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Type of Manuscript: Research

A Study to Assess the Knowledge and Practice of Exclusive Breastfeeding among Mothers in Selected Pediatric Clinics at Chennai

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Absract

Introduction: Breast feeding is considered as the pivotal factor between life and death for the vast majority of children in developing countries, but pattern of breast feeding and exclusive breast feeding is more important, which is ignored often by most mothers. **Aims & Objectives**: To assess the knowledge, and Practice of Exclusive Breast feeding among Mothers in selected pediatric clinics at Chennai. **Methodology:** A quantitative descriptive research design was adopted and samples are selected by purposive sampling technique. The data was collected by self-administered questionnaire and data analysis was done by descriptive and inferential statistics. **Result**: The study revealed that most of the mothers 46(46%) had moderate knowledge, 36(36%) had adequate knowledge and18 (18%) had inadequate knowledge of exclusive breast feeding among mothers and also most of the mothers 52(52%) had moderate practice, 40(40%) had inadequate practice and 8(8%) had adequate practice of exclusive breast feeding among mothers. In demographic variable education of mother (x=18.841,p=0.004) had shown statistically significant association with level of knowledge of exclusive breast feeding among mothers at p = 0.05 level **Conclusion**: The results concluded that a substantial positive correlation between knowledge and practice of exclusive breast feeding among women which clearly infers that when the knowledge of exclusive breast feeding among women increases their practice level also increase.

***Keywords**: Exclusive breast feeding, Knowledge, Practice, Primi Mothers, Adequate, Inadequate Knowledge*

Introduction

There is no substitute for mother’s love; There is no substitute for Mother`s milk.”

-William Gouge

Breastfeeding is a well-recognized and prescribed intervention for improving a child’s nutritional status. Breast feeding, particularly exclusive breastfeeding, and appropriate complementary feeding practices are widely recognized as vital components for infants’ healthy growth and development, as well as the prevention of childhood illness[12]. Breast milk is

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not only the best for infants, but it is also needed[16]. Lack of breast feeding, especially exclusive breast feeding within the first few months of life, is critical because it lowers the risk factors for infant mortality and morbidity. According to the World Health Organization, increased breast feeding will save the livesof1.5millioninfants per year[1].

Breastfeeding exclusively is described as starting breastfeeding immediately after birth and not giving the baby any other solid food (including water) (GEAG ETAL., 2015, Singh et al.,2018). Breast milk is in expensive, always available, hygienic, and delivered at the proper temperature for the infant. Breast feeding exclusively is beneficial to the growth of immunity as well as the infant's physiological and psychological development (Nkirigacha et al., 2016, WHO, 2013)[4].Breast milk also helps to postpone the return of fertility and lowers the risk of breast and ovarian cancer(WHO,2013)1.

Background

Breastfeeding exclusively decreases child infection and mortality, increases mental and motor growth, and protects against obesity and metabolic diseases later in life (Horwood et al., 2001;Jones et al., 2003; Langley Evans, 2009)[9].According to epidemiological evidence, exclusively breastfeeding for the first six months boosts a baby's immune system and protects them from acute respiratory infections and diarrhea, the two leading causes of child mortality in developing countries (Cai et al., 2012; UNICEF, 2006)[5] According to estimates, 22 percent of infant death scan be avoided if breastfeeding begins within the first hour of birth, and 16 percent can be avoided if breast feeding begins within the first 24 hours (Massonetal.,2013)[15].

Need for the Study

Exclusive breastfeeding (EBF) is not optimally implemented world-wide. Estimates indicate that 42% of infants are exclusively breastfed globally[11]. In Sub –Saharan Africa (SSA), the setting with highest prevalence of infant and child mortality, sub optimal breastfeeding practices are common only 36% of SSA infants are exclusively breastfed6. In Tanzania, the Demographic Health Survey indicates that only 59% of infants are exclusively breastfed[3]. It has been estimated that exclusive breast feeding for the first six months could reduce more than 800,000 infant mortality[2]. Exclusively breastfed children are at lower risk of infection from diarrhea and acute respiratory infection (ARI) than infants who are mix fed in the rest six months of life. Diarrhea and ARI are the two major causes of child mortality in low and middle income countries, contributing 33% of the 6.9 million deaths occurring each year globally[7]. Exclusive breastfeeding (EBF) has also been shown to reduce mother-to-child HIV transmission compared to formula feeding[14].

Materials and Methods

Research Setting

The setting is the location where the study is conducted. The study was conducted in selected pediatric clinics, at Chennai. This setting is selected because of availability of the samples, feasibility of conducting study.

Population

The population referred to is the target population, which represents the entire group or all the elements like individuals or objects that meet certain criteria for inclusion in the study.

In this study population refers to all the Primi Mothers having children with the age of 6 months to 2 years attending Pediatric Clinics.

Sample

The term "sample" refers to a subset of the population that has been chosen to take part in the research.

Primi mothers having children with 6 months to two years of age attending Pediatric Clinic at Porur & also who satisfied the inclusion criteria.

Sample Size

The sample size for this research consisted of 100 Primi mothers who had exclusively breastfed their children between the ages of six months to two years of age.

SAMPLING TECHNIQUE

Purposive sampling technique is used in this study

SAMPLING CRITERIA

Inclusion criteria

- Breast feeding primi mothers who had children between the age 6months-2years.
- Primi mothers who gave consent to take part in the study.
- Primi mothers who can read self-administered questionnaire

Exclusion criteria

- Breast feeding mothers having children with medical conditions that prevented the practice of EBF such as Galactocemia.
- Primi mothers who were unwilling to participate.
- Primi mothers who are not present at the time of data collection.

Result

Description of Demographic Variables

In the present study, most of the women, 60(60%) were aged between 26 – 35 years, 78(78%) were Hindus, 68(68%) had college education and above, 67(67%) were housewives, 39(39%) had monthly family income of Rs.15000 – 20000, 51(51%) belonged to nuclear family, 43(43%) had vacuum and forceps delivery, 56(56%) of mothers had 0 – 6 months old child, 60(60%) received information regarding health through paramedical and 66(66%) had received knowledge regarding exclusive breast feeding.

Assess the level of Knowledge and Practice of Exclusive breastfeeding among Mothers.

The present study showed that most of the mothers 46(46%) had moderate knowledge, 36(36%) had adequate knowledge and 18(18%) had inadequate knowledge of exclusive breast feeding among mothers.

Level of Knowledge	Frequency	Percentage
Inadequate Knowledge (≤50%)	18	18.0
Moderate Knowledge (51 – 75%)	46	46.0
Adequate Knowledge (>75%)	36	36.0

The present study showed that most of the mothers 52(52%) had moderate practice, 40(40%) had inadequate practice and 8 (8%) had adequate practice of exclusive breastfeeding among mothers.

Level of Practice	Frequency	Percentage
Inadequate Practice (≤50%)	40	40.0
Moderate Practice (51 – 75%)	52	52.0
Adequate Practice (>75%)	8	8.0

Determine the Relationship between Knowledge and Practice of Exclusive breastfeeding among Mothers.

The study result showed that the mean score of knowledge among women was 19.82±4.93 and mean score of practice was 6.16±1.87. The calculated Karl Pearson's Correlation value of r = 0.338shows a substantial positive correlation between knowledge and practice of exclusive breastfeeding among women which clearly infers that when the knowledge of exclusive breast feeding among women increases their practice level also increases.

Determine the association of Knowledge and Practice of exclusive breastfeeding among Mothers with selected socio demographic variables.

The result showed that the demographic variable education of mother (**x^2=**18.841,p=0.004) had shown statistically significant association with level of knowledge of exclusive breastfeeding among mothers at p<0.01 level and the other demographic variables had not shown statistically significant association with level of knowledge of exclusive breast feeding among mothers.

This study revealed that a substantial positive correlationbetweenknowledgeandpracticeofexclusive breast feeding among women which clearly infers that when the knowledge ofexclusivebreastfeeding among women increasestheirpracticelevelalsoincrease. It is recommended that education of mother is necessary to increase their practice level.

Discussion

The study showed that most of the mothers 46(46%) had moderate knowledge, 36(36%) had adequate knowledge and 18(18%) had inadequate knowledge of exclusive breast feeding among mothers

The study findings was supported by Sandhya Jagadale (2015) conducted a cross sectional study on 35 Primi mothers to assess knowledge, attitude and practice regarding breast feeding. Samples selected by purposive sampling technique. The study found that11(31. 42%) having good knowledge, 22 (62.85%) having average knowledge and 2 (5. 71%)having poor knowledge and 19 (54. 28%) mothers were not using knowledge of practice forgiving breast feeding to new born baby.The study concluded that Majority of 60% mothers having good knowledge of breast feeding but they were not practicing the knowledge of breastfeeding.

The present study showed that most of the mothers 52(52%) had moderate practice, 40(40%) had inadequate practice and 8 (8%) had adequate practice of exclusive breastfeeding among mothers.

The study also supported byGetchew Arage (2016) in aCommunity based cross-sectional study to assess the prevalence of exclusive breast feeding practice and its associated factors among infants, Simple random sampling technique was used among 470 mother-infant pairs. The finding revealed that out of 470 mother-infant pair's samples, 453were included in the final analysis. The study concluded that a small proportion of infants are exclusively breastfed during the first 6 months. Promoting institutional delivery, revising the leave after birth, advice and counseling pregnant mothers about EBF, and enabling every mother to encourage colostrum feeding were recommended in order to increase the proportion of women practicing exclusive breastfeeding.

The study result shows that the mean score of knowledge among women was 19.82±4.93 and mean score of practice was 6.16±1.87. The calculated Karl Pearson's Correlation value of r = 0.338shows a substantial positive correlation between knowledge and practice of exclusive breastfeeding among women which clearly infers that when the knowledge of exclusive breast feeding among women increases their practice level also increases.

The study was supported byRuth NimotaNukpezah (2018)a descriptive cross-sectional study conducted in mother-infant pairs attending child welfare clinics from three health facilities in the Tamale Metropolis. It was surveyed in 393 mothers-infant pair's. This study was aimed at assessing the knowledge and practice of exclusive breast feeding. The study revealed that 39.4% initiated breastfeeding within one hour after birth. Majority of participants had heard of EBF 277 (70.5%), about 344 (87.5%) of participants believed that EBF should be practiced for 5 months in their locality. The study conclude that all the participants had some level of education background, a majority did not have adequate knowledge on EBF and EBF practice was low in the study community. They have suggest improved education at the child welfare clinics and the media should be used as a platform to educate women adequately about importance of EBF.

The result shows that the demographic variable education of mother **(x^2=**18.841,p=0.004) had shown statistically significant association with level of knowledge of exclusive breastfeeding among mothers at $p<0.01$ level and the other demographic variables had not shown statistically significant association with level of knowledge of exclusive breast feeding among mothers.

The study also supported by Dipen.V.Patel(2015), on Breast feeding Practices, Demographic Variables, and their Association with Morbidities in Children among 781 mothers in Gujarat,The result revealed that More than half of mothers (57.5%) started feeding within an hour of birth, 55.9% gave exclusive breastfeeding for six months, 89.1% of the mothers stopped breastfeeding before two years of age, 18.2% of the mothers bottle-fed the babies, and 15.6% had problems during breastfeeding in first 6 months. Early initiation of breastfeeding within one hour of birth promoted exclusive breastfeeding and breastfeeding for longer duration. Exclusive breastfeeding increased frequency of feeds. Multivariable logistic regression showed that initiation of breastfeeding after an hour of birth (p = 0.035), not providing exclusive breastfeeding for 6 months (p < 0.0001), unemployed mothers (p = 0.035), having two or more

kids (p = 0.001), and complementary feeds given by person other than mother (p = 0.007) increased hospitalization. Starting breastfeeding after an hour of birth (p = 0.045), severe malnutrition (p = 0.018), and breastfeeding for < two years (p = 0.026) increased rates of diarrhea. Breastfeeding practices were not optimum and interventions to improve these practices need to be strengthened. This study conclude that maternal illiteracy has been associated with suboptimal feeding practices. Maternal education plays a huge role in increasing the receptivity of mothers towards correct practices. Lower literacy in mothers, in addition to lack of knowledge about correct practices and recommendations, makes routine counseling by community health workers also ineffective.

Conclusion

The study concluded that to assess the knowledge and practices of exclusive breast feeding among mothers. The results concluded that a substantial positive correlation between knowledge and practice of exclusive breast feeding among women which clearly infers that when the knowledge of exclusive breastfeeding among women increases their practice level also increase. Thus the investigator concluded that educational module is effective in improving the knowledge and practice of exclusive breast feeding.

Conflict of Interest: The authors have no conflict of interest regarding the investigation.

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Ethical Clearance: Ethical clearance is obtained from the ethical committee of A.C.S Medical College and Hospital.

Reference

1. Breastfeeding protects against hip fracture later in life. Nature Reviews Endocrinology. 2011;7(11):632– Correction for Cheng et al., KDM4B protects against obesity and metabolic dysfunction. Proceedings of the National Academy of Sciences. 2019;116(6):2384
2. Original Article JHAS 2020; 10(1):24-29 Prevalence of ... [Internet]. [cited 2021Dec9]. Available from: https://pdfs.semanticscholar.org/dd23/1a1a3baeeccb 952720a7ad c8af2049826784.pdf
3. Abeshu MA, Adish A, Haki GD, Lelisa A, Geleta B. Assessment of caregiver's knowledge, complementary feeding practices, and adequacy of nutrient intake from homemade foods for children of 6–23 months in food insecure woredas of Wolayita Zone, Ethiopia. Frontiers in Nutrition. 2016;3.
4. Ben X-M. The benefits of expressed maternal milk and donor breast milk for preventing necrotizing enterocolitis in preterm infants: Systematic review and meta- analysis. Journal of Nutritional Disorders & Therapy. 2012;02(02).
5. Bhatt N. Breastfeeding in India is disrupted as mothers and babies are separated in the pandemic. BMJ. 2020;:m3316.
6. Bjørke-Monsen A-L. Is exclusive breastfeeding ensuring an optimal micronutrient status and psychomotor development in infants? Clinical Biochemistry. 2014;47(9):714.
7. Carberry AE, Raynes-Greenow CH, Turner RM, Jeffery HE. Breastfeeding within the first hour compared to more than one hour reduces risk of early-onset feeding problems in term neonates: A cross-sectional study. Breastfeeding Medicine. 2013;8(6):513–4.
8. Dieterich CM, Felice JP, O'Sullivan E,

Rasmussen KM. Breastfeeding and health outcomes for the mother-infant dyad. Pediatric Clinics of North America. 2013;60(1):31–48.

9. First L. Breastfeeding and improved cognitive/noncognitive development: Does the effect last post infancy and toddlerhood? Breastfeeding: Support, Challenges, and Benefits. 2018;:108.
10. Furman L. Measuring breastfeeding success. Breastfeeding: Support, Challenges, and Benefits. 2018;:48–9.
11. Infant and young child feeding. 2016; Jang GJ, Hong YR. Effects of a breastfeeding support program on the prevalence of exclusive breastfeeding and growth in late preterm infants. Child Health Nursing Research. 2020;26(1):90–7.
12. LO denise. Low prevalence of exclusive breastfeeding among hospitalized Brazilian infants. 2018;
13. Nanda S, Nanda S. Postpartum care and breastfeeding in gestational diabetes mellitus, benefits for mother and baby. Contemporary Topics in Gestational Diabetes Mellitus. 2015;:263–.
14. Rahman A. Promotion of breastfeeding and evaluation study: A community-based maternal-focused approach to promote exclusive breastfeeding in rural Pakistan. http://isrctnorg/>. 2012;
15. Woldeamanuel BT. Trends and factors associated to early initiation of breastfeeding, exclusive breastfeeding and duration of breastfeeding in Ethiopia: Evidence from the Ethiopia Demographic and Health Survey 2016. International Breastfeeding Journal. 2020;15(1).
16. Woldeamanuel BT. Trends and factors associated to early initiation of breastfeeding, exclusive breastfeeding and duration of breastfeeding in Ethiopia: Evidence from the Ethiopia Demographic and Health Survey 2016. International Breastfeeding Journal. 2020;15(1).

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Lifestyle Pattern among Nepalese Migrant Workers in Gulf Countries and Malaysia

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Abstract

Background: Nepal is one of the largest suppliers of low skilled laborer to gulf countries. The conditions surrounding the migration can increase health vulnerabilities due to lifestyle pattern. This study assessed the lifestyle pattern adopted by migrant workers in gulf countries and Malaysia.

Method: Descriptive cross-sectional study was conducted among 502 Nepali migrant workers arriving in Tribhuvan International Airport from gulf countries and Malaysia during 15th May to 15th June 2019. Face to face interview with structured questionnaires was done.

Results: More than half (51.5%) respondents consumed alcohol. Majority (96.8%) of the respondents were non vegetarian and (69.3%) never did exercise, 7.6% respondents often consume extra added salt in food. More than half (51%) respondents drank only 1-3 liters water per day. Majority (86.9%) of the respondents worked 8-12 hours per day and 27.5% worked at temperature of 41-50 degree centigrade. Painkiller was used sometimes by 19.5% respondents. About thirty two percent lived by sharing the room with 6-10 people.

Conclusion: Nepalese migrant workers have unhealthy lifestyle pattern which increases the risk of non-communicable diseases. Further there is a lack of adequate information for the migrants making them aware of their health risks and consequences of lifestyle pattern.

Keywords: *Lifestyle pattern, Nepalese Migrant workers, Gulf countries*

Introduction

Globalization of markets and labour supply has added impetus to the growing mobility of people working abroad. In Asia the movement of labour is an important and enduring phenomenon associated with economic growth and development since it eases skill imbalances in labour markets and provides benefits for both sending and receiving countries. Conditions surrounding migration process can increase health vulnerabilities along with injury, illness, poor provision of health care. In extreme situations, migrants are forced to return home because of ill-health, chronic or terminal illnesses, and often end up

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unable to work or die back in their home country[1].

Nepalese migrant workers travelling to Malaysia and the Middle East has increased in recent years. Nepal is the second largest labour supplier to Malaysia with 519,000 workers. They are in semi-skilled or manual roles with majority in the construction and manufacturing sectors [2]. These jobs are characterized by lower payment, longer working hours and physically and mentally hazardous working conditions [3]. Further these migrant workers experience poor housing conditions with very limited access to quality health care leading to emergence of variety of adverse health outcome [4].

On an average three migrant workers return home (Nepal) from gulf countries with kidney problem daily. Seventy such returnees are undergoing dialysis at National Kidney Center. 'Most of the migrant workers are from hilly region, their body is not accustomed to hot climate. Further, people are not habituated in working longer hours in Nepal. Longer work hours causes body aches leading to using painkillers which further damage kidney. Regular intake of toxins and persistent dehydration can damage kidney within 6 months. Intake of high protein; red meat and stress also damages kidney' [5].

The transition to new country, new environment, new cultural and language perspective, along with working and living conditions subject Nepalese migrant workers in Gulf countries and Malaysia to drastic lifestyle changes. These lifestyle changes can increase the risk of chronic and non-communicable diseases.

Objectives of this study is to find out the lifestyle pattern adopted by Nepalese working in gulf and its effect on mental health of migrant worker.

Methods

Descriptive cross sectional study design was used to identify the lifestyle pattern of the Nepalese migrant workers in gulf countries. The study was conducted in the arrival section of Tribhuvan International Airport (TIA). It serves as the world's gateway to migrant workers. Data collection was done from15th May to 15th June 2019. All the Nepali migrant workers arriving in TIA from gulf countries and Malaysia were the study population. Purposive sampling technique was used to collect data from 502 respondents. Nepalese citizen working in any post and occupation in gulf countries and Malaysia, residing there for 6 months of duration or more and arriving at TIA during the period of data collection and no diagnosis of mental illness were included in the study. Further the participation was voluntary. Structured questionnaires including sociodemographic information and lifestyle questionnaire based on STEPwise Approach to NCD Risk Factor Surveillance (STEPS) instrument were used to collect data. An informed written consent was obtained from all participants.

Results

Socio demographic information: Nearly half (43.2%) of the respondents were from the age group of 26-35 years with the mean age 32.97 (SD=7.62). Majority (93%) of the respondents were male, married (81.7%) and Hindu (80%). Regarding the educational status, nearly half (47%) of the respondents have completed their secondary level education, 35.7% had completed primary level. More than half (55.60%) of the respondents were from Terai region, 37% from hilly and 7% from mountain region of the country. Regarding the work experience, it shows that nearly half (41.8%) of the respondents have worked experience in Qatar followed by 21%

respondents in Saudi Arabia and UAE, 7% in Kuwait, 5% in Malaysia. Representing occupation, most of the respondents (15%) were driver, followed by laborer (14.7%), scaffolder (14.2%), electrician (10.6%), housekeeping (10.4%), cook (10.2%), security guard (8%). More than half (56.8%) of the respondents worked in the indoor area. More than half (63.7%) of the respondents have 1-5 years, 23.5% had 6-10 years of work experience.

Table 1 Distribution of respondents according to smoking, chewing tobacco, drinking alcohol and dietary composition (n=502)

Behavior	Yes (%)	No (%)
Smoking	32%	68%
Chewing Tobacco	26.7%	73.3%
Alcohol consumption	51.5%	48.5%
Dietary composition	Frequency	Percentage (%)
Vegetarian	16	3.2%
Non-vegetarian	486	96.8%

Table 2 Distribution of respondents according to dietary pattern and exercise (n=502)

Items	Always	Often	Sometimes	Seldom	Never
Consumption of food in hotel/ fast food	30(6%)	53(10.6%)	200(39.8%)	83(16.5 %)	136(27.1%)
Consumption of additional salt	15(3%)	38(7.6%)	153(30.5%)	181(36.1%)	115(22.9%)
Consumption of Fruits	115(22.9%)	143(28.5%)	180(35.9%)	56(11.2%)	8(1.6%)
Consumption of Vegetable	51(10.2%)	129(25.7%)	183(36.5%)	109(21.7%)	30(6%)
Consumption of processed food	16 (3.2%)	76(15.10%)	166(33.10%)	159(31.6%)	85(17 %)
Consumption of sugary drinks	103(20.5%)	104(20.7%)	160(31.9%)	89(17.7%)	46(9.2%)
Exercise	42 (8.4%)	20 (4%)	76 (15.1%)	16 (3.2%)	348 (69.3%)

Table 3 Distribution of respondents as per water supply and water intake (n=502)

Water supply and water intake	Percentage (%)	
Water supply at workplace	Yes	No
	95.2%	4.8%
Water intake per day		
1-3 liters	51%	
4-6 liters	41.6%	
7-9 liters	6%	
10-12 liters	1.4%	

Table 4 Distribution of respondents who skip drinking water and urinating despite the urge (n=502)

Items	Always	Often	Sometimes	Seldom	Never
Skipping drinking water despite the urge to drink	42 (8.4%)	41 (8.2%)	101 (20.1%)	64 (12.7%)	254 (50.6%)
Skipping urination despite the urge to urinate	11 (2.2%)	81 (16.1%)	151 (30.1%)	92 (18.3%)	167 (33.3%)

Table 5 Distribution of respondents according to their working and living arrangements (n=502)

Duration of working hours per day	Frequency	Percent (%)
3-7 hours	12	2.4
8-12 hours	436	86.9
13-17 hours	35	7.0
18-22 hours	19	3.8
Work Temperature (degree centigrade)		
20-30	259	51.6
31-40	71	14.1
41-50	138	27.5
51 and above	34	6.8

Cont... **Table 5 distribution of respondents according to their working and living arrangements (n=502)**

Living room equipped with		
Air condition	479	95.4%
Fan	15	3%
None	8	1.6%
Number of persons in a room		
1-5 people	326	64.9
6-10 people	162	32.3
11-15 people	7	1.4
16-20 people	4	.8
21-25 people	3	0.6

Table 6: Distribution of respondents according to use of painkiller (n=502)

Use of painkiller	Frequency	Percent
Always	10	2.0
Often	37	7.4
Sometimes	98	19.5
Seldom	76	15.1
Never	281	56.0

Discussion

The common age for migration in this study was 26 to 35 years and majority of respondents were engaged in laborious job as in other studies. A study done among Nepalese migrant workers to Gulf had respondents of age 26-35 years and were involved in unskilled and laborious jobs [3,6].

As per study by NIDS (2006), the reported health problems of the Nepalese migrants in the Gulf countries and Malaysia were stomach pain, fever, malaria, jaundice, blood pressure, obesity, physical disability, temperature related illness, kidney failure and mental trauma [7]. As this study, respondents had less intake of drinking water and skipped water and urination due to heavy workload [7].

The study suggests that Nepalese migrant workers have unhealthy lifestyle which are risk factors for non-communicable diseases. The use of tobacco along with lack of physical activities, harmful use of alcohol and unhealthy diets has been identified as four major risk factors for non-communicable diseases (NCD). NCD includes heart disease, stroke, cancer, diabetes, chronic lung disease [8]. Tobacco accounted for 7.2 million deaths annually while 4.1% death were linked to excess salt intake, 3.3 million deaths because of alcohol use ad 1.6 million death because of insufficient physical activity [9]. Vulnerable and socially disadvantaged group of people have higher risk of being subjected to unhealthy dietary practices, use of tobacco, smoking and alcohol [8].

Among South Asian migrants, (Indian, Pakistani and Bangladeshi) in United Arab Emirates, prevalence of hypertension was 30.5%. Hypertensive respondents were less likely to walk 30 minutes daily [10]. Another study compared Indian male Gulf (UAE, Saudi, Arabia, Qatar, Oman, Kuwait and Bahrain) migrants with non-migrants in India. The age adjusted prevalence of hypertension was higher (57.6%) among migrants. Migrants were more likely to be physically inactive (OR:1.8; 95% CI) than non-migrants [11].

Another study conducted among migrant women in UAE, found that prevalence of prediabetes and diabetes among 127 South Asian (India, Pakistan and Bangladesh) migrants was 30.3% and 16.7%. Prevalence was higher among South Asian female migrants than Filipinos and Arabs migrants[12].

As per a study there was death of five thousand Nepalese migrants working abroad in between 2008 and 2014 [13]. Among death almost 29% were attributed to cardiac arrest or heart attack [14] this demonstrates the greater burden of cardio-metabolic disease as well as greater NCD risk factors in this population [14,15].

Along with rapid urbanization there has been tremendous changes in lifestyle with inclusion of high- calorie foods, processed foods and increased proportion of meat leaving behind traditional food culture of unrefined carbohydrates, fibers and tubers [16,17,18].

Not only these lifestyle practices are risk factor for physical health, but it has an impact on mental health and wellbeing. A review identified lifestyle changes along with occupational injuries and hazards and sexual risk-taking behaviors as the key risk factors linked with Nepalese Migrant workers health and wellbeing [1]. Another study among male Nepalese migrant workers in Malaysia, Qatar and Saudi Arabia showed that 13% reported poor or very poor health and nearly a quarter reported a mental health issue. Age and exercise were significantly associated with health status, while poor work environments and perceived health risks at work were associated with both mental health issues and physical health status [19].

Hydration in the workplace is an important concern because dehydration can affect productivity, safety, health care costs and employee morale. Protective clothing and safety equipment and air-condition also contributes to dehydration[20]. Dehydration with loss of body mass of 2% or more results in impaired cognitive function [21], reduced physical performance [22], headaches and fatigue [23]. Severe dehydration is fatal [24]. Mild dehydration of 1 % to 2% loss of body mass is sufficient for impairing physical and mental performance [25]. Chronic mild dehydration is associated with increased risk of many conditions as constipation, urinary tract infection, hypertension, coronary heart disease and even stroke [26]. While overhydration leads to hyponatremia leading

to lung congestion, brain swelling, headache, fatigue, lethargy, seizures, fatigue eventually coma [27]. Almost 30% of respondents in this study work at 41-50 degree centigrade which suggest of rapid fluid loss as sweat. The initiation of thirst response occurs when loss of body mass is 1% to 2% [28]. Thus, skipping drinking as seen in this study despite the urge further leads to dehydration.

Migration from rural to urban areas necessitates alterations in social status and living conditions resulting in behavioral adaptations to urban life. Migrant workers are more likely to take riskier jobs than natives. The stress induced by migration itself, unstable living situations and poor working conditions, is likely to increase the risk of substance abuse [29]. Being away from home and feeling socially isolated might led migrants to engage in drugs and alcohol use [1].

In this study respondents were found to skip urination despite the urge because of longer working hours and limited breaks in the work. This increases the risk of bladder dysfunction, increased risk for urinary tract infection, damage to urinary structure like bladder and or even kidneys which may result in kidney diseases [30].

Almost 10% of the respondents in this study used painkiller always or often. Main painkillers available for over-the-counter use are acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs). Long term use of NSAID can lead to stomach issues, kidney problems, hypertension, fluid retention [31].

Conclusion

Nepalese migrant workers to gulf and Malaysia have lifestyle pattern as risk for physical as well as mental health problems. Most of the lifestyle posit risk for non-communicable diseases. This study provides important messages for the migration policy makers in Nepal. There is a lack of adequate information for the migrants making them aware of their health risks and consequences of lifestyle adaptations.

Recommendations: Dietary counselling for workers applying to work abroad might be conducted by dietician. Pre-departure training and counseling might be provided to every worker regarding the potential health risks due to change lifestyle pattern.

Ethical Clearance: Ethical clearance was obtained from Nepal Health Research Council (NHRC). Further research was conducted after official permission granted by University Grant Commission, Nepal and Tribhuvan International Airport. Informed Written consent was obtained from each participant.

Conflict of Interest: Nil

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References

1. Simkhada PP, Regmi PR, van Teijlingen E. Identifying the gaps in Nepalese migrant workers' health and well-being: A review of the literature. Journal of Travel Medicine. 2017; 24(4):1-9. Identifying the gaps in Nepalese migrant workers' health and well-being: a review of the literature - PubMed (nih.gov)
2. Baruah N, Tuladhar S. The challenge for Nepal's migrant workers. The Diplomat. 2012. The Challenge for Nepal's Migrant Workers – The Diplomat
3. Sönmez S. "Human rights and health disparities

for migrant workers in the UAE,". Health and Human Rights: An International Journal. 2011;13(2):17-35. Human Rights and Health Disparities for Migrant Workers in the UAE 13 Health and Human Rights 2011 (heinonline.org)

4. Joshi S, Shimkhada P, Prescot G. Health problems of Nepalese migrants working in three Gulf countries. BMC International Health Human and Rights. 2011; e3. Health problems of Nepalese migrants working in three Gulf countries | BMC International Health and Human Rights | Full Text (biomedcentral.com)
5. The Himalayan Times. Renal Failure Rampant among migrants. 2nd Sep 2017.https://thehimalayantimes.com/nepal/renal-failure-rampant-among-migrants
6. Graner E, Gurung G. Arab KoLahure: Looking at Nepali Labour Migrants to Arabian Countries. CNAS Journal. 2003;30 (2): 295-325. CNAS_30_02_04.pdf (cam.ac.uk)
7. Nepal Institute of Development Studies (NIDS). State of Migrants Health 2005. Nepal country Report. 2006. [http://www.caramasia.org/enews/ 2007/april/inside/soh_country_reports/nids_booklet.pdf].
8. World Health Organization. Non communicable disease; key facts. 2021. Noncommunicable diseases (who.int)
9. GBD 2015 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. Lancet, 2016; 388(10053):1659-1724. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015 (nih.gov)
10. Shah SM, Loney T, Sheek-Hussein M, El Sadig M, Al Dhaheri S, El Barazi I, et al. Hypertension prevalence, awareness, treatment, and control, in male south Asian immigrants in the United Arab Emirates: a cross-sectional study. BMC Cardiovasc Disord. 2015;15:30. Hypertension prevalence, awareness, treatment, and control, in male South Asian immigrants in the United Arab Emirates: a cross-sectional study | BMC Cardiovascular Disorders | Full Text (biomedcentral.com)
11. Begam NS, Srinivasan K, Mini GK. Is migration affecting prevalence, awareness, treatment and control of hypertension of men in Kerala, India? J Immigr Minor Health. 2016;18(6):1365–70. Is Migration Affecting Prevalence, Awareness, Treatment and Control of Hypertension of Men in Kerala, India? | SpringerLink
12. Shah SM, Ali R, Loney T, Aziz F, ElBarazi I, Al Dhaheri S, et al. Prevalence of diabetes among migrant women and duration of residence in the United Arab Emirates: a cross sectional study. PLoS One. 2017;12(1):e0169949. Prevalence of Diabetes among Migrant Women and Duration of Residence in the United Arab Emirates: A Cross Sectional Study (plos.org)
13. STATs News. At a rising rate, Nepalis working abroad go home in coffins USA: STAT; 2016 [Available from: https://www.statnews.com/2016/12/21/ nepalis-die-working-abroad/.
14. International Labour Organization. When the safety of Nepali migrant workers fails: A review of data on the numbers and causes of the death of

Nepali migrant workers. Kathmandu; 2016.

15. Aryal N, Regmi PR, Van Teijlingen E, Simkhada P, Adhikary P, Bhatta YKD, et al. Injury and mortality in young Nepalese migrant workers: a call for public health action. Asia Pac J Public Health. 2016;28(8):703 –5. Injury and Mortality in Young Nepalese Migrant Workers: A Call for Public Health Action - Nirmal Aryal, Pramod R. Regmi, Edwin van Teijlingen, Padam Simkhada, Pratik Adhikary, Yadav Kumar Deo Bhatta, Stewart Mann, 2016 (sagepub.com)

16. Subedi YP, Marais D, Newlands D. Where is Nepal in the nutrition transition? Asia Pac J Clin Nutr. 2017;26(2):358–67. Where is Nepal in the nutrition transition? | Asia Pacific Journal of Clinical Nutrition (informit.org)

17. World Health Organization. WHO Country Cooperation Strategy Nepal, 2013–2017. Kathmandu: World Health Organization, Country Office for Nepal; 2013. cover.CDR (who.int)

18. Bishwajit G. Nutrition transition in South Asia: the emergence of noncommunicable chronic diseases. F1000Research. 2015;4. Nutrition transition in South Asia: the emergence of non-communicable chronic diseases (nih.gov)

19. Adhikary P, Sheppard Z, Keen S, van Teijlingen E. Health and well- being of Nepalese migrant workers abroad, International Journal of Migration, Health & Social Care. 2018. https://doi.org/10.1108/IJMHSC-12-2015-0052

20. Natural Hydration Council. Hydration in workplace fact sheet. 2018. https://www.naturalhydrationcouncil.org.uk/ wp-content/uploads/2016/07/NHC-Hydration-in-Workplace-fact-sheet-FINAL1. pdf

21. Ritz P, Berrut G. The importance of good hydration for day- to day health. Nutrition Reviews. 2005; 63 (Part II): S6-13. Importance of Good Hydration for Day-to-Day Health | Nutrition Reviews | Oxford Academic (oup.com)

22. Shirreffs S. The importance of good hydration for work and exercise performance. Nutrition Reviews. 2005; 63 (Part II): S14-21. Importance of Good Hydration for Work and Exercise Performance | Nutrition Reviews | Oxford Academic (oup.com)

23. Shirreffs SM, Merson SJ, Fraser SM et al. The effects of fluid restriction on hydration status and subjective feelings in man. British Journal of Nutrition. 2004; 91: 951-8. The effects of fluid restriction on hydration status and subjective feelings in man | British Journal of Nutrition | Cambridge Core

24. Thomas DR, Cote TR, Lawhorne L et al. Understanding clinical dehydration and its treatment. Journal of American Medical Directors Association. 2008; 9: 292-301. Understanding Clinical Dehydration and Its Treatment - ScienceDirect

25. Benelam B, Wyness L. Hydration and health: a review. Nutrition Bulletin. 2010 Mar;35(1):3-25. Hydration and health: a review - Benelam - 2010 - Nutrition Bulletin - Wiley Online Library

26. Manz F, Wentz A. The importance of good hydration for the prevention of chronic disease. Nutrition Reviews. 2005; 63 (Part II): S2-5. Importance of Good Hydration for the Prevention of Chronic Diseases | Nutrition Reviews | Oxford Academic (oup.com)

27. O'Brien KK, Montain SJ, Corr WP et al. Hyponatraemia associated with overhydration in US army trainees. Military Medicine.2001;

166: 405-10. Hyponatremia Associated with Overhydration in U.S. Army Trainees | Military Medicine | Oxford Academic (oup.com)

28. Armstrong LE. Hydration assessment technique. Nutrition Reviews.2005; 63: S40- S54.

29. Wan X, Shin SS, Wang Q, Raymond HF, Liu H, Ding D, et al. Smoking among young rural to urban migrant women in China: a cross-sectional survey. PLoS One. 2011;6(8):e23028. doi: 10.1371/journal.pone.0023028.

30. Nall R. How long can you hold in your pee? MedicalNewsToday.2020. How long can you hold in your pee: Timing and dangers (medicalnewstoday.com)

31. American Addiction Centers. The effects of painkiller use. 2019.Painkiller Effects | Short Term, Long Term & Side Effects (drugabuse.com)

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A Study to Assess the Effectiveness of Structured Teaching Programme (STP) to the Care Givers Regarding Pre and Post Operative Care on Knowledge and Practice of Clients, Undergoing Cataract Surgery at Selected Camps Conducted in Bidar

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Abstract

Introduction: Cataract is the clouding of the crystalline lens of the eye, placed at the back of the iris or in it envelop. cataract is very common in older people.[1] There are, many causes for cataract; they are smoking, diabetes, deterioration in the nutrition of the lens, deposits of acids and salt between lens fibers and disintegrate of lens fibers, use of alcohol and prolonged exposure to sunlight.[2] Age related cataract occurs in 40s and 50s. Methods: The research design selected for study was a one group pre-test post-test quasi experimental design. The study includes 60 caregivers who are selected as a sample by non-probability convenient sampling technique. Result: The major findings of the study revealed that, majority of care givers 48(80%) had inadequate level of knowledge about pre and post operative care on knowledge and practice of clients undergoing cataract surgery, whereas 12(20%) of care givers had moderate level of knowledge and none of care givers had adequate knowledge regarding pre and post operative care on knowledge and practice of clients undergoing cataract surgery before administration of structured teaching programme.[3]However, significant increase in the post-test knowledge score of care givers after the administration of structured teaching programme.[4] The post test data revealed that, majority of care givers 40(66.67%) had average level of knowledge about pre and post operative care on knowledge and practice of clients undergoing cataract surgery whereas 20(33.33%) of care givers had moderate level of knowledge and none of care givers had inadequate knowledge regarding pre and post operative care on knowledge and practice of clients undergoing cataract surgery after administration of structured teaching Programme.[5] Discussion: The findings of this study revealed that knowledge of the caregivers having more knowledge regarding pre and post operative care after giving the structured teaching programme.[6]

Key words: *Cataract, Caregivers, Surgery, WHO, Crystalline lens & Blindness.*

Objectives of the Study

1. To assess the pretest knowledge among the care givers regarding pre and post operative care on knowledge and practice of clients, undergoing Cataract surgery at selected camps.

2. To administer Planned Teaching Programme to care givers regarding pre and post operative care on knowledge and practice of clients, undergoing

Cataract surgery at selected camps.

3. To assess the posttest knowledge among care givers regarding pre and post operative care on knowledge and practice of clients, undergoing Cataract surgery at selected camps.

4. To determine the effectiveness of Planned Teaching Programme in terms of gain in knowledge score.

5. To know the association between pretest and posttest knowledge scores with selected demographic variables.

II. METHODOLOGY

Methodology of research organizes all the components of study in a way that is most likely to lead to valid answers to the problems to have been posed

Research approach:

In the present study an evaluative research approach was used to assess the knowledge of care givers regarding pre and post operative care on knowledge and practice of clients, undergoing Cataract surgery.

Research design:

The research design selected for study was a one group pre-test post-test quasi experimental design was best suited to find the knowledge of care givers regarding pre and post operative care on knowledge and practice of clients, undergoing Cataract surgery.

Variables under study:

A concept which can take on different qualitative values is called a variable

Independent Variable

Structured teaching programme

Dependent Variable

Knowledge regarding pre and post operative care on knowledge and practice of clients undergoing Cataract surgery.

Population:

The population of the present study consists of care givers of clients undergoing cataract surgery in selected camps conducted at hospital Bidar.

Sample and sample size:

The sample of the present study includes care givers of clients undergoing cataract surgery in selected camps conducted at hospital Bidar.

The sample size of the present study comprises of 60 numbers.

Sampling technique:

Sampling refers to the process of selecting the portion of population to represent the entire population. Non-probability convenient sampling technique was adopted for the present study.

Selection and development of tool:

The instrument selected in research must be the vehicle that obtains the best data for drawing conclusions to the study. The tool act as an instrument to assess and collect the data from the respondents of the study.

The tool was developed based on,

- Past clinical experience of the student investigator.

- Related review of literature (Books, Journals, Periodicals, and articles published and unpublished research studies) was reviewed and used to develop the tool.

- Based on the concept of the study.

- Based on the opinions of the subject experts.

- Based on the objectives of the study, the blue print was prepared under 3 main areas namely knowledge, comprehension and application. The prepared items were subjected to content validation, pre-testing and estimation of reliability.

Results

Presentation of Data

The analyzed data has been organized and presented in the following sections: Section 1: Description of socio demographic variables of the caregivers in the experimental and control group.

The analyzed data has been organized and presented in the following sections.

Section A: Description of socio-demographic variable of the patient admitted in selected hospitals at Mandya Dist.

Section B: Analyses and interpretation of pre-test and post-test level of knowledge of experimental group.

TABLE – 1: Aspect wise pre-test mean knowledge scores of care givers regarding pre and post operative care of patients undergoing cataract surgery

n=60

Domain	Max statements	Max Score	Range	Mean	SD	Mean%
Cataract- definition and causes	7	7	3--5	3.8	1.2	54.3
Signs and symptoms, diagnosis	15	15	5--10	5.5	1.4	36.7
Treatment, management and complications of cataract surgery	8	8	2--4	3.8	1.2	47.5
Overall	30	30	9--16	13.1	2.3	43.7

The above table-1 describes the mean and standard deviation of knowledge score obtained by care givers regarding pre and post operative care of patients undergoing cataract surgery before administration of structured teaching programme. It is noticeable in the table that the care givers had obtained significantly low score in each aspect of pre and post operative care of patients undergoing cataract surgery before

administration of structured teaching Programme, that is score ranges from 9-16 with overall mean 13.1(43.7%) and standard deviation 2.3.

TABLE – 2 : Aspect wise post-test mean knowledge scores of care givers regarding pre and post operative care of patients undergoing cataract surgery

n=60

Domain	Max statements	Max Score	Range	Mean	SD	Mean%
Cataract- definition and causes	7	7	4--7	5.9	1.1	84.3
Signs and symptoms, diagnosis	15	15	8--14	10.6	1.5	70.7
Treatment, management and complications of cataract surgery	8	8	3--7	6.3	0.9	78.8
Overall	30	30	11--23	22.8	2.7	76.0

The above table-2 shows that, the mean and standard deviation of knowledge score obtained by care givers regarding pre and post operative care of patients undergoing cataract surgery after administration of structured teaching programme. It is noticeable in the table that the care givers have obtained significantly high score in each aspect of pre and post operative care of patients undergoing cataract surgery after administration of structured teaching programme that is score ranges from 11-23 with overall mean 22.8(76.0%) and standard deviation 2.7.

TABLE-3: Comparison of knowledge of care givers regarding pre and post operative care of patients undergoing cataract surgery comparing pre-test with post-test

n=60

Level of knowledge	Score	Pre test		Post test	
		No	%	No	%
Inadequate	<50%	48	63.33	0	0.00
Moderate	50--75%	12	36.67	20	33.33
Adequate	>75%	0	0.00	40	66.67
Total	100	60	100	60	100

The above table shows the comparison of pretest and post-test knowledge of care givers on pre and post operative care of patients undergoing cataract surgery. The pre-test table depicts that, pre-test level of knowledge of care givers on pre-test knowledge level regarding pre and post operative care of patients undergoing cataract surgery. In the table it is noticeable that majority of care givers 48(80%) had inadequate level of knowledge about pre and post operative care of patients undergoing cataract surgery, whereas 12(20%) of care givers had moderate level of knowledge and none of care givers had adequate knowledge regarding pre and post operative care of patients undergoing cataract surgery before administration of structured teaching programme.

The post-test table depicts that, post-test level of knowledge of care givers on pre and post operative care of patients undergoing cataract surgery, in which majority of care givers 40(66.67%) had average level of knowledge about pre and post operative care of patients undergoing cataract surgery, whereas 20(33.33%) of care givers had moderate level of knowledge and none of care givers had inadequate knowledge regarding pre and post operative care of patients undergoing cataract surgery after administration of structured teaching programme. Hence the data reveals the effectiveness of structured teaching programme.

TABLE – 4: To evaluate the effectiveness of structure teaching programme on pre and post operative care of patients undergoing cataract surgery

n=60

Domain	Mean	SD	Mean%	Unpaired 't' test
Cataract- definition and causes	2.1	0.89	30.0	18.2**
Signs and symptoms, diagnosis	5.1	1.6	34.0	24.6**
Treatment, management and complications of cataract surgery	2.5	1	31.3	27.6**
Overall	9.7	2.2	32.3	34**
**Significant at P<0.01 level, df 59, t value 2				

The above table-4, depicts the mean and standard deviation of knowledge score obtained by care givers in each aspect of pre and post operative care of patients undergoing cataract surgery after the administration of the structured teaching Programme with mean of 11.2, S.D of 2.9 and mean% of 37.33.

The table shows that care takers had scored more in Signs and symptoms, diagnosis of cataract after the administration of structured teaching programme and are significant at p<0.001 level, df 59, (t-2) by unpaired 't' test.

Conclusion

It is concluded that there was significant difference between the pre-test knowledge level and post-test knowledge level of care givers regarding pre and post operative care on knowledge and practice of clients undergoing cataract surgery. The mean knowledge score of 60 care givers during the pre-test was 39.3% where as it had increased up to 76.0% during the post-test as an effectiveness of structured teaching programme. Therefore, the difference assessed was 32.3% between pre-test and post-test. Hence on-going teaching and health education programs can further improve the knowledge of care givers.

Ethical Clearance: It was obtained during the study from institutional ethical committee.

Source of Funding: Self, no financial support was provided relevant to this research study.

Conflict of Interest: Nil.

References

1. Enoch JM, Barroso L, Huang D., Cataract: a critical problem in the developing world. Optom Vis Sci. 1993 Nov; 70(11):986-9.
2. J Hubley and C Gilbert, Eye health promotion and the prevention of blindness in developing countries: critical issues, Br J Ophthalmol. 2006 March; 90(3): 279–284.
3. Lee Teak Tan, Huw Jenkins, John Roberts-Harry, and Michael Austin, should patients set the agenda for informed consent of cataract.1119–1125 Published online 2008 October.
4. Kuper and colleagues, challenges in rendering ophthalmic health needs. Br J Ophthalmol. 2006 May; 90(5): 538–542.
5. Henry Nkumbe, helping older people get the eye care they need, Community Eye Health. 2008 June; 21(66): 26–28.
6. Paul Court right and Susan Lewallen, improving gender equity in eye care: advocating for the needs of women, Community Eye Health. 2007 December; 20(64): 68–69.

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Nurses' Burnout and Its Associated Factors and Impact on the Quality of Nursing Services

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Abstract

Background: Nurses are at risk of experiencing burnout and it can impact the quality of their nursing services. The study aims to identify factors that influence nurses' burnout and its impact on the quality of nursing services at a public hospital in the Aceh Province, Indonesia.

Methods: The research used a correlational design with a cross-sectional approach. Self-reported questionnaires were used in data collection and distributed to 214 nurses. A proportional random sampling technique was used in the selection of the study participants.

Results: Results of data analysis using the Fisher's exact test showed that there was a significant correlation between workload, work-family conflict, and job control with burnout. The Correlation was not significant between burnout with social support and with the quality of nursing services. The work-family conflict was identified as the most dominant factors that affect nurses' burnout.

Conclussion: The study concludes that nurses' burnout is related to workload, work-family conflict, and job control and has no impact on the quality of nursing services.

Keywords*: burnout, job control, nursing services quality, workload, work-family conflict,*

Background

Burnout is known as the response experienced by a person to work stress that is experienced for a long time continuously[1]. Differences in job characteristics classified into job demands and job resources are factors that can affect the incidence of burnout [2], assuming that burnout will occur when job demands are high and job resources are low [3].

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Burnout have a negative impact on institutions and the profession [4] as well as the low quality of nursing services [5]. Nurses at risk of experiencing burnout are influenced by job characteristics such as high workload, low number of nurses, high working hours and low work control [5]. The incidences of burnout in nurses are related to high workload, low work control [5,6], work family conclict [7] and social support [8].

A study by Monsalve-Reyes et al [9] on nurses in three countries showed that 28% of nurses experienced burnout. Another study stated that 11.23% of nurses in 49 countries experienced burnout [10]. Indonesian health workers during the covid-19 pandemic experienced

moderate to severe burnout, reaching 83% [11]. Research on burnout among nurses in Indonesia shows that 27.2% of nurses experience emotional exhaustion and 31.5% experience disengagement [12].

Research conducted at a government general hospital in Aceh showed 23.7% of nurses experienced burnout in the high category [13]. Meanwhile, Dianto's research [14] stated that health workers working in Aceh government general hospitals experienced burnout, of which 45.03% experienced disengagement and 33.44% experienced fatigue. The Other research shows that nurses working in Aceh government public hospitals have experienced mild to severe work stress since 2014 [15–18]. Work stress that is experienced for a long time continuously can cause burnout [1].

Burnout treatment is an urgent issue because it will have a positive impact on hospitals and patients. Cimiotti et al. [19] stated that reducing 30% burnout would result in low patients infection rates and it save $68 million in operating costs in a year. Therefore, this study aims to identify the level of burnout in the Aceh general hospital, the influencing factors and its impact on the quality of nursing services.

Literature Review

Burnout is a condition of physical and psychological exhaustion experienced by a person which consists of personal burnout, work-related burnout and client-related burnout [20]. Several factors including workload [21], work family conflict [22], social support [23], and job control [24] affect burnout.

Job Demand Resource (JDR) model developed by Demeuroti et al. [2] explains job characteristics consisting of job demands and job resources can affect the occurrence of burnout in the workplace. The JDR model assumes the combination of high job demands and low job resources contributes to burnout [25]. Meanwhile, the balance between job demands and job resources will result in the health and well-being of employees [26]. The process of burnout based on the JDR Model is shown in Figure 1.

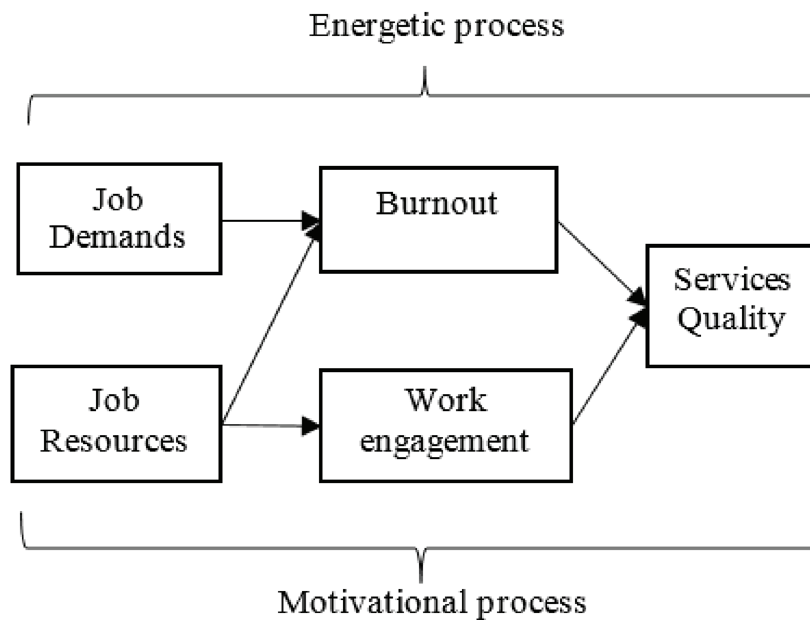

Figure 1: Job demand resource model 26,29,44

All job characteristics can be modeled using job demand and job resources and applied to all work environments or specific jobs [27]. Several studies have proven that job demands and job resources can be applied to the nursing profession and are antecedents of burnout in nurses [28–30]. The Study by Cotel et al. [31] concluded that work-family conflict (job demand), and control (job resource) as predictors of burnout in nurses. Dall'Ora et al. [5] mentions workload and control related to nursing burnout.

Burnout experienced by nurses have an impact on patients, nurses, and hospitals [32], where the impact on hospitals is affecting the quality of nursing services [33]. Burnout causes the low quality of nursing services [29], so that it can trigger errors in providing nursing care [5].

The quality of nursing services is a nursing response to the physical, psychological, emotional, social, and spiritual of patient's needs, which are given with full attention so that the health of patient recovers, the degree of health increases and returns to normal as well as the satisfaction felt by both nurses and patients [34]. Lindgren and Anderson [35] stated that the quality of patient care can be seen from the perspective of patients and nurses.

Methods

This research is a cross-sectional study with a correlational approach, identifying factors related to burnout and its impact on the quality of nursing services. The study variables consisted of workload, work-family conflict, social support, job control, burnout, and quality of nursing services as presented in Figure 2.

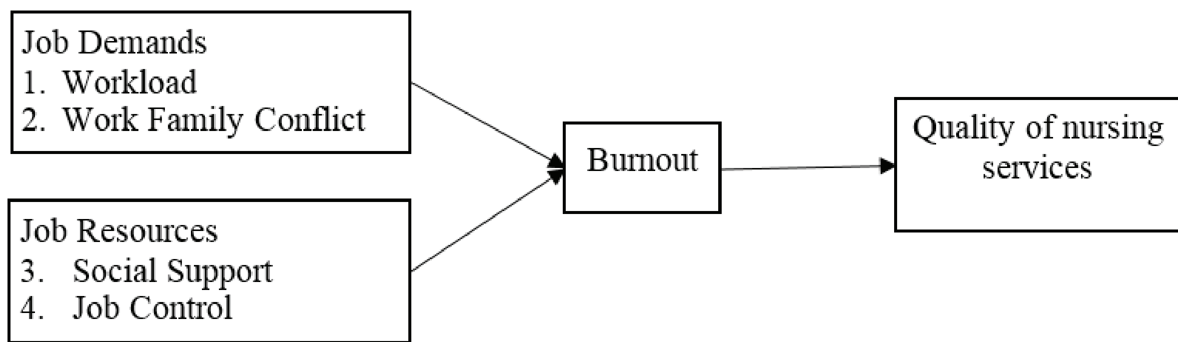

Figure 2: Study Framework

The study was conducted at one of public hospital in the capital of the Aceh Province. A total 214 of 459 nurses working in inpatient rooms especifically in medical surgical nursing and paediatric nursing were selected for the study using a proportional random sampling techniques. Sample size determination is calculated by the Slovin formula.

Data collection was carried out using instruments in a Likert scale form consisting of a nursing service quality questions, burnout questions, workload questions, social support questions, work-family conflict questions, and job control questions. The Questionnaire for assessing the quality of nursing services used 48 questions of the Quality nursing care

scale (QNCS) [36]. The Questionnaire for assesing the Burnout used 19 questions of the Copenhagen burnout inventory (CBI) [20]. The Copenhagen psychosocial questionnaire (COPSOQ) version III [37] was used to measure workload (4 questions), social support (6 questions), and work-family conflict (5 questions). The Questionnaire for assessing job control used 4 questions of a sub-scale of the Job resource in nursing scale (JRIN) [30]. Cronbach's alpha values of the instruments from a reliability test at one hospital in Banda Aceh were 0.90 for the quality of nursing services questions, 0.77 for burnout, 0.74 workload, 0.75 for work-family conflict, 0.84 for support social, and 0.72 for job control, respectively.

Result and Discussion

Characteristics of reseach respondents are shown in the Table 1. Of the 214 respondents surveyed, the majority were female nurses (81,8 %), aged between 31-40 years (59.3%), married (81.8%), had an associate degree in Nursing education (52.3%), and had worked as nurses for 5 – 10 years (57.5%). Characteristics of respondents in more detail are presented in Table 1.

Table 1: Characteristics of respondents

Characteristics	Frequency	Percentage
Gender		
a. Male	39	18.2
b. Female	175	81.8
Age		
a. < 29 years	37	17.3
b. 29 – 30 years	46	21.5
c. 31 – 40 years	127	59.3
d. 41 – 50 years	4	1.9
Marital status		
a. Single	37	17.3
b. Married	174	81.8
c. Widow/widower	3	1.4
Education		
a. Magister of nursing	1	0.5
b. Ners	89	41.6
c. Bachelor of Applied Sciences	1	0.5
d. Associate Degree	123	57.5
Working period		
a. < 5 years	72	33.6
b. 5-10 years	112	52.3
c. 11 – 20 years	29	13.6
d. > 20 years	1	0.5

The Tabel 2 show that the Correlation Analysis between workload, work-family conflict, social support, and work control with burnout was carried out using the Fisher's exact test. Results of the analysis show that there were significant correlations between workload (p=0.000), work-family conflict (p=0.000), and job control (0.003) with nurses' burnout. The correlation was not statistically significant between social support and nurses' burnout (p=1.000). The Correlation coefficient shows that the workload has a weak correlation, the work-family conflict has a moderate correlation, and the job control has a weak correlation.

Table 2: Factors that influence burnout

Independent Variable	*p*-value
Workload	0.000
Work-Family Conflict	0.000
Social support	1.000
Job Control	0.003

A high workload can drain the energy of employees, including nurses so that it can cause burnout [21]. Dewi and Riana [38] stated that working conditions with excessive workloads cause work fatigue. The workload at Aceh Public Hospital indicated 89.7% of nurses have a low workload, and 10.3% have a high workload. This high workload is triggered by various factors. Alghamdi [39] suggests the workload depends on the characteristics of nurses who have knowledge and skills.

Van Der Heijden et al. [22] state that nurses who experienced work-family conflict also experienced burnout. The level of work-family conflict will be different for each person, namely, those who have children will experience more severe work-family conflicts than those who do not have children. [40]. Based on characteristic data, 81.3% of nurses in the Aceh public hospitals were married, so it is suspected that this factor contributes to the incidence of work-family conflict in the hospital.

Social support is a job resource that can affect burnout [3]. The research of Ye et al. [23] concluded that social support is negatively related to burnout. However, the results of this study indicate that there is no relationship between social support and burnout. This condition is thought to be related to the characteristics of the Aceh hospital nurses, namely the majority of whom are married (81.3%) which means that nurses can still receive social support from their families when social support at work is not optimal. In addition, the factors of gender and personality type can determine the effect of social support on burnout

[41], In addition, gender and personality type factors can determine the effect of social support on burnout, so in this case, the gender difference of nurses in Aceh public hospitals can be a confounding variable on the correlation between social support and burnout.

Based on the results of the analysis of the correlation between job control and burnout, it is concluded that nurses who have high job control will experience low burnout. The results of the descriptive analysis showed that nurses in the Aceh public hospitals experienced low burnout, 84.3% has high job control and 56.5% has low job control.

Control of work involves individuals in managing and controlling their work and taking initiative in work [42]. In nursing practice, it is defined as the freedom of nurses in solving problems that affect nursing care [24]. Low of job control, which is an aspect of job resources, when interacting with high job demands will cause workers to withdraw and burnout will occur [43].

The impact of nurse burnout on the quality of nursing services was identified through testing the relationship between burnout variables and the quality of nursing services with the Fisher's exact test. The results of data analysis is presented in Table 3 as follows.

Table 3: The correlation between burnout and the quality of nursing services

Independent Variable	p-value
Burnout	0.090

Table 3 shows that there was no relationship between nurse burnout and the quality of nursing services. In other words, nurse burnout at the Aceh public hospital does not have an impact on the quality of nursing services at the hospital.

Based on the JDR model, burnout can predict organizational outcomes such as service quality [44]. However, the results of this study contradict the JDR model, which is thought to be due to the characteristics of nurses and the characteristics of the hospital where this research was conducted. As a referral center hospital for the province of Aceh which continuously gets monitoring from the public, it demands nurses to demonstrate the quality of nursing services according to standards. In addition, hospital accreditation efforts also require nurses to always carry out nursing activities according to standard operating procedures (SOP) so that under any condition nurses must demonstrate service quality that meets expected standard.

The most dominant factor influencing burnout was identified by logistic regression analysis using the backward stepwise method. The final model of the backward stepwise method obtained two significant variables affecting burnout, namely workload and work-family conflict. The job control variable was excluded from the model because it had a p-value greater than 0.05. Table 4 presents the results of logistic regression analysis.

Table 4 shows that the workload and work-family conflict variables significantly affect burnout simultaneously. Based on the Odd Ratio (OR) value, it shows that work-family conflict is a more dominant factor that affects burnout compared to workload.

Table 4: The results of logistic regression analysis

Variable	B	p-value	Exp (B)	95% Exp (B)	
				Lower	Upper
Workload	1.202	0.023	3.328	1.179	9.394
Work-Family Conflict	1.645	0.001	5.182	1.979	13.572
Job Control	-1.063	0.041	0.345	0.125	0.955

Conclusion

Factors related to burnout for nurses who work in the inpatient wards of Aceh general hospitals are workload, work-family conflict, and job control. While social support is not related to burnout and burnout does not have an impact on the quality of nursing services at the hospital.

This study has limitations, including data collection using a questionnaire method distributed online which allows the collected data to be less objective. Further research using observation collection methods is needed to obtain more objective data, and it involves a population of nurses in wider hospital scope to produce more representative conclusions. In addition, future research by controlling the variables of gender and personality type is proper to identify the effect of social support on burnout.

Ethical Clearance: This research has been declared ethically feasible under the Seven 2011 WHO ethical standards by the Health Research Ethics Committee of RSUDZA-FK USK.

Conflict on Interest: None

Source of Funding : None

References

1 Leiter MP, Maslach C. Areas of Worklife: a Structured Approach To Organizational Predictors of Job Burnout. In: *Research in Occupational Stress and Well Being*. 2003, pp 91–134.

2 Demerouti E, Nachreiner F, Bakker AB, Schaufeli WB. The job demands-resources model of burnout. *J Appl Psychol* 2001; **86**: 499–512.

3 Bakker AB, Demerouti E, Verbeke W. Using the job demands-resources model to predict burnout and performance. *Hum Resour Manage* 2004; **43**: 83–104.

4 De Hert S. Burnout in healthcare workers: Prevalence, impact and preventative strategies. *Local Reg Anesth* 2020; **13**: 171–183.

5 Dall'Ora C, Ball J, Reinius M, Griffiths P, Griffiths P. Burnout in nursing: A theoretical review. *Hum Resour Health* 2020; **18**: 41.

6 Carvalho DP de, Rocha LP, Pinho EC de, Tomaschewski-Barlem JG, Barlem ELD, Goulart LS. Workloads and burnout of nursing workers. *Rev Bras Enferm* 2019; **72**: 1435–1441.

7 Wang Y, Chang Y, Fu J, Wang L. Work-family conflict and burnout among Chinese female nurses: The mediating effect of psychological capital. *BMC Public Health* 2012; **12**: 915.

8 Kim S, Wang J. The role of job demands–resources (JDR) between service workers' emotional labor and burnout: New directions for labor policy at local government. *Int J Environ*

Res Public Health 2018; **15**: 2894.

9 Monsalve-Reyes CS, San Luis-Costas C, Gómez-Urquiza JL, Albendín-García L, Aguayo R, Cañadas-De La Fuente GA. Burnout syndrome and its prevalence in primary care nursing: A systematic review and meta-analysis. *BMC Fam Pract* 2018; **19**: 59.

10 Woo T, Ho R, Tang A, Tam W. Global prevalence of burnout symptoms among nurses: A systematic review and meta-analysis. *J Psychiatr Res* 2020; **123**: 9–20.

11 FKUI. 83% Tenaga Kesehatan Indonesia Mengalami Burnout Syndrome Derajat Sedang dan Berat Selama Masa Pandemi COVID-19. Berita. 2020.https://fk.ui.ac.id/berita/83-tenaga-kesehatan-indonesia-mengalami-burnout-syndrome-derajat-sedang-dan-berat-selama-masa-pandemi-covid-19.html (accessed 3 Jul2021).

12 Lusiyana A, Handiyani H, Pujasari H. The Relationship Between Case Manager Competence and Nurse Burnout in Indonesia. *KnE Life Sci* 2021; : 953–968.

13 Aprilia ED, Yulianti D. Hubungan Antara Hardiness Dengan Burnout Pada Perawat Rawat Inap Di Rumah Sakit ‘ X ’ Aceh Correlation Between Hardiness and Burnout Among Nurses Inpatient Care in Hospital ‘ X ’ Aceh. *J Ecopsy* 2017; **4**: 151–156.

14 Dianto R, Kurniawan FD, Pamungkas SR, Mawarpury M, Zulfikar T. Burnout among Healthcare Workers during COVID-19 Pandemic in Aceh, Indonesia. In: *Occupational and environmental health*. European Respiratory Society, 2021, p PA3180.

15 Afra Z, Putra A. Stres Kerja Perawat di Ruang Rawat Inap RSUD DR. Zainoel Abidin Banda Aceh. *JIM FKEP* 2017; **2**: 1–7.

16 Jannah R. *Hubungan Kepribadian Dengan Stres Kerja Pada Perawat Ruang Rawat Intensif Rumah Sakit Umum Daerah Dr. Zainoel Abidin Banda Aceh*. 2015.http://202.4.186.74/baca/index.php?id=14452&page=1.

17 Rufli A. *Faktor – Faktor Yang Mempengaruhi Stres Kerja Perawat Pelaksana Di Ruang Intensive Rumah Sakit Umum Daerah Dr. Zainoel Abidin Banda Aceh Tahun 2014*. 2014.

18 Suhaya I, Sari H. Tingkat Stres Perawat dalam merawat Pasien dengan Penyakit Menular di Rumah Sakit Umum Daerah dr. Zainoel Abidin Banda Aceh. *JIM FKEP* 2019; **IV**: 102–106.

19 Cimiotti JP, Aiken LH, Sloane DM, Wu ES. Nurse staffing, burnout, and health care-associated infection. *Am J Infect Control* 2012; **40**: 486–490.

20 Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work Stress* 2005; **19**: 192–207.

21 Adil MS, Baig M. Impact of job demands-resources model on burnout and employee’s well-being: Evidence from the pharmaceutical organisations of Karachi. *IIMB Manag Rev* 2018; **30**: 119–133.

22 Van Der Heijden B, Mahoney CB, Xu Y. Impact of job demands and resources on nurses’ burnout and occupational turnover intention towards an age-moderated mediation model for the nursing profession. *Int J Environ Res Public Health* 2019; **16**: 2011.

23 Ye Y, Huang X, Liu Y. Social support and academic burnout among university students: A moderated mediation model. *Psychol Res Behav Manag* 2021; **14**: 335–344.

24 Nogueira L de S, Sousa RMC de, Guedes E de S, Santos MA Dos, Turrini RNT, Cruz D de ALM da. Burnout and nursing work environment in public health institutions. *Rev Bras Enferm* 2018; **71**: 336–342.

25 Bakker AB, de Vries JD. Job Demands–Resources theory and self-regulation: new explanations and remedies for job burnout. *Anxiety, Stress Coping* 2021; **34**: 1–21.

26 Schaufeli WB, Taris TW. A critical review of the job demands-resources model: Implications for improving work and health. In: *Bridging Occupational, Organizational and Public Health: A Transdisciplinary Approach*. Springer Netherlands: Dordrecht, 2014, pp 43–68.

27 Bakker AB, Demerouti E, Sanz-Vergel AI. Burnout and Work Engagement: The JDR Approach. *Annu Rev Organ Psychol Organ Behav* 2014; **1**: 389–411.

28 Broetje S, Jenny GJ, Bauer GF. The Key Job Demands and Resources of Nursing Staff: An Integrative Review of Reviews. *Front Psychol* 2020; **11**. doi:10.3389/fpsyg.2020.00084.

29 Kaiser S, Patras J, Adolfsen F, Richardsen AM, Martinussen M. Using the Job Demands–Resources Model to Evaluate Work-Related Outcomes Among Norwegian Health Care Workers. *SAGE Open* 2020; **10**: 215824402094743.

30 Penz KL, Kosteniuk JG, Stewart NJ, MacLeod MLP, Kulig JC, Karunanayake CP *et al.* Development and psychometric evaluation of the Job Demands in Nursing Scale and Job Resources in Nursing Scale: Results from a national study. *Nurs Open* 2019; **6**: 348–366.

31 Cotel A, Golu F, Pantea Stoian A, Dimitriu M, Socea B, Cirstoveanu C *et al.* Predictors of Burnout in Healthcare Workers during the COVID-19 Pandemic. *Healthcare* 2021; **9**: 304.

32 Nabizadeh-Gharghozar Z, Adib-Hajbaghery M, Bolandianbafghi S. Nurses' Job Burnout: A Hybrid Concept Analysis. *J Caring Sci* 2020; **9**: 154–161.

33 Jun J, Ojemeni MM, Kalamani R, Tong J, Crecelius ML. Relationship between nurse burnout, patient and organizational outcomes: systematic review. *Int J Nurs Stud* 2021; **119**: 103933.

34 Charalambous A, Papadopoulos I, Beadsmoore A. Quality Nursing Care: a Selective Review of the Literature of Patients' and Nurses' Interpretations. *Hell J Nurs Sci* 2009; **1**: 75–82.

35 Lindgren M, Andersson IS. The Karen instruments for measuring quality of nursing care: Construct validity and internal consistency. *Int J Qual Heal Care* 2011; **23**: 292–301.

36 Liu Y, Aungsuroch Y, Gunawan J, Sha L, Shi T. Development and psychometric evaluation of a quality nursing care scale from nurses' perspective. *Nurs Open* 2021; **8**: 1741–1754.

37 Burr H, Berthelsen H, Moncada S, Nübling M, Dupret E, Demiral Y *et al.* The Third Version of the Copenhagen Psychosocial Questionnaire. *Saf Health Work* 2019; **10**: 482–503.

38 Dewi RS, Riana IG. The Effect Of Workload On Role Stress and Burnout. *J Multidiscip Acad* 2019; **03**: 1–5.

39 Alghamdi MG. Nursing workload: A concept

analysis. *J Nurs Manag* 2016; **24**: 449–457.

40 Loscalzo Y, Raffagnino R, Gonnelli C, Giannini M. Work–Family Conflict Scale: Psychometric Properties of the Italian Version. *SAGE Open* 2019; **9**: 215824401986149.

41 Shirey MR. Social support in the workplace: Nurse leader implications. *Nurs Econ* 2004; **22**: 313–9, 291.

42 Del Pozo-Antúnez JJ, Ariza-Montes A, Fernández-Navarro F, Molina-Sánchez H. Effect of a job demand-control-social support model on accounting professionals' health perception. *Int J Environ Res Public Health* 2018; **15**: 2437.

43 Schaufeli WB, Bakker AB. Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *J Organ Behav* 2004; **25**: 293–315.

44 Bakker AB, Demerouti E. The Job Demands-Resources model: State of the art. *J Manag Psychol* 2007; **22**: 309–328.

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Assessment of Obsessive-Compulsive Disorder among Nursing Students in Alriyada College in Jeddah and its Relationship to Some Variables

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Abstract

Background: Obsessive-Compulsive Disorder (OCD) is a common neuropsychiatric disorder that occurs across the whole life span and is classified under anxiety disorders. It is a combination of illogical thoughts and compulsory behaviors caused by anxiety. **Aim:** To assess obsessive-compulsive disorder among female nursing students in Alriyada college in Jeddah and its relationship to some variables. **Materials and Methods:** A quantitative study "descriptive design". The total number of study participants was (N =279). Data was collected through one tool by "Arabic Scale of Obsession-Compulsion" (ASOC). **Results:** The weighted mean for all dimensions of obsessive-compulsive disorder were 1.5458 ± .36035. The highest mean score of OCD symptoms 1.9023 ± .48364 was related to the "orderliness and discipline" dimension, followed by 1.7513 ± .53314 were related to the "obsessive thoughts" dimension. **Conclusion and Recommendations:** The study showed a low prevalence of OCD among study participants. The study recommended early detection, and prevention programs to reduce the negative impact of OCD disorder on the behavior, the mental health of the individual, and society. Also, public awareness, screening, and the presence of an educational psychologist in college may help for early detection and symptom management.

Key words: *obsessions, compulsions, prevalence, symptoms.*

Introduction

Most of the studies reported a high rate of prevalence of obsessive-compulsive disorder at the present time, compared with the estimates that made in the last century, so this disorder takes the attention in the field of psychology (Reddy, Rao & Khanna, 2016) [1]. According to the Fourth Diagnostic and Statistical Manual of Mental Disorders (1994), the diagnosis indicates that symptoms of OCD affect the academic achievement of students and their social interaction and public relations (Luo et al., 2020) [2].

Despite, OCD is the most prevalent psychiatric disorder, it is still underestimated worldwide. From this respect, it may be the nature of the ego-personality of this disorder that enforce the sufferer to be ashamed or disguise from their symptoms and they will not reveal their obsessive thoughts and compulsive symptoms (Siev, Lit & Leykin, 2019) [3].

Moreover, most young people with OCD disorder may be unaware of the symptoms or perceive their symptoms as embarrassing and they do not reveal them unless specifically asked (Nazeer et al., 2020) [4]. Subsequently, there is evidence that early detection

of OCD disorder symptoms and early intervention improves the treatment outcome (Kazem & Al-Said, 2016) [5].

The essential feature of Obsessive-Compulsive-Disorder (OCD) is repeated and uncontrollable obsession or compulsion, which is causes marked distress, resulting in time-consuming or serious interference with individuals' normal life, educational or occupational functioning, and their social relationships with others (Cochrane & Heaton, 2017) [6]

According to DSM-5, defined the obsessions as persistent thoughts, images that are experienced as intrusive and uncontrollable that cause marked distress or anxiety. While defining the compulsions as repetitive behaviors (e.g., ordering, hand washing, checking) or mental acts (e.g., counting, praying, repeating words silently) that the person performed in response to obsessive thoughts (Agrawal, Heath and Lynskey, 2016) [7].

Therefore, there is a lack of studies conducted in Saudi Arabia about obsessive-compulsive phenomena among nursing students. In this context, this study aims to assess the prevalence of the obsessive-compulsive disorder among nursing students in Jeddah and its relationship to some variables.

Material and methods:

Research Design:

The study will adopt a quantitative "descriptive design" to address the research questions.

Setting:

The study conducted in Alriyada College for Health Sciences in Jeddah that adopts the evidence-based education curriculum in nursing sciences.

Research Sampling and sample size:

The researcher applied a convenience sampling method. The sample size was calculated from the whole target population electronically by using the Raosoft website. Which is calculated the sample size by considering the response distribution among them as 50%, the margin of error as 5%, and confidence level as 95%. So, the minimum recommended sample size in this research is 235 and the reached sample size for this study is 279 nursing students.

Research Tool:

Data was collected through one tool, which includes two parts:

Part I: socio-demographic characteristics and mental health status:

This part was developed by the researcher to assess the socio-demographic characteristics of the study participants. It will include (age, marital status, degree & level of education, GPA average in the current academic year, family economic level. Also, to assess the mental health status of the study participants, which include (current psychiatric problems and family history of OCD).

Part II: structured questionnaire to assess obsessive-compulsive disorder:

This part developed by (Abdel-Khalek,2018) [8], used to assess obsessive-compulsive disorder among female nursing students. It includes 25 items, which divided into sex dimensions as the following: orderliness and discipline (four items), slowness and hesitation (four items), hoarding and collecting compulsions (four items), meticulousness and repetition (four items), checking (four items) and obsessive thoughts (five items).

The seventh dimension "self-injury compulsions" which is disorders related to OCD include six items that were added and modified by the researcher, the questionnaire conducted from the Milwaukee Inventory for Subtypes of Trichotillomania-Adult Version (MIST-A) include (three items) and the Milwaukee Inventory for the Dimensions of Adult Skin Picking (MIDASP) include (three items).

Responses were measured on a three-point Likert scale that ranges from 1 to 3, with the following ranges criteria: 3 = (Yes), 2 = (Sometimes), and 1 = (No). The highest response will indicate the highest rate of OCD symptoms, following the weighted mean for the Likert scale as shown in table 1.2

Table 1.2: The Likert scale model in answering the questionnaire.

Descriptive Interpretation	Weight	Weighted Mean
No (Low rate)	1	(1.00 – 1.66)
Sometimes (Moderate rate)	2	(1.67 – 2.33)
Yes (High rate)	3	(2.34 – 3.00)

The Questionnaires contain some items which are to be filler items and must be excluded from the computation of the total score (items number: 1, 5, 12, 17, and 20). These items are designed to control the acquiescence response bias (Abdel-Khalek,2018) [8] .

Validity:

Validity was done in Two weeks. Comments and suggestions of the jury were considered and the necessary modification was done accordingly.

Reliability:

The reliability test conducted and the result of Cronbach alpha coefficient was equal to 0.71 for overall questionnaire items.

Pilot Study:

Before embarking on the actual study, 10% of nursing students included in a pilot study, according to the estimated study sample size, the pilot study was conducted for 24 nursing students in Alriyada College for Health Sciences, after obtaining college permission. The researcher was distributing the questionnaire electronically through "google form". The questions of the tool were clear, simple, with easy language and no modification was done.

Data Collection Procedure:

- An official permission to conduct the study obtained from the ethical committee of the Alriyada College for Health Sciences in Jeddah.
- The researcher met the responsible person in the research unit in Alriyada College to explain the aim of the study and ensure cooperation from students.
- The researcher explained the aim of the

study in the research consent paper. Also, the participation is voluntary and full autonomy to withdraw from the study at any time has been explained and ensured.

- Electronic research questionnaires and consent were distributed to the nursing student after college permission.

Statistical Analysis

The research data were collected by using Statistical Package for Social Science (SPSS for Windows, version 26). The data was computed by using descriptive statistics for the study sample in the form of frequency, percentage (%), mean and standard deviation to describe items' responses. An "Independent T-test" was used to assess the significance of the relation between the two variables of socio-demographic characteristics and OCD symptoms. A "One-way analysis of variance" (ANOVA) test was used to measure the significance of the relationship between more than two variables of socio-demographic characteristics and OCD symptoms.

Results

Table 1: Distribution of total mean scores ± standard deviation of all dimensions of obsessive-compulsive disorder, (n= 279):

All dimensions of obsessive-compulsive disorder	Total mean scores ± S.D
1- (Orderliness and discipline) items.	1.9023 ± .48364
2- (Slowness and hesitation) items.	1.5329 ± .43112
3- (Hoarding and collecting compulsions) items.	1.7384 ± .67696
4- (Meticulousness and repetition) items.	1.3584 ± .48619
5- (Checking) items.	1.6165 ± .54151
6- (Obsessive thoughts) items.	1.7513 ± .53314
7- (Repetition of self-injury compulsions) items.	1.1374 ± .31993
Weighted mean ± S.D 1.5458 ± .36035	

Table 1: The highest mean score of OCD was related to "Orderliness and discipline", "Obsessive thoughts " "Hoarding and collecting compulsions" and "Checking" dimensions with mean scores of (1.9023 ± .48364, 1.7513 ± .53314, 1.7384 ± .67696 and 1.6165 ± .54151) respectively.

While, the lowest mean score of OCD was related to "Slowness and hesitation", "Meticulousness and repetition" and "Repetition of self-injury compulsions" dimensions with mean scores of (1.5329 ± .43112, 1.3584 ± .48619 and 1.1374 ± .31993) respectively. The overall average of weighted mean was 1.5458 ± .36035 for all dimensions of obsessive-compulsive disorder, this result demonstrates a low prevalence of the obsessive-compulsive disorder among study participants in Alriyada College.

Table 2: The relationships between the total mean scores of OCD symptoms with their socio-demographic characteristics and their mental health status, (n=279)

*Statistically significant at P ≤ 0.05

Socio-demographic characteristics& mental health status of study participants		Total mean scores of OCD symptoms	
		Mean ± SD	Test of significant
Nurse age	≤ 20 years	± .390281.6346	F = 2.940 P = .034*
	21 – 30 years	± .364151.5813	
	31 – 40 years	±.332231.4619	
	≥ 40 years	± .407951.5577	
Social status	Single	± .368781.5971	F = 5.139 P = .002*
	Married	± .279271.3946	
	Divorced	± .374961.4983	
	Widowed	± .353551.4423	
The degree of education	School graduate	1.5863 ± .37252	T = 2.129 P = .034*
	Diploma graduate	1.4944 ± .33885	
The current level of education	First year	± .338641.5353	F= 3.374 P= .019*
	Second year	± .408301.6284	
	Third year	± .395511.5819	
	Fourth year	± .277711.4339	

Table 2: Show that there was a statistically significant difference between the total mean scores of OCD symptoms with their social status, where the present findings indicate that the study participants were single have the highest mean score. Also, there was a statistically significant difference between the total mean scores of OCD symptoms with their current level of education, where the present findings indicate that the study participants in the second year have the highest mean score.

In addition, there was a statistically significant difference between the total mean scores of OCD symptoms with their age, where the present findings indicate that the study participants who less than 20 years old have the highest mean score. Whereas, there was a statistically significant difference between the total mean scores of OCD symptoms with their degree of education, where the present findings indicate that the study participants who were school graduates have the highest mean score.

Table 3: The relationships between the total mean scores of OCD symptoms with their socio-demographic characteristics and their mental health status, (n=279)

Socio-demographic characteristics& mental health status of study participants		Total mean scores of OCD symptoms	
		Mean ± SD	Test of significant
GPA average	4.50 – 5.00	± .331251.4808	F = 3.163 P = .025*
	4.00 – 3.50	± .361921.5527	
	3.00 - 2.50	± .388581.6370	
	≤ 2.00	± .271961.9231	
Family economic level	Excellent	± .320131.4487	F = 1.467 P = .224
	Average	± .366221.5791	
	Good	± .366481.5274	
	Very bad	± .281761.5577	
Family history of OCD	Yes	1.7719 ± .33418	T = 3.648 P = 0.000*
	No	1.5195 ± .35464	
Psychiatric problems	Depression disorder	1.9423 ± .38330	F= 21.262 P = 0.000*
	Anxiety disorder	1.7990 ± .36847	
	None	1.4732 ± .31509	

*Statistically significant at $P \leq 0.05$

Table 3: Show that there was a statistically significant difference between the total mean scores of OCD symptoms with their family history of OCD, where the study participants who have a family history of OCD have a highest mean score. In addition, there was a statistically significant difference between the total mean scores of OCD symptoms with their GPA average, where the study participants who have a GPA average (3.00 - 2.50 and ≤ 2.00) have the highest mean scores. Also, there was a statistically significant difference between the total mean scores of OCD symptoms with their psychiatric problems, where the study participants who have depression disorder have the highest mean score.

Discussion

According to the symptoms of obsessive-compulsive disorder among study participants for all dimensions, it includes seven dimensions as following: orderliness and discipline, slowness and hesitation, hoarding and collecting compulsions, meticulousness, and repetition, checking, obsessive thoughts, and repetition of self-injury compulsions.

Regarding the first dimension "orderliness and discipline", the findings of the present study indicated that the OCD symptoms of orderliness and discipline among study participants were at a moderate rate. The findings of the present study were in accordance with the results of studies done by Townsend & Pedersen, in (2015) [9] and Alsubaie et al., in (2020) [10], who found that most of the study participants had a moderate rate of OCD symptoms which related to orderliness and discipline.

In contrast, studies done by (Rady, Salama, Wagdy & Ketat, in 2013) [11] ,the result demonstrated that the study participants had a high rate of OCD symptoms related to orderliness and discipline dimension. Further, the study result was inconsistent with the current study findings, the result revealed that only 12% of study participants had ordering and symmetry symptoms of OCD.

As regards, the OCD symptoms of study participants toward the second dimension "slowness and hesitation", the findings of the present study indicated a low rate of slowness and hesitation symptoms among study participants. This result was in the same line with the study done by (Kazem &Al-Said,2016) in Oman,[5] who found that only 10.92 percentage was related to slowness, carelessness, and hesitation symptoms. Whereas, studies done by (Akras in 2017) [12] the findings reported that the most popular forms of obsessions associated with doubts, slowness, carelessness, and hesitation.

In relation to the OCD symptoms of study participants toward the third dimension "hoarding and collecting" compulsions, the finding of the current study indicated that the OCD symptoms of "hoarding and collecting" were at a moderate rate. This result was consistent with the study done by (Rady, Salama, Wagdy & Ketat) [11], the result of the study disclosed that the most compulsive symptoms found among OCD students were about 38% of study participants had hoarding symptoms. While, a study by (Erfan & Rakhawy) [13], reported that the OCD symptoms of hoarding and collecting were at a high rate. This result inconsistent with the study done by (Peng et al., 2011) [14], who reported a low rate of hoarding and collecting symptoms.

Regarding the OCD symptoms of study participants toward the fourth dimension "meticulousness and repetition", the findings of the present study indicated

a low rate of meticulousness and repetition symptoms among study participants. This result matched with other studies done by (Stewart, Hezel & Stachon, 2012) [15] in Iran.

This result was contradicted by the results of studies done by (Vivan et al., 2013) in Brazil and (Guo et al., 2016) in China [16,17] , they reported that about 86.7% of the study participants suffer from miscellaneous compulsive symptoms. In addition to other study findings done in Syria, which revealed that the most prevalent compulsive symptoms were related to repeating washing, cleaning, and counting (Slaimon, Alsaadi & Watfe) [18]. Furthermore, another study reported the effectiveness of cognitive-behavioral therapy (CBT) in reducing the OCD symptoms of repetition and cleanliness among women (Alblowy, 2018) [19].

Concerning the OCD symptoms of study participants toward the fifth dimension "checking", the findings of the present study indicated a moderate rate of checking symptoms among study participants. This result was in the same line with other studies done in Qatar, Saudi Arabia, and Egypt, [4,10,11] the result reflected that the common compulsive symptoms were checking. In addition to other study done in Shaqra University in KSA, the result of the study revealed that more than half of the students spend less than an hour in compulsive behaviors and repeatedly check things, such as door locked, oven turned off (Alroqee, Deshwali & Al Hubail, 2018) [20]. This result was contradicted by the results of studies done [5,21,22] which revealed a low rate of checking symptoms.

Regarding the OCD symptoms of study participants toward the sixth dimension " obsessive thoughts", the findings of the present study indicated that the symptoms of obsessive thoughts were at a moderate rate among study participants. This result in harmony with other studies done by (Aljeshi in 2011) [23] in Saudi Arabia and Jaisoorya et al., in 2020 in India, the results reflected a moderate rate of obsessive thoughts, and the most common obsessive symptoms were related to contamination, symmetry, aggression, collecting and religious [22]. In addition to suicidal obsessions in a patient with OCD [24]. Moreover, another study done by (Ghanem et al., 2015) in Ain Shams University Hospital in Egypt, the result found that the biggest portion of study participants mostly suffered from obsessional doubting, hoarding thoughts fears of contamination, and obsessive thoughts about the arrangement of objects to achieve a satisfying symmetry [25].

Consistently, other study was done in Jerusalem, the result of the study reflected that most of the students suffered from various obsessions, which include fear of contamination or illness, fear to hurt other, sexual, religious, and symmetry obsessive thoughts [26]. This result was not in harmony with other study done by Kazem &Al-Said in 2016 in Oman, in which the result revealed a low rate of obsessive thoughts among study participants [5].

About the OCD symptoms of study participants toward the seventh dimension "Repetition of self-injury compulsions", the findings of the present study indicated a low rate of symptoms related to self-injury compulsions among study participants. This result matched with other studies done by [27,28] ,the result demonstrated that the prevalence of excoriation and trichotillomania was low among university students.

This result inconsistent with the result of other studies which revealed a high rate of self-injury compulsions among study participants [29,30,31] . In the same dimension, a study done in the US found

a high rate of OCD-related disorders, in which the most common site related to trichotillomania disorder was the scalp and eyebrows [32]. Whereas, other the study reported the most common sites of excoriation disorder are the face, nails, arms, scalp, feet, and hands [(33)].

Conclusion and Recommendations

The study showed a low prevalence of OCD among study participants. The study recommended early detection, and prevention programs to reduce the negative impact of OCD disorder on the behavior, the mental health of the individual, and society. Also, public awareness, screening, and the presence of an educational psychologist in college may help for early detection and symptom management.

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Conflict of Interest - Nil

References

1. Reddy Y, Rao N, Khanna S. An overview of Indian research in obsessive compulsive disorder. *Indian Journal of Psychiatry*. 2016;52(7):200.
2. Luo L, Feng B, Yang S, Zhang N, Qiu S. Clinical characteristics of moderate–severe obsessive–compulsive disorder in children and adolescents in China. *Journal of International Medical Research.* 2020;48(5).
3. Siev J, Lit K, Leykin Y. Perceived decision-making styles among individuals with obsessive-compulsive and hoarding disorders. *Journal of Obsessive-Compulsive and Related Disorders*. 2019; 23:100472.
4. Nazeer A, Latif F, Mondal A, Azeem M, Greydanus D. Obsessive-compulsive disorder in children and adolescents: epidemiology, diagnosis and management. *Translational Pediatrics*. 2020;9(S1):S76-S93.
5. Kazem A, & Al-Said T. Obsessive-Compulsive among Omani children and adolescents. *European Journal of Psychological Assessment*. 2016:14(2), 146 - 158.
6. Cochrane T, Heaton K. Intrusive Uncertainty in Obsessive Compulsive Disorder. *Mind & Language*. 2017;32(2):182-208.
7. Agrawal A, Heath A, Lynskey M. DSM-IV to DSM-5: the impact of proposed revisions on diagnosis of alcohol use disorders. *Addiction.* 2016;106(11):1935-1943.
8. Abdel-Khalek A. The Construction and Validation of the Revised Arabic Scale of Obsession Compulsion (ASOC). *Online Journal of Neurology and Brain Disorders.* 2018;1(2).
9. Townsend M & Pedersen D. Package of Essentials of Psychiatric Mental Health Nursing, 4th Edition & Psych Notes, 2nd Ed, *F A Davis Co.* 2015: ISBN-10: 0803618980 ISBN-13: 978-0803618985.
10. Alsubaie S, Almathami M, Abouelyazid A, Alqahtani M, Alshehri W. Prevalence of Obsessive-Compulsive Disorder: A Survey with Southern Saudi Arabian Samples. *J Psychiatry Depress Anxiety.* 2020: 6-031.
11. Rady A, Salama H, Wagdy M, Ketat A. Obsessive compulsive phenomenology in a sample of Egyptian adolescent population. *The European Journal of Psychiatry*. 2013;27(2):89-96.
12. Akras, N. Preparation obsessive-compulsive disorder measure on the Jordan Environment. *IUG Journal of Educational and Psychology Sciences.*2017: 25(2), 167 - 185.

13. Erfan S, & Rakhawy M. The Impact of Obsessive-Compulsive Disorder on Patients' Life: *A Transcultural Perspective. Current Psychiatry*. 2011: 17(2), 25-33.

14. Peng Z, Yang W, Miao G, Jing J, Chan R. The Chinese version of the Obsessive-Compulsive Inventory-Revised scale: Replication and extension to non-clinical and clinical individuals with OCD symptoms. *BMC Psychiatry*. 2011;11(1).

15. Stewart S, Hezel D, Stachon A. Assessment and Medication Management of Paediatric Obsessive-Compulsive Disorder. *Drugs*. 2012;72(7):881-893.

16. Vivan A, Rodrigues L, Wendt G, Bicca M, Braga D, & Cordioli A. Obsessive-compulsive symptoms and obsessive-compulsive disorder in adolescents: a population-based study. *Revista Brasileira De Psiquiatria*. 2013:36(2), 111-118.

17. Guo X, Meng Z, Huang G, Fan J, Zhou W, Ling W et al. Meta-analysis of the prevalence of anxiety disorders in mainland China from 2000 to 2015. *Scientific Reports.* 2016;6(1).

18. Slaimon R, Alsaadi R, & Watfe M. The Obsessive-compulsive Disorder (OCD) and its relationship with Generalized Anxiety Disorder (GAD) among a sample of pupils in education stage Basic. *Tishreen University Journal For Research And Scientific Studies-Syria.* 2017: 39(5).

19. Alblowy N. The Effectiveness of danger ideation reduction therapy program in reducing Obsessive -Compulsive Disorder related to hygiene among women in Saudi Arabia. *Babel Journal.* 2018: 38(2).

20. Alroqee F, Deshwali S, & Al Hubail I. Obsessive-compulsive disorder in medical students: Prevalence, Symptom severity, and Correlates. *Int. J. Adv. Res. Biol. Sci.* 2018: 5(4), 18 - 30.

21. Calamari J, Woodard J, Armstrong K, Molino A, Pontarelli N, Socha J et al. Assessing older adults' Obsessive-Compulsive Disorder symptoms: Psychometric characteristics of the Obsessive Compulsive Inventory-Revised. *Journal of Obsessive-Compulsive and Related Disorders*. 2014;3(2):124-131.

22. Jaisoorya T, Janardhan Reddy Y, Nair B, Rani A, Menon P, Revamma M et al. Prevalence and correlates of obsessive-compulsive disorder and subthreshold obsessive-compulsive disorder among college students in Kerala, India. Indian Journal of Psychiatry. 2020;59(1):56.

23. Aljeshi A. Obsessive-compulsive disorder. *Neurosciences*. 2011: 16(4), 313-319.

24. Al-Zaben F. Suicidal Obsessions in a Patient with Obsessive Compulsive Disorder: A Case Report. *King Abdulaziz University*. 2012:19(4), 121-127.

25. Ghanem M, Hatata H, Elhabiby M, Khalil S, Abdeen M. Obsessive–compulsive symptoms and obsessive–compulsive disorders in an Egyptian sample of substance use disorder patients. *Middle East Current Psychiatry*. 2015;22(3):137-142.

26. Abu Shaban A, & Abdallah T. Obsessive-compulsive disorder among Palestinian school children grade 11 in Jerusalem district. *IUG Journal of Educational and Psychology Sciences.* 2011: 30(4), 10 - 80.

27. Prochwicz K, Kałużna-Wielobób A, Kłosowska J. Skin picking in a non-clinical sample of young Polish adults. Prevalence and characteristics. *Comprehensive Psychiatry.* 2016; 71:77-85.

28. Simos G, Zikopoulou O, Nisyraiou A, Zafiropoulos K. Psychometric Properties of the Greek Version of the Obsessive-Compulsive Inventory-Revised in a Non-Clinical Young Adult Sample. *Psychology*. 2019;10(16):2247-2265.

29. Dixon L, Snorrason Í. Prevalence and clinical characteristics of skin picking among adults with skin disease symptoms. *Journal of Obsessive-Compulsive and Related Disorders*. 2019; 22:100454.

30. Blum A, Chamberlain S, Harries M, Odlaug B, Redden S, Grant J. Neuroanatomical Correlates of Impulsive Action in Excoriation (Skin-Picking) Disorder. *The Journal of Neuropsychiatry and Clinical Neurosciences*. 2018;30(3):236-241.

31. Say Ocal D, Ozdel K, Safak Y, Kekilli Karnaz Y, Kısa C. A comparison of symptom dimensions for obsessive compulsive disorder and obsessive compulsive-related disorders. *PLOS ONE*. 2019;14(7).

32. Alexander J, Houghton D, Twohig M, Franklin M, Saunders S, Neal-Barnett A et al. Factor analysis of the Milwaukee Inventory for Subtypes of Trichotillomania-Adult Version. *Journal of Obsessive-Compulsive and Related Disorders*. 2016; 11:31-38.

33. Grant J, Chamberlain S. Clinical correlates of symptom severity in skin picking disorder. *Comprehensive Psychiatry*. 2017; 78:25-30.

A Descriptive Study to Assess the Knowledge of Post-Menopausal Women Regarding the Effects of Pranayama on Post-Menopausal Symptoms

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Abstract

Menopausal women suffer from many problems such as hot flushes, headache, profuse night sweating, fatigue, hair loss, insomnia, weight gain, joint pain, muscle pain, dry skin, vaginal dryness and mood disorders and it is well understood that menopausal women have been suffering from hot flushes, insomnia, headache, fatigue and profuse night sweating there is a need to overcome this unsatisfied life event. Thus, the investigator conducted a study to assess the knowledge regarding effects of pranayama on post-menopausal symptoms among post-menopausal women. The study was conducted in AVJ Heights, Zeta-1, Greater Noida, Uttar Pradesh. 100 Menopausal women were selected by convenience sampling technique. A structured knowledge questionnaire was used for assessing the knowledge regarding effects of pranayama on selected post-menopausal symptoms for post-menopausal women. Descriptive statistics were used to analyse the data. In this study, the mean score was 67.92 with S.D 8.79. Mode and median of were 66 and 66. Hence, the participants had average knowledge regarding effects of pranayama on post-menopausal symptoms.

Keywords: *Pranayama, Post-menopausal symptoms, post-menopausal women.*

Introduction

Menopause is a natural stage of a woman's life. Menopause is a stage in a woman's life when her reproductive system slows down and eventually quits, usually between the ages of 40 and 60, and is marked by hormonal, physical, and psychological changes. Menopause can also occur if the ovaries are eliminated or if the reproductive activity of the ovaries is halted. It happens when the ovaries stop generating oestrogen, which causes the reproductive system to shut down gradually or abruptly. [1]

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Menopausal symptoms affect 80% of ladies who are approaching menopause suffering with uneasiness. Some women easily adopt the changes with no difficulty. Typical menopausal symptoms, such as hot flushes or night sweats, are caused by change in hormonal levels in the female reproductive system. Other symptoms include irregular menstruation, changes in sexual desire, hot flashes, profuse night sweats, insomnia, fatigue, headache, vaginal dryness and urinary problems, changes in appearances, mood swings, sleep disturbances, palpitations, backache, memory loss, and depression.[2] For coping with climacteric symptoms, non-hormonal methods are more widely accepted by women than hormonal therapy.[3]

Yoga comprises physical postures as well as advice for ethical lifestyle and spiritual practice with the ultimate goal of uniting mind, body, and spirit. Yoga is often associated with physical postures (asana), breathing techniques (pranayama), and meditation (dyana). Yoga have been shown to decrease anxiety, distress, blood pressure, pain and fatigue.[4,5,6,7,8]

A randomized controlled trial with three by two factorial design was conducted by Newton K.M to study the efficacy of yoga on vasomotor symptoms (VMS). Eligible women were randomized to yoga (n=107), exercise (n=106), or usual activity (n=142), and were simultaneously randomized to double-blind comparison of omega-3 fatty acid (n=177) or placebo (n=178) capsules. Yoga intervention was twelve, weekly, 90-minute yoga classes with daily home practice. Primary outcomes were VMS frequency and bother assessed by daily diaries at baseline, 6, and 12 weeks. Secondary outcomes included insomnia symptoms (Insomnia Severity Index) at baseline and 12 weeks. Among 249 randomized women, 237 (95%) completed 12-week assessments. Mean baseline VMS frequency was 7.4/day (95% CI 6.6, 8.1) in the yoga group and 8.0/day (95% CI 7.3, 8.7) in the usual activity group. There was no difference between intervention groups in change in VMS frequency from baseline to 6 and 12 weeks (mean difference (yoga – usual activity) from baseline −0.3 (95% CI −1.1, 0.5) at 6 weeks and −0.3 (95% CI −1.2, 0.6) at 12 weeks (p=0.119 across both time points). Results were similar for VMS bother. At week 12, yoga was associated with an improvement in insomnia symptoms (mean difference [yoga-usual activity] in change –Insomnia Severity Index, 1.3 [95% CI −2.5, −0.1] [p=0.007]).[9]

Vora. R and Dangi. A studied the effect of Yoga on menopausal symptoms in females in the post-menopausal phase. Total Menopause Rating Scale (MRS) score with three subscale scores (somatic-vegetative, psychological and urogenital) of MRS and Menopause Specific Quality of Life Questionnaire (MENQOL) score was measured on day 1 and day 30 in the study group which performed Yoga (Pranayama, Surya Namaskar and Savasana) under supervision for 4 weeks on every alternate day. The scores were compared with the control group that did not perform Yoga. Results showed that on day 1 the scores in both the groups were comparable. On day 30, the Yoga group showed a statistically significant reduction in the total MRS score, scores on all the 3 subscales of MRS as well as MENQOL score.[10]

Objectives

To assess the knowledge regarding effects of pranayama on post-menopausal

symptoms among post-menopausal women.

Materials and Methods

For the current study, research approach used was the quantitative approach and the research design is the descriptive design. The study was conducted in urban area of AVJ Heights, Zeta, Greater Noida, Uttar Pradesh. The area was selected on the basis of: (1) Geographical proximity (2) Availability of subjects (3) Feasibility in conducting the study (4) Familiarity of the place. Non- Probability convenience sampling technique was used. Population comprised of 100 post-menopausal women, aged between 40-60 years. A structured questionnaire was prepared to assess the knowledge of women regarding the effects of Pranayama on Postmenopausal symptoms. A questionnaire comprised of two sections- Section A and Section B. Section A consists of 9 items to collect information on sample characteristics and Section B consists of 20 knowledge items. The maximum score on the knowledge item was 100 with score 5 for each correct answer. Data was collected in the month of August and for the collection of data, a formal administrative approval was taken from the secretary of AVJ Heights Society, Greater Noida, U.P. The tool in the form of questionnaire was administered to post-menopausal women who were oriented and explained about the purpose of the study. Post-menopausal women willing to participate in the study and living in the society, were the part of the study. They were also assured about the confidentiality of their responses. Average time taken for completion of tools by the participants was 25 minutes. Data was analysed using descriptive statistics.

Result and Discussion

Findings related to Demographic Characteristics of Sample Subjects

Findings related to Demographic Characteristics of sample subjects reveals that majority of the sample subjects were in the age group of 40-45 years that is 60 (60%). Majority of the samples' age at menarche was 12 years, i.e. (37%). 70% of sample subjects were above 40 years at the time of menopause. 63% of sample subjects got married after 25 years of age. Only 17% of sample subjects had no children whereas, 46% of the sample subjects had 2 children. Majority of the sample subjects were educated above secondary level. 61% of sample subjects were employed and only 4% were retired. Majority (63%) of the sample subjects' family income was above 15000/- Rs. Social media was the major source of information for 43% of sample subjects.

Findings related to knowledge score of the sample subjects

Table 1: Mean, Median and Mode of Knowledge scores

n=100

Total Score	Mean	Median	Mode	Standard Deviation
6792	67.92	66	66	8.79

Data in table-1 shows the overall mean of the knowledge score was 67.92. It further reveals that median, mode of sample subjects' knowledge score was 66 and 66 respectively. Standard deviation of sample was 8.79 which shows that the group is heterogenous group.

Table 2: Frequency and percentage distribution of sample subjects according to their level of knowledge regarding effects of pranayama on post-menopausal symptoms.

n=100

Knowledge Score	Frequency	Percentage
Poor Knowledge	0	0
Average Knowledge	58	58%
Good Knowledge	42	42%

Data in table- 2 shows that; Most of the sample subjects were having average knowledge that is 58 (58%), 42 (42%) of the sample subjects were having average knowledge and no sample subject comes under poor knowledge.

Conclusion

Hence, we conclude that most of the sample subjects have average knowledge i.e. 58% and 0 samples have poor knowledge.

Conflict of Interest- None

Source of Funding- Self

Ethical Clearance- Ethical clearance was taken from ethical committee of Sharda University. Consent was also taken from Subjects before conducting research.

References

1. Priyadarshini T, Jeyabharti, Pranesh. A study to assess the effects of pranayama on quality of life (QoL) and blood pressure among menopausal women in the urban community. *International Journal of Advance Research in Community Health Nursing.* 2020; 2(2): 19-21
2. Shenbagam. C. A study to assess the outcome of pranayama on menopausal symptoms among menopausal women in selected setting [dissertation]. Tamil Nadu: The Tamil Nadu DR. M.G.R. Medical University; 2012
3. Swain D, Nanda P, Das H. Impact of yoga intervention on menopausal symptoms-specific quality of life and changes in hormonal level among menopausal women. *The Journal of Obstetrics and Gynaecology Research*. 2021; 47(10): 3669-3671
4. Cramer. H, Lauche. R, Langhorst J and Dobos G. Effectiveness of Yoga for Menopausal symptoms: Systematic review and meta-analysis of randomized controlled trial. *Evidenced based complementary and alternative medicine.* 2012; 2012
5. Kirkwood G, Rampes H, Tuffrey V, Richardson J, Pilkington K. Yoga for anxiety: a systematic review of the research evidence. *British Journal of Sports Medicine.* 2005;39(12):884–891
6. Yang K. A review of yoga programs for four leading risk factors of chronic diseases. *Evidence-Based Complementary and Alternative Medicine.* 2007;4(4):487–491.

7. Bussing A, Ostermann T, Ludtke R, Michalsen A. Effects of yoga interventions on pain and pain-associated disability: a meta-analysis. *Journal of Pain.* 2012;13(1):1–9.

8. Cramer H, Lauche R, Haller H, Dobos G. A systematic review and meta-analysis of yoga for low back pain. *Clinical Journal of Pain*. In press.

9. Newton. KM et al. Efficacy of Yoga for Vasomotor symptoms: A Randomized Controlled trial. Menopause: *The Journal of North American Menopause Society*. 2014; 21 (4): 339-346

10. Vora. R, Dangi. A. Effects of Yoga on Menopausal symptoms on early menopausal period: A randomized controlled trial. *Indian Journal of Physiotherapy and Occupational therapy*. 2014; 8 (3): 49-53

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Effectiveness of Nursing Care Bundle in Terms of Knowledge and Practices Regarding Care of Patients on Mechanical Ventilator among Nursing Personnel

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Abstract

Background- Covid-19 Pandemic has proved the Nurse's crucial role in health care delivery system and providing nursing care to critically ill patients. It is a challenge for nurses as they need to be astute, competent, compassionate and critical thinker when they have to take care of patients on mechanical ventilator. Aim– To assess knowledge and practices regarding care of patients on mechanical ventilator among nursing personnel before and after administration of Nursing Care Bundle (NCB) in experimental and comparison group. Material and method. A Quasi Experimental non Equivalent comparison group pretest post test design used in thus study. 65 nursing personnels (30 experimental and 35 comparison groups) were selected from hospitals of North India using convenience sampling technique. NCB was administered in experimental group. Structured knowledge questionairre, Structured Observation Checklist for practices was used to collect data before and after intervention. Results- The mean post test knowledge and practices scores of nursing personnel in experimental and comparison groups were (21.6 ± 3.84, 30.83 ± 4.51) and (17.54 ± 2.76, 19.54 ± 4.17) respectively. There was significant difference between mean pre test and post test knowledge and practices scores (p=0.00).There was statistically no significant correlation between post test knowledge and practices score [r=0.16 (0.39)] among nursing personnel in experimental group at the level of significance 0.05.There was significant association of selected variable in area of gender (0.02) in experimental and education (0.02) in comparison group with pre test knowledge scores , also there was a significant association of selected variable in area of gender in experimental (0.03) and present area of working (0.03) in comparison group with pre test practices score. Conclusion- Nursing Care Bundle was effective in improving knowledge and practices of nursing personnel.

Keywords- *Effectiveness, Nursing Care Bundle, Knowledge, Practices, Nursing Personnels*

Introduction

Mechanical ventilation is found to be an essential method for resuscitation and comprehensive treatment of critically ill patients in the intensive care units. Approximately 20% of acute care and 58% of emergency admissions and about 80% of patients in intensive care units are reported to require mechanical ventilation.[1] Mechanical Ventilator are the one of the most frequently used modalities to help patient recover from respiratory failure and other critical illness such as acute respiratory failure with hypoxemia, acute respiratory distress syndrome, heart

failure with pulmonary edema, pneumonia, sepsis, and complications of surgery and trauma etc.[2] 65% of patients are found to be ventilated due to hypercarbic ventilatory failure such as coma exacerbations of chronic obstructive pulmonary disease and neuromuscular diseases admission. Studies depict that ventilator associated complications can cause prolonged stay and increase the risk of death among critically ill patients. [3] The patient in intensive care unit often requires mechanical assistance to maintain airway patency. The ICNARC report also revealed mortality rate of 35.1% among patients treated in ICU for viral pneumonia and required mechanical ventilation from year 2017 to 2019.[4] The ICNARC revealed 3883 patients with confirmed COVID-19 were admitted to (ICUs) in England, Wales, or Northern Ireland. Among 66.3% of the 1053 patients who required mechanical ventilation died. [3] The ICNARC report also revealed mortality rate of 35.1% among patients treated in ICU for viral pneumonia and required mechanical ventilation from year 2017 to 2019. In Wuhan, China, it depicts that 37 (71%) required mechanical ventilation whereas 32 (61.5%) died within 28 days of ICU admission.[5] Morality was higher among those who required mechanical ventilation than among those who did not (94% v/s 35%).The Journal of the American Medical Association (JAMA) stated that the mortality rate for all patients placed on mechanical ventilation was 88.1%. Analyzed by age group, mortality rates for patients aged 18 to 65 were 76.4 percent. [6]COVID-19 pandemic, the nurses are one of the frontiers for care of patients admitted in hospitals.Nurses armed with clinical supplies are usually the front line of care and, in some cases, may be the only provider in the area, especially in developing countries. Across the globe,New York has reported 80 % of patients admitted in hospital require mechanical ventilation in critical care settings whereas 86% in china and 66% patients in UK.[7] Knowledge about dealing with patient on mechanical ventilator utilized in intensive and long-term care settings to assist patients requiring additional respiratory support is of great importance for the patient's safety and their early recovery. Novice nursing personnel need orientation and special training programs to update knowledge and prctices concerning care of critically ill patients on mechanical ventilator to provide efficient care.[8]Hence, Ministry of health and family welfare initiated various health care professional regarding care of patients and operating ventilator along with behavior and documentation for establishing and maintaining invasive care with certain disorders and various other components of care such as response to ventilator, intervenes to maintain oxygenation and ventilation ensuring that complex needs are met. WHO has declared the year 2020 as the "International Year of Nurses and Midwives

Methods

The present study is a quasi- experimental non equivalent control group pretest/posttest design. The population of the study included nursing personnels who work in MMIMS&R, M.M super specialty Hospital, Mullana, Ambala, Haryana and M.M Hospital Solan H.P. The sample included 68 nursing personnel selected using the convenience sampling method. Confidentiality was maintained along with informed consent. Nursing personnel available at time of study and willing to participate in the study were included whereas not able to attend intervention and post test or were in night shifts during data collection were excluded.

Data Collection

For data collection, the researcher initially

developed a structured knowledge questionairre and structured observation checklist for practices after an extensive review of the relevant literature to achieve good content validity. Structured knowledge questionairre first part included questions about selected variables of nursing personnel, including age, gender, education, **previous work experience, present area of working,** and total work experience. The second part contained 30 questions to investigate nursing personnel knowledge regarding care of patients on mechanical ventilator including 4 subgroups of **Concept of mechanical ventilator (7), Assessment (12), Oral care** (3), **Endotracheal tube care (8).** The questions were rated using Likert scale (0= not attempted, 1= correctly done) and the maximum score was 30. Scores>**26 were very good, 22 -26 were good, 15 -21 were average and 0 -14 were below average. Structured observation checklist for practices included checklist for practices of assessment, oral care and endotracheal tube care** which comprises of 29 items. Each item has a marking of 0 (not attempted), 1 (Incorrectly) and 2 (correctly done) which is given based on performance of nursing personnel regarding care of patients on mechanical ventilator. Scores **> 44 were good, 29-44 were fair and 0-28 was poor. Content validity of tool was established by nine experts,** three professors(from Medical surgical Nursing, obstetrics and Nursing Education). One Associate professor, one assistant professor (from medical surgical nursing), two Doctor'sand two nursing superintendents to check the accuracy and relevance of the tool. Furthermore, reliability was checked by adopting techniques such as Kuder Richardson -20 and Inter Rater Reliability. The reliability for structured knowledge questionnaire and structured observation checklist for practices were found to be 0.86, 0.76 respectively. Thus tools were found to be reliable for study. The questionnaire was given to research participants as pretest before intervention and data were collected and analyzed. Intervention held for one day and after 15 days, posttest to analyse knowledge and practices of nursing personnel regarding care of patients on mechanical ventilator.

Data Analysis

To analyze data, descriptive tests, including frequency, percentage, mean, and standard deviation (SD) and analytical tests, including the Kolmogorov–Smirnov test was conducted to indicate that the data were sampled from a population with a normal distribution. The correlation between knowledge and practices mean score was examined by the Pearson correlation coefficient, paired t-test, , and ANOVA using the SPSS software.

Results

A total of 65 nursing personnel were included in the study, more than half of nursing personnel (53.3%) were in age group of 24-26 years in experimental group whereas in comparison group age of nursing personnel is equally distributed from age group of 21-23(34.3%), 24-26 (31.4%), and 27-29 years (34.3). Nursing personnel (100%) in comparison group were females whereas in experimental group (90%) were female. Maximum number of nursing personnel in experimental group (60%) and comparison group i.e. (91.4%) had completed General Nursing and Midwife. Most of the nursing personnel in experimental group (66.7%) had no previous work experience while (65.7%) nursing personnel in comparison group had work experience in ward settings. Majority of (76.7%) were presently working in ICU in experimental group whereas nursing personnel (62.9%) in comparison group were presently working in wards. Majority

of nursing personnel (83.3%) in experimental and comparison group (88.6%) had 0-2 years of work experience. The chi square computed values to check the homogeneity for the selected variables of the nursing personnel in experimental and comparison group showed that there was a significant difference in both the groups in terms of all selected variables except total work experience that was found to be homogenous. Research findings showed that mean and SD of total knowledge and practices score prior to administration of nursing care bundle regarding care of patients on mechanical ventilator in experimental group was 14.23 ± 3.15, 20 ± 5.52 and for comparison group 15.85 ± 3.01, 14.77 ±5.56 while after the administration of NCB mean and SD score of knowledge and practices among nursing personnel in experimental group was 21.6 ± 3.84, 30.83± 4.51and comparison group 17.54 ± 2.76, 1.9.45 ± 4.17 (as depicted in table 1 and 2). Findings revealed that knowledge and practices of nursing personnel regarding care of patients on mechanical ventilator, mean score and SD increased at all dimensions after the administration of nursing care bundle comparing mean and SD before the administration of NCB.

Table 1: Mean, mean difference, standard deviation, standard error of mean, df, "t" value and "p" value of knowledge scores before and after administration of nursing care bundle regarding care of patients on mechanical ventilator in Experimental and comparison groups. N=65

Group	Mean ±SD	MD	SEMD	"t " value	df	"p" value
pre test Experimental group (n=30) Comparison group (n=35)	14.23± 3.15 15.85 ±3.01	1.62	0.75	2.11	63	0.04*
post test Experimental group (n=30) Comparison group (n=35)	21 .6 ± 3.84 17.54 ± 2.76	4.06	0.82	4.92	63	0.00*

*significant (p≤0.05) NS Not Significant

(p>0.05)

t (63) = 1.9983

Table 2: Mean, mean difference, standard deviation, standard error of mean, df, “t” value and “p” value of practices scores before and after administration of nursing care bundle regarding care of patients on mechanical ventilator in Experimental and comparison groups. N=65

Group	Mean ±SD	MD	SEMD	“t ” value	df	“p” value
pre test Experimental group (n=30) Comparison group (n=35)	20± 5..5 14.77 ±5.56	1.38	3.78	2.11	63	0.00*
post test Experimental group (n=30) Comparison group (n=35)	30.83 ± 4.51 19.45 ± 4.17	11.77	1.07	10.91	63	0.00*

*significant ($p \leq 0.05$) NS Not Significant ($p>0.05$)

t (63)= 1.9983

Karl Pearson correlation coefficient showed that there was statistically no significant correlation between post test knowledge and practices score [r=0.16 (0.39)] among nursing personnel in experimental group at the level of significance 0.05 (as depicted in table 3). Post hoc test was applies and pair wise comparison was done.

TABLE 3 Correlation between the mean pre test and post test knowledge and practices scores of nursing personnel regarding care of patientson mechanical ventilator in experimental and comparison group N=65

<table>
<tr><th rowspan="2">Groups</th><th colspan="2" rowspan="2"></th><th colspan="2">Practices</th></tr>
<tr><th>Pre test</th><th>Post test</th></tr>
<tr><td>Experimental group (n=30)</td><td rowspan="2">Knowledge</td><td>Pre test
Post test</td><td>0.19 (0.31NS)</td><td>0.16 (0.39 NS)</td></tr>
<tr><td>Comparison group (n=35)</td><td>Pre test
Post test</td><td>0.33 (0.52 NS)</td><td>0.14(0.93NS)</td></tr>
</table>

*significant ($p \leq 0.05$) NS Not Significant ($p>0.05$)

Post hoc test using Bonferroni correction revealed that there was a significant difference in practices score of nursing personnel in comparison group in ICU and CCU (p= 0.02) along with wards and CCU (p= 0.02). Despite in the area of Wards and ICU which was found non significant (p= 0.83) (as depicted in table 4)

Table 4 Post- hoc test value showing mean difference of pre practice score regarding care of patients on mechanical ventilator among nursing personnel with their selected variable (Present area of working) in comparison group

Variable	Category	Mean difference	Standard error	"p" value
Present area of working	**ICU Vs CCU**	6.42	2.38	0.02s
	Ward Vs CCU	6.42	2.38	0.02s
	Ward Vs ICU	1.30	2.24	0.83NS

*Significant ($p \leq 0.05$) NS Not Significant ($p > 0.05$)

Discussion

According to the results, majority of the nursing personnel were female in age group of 24-26 years qualified as GNM **resp**. In the experimental group majority had no previous work experience and were found to be working in ICU's with work experience of 0-2 years whereas in comparison group majority had experience working in ward settings for 0-2 years**.** These findings were consistent with study conducted by Manisha Macchar, Kirtida Lakum and Suresh V [9]where majority of nursing personnel were females under age group of 23 – 27 years with qualification of diploma nursing along with 1- 3 years of experience. Also consistent with study conducted by "Ravikant Sharma, Shiv Kumar Mugdal (2018)[10] where it showed that majority of nursing personnel were female in age group of 21-25 years. Study conducted by LynnBotha , to determine and describe level of competence with regard to mechanical ventilation, states that age and experience had minimal influence on levels of competency amongst the nurses[11]Also, Suhara et al (2010) found that there was no significant association between knowledge scores of staff nurses in relation to their demographic variables.[12] The mean knowledge score in experimental and comparison group was significantly higher after administration of nursing care bundle respectively. These findings were supported with study conducted by Jasoda Sanasam, Veena D Sakhardande et.al [13](2017). Study observed that mean post -test score was significantly higher than mean pre test knowledge score The study concluded that teaching program was effective in increasing knowledge and practices of nursing personnel. Findings were also consistent with study conducted by Maria Sagario, Acebedo et al.[14] which showed that more experienced nurses develop natural and spontaneous response in care of critical patients and that the application of everyday knowledge and practice. Another study conducted by Ravikant Sharma and Shiv Kumar Mugdal (2018) [7] states that pre knowledge and skill scores was lower than the post test knowledge and skill score respectively. There was significant difference between the pre-test and post-test practice scores ($t= 8.70$, $p=0.00$) before and after the administration of NCB in experimental group. Findings were consistent with study conducted by Ms. A Indira [14] which stated statistically significant difference in the post test practices score among experimental group. It was found that there was statistically no significant co-relation among nursing

personnel in experimental comparison groupin terms of knowledge and practices before and after administration of nursing care bundle.These finding werepartially supported by Ravikant Sharma and Shiv Kumar Mugdal et al. (2014)[7] and Gomes, (2010) who stated a weak correlation between working years in ICU and knowledge, but this correlation may be clinically insignificant.[15]There was significant association of selected variable in area of gender (0.02) in experimental and education (0.02) in comparison group with pre test knowledge scores, also there was a significant association of selected variable in area of gender in experimental (0.03) and present area of working (0.03) in comparison group with pre test practices score. Findings were inconsistent with the study conducted by Ravikant Mishra,[7] which showed no significant association between nursing personnel knowledge and practice with selected variables such as age, gender and professional education. Another study by "Said," (2012)[16] found, no association between knowledge and years of working experience (p-value 0.34), ICU training (p-value 0.64) and level of education (p-value 0.55) concluded that level of knowledge is not affected by the work experience of nursing personnels. Findings were inconsistent in light of study by Shaimaa Hesham Mahmoud Awad to assess nurses' performance regarding management of patients on mechanical ventilator stated there was no statistically significant relationship between nurses' knowledge and practices regarding the management of patients on the mechanical ventilator and their demographic characteristics.[17]

Conclusion

The Nursing Care Bundle was effective in improving the knowledge and practices of nursing personnel regarding care of patients on mechanical ventilator as there was a significant increase in knowledge and practices regarding after the administration of nursing care bundle. There was statistically no significant co-relation found between knowledge and practices scores, but a significant association of selected variable in area of gender (0.02) in experimental and education (0.02) in comparison group with pre test knowledge scores, also there was a significant association of selected variable in area of gender in experimental (0.03) and present area of working (0.03) in comparison group with pre test practices score.

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References

1. DR. Mac Mc Cormick; Tele ICU: an invaluable tool; Eagle Medicine; Jan 13,2019 http//www.eagletelemedicine.com
2. Mosenifar Z, Amitai A et.al; Ventilator management; Medspace; Apr 7, 2020.
3. Mudgal SK. and Gaur R.; Efficacy of IP on knowledge regarding tracheostomy care among staff nurses; International Journal of Nursing Education.2018 July;10(3):87-90.
4. Swift. D; Higher mortality rate in ventilated COVID 19 Patients in large sample; April13,2020; www.medspace.com

5. Intensive care national audit & research centre; www.icnarc.org

6. Libassi. M; Largest COVID 19 study of hospitalized patient in US link to comorbidities to acuity; Feinstein institutes for medical research, Northwell health; April22,2020; www.feinstein.northwell.edu

7. Ariana Eunjung Cha; the wasington post; April 27,2020; www.washingtonpost.com

8. Demingo. X; Nurses' knowledge regarding weaning the critically ill patient from mechanical ventilation; The journal of alternative and complementary medicine; 2012; vol.3; no.4, p 34-53.

9. Kritida L and Suresh V; A study to assess effectiveness of structured teaching program on knowledge and of practices regarding oral care of patients with mechanical ventilator among nurses; International Journal of applied research, 2016;2(8); pages 422- 425.

10. Sharma R, Mudgal SK; Knowledge and Skill Regarding Care of a Patient on Mechanical Ventilator among the Staff Nurses Working in Selected Hospital; International Journal of Practical Nursing; Volume 6; Number 3; September - December 2018; DOI: 10.21088 / ijpn.2347.7083.6318.2

11. Lynn B; level of nurses' competence in mechanical ventilation in intensive care units of two tertiary health care institutions; 2012; www.pubmed.gov

12. Suhara. F K.A1, Jancy. G; Assessment of knowledge regarding mechanical ventilation among staff nurses; Department of Medical Surgical Nursing, Yenepoya Nursing College; Mangalore, 575018 India; International Journal of Recent Scientific Research;Vol. 4; Issue 9;, pp.1410- 1413; September, 2013.

13. Sanasam.J, Veena D; Effect of planned teaching programme on knowledge regarding care of patients on mechanical ventilator among staff nurses; International Journal of Applied Research 2017; 3(5): 586-588

14. Sagrario M, Acebedo- Urdiales, Jose; Practical knowledge of experienced nurse in critical care; BMC medical education; 2014, 14;173, http//www.biomedicalcentral.com; 1472-6920-14/173.

15. Gomes. V ; Knowledge of intensive care nurses on evidence based guideline for prevention of VAP ; Johannesburg.2020

16. Said.A; knowledge and practice of intensive care nurses on prevention of ventilator associated pneumonia at muhimbili national hospital; dar es salaam; tanzania November; 2012.

17. Shaimaa H, Prof. Mohamed Ahmed A. et al ; Assessment of Nurses' Performance Regarding Management of Patients on Mechanical Ventilator; Port Said Scientific Journal of Nursing; Vol.3, No. 1; June 2016.

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A Systematic Review of Conceptual and Competency Contents of Baccalaureate Global Nursing Education in Countries for Referring Further Development in Japan

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Abstract

Objective: To facilitate discussions of the contents of global nursing education programs in Japan, a systematic review of related articles in other countries was conducted.

Review Method: This review was implemented using the PRISMA guidelines. Online databases of PubMed, Cochrane Library, CINAHL with full text, and National Center for Biotechnology Information were studied. A systematic literature review was conducted of the databases' articles written in English by using the keywords "global/international nursing education" and "undergraduate course." Research-appropriate articles by titles and abstracts were selected and full texts of these articles were obtained. The authors read all the full texts, choose those appropriate to the research objective and synthesized the data.

Results: Out of eight articles that were identified, three demonstrated sets of domains with competencies. The three articles included almost all domains in the remaining five, and the essential domains were categorized such as global burden of diseases, socio-environmental health issues, and human rights and social justice. Some concepts (e.g., social justice) have not been included in official announcements in Japan.

Conclusions: Six categories of domains with competencies seemed comprehensive, and shall be a base of discussion for further development of the subject education in Japan as well as for any nursing institute in the world.

Key words: *baccalaureate course, concepts, competencies, global nursing education, systematic review*

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Introduction

Despite a long history of nursing education in Japan, the first official inclusion of global nursing in nursing education occurred relatively recently, and the globalization and nursing category was added to the

national nursing licensure exam questions standards (NNLEQS) by (Ministry of Health, Labor and Welfare (MHLW) in 2009[1]. The MHLW completed the global nursing education contents with sub-categories and codes in 2013–2017[2] (Table 1).

Table 1: Contents of Globalization and Nursing Category (Ministry of Health, Labor and Welfare, Japan, 2017)

Sub-category	Code
Viewpoint of globalization in nursing	a. Globalization and world health goals b. Globalization and human security c. Health inequity among countries and regions d. Roles of Japan in global health e. Nursing systems in world nations
Nursing target populations in global settings	a. Foreign residents b. Japanese residing abroad c. Returned Japanese from overseas d. People, regions, and organizations that need international cooperation activities
Multi-cultures and nursing	a. Nursing sensitivity to cultures b. Health issues of foreign residents and nursing
International cooperation and nursing	a. Roles of international organizations b. Roles of engaged nurses in international cooperation c. Assistance for developing countries through Official Development Assistant Scheme

Every nursing student in three-year vocational nursing institutes under the MLHW's jurisdiction or in four-year colleges under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) takes the national licensure exam. Although the three-year institutes are in compliance with the NNLEQS, the nursing colleges have been expected to develop an autonomous curriculum based on the MEXT's Baccalaureate Nursing Education Model Core Curriculum[3], which includes global nursing in three out of seven categories, in addition to being in compliance with the NNLSQS.

In addition to discussing how to assist global nursing educators, the authors sought to answer fundamental questions, including whether officially indicated educational contents of the global nursing encompassed all essentials and whether we have concrete indicators of educational outcomes for each essential. No report on or discussion of those issues was found, although some research has reported on a limited number of faculty with expertise in the subject due to broad fields that global nursing covers and low interest among students[4-6].

In this study, we aim to utilize essential domains and competencies to comprehend global nursing education in other countries through a systematic literature review in order to develop a consensus on global nursing education contents in Japan.

Materials and Methods

We followed the Preferred Reporting Items for Systematic Review and Meta-Analysis protocols (PRISMA-P)[7].

Search Strategy

The authors used online databases in English available in their schools in Japan, including PubMed, Cochrane Library, and CINAHL with full text. As this study focused on conceptual dimensions in nursing education, national or board ideology for undergraduate global nursing education in some countries was also searched online.

Several steps were followed. First, we explored appropriate combinations of search terms, such as global/international nursing education, undergraduate course in PubMed. We then collected information on articles with the appropriate terms from the above mentioned three databases. We listed the nursing journals from journals referenced in the National Center for Biotechnology Information databases through PubMed, selected the journals online, and collected articles with the appropriate terms through each journal's portal. Second, we selected research-appropriate articles by titles and abstracts and obtained full texts of these articles from the internet or hard copies from other schools in Japan. We collected national or board ideology documents for undergraduate global nursing education from the internet. We read the full texts of the articles and documents and choose those appropriate to the research objective. Finally, we synthesized the data.

Inclusion and Exclusion Criteria

Articles were included if they met the following criteria: (a) were written in the English language; (b) were peer-reviewed journal articles; (c) described comprehensive domains, perspectives, concepts, or competency at individual instituted or in aggregate; and (d) were published between 2000 and August 2020. We chose these two decades for the study because this period produced many more articles in PubMed than prior to 2000.

The exclusion criteria were content that did not relate to undergraduate nursing education essentials, activity reports for improving global nursing lecture/ practicum skills of faculty, and reports of nursing practicum in global nursing.

Search Outcomes

After we applied different combinations of search teams, the PubMed database yielded two candidates: "global/international nursing education, undergraduate" and "global/international nursing education, undergraduate course" (Table 2).

Table 2:Article Numbers by Search Terms in PubMed

	Search Terms	Articles
a.	Global/international nursing education, undergraduate	Global - 264 International - 271
b.	Global/international nursing education, undergraduate course	Global - 54 International - 56

We selected b. as the terms as a. articles included all of b. articles along with other nursing articles not related to nursing education. The authors applied the terms to Cochrane Library and CINAHL with full text; however, neither database returned appropriate articles. Of the 110 articles included in Table 2, 98 remained after the removal of duplicates.

Nine of the 73 online nursing journals identified in the NCBI Databases—Advances in Nursing Science, International Journal of Nursing Education Scholarship, Journal of Advanced Nursing, Journal of Nursing Education, Journal of Nursing Education and Practices, Journal of Professional Nursing, Nursing Educator, Nursing Education Perspectives, and Nursing Education Today—returned 3,388 articles with the terms. The articles were excluded by screening the title and abstract.

In terms of national or board announcements for baccalaureate global nursing education, three countries' documents were retrieved through the internet: American Association of Colleges of Nursing[8](AANC), Nursing and Midwifery Council in UK[9], and Canadian Association of Schools of Nursing[10]. Only the AACN described competencies for global nursing, which were published in an academic article; therefore, we included not the AACN announcement but rather the article for analysis. Finally, eight articles were identified as meeting inclusion of this review.

Findings

We included eight articles and described their consideration of the essentials of global nursing education: a. Carlton KH, et al.[11]; Calvillo E, et al. [12]; Wilson L, et al.[13]; MacNeil J, Ryan M.[14]; Veras M, et al.[15]; Jogerst K, et al.[16]; Wilson L, et al.[17]; Torres-Alzate HM, et al.[18].

The terms used in these articles varied and included competencies, domains, cultural competencies, concepts, and themes. Regardless of what terms the authors used, there were broader conceptual categories and concrete abilities under each of those categories. We entitled the former "domain" and the latter "competency" in this study.

To understand each content of the eight articles, we listed domains in three categories: fields for global health; competency, attitudes, values, and perspectives expected of nursing students learning global health; and competency, attitudes, values, and perspectives expected of all nursing students. Each category indicated several domains in more than two articles. The first category included global disease conditions; social and environmental issues, health as a right, social justice, equity, and health disparity; health implications of migration, travel, and displacement; globalization of health and healthcare. The second category included cultural competence, humanistic, holistic care. The third category included collaboration, partnership, and communication. Domains appearing repeatedly might represent a common ideology for global nursing among the articles' authors.

Finally, the authors focused on three of the eight articles that clearly indicated domains, with concrete competencies for each domain, and also included the previously mentioned domains. Table 3 shows the six categories of the aggregated domains in the three articles: global burden of disease; health issues along with globalization; social and environmental determinants of health; human rights, health equity, social justice, and ethics; nursing for populations in low-income countries; and professional development as global health nurses and human beings. Table 3

does not list the competencies for each domain, but does include some keywords used to assist in understanding domains' competencies.

Table 3: Integrated Categories of Global Nursing Domains in Three Articles

Article title and Category	Global health competencies for nurses in the Americas (2012)	Identifying Interprofessional Global Health Competencies for 21st-Century Health Professionals (2015)	Essential global health competencies for baccalaureate nursing students in the United States, A mixed methods Delphi study (2020)
Global burden of disease	Global burden of disease (keywords: major causes of morbidity and mortality, regional risk of diseases)	Global burden of disease (keywords: morbidity, mortality, country group with income-classification, health disparity)	Global burden of disease (keywords: morbidity, disability, mortality, health disparities, SDGs)
Health issues and healthcare in globalization	Health implications of migration, travel, and displacement (keywords: risk by international travel or foreign birth, cultural context and sensitiveness)	Globalization of health and healthcare (keywords: travel, trade, spread communicable diseases)	Health implications of pandemics, displacement, wars, disasters, and travel (keywords: risk of international travel, migration, displacement, disasters)
	Globalization of health and healthcare (keywords: changing disease patterns, availability and shortage of healthcare workers)		Global nursing and healthcare (keywords: healthcare provision, healthcare workers and availability and shortage, roles of nurses in global setting)
			Culturally competent, humanistic and holistic care (keywords: cultural sensitiveness, respect, cultural humility understanding)
Social and environmental determinants of health	Social and environmental determinants of health (keywords: poverty, education, lifestyle, life expectancy, income level, clean water, sanitation, food, air)	Social and environmental determinants of health (keywords: social, economic, environmental factors on well-being)	Social and environmental determinations of planetary health (keywords: poverty, race, education, lifestyle, life expectancy, clean water, sanitation, food, air)

Cont... Table 3: Integrated Categories of Global Nursing Domains in Three Articles

Human rights, health equity, social justice, and ethics	Health as a human right and development resource (keywords: human right as individual and population health)	Health equity and social justice (keywords: health disparities, global inequity)	Ethical issues, equity, and social justice in global health (keywords: human rights and health, WHO roles and declarations, commitment)
		Ethics (keywords: working with diverse economic, political and cultural contexts)	
Nursing for populations in low-resource countries	Health care in low-resource settings (keywords: high- and low-resource differences, cultural and ethical issues)	Professional practice (keywords: articulate barriers, health in low-resource settings)	Leadership, management, and advocacy (keywords: community engagement, advocate health improvement of vulnerable population, active participation on health improving activities)
Professional development as global health nurses		Collaboration, partnership, and communication (keywords: stakeholders, open dialogue)	Collaboration and partnership (keywords: healthcare team, leadership skills, communication, relationship building)
		Sociocultural and political awareness (keywords: basics for working with diverse cultural settings)	Communication (keywords: confronting language barrier, understanding team members' role and responsibility)

Discussion

As global nursing educators, the authors recognized the importance of all domains presented in the eight articles and identified several domains more frequently described over the years that might be essential. Focused on these domains, the authors considered three articles that embodied the essentials and indicated concrete competencies for each domain that could be utilized for the discussion of educational achievement objectives.

Wilson et al.[13] analyzed the perception of 30 global health competencies under six domains among faculties in 16 countries. All competencies demonstrated high acceptance among the faculties and high internal consistency for reliability in English-speaking and Spanish-speaking faculties. Using participants' comments, the authors described how to incorporate these competencies into existing courses rather than setting a new subject of global nursing as well as the need for different sets of global nursing competencies at different levels (e.g., undergraduate and graduate).

Jogert et al.[16] developed a list of global health competencies for health professionals, including nurses. Their list included domains and competencies at two levels and the study reviewed the list for the global citizen level in order to be applicable to undergraduate students. The list demonstrated a set of

core realms over different professional disciplines.

Torres-Alzate et al.[18] conducted a three-phase study with nurse faculties who were experts in global health to identify competencies in global health for undergraduate students in the United States. The experts strongly agreed on 40 competencies in nine domains. It indicated that competencies were conceptually concrete; some were tangible and could provide educational approach implications as well as achievement objects.

Comparison and Clarified Characteristics of the Contents in Japan

By reviewing global nursing educational contents for the NNLEQS in Japan (Table 1) to compare them with the results in the identified domains, the authors found a fundamental difference: Japanese global nursing does not yet seem to stand on genuine globalism. There is a “we” versus “they” perception (e.g., Japanese versus other people; Japanese culture versus other cultures). The selected eight articles did not include such a distinction. The authors have no intention of disagreeing with the contents in Table 1, which imply a particular background of Japanese society and nursing education.

In light of this point, the majority of clinical nurses and even nursing faculties, especially in rural areas, may not have experience caring for non-Japanese patients. The mean of annual foreign patients was four among 4,097 participating hospitals in 2020[20]. Although travelers to Japan have been decreasing due to COVID-19, even prior to the pandemic nursing reports or communication regarding nursing care for overseas visitors or foreign residents were limited. Apparently experienced global nursing faculties are insufficient. Eighty-five percent of studied nursing institutes nationwide that offer the global nursing subject depend on nurses who have global nursing experience as part-time lecturers[21].

In addition, compared to the studied contents, Japanese global nursing contents emphasize understanding international cooperation, national and international related organizations, and nurses’ roles in global health. The historical implementation of global nursing as technical cooperation with other nations’ nurses and communities after World War II has been the main global nursing activity for decades. Therefore, the authors considered the emphasis placed on such contents.

Regarding the extracted essential domains, the main difference with Japanese contents was the term “social justice.” Respect for human rights, ethics, and inequity were mentioned in general nursing and global nursing realms of the MEXT model; however, social justice involved broader and deeper concepts related to societal roles due to both individuals’ and nurses’ disparity of wealth, opportunity, and privilege, which might lead to disadvantages in health services, education, and welfare, among other areas. The concept of social justice might bring a greater understanding of holistic nursing care to nursing students than learning rights and ethics individually.

The reviewed articles showed a transition in global nursing educational domains. Many studies and discussions have been developed over the decades, involving broader organizations/participants from different counties, which seemed efficient for deliberating on the essential contents. Torres-Alzate et al.[18] suggested that their study results could be utilized to identify competencies across any profession. The essential domains could form a sufficient discussion base for conceptual framework development in Japan.

Having global nursing as an independent subject or incorporating it into related subjects should be discussed in greater details. Baccalaureate nursing institutes are expected to develop a curriculum based on the MEXT demonstrated model, which thoroughly integrates global nursing. Only 12% of the studied 90 baccalaureate nursing institutes in Japan have incorporated global nursing into existing subjects, such as fundamental nursing or public health nursing[4]. This might be due to global nursing being a newly introduced subject, although several domains in Table 3 imply that incorporating this area into the curriculum is appropriate. Dawson et al.[22] reported a process to address global nursing competencies in selected courses across the curriculum without creating additional work for faculties but still enhancing global perspectives. One report found that integrating cultural competence into the curriculum improved students' self-recognition of cultural competence[23].

Limitations

The limitations of this review include that only English articles were considered due to the limited language ability of the authors. Databases within the authors' institutes and full texts or hard copies (when not able to download texts from the internet) were also limited.

Conclusion

This review analyzed essential domains related to global nursing education for baccalaureate students. These domains were categorized as the global burden of disease, health issues and healthcare in globalization, social and environmental determinants of health, human rights, health equity, social justice, and ethics, nursing for populations in low-resource countries, and professional development as global health nurses. Current contents of global nursing education in Japan do not contain all of these domains; however, the reasons and particular backgrounds were also clarified. A series of discussions were considered to develop a consensus based on the findings and indicated that global nursing faculties and experts in Japan should produce qualified global nursing education. The findings might be applicable to any nursing institutes in all countries. Institutes need to develop their own global nursing education courses based on their background and concepts with domains as realms, competencies as measurable learning outcomes, and evaluation methods to measure their progress.

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References

1. Ministry of Health, Labour and Welfare, Japan. 2010 nen kokka kangoshisi shiken shutudai kijun [2010 National nursing exam questions standards]. 2017 [cited 2020 September 20]. Available from: https://www.mhlw.go.jp/topics/2009/04/dl/tp0413-1f.pdf. No English available.
2. Ministry of Health, Labour and Welfare, Japan. Kangoshi kokka shaken shutsudai kijun [National nursing exam questions standards]. 2010 [cited 2020 September 20]. Available from: https://www.mhlw.go.jp/file/04-Houdouhappyou-10803000-Iseikyoku-Ijika/0000158947.pdf. No English available.

3. Ministry of Education, Culture, Sports, Science and Technology, Japan. Model Core Curriculum for Nursing Education in Japan: Learning objectives aiming for acquiring "core abilities of nursing practice in bachelor's degree program". 2018 [cited 2020 September 20]. Available from: https: www.mext.go.jp/content/20200428-mxt_igaku1217788_4.p.pdf. No English available.
4. Hiruta Y, Kubo N, & Yamanouchi Y. Kiso kangogaku kyoiku ni okeru kokusai kanngogaku no kyouiku puroguramu no kaihatu ni kannsuru kennkyuu -Waga kuni no daigaku kanngogakka ni okeru kokusai kango kyouiku no jittai [A study on design of education program of the international nursing science in basic nursing education system: the present status of the international nursing education in the department of nursing in university in Japan]. Hachinohe Gakuin Institutional Bulletin. 2017; 54: 39-54. No English available.
5. Kato Y. The Current Situation and Challenges of Short-term Study Overseas Training Programs at Faculties of Nursing. Ishikawa Journal of Nursing. 2020; 17: 1-10. Available from: http://id.nii.ac.jp/1301/00000253/ English abstract is available.
6. Nakagoshi R, Mori K, Tanaka Y, Nomura A, & Joho T. Waga kuni no kiso kango kyoiku ni okeru kokusai kanngo kyouiku no genjo to kadai [Current status and issues of global nursing in udergraduate course in Japan]. Bulleting of Ehime Prefectural University of Health Sciences. 2014; 11 (1): 9-13. No English available.
7. PRISMA for systematic review protocols (PRISMA-P). Transparent Reporting of Systematic Reviews and Meta-Analysis. Available from: https: www.prisma-statement.org/Extensions/Protocols.
8. American Association of Colleges of Nursing. The Essentials of Baccalaureate Education for Professional Nursing Practice. 2008. [cited 2020 August 18]. Available from: https://www.aacnnursing.org/Portals/42/Publications/BaccEssentials08.pdf (aacnnursing.org)
9. Nursing & Midwifery Council (UK). Standards for pre-registration nursing Programmes. 2018. [cited 2020 September 30]. Available from: https://www.nmc.org.uk/standards/standards-for-nurses/standards-for-pre-registration-nursing-programmes/
10. Canadian Association of Schools of Nursing. National Nursing Education Framework Final Report. 2015. [cited 2020 October 10]. Available form: https://www.casn.ca/wp-content/uploads/2014/12/Framwork-FINAL-SB-Nov-30-20151.pdf
11. Carlton KH, et al. Integration of Global Health Concepts in Nursing Curricula: A national study. Nurs. Educ. Perspect. 2008; 28 (3): 124-129.
12. Calvillo E, et al. Cultural Competency in Baccalaureate Nursing Education. J Transcult Nurs. 2009; 29 (2): 137-145.
13. Wilson L, Mendes IAC, Klopper H, Catrambone C, Al-Maaitah R, Norton ME, et al. Global health competencies for nurses in the Americas. J **Prof Nurs. 2012;** 28(4): 213-333.
14. MacNeil J, Ryan M. Enacting global health in the nursing classroom. Nurse Educ Today. 2013; 33: 1279-1281.
15. Veras M, et al. Reliability and validity of a new survey to assess global health competencies of health professional. Glob J Health Sci. 2013; 5 (1): 13-27.

16. Jogerst K, Adams V, Evert J, Fields E, Hall T, Olsen J, et al. Identifying interprofessional Global Health Competencies for 21st-Century Health Professionals. Annals of Global Health. 2015; 81(2): 239-247.
17. Wilson L, ‘Global health’ and ‘global nursing’: proposed definitions from The Global Advisory Panel on the Future of Nursing. J Adv Nurs. 2016;72(7): 1529-1540.
18. Torres-Alzate HM, Wilson LL, Harper DC, Ivankova NV, Heaton K, & Shirey MR. Essential global health competencies for baccalaureate nursing students in the United States: A mixed methods Delphi study. J Ad. Nurs. 2020; 76: 725-740.
19. Ministry of Health, Labour, and Welfare. A status report of acceptance of foreign patients by hospitals in 2020. [cited 2021 March 21]. Available from: https://www.mhlw.go.jp/content/10800000/000783797.pdf. No English available.
20. Nagamine M, Oohue T, Tsujimura H, Mori Y, & Yamada C. Survey of what is required to be strengthened in international nursing education. Journal of Japanese Society for International Nursing. 2021; 5 (1): 71. English abstract available.
21. Kelly T, Lazenby M. Developing and validating learning domains, competencies, and evaluation items for global health clinical immersion practicum for graduate-level nursing. J Adv Nurs. 2019; 75: 234-252.
22. Dawson M, Gakumo LA, Wilson LL. Process for mapping global health competencies in undergraduate and graduate nursing curricula. Nurse Educ. 2016; 41 (1): 37-40.
23. Caffrey RA, Nearnde, W, Markle D, Stewart B. Improving the Cultural Competence of Nursing Students: Results of Integrating Cultural Content in the Curriculum and an International Immersion Experience. J Nurs. Educ. 2005; 38: 234-240.

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Use of ADDIED Model to Develop Self Learning Material on Behavior Change Communication (BCC) related to Reproductive and Child Health Care and Assess its Effectiveness on Knowledge of Auxiliary Nurse and Midwives (ANMs) Regarding BCC for Antenatal Care

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Abstract

Introduction: As per WHO Every year an estimated 2,87,000 women die worldwide from complications related to pregnancy. Behavior Change Communication (BCC) is one of the most cost effective ways of targeting the issues of maternal health . There is a need to sensitize the in service ANMs regarding the benefits of adopting a systematic BCC intervention.

Objective: 1: To develop self learning material on BCC for RCH care

2: To assess effectiveness of Self learning material (SLM)on knowledge of ANMs regarding BCC for Antenatal care

Method: Study was based on ADDIE Model to develop instructional material. Researcher developed SLM with learning objective to describe the process of Behaviour Change Communication and related role of ANMs, to acquire knowledge about relevant information about selected ANC issues, plan and conduct BCC sessions for the selected ANC issues. Structured questionnaire was developed by the researcher consisting items on knowledge of BCC and information related to antenatal period for early registration, Importance of TT immunization, Diet and Rest, Identification and treatment of Anemia, Hi-Risk Pregnancy, Importance of Institutional Delivery , Identification and treatment of RTI/STI. One group pretest post-test time series design was used to assess the retention of knowledge among 94 study sample after reading the SLM up to three months.

Result: Majority of In-service ANMs (ISAs) 67 (71.3%) were from the age group of 40 years and above and had not attended any course /In service education programme on BCC. Finding shows that SLM was significantly effective to enhance the pre-test mean knowledge score from 32.78 to 78 .61 and 70.16 ($p<.001$).

Conclusion: SLM was effective to improve the knowledge of In-service ANMs on BCC and relevant information related essential health care practices during antenatal period

***Key Words**: Behavior Change Communication (BCC) Self learning material(SLM). Antenatal care(ANC)*

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Background of the study

Behavior Change Communication (BCC) is one of the most cost effective ways of targeting the issues of MCH. It is the planned and strategic usage of communication to strengthen health seeking behaviors through health literacy, can be either focused at the community or individual level.

Global Situation :Maternal, Neonatal and childhood mortality

Every year an estimated 2,87,000 women die worldwide from complications related to pregnancy, child birth or the postnatal period. 99% of these deaths occurs within the most disadvantaged population group living in the poorest countries of the world. (WHO[1] 2012)

Indian scenario: Maternal, Neonatal and childhood mortality

Reduction in MMR has been the national priority since first five year plan till the 12th Five year plan. (MOHFW statistic report[2] 2015)

In reproductive and child health (RCH) program Behaviour change communication (BCC) have specific role to play for bringing desirable behaviour changes in health practices of people as Neonatal and childhood mortality are preventable and once detected, they are treatable.

Strategies to reduce Maternal, Neonatal and Childhood Mortality

Many important MCH issues related to ANC; such as educating women regarding skilled attendance at birth, exclusive breastfeeding for six months, child immunization, emergency obstetric care when necessary and post-natal care (PNC) for mothers and babies.

BCC is needed to promote positive health practices for maternal and newborn health, and to discourage harmful practices. Village level interpersonal communication and community mobilization, are however the major forms of BCC which lead to changed behaviour (Operational Guidelines on Maternal and Newborn Health by GOI[3]2010).

BCC strategy requirement as mentioned by GOI on Maternal and New Born Health include :

- Knowledge of the determinants of key behaviours
- Audience segmentation and the choice of appropriate message, medium and communicator to reach mothers, their families and community influencers.
- Measures to monitor and evaluate effectiveness of the BCC components.

Need of the Study

In the results of follow up study conducted by Sarkar R [4],70 % ANMs expressed that they do not carry out post-natal visits as they do not get adequate experience during training. Majority (90%) of in service ANMs do not coordinate their activities with local community as they do not get adequate experience in coordinating their activities with local community leaders during training period.

Reasons affected to meet the client's needs for MCH :

- Absence of supportive supervision,
- Lack of training in inter-personal communication,

- Lack of motivation to work among health workers in urban /rural areas ,together with difficult to access reproductive and child health services,

- Poor quality of services (National Health Policy[5], 2000) .

The ANMs were not able to perform midwifery properly as they lack experience of field practice. Lack of knowledge of the RCH programme and its components. The key recommendation was to develop an in-service programme (**Prakasamma, DM[6]2005).**

Clarity on BCC, its distinction from traditional IEC and the right approach to BCC is not evident in the planning, implementation and monitoring of BCC" . The need to build BCC planning capacity exists ,not only in one region where the study was conducted , but in other parts of the country too. Health workers role at each stage of behavior change needs to be identified and explained to heath workers to provide quality RCH care. (**UNICEF [7]2007)**

Objective: 1: : To develop self learning material on BCC for RCH care

2: To assess effectiveness of Self learning material on knowledge of ANM

regarding BCC for Antenatal care

Method :

Research Approach: The research approach used for present study was quantitative research approach evaluative in nature.

Research Design

Keeping the objectives in mind the Pre experimental research design was selected for present study .To assess the retention of knowledge among study sample after reading the SLM up to three months , researcher used **one group pretest post-test time series design .**

Variables under Study

- **Independent variable:** Self-Learning Material on Behaviour Change Communication related to Selected Reproductive and Child Health issues introduced to In-Service ANMs.

- **Dependent variable** :Knowledge(K)scores of In-service ANMs Before and after reading the SLM on BCC related to antenatal care.

Setting for the research study groups:

For In-service ANMs group the setting was Maternal and child welfare (M&CW) centre and Maternity Homes of Municipal Corporation of Delhi (MCD) .

Population for the research study groups:

For In-service ANMs group: Total population In-service ANMs in Municipal Corporation of Delhi-800 and accessible population was all the ANMs working in selected health units.

Calculated sample size and sampling technique:

Sample Size calculation :The sample size was calculated by using power analysis it was 91 **Expecting that the minimum gain of 15% in scores. Multistage** random sampling technique was adopted for selecting the health unit.**Total enumeration technique** to select In-service ANMs from randomly selected health units.Total ISA participated in the study-94.

Criteria for Selecting Sample- ANMs working in selected M.C.D Health unit - ANMs willing to

participate in study - ANMs available at setting on the day of assessment.

Development of the Self Learning Material. (SLM) as Intervention and knowledge questionnaire to assess its effect

The major steps followed by the researcher in the development of the S.L.M and assessing its effect was based on ADDIE Model[8]

Analysis :, Along with review of research and non-research literature ,to support the need of present study for In-service ANMs a questionnaire was developed also got validated for identifying the ANC issues and for collecting base line information about awareness related to BCC for ANC care among in-service ANMs(20) and views of their supervisors (10PHNs and 10Doctors) .

Findings of the analysis shows that majority of In-service ANMs were aware of correct meaning of health seeking behvious related to ANC. They were aware of dropout cases but in relation to immunization only. They were aware of how to identify drop outs for immunization but not for ANC care .Planning and conducting BCC sessions for drop out cases was also not practiced .

In-service ANMs expressed that there is need to include updated relevant information related to selected topics on ANC in reference to BCC There was (100%) agreement of all the experts that self learning material on BCC for ANC will be useful among In-service ANMs for creating awareness.

DESIGN : Development of a criteria checklist for content outline of units of SLM and got it validated by 9 experts .

DEVELOPMENT: Development of structure of units based on validated design. And Development of criteria checklist, for evaluation of SLM. Preparation of the first draft of the S.L.M. **Content validation of the S.L.M**. by twenty one experts with the help of criteria checklist developed for evaluation of SLM. Modification and preparation of the second draft of the S.L.M. **Pre-testing of the S.L.M was done in** August 2016. Preparation of the final draft of the S.L.M was ready in December 2016 .**Translated the validated S.L.M** in Hindi and then back to English.

General objective of Self learning material.

- Describe the process of communication
- Acquire various qualities of an effective communicator.
- Discuss the process of Behaviour Change.
- Explain process of Behavour Change Communication and related role of ANM
- Acquire knowledge about various components of RCH and relevant information about selected ANC issues.
- Describe various approaches and methods for Behaviour Change Communication(BCC)
- Plan and conduct BCC sessions for the selected ANC issues.

Units of the self learning material.

The SLM included three units:

Unit – 1 Introduction to Behavior Change Communication(BCC)

Unit – 2 Behavior Change Communication : Approaches and methods

Unit – 3 BCC guidelines for selected ANC

issues it described the steps to plan a BCC session in the community and one model BCC plan is presented in the unit.

Development of Data Collection Tools :

List of Tools Develop by the Researcher got validated by (twenty one) experts :

1. Structured Performa to assess background data of In service ANMs

2. Structured Questionnaire to assess knowledge of ANMs on BCC for Antenatal care .

The major steps taken for the development of the questionnaire were:

✓ **Blue print for questionnaire.**

✓ **Item construction.**

✓ **Establishing validity. (from January 2016 to April 2016) (by 21 experts)**

✓ **Modification done as per suggestions of expert.**

✓ **Pre-testing of tools (June 2016.)**

✓ **Establishing reliability:** Reliability of the questionnaire was established using Kudar Rechardson (KR-20) formula and value 0,86 considered satisfactory for internal consistency of the tool

✓ **Translation of KAP tools in Hindi and then English**

Description of questionnaire :

Structured Questionnaire to assess knowledge of ANM on BCC for antenatal care consisting 49 items on knowledge of BCC and relevant information related to health care practices during antenatal period like early registration, Importance of TT immunization, Diet and Rest, Identification and treatment of Anemia, Hi-Risk Pregnancy, Identification of PIH, Convulsions/Eclampsia and bleeding, Importance of Institutional Delivery and Birth Preparedness, Identification and treatment of RTI/STI.(Total score-85)

IMPLEMENTATION: (DATA COLLECTION PROCEDURE)

- The written Informed Consent was taken from each study subjects of ISA
- Information sheet containing brief information about the study was given to them
- Pre –Test Assessment for Knowledge using pre-tested knowledge questionnaire among ISA group was done by making them to sit separately in a big room at their respective setting.
- Duly filled knowledge questionnaire were collected back after 2 hour from ISA group.
- Intervention as Self learning material was introduced by the researcher using group approach: 4-6 study subjects in one ISA group. (As per their availability at each health unit)
- Discussion based on the content of SLM with each group of ISAs for 60-90 minutes .
- (Unit-1-30-50 minutes,Unit-2 -15-20 minutes,Unit-3 -15-20 minutes)
- The study subjects were later requested to read the content as per their own pace and time for the period of one month.
- Self reported log-book was provided to note

reading status for each unit.

- Weekly reminder calls to ISA group was done by researcher.

Evaluation :

Post test assessments was taken after one month and then after three months from the day of intervention introduced to study subjects of ISA group at their respective setting .

SLM was collected back after post test -1.

Analysis and Interpretation

Major findings of study is presented in following sections:

Section-I Description of Characteristics of study sample groups :

- Majority of In-service ANMs (ISAs) 67 (71.3%) were from the age group of 40 years and above. 45(47.5%) ISAs were having 10th as minimum educational qualification and 51 (54.5%) ISAs were having professional experience of 20 years and above .
- Majority of ISAs 87(92.6) were having ANM diploma as professional qualification but 7(7.4%) of ISAs were having GNM diploma also. Majority of ISAs 74(78.72%) were trained from the institute situated in Haryana. Most of the ISAs 60(63.8%) were having 6-10 years experience of working as field worker .
- Majority of In-service ANMs 81 (86.2%) had not attended any course /In service education programme on BCC. 86(91.5%) of them plan health education sessions only not BCC sessions. 62 (66%) had conducted health education sessions on topic related to Antenatal care for antenatal women.

Section-II :Comparison of Mean knowledge Scores of ISAs in Pre-test and post test-I and II is presented in table -1 and 2

Table -1: Mean ,Standard Deviation and ANOVA for knowledge Scores of In –Service ANMs In Pre -Test And Post Test I And II

Knowledge	n	Mean±SD	p-value.
Pre –test	94	32.78 ±3.775	. p<.001*
Post-test(30)	94	78.61 ±5.245	
Post-test(90)	94	70.16±4.285	

* Significant at 0.05 level

Table -1 shows comparison of pre-test, post-test-I and post-test-II mean knowledge scores using ANOVA With significant p value data signifies that the SLM was effective in increasing the knowledge scores.. It is interpreted that the mean knowledge scores had significantly increased after reading the SLM.

Table-2: Area-Wise Mean, Mean Percentage And Mean Percentage Gain In Knowledge Scores Among In-Service ANMs From Pre Test To Post Test-1 And Post Test -II

N-94

S. No	Variable (Knowledge Area wise)	marks	Mean	Mean %	Mean % gain	P value
	Knowledge of BCC	Pre-test	13.66	40.17	56.59	<.001*
I		Post-test-I	32.90	96.76		
		Pre-test	13.66	40.17	47.5	<.001*
		Post-test-II	29.81	87.67		
		Post-test-I	32.90	96.76	9.09	<.001*
		Post-test-II	29.81	87.67		
Ii	Knowledge of relevant information on ANC care.	Pre-test	19.12	37.49	52.13	<.001*
		Post-test-I	45.71	89.62		
		Pre-test	19.12	37.49	59.7	<.001*
		Post-test-II	40.35	79.11		

* Significant at 0.05 level

Data in table -2 shows mean and mean percentage scores of ISAs in Pre-test and post test-I and II .

Findings in the table reveals that mean and mean percentage scores of post test –I and Post test-II are higher than pre-test scores for knowledge of BCC and Knowledge of relevant information on ANC care.

Tukey's post hoc analysis for multiple comparison of total mean knowledge scores revealed that knowledge scores had increased in post test-I and II after reading the SLM.

Minimum percentage gain of 47.5% from pre-test to post test-II in areas of knowledge of BCC and where the mean percentage gain is more than 50% for Knowledge of relevant information on ANC care .It is interpreted that for the knowledge on BCC and knowledge of relevant information related to issues of during ANC had increased after reading the SLM among ISA.

Conclusion

 It was concluded that SLM was effective to improve the knowledge of ISAs on Behaviour Change Communication and Knowledge of relevant information for Antenatal care related to Importance of early Registration and regular ANC Visits during pregnancy. importance of TT immunization during pregnancy, Knowledge Diet & rest during pregnancy . identification and treatment of aneamia, warning sign and High-risk pregnancy , importance of Institutional Delivery and Birth Preparedness .knowledge of Bleeding during pregnancy /Abortions 'Identification and treatment of RTI/STI

Discussion

In present study there was lack of knowledge regarding BCC for ANC care components among In-service ANMs .

Similar to present study findings **Haruna et al[9]. (2010)** reported that midwives in Tokyo expressed their lack of expertise in behaviour change communication (BCC).

In congruence to the findings of present study it was revealed by **Novick[10],**that target people for MCH care desired comprehensive and relevant information to clear their doubts, and enable them take informed decisions similarly, the women in study of **Bridgit Omowumi[11] et.al** mentioned issues about which they wanted more information.

The overall findings of **Kaushik LK[12]** were similar to present study that counseling skills were lacking in a substantial proportion of HW-F which indicates a need to train them in these aspect, for improving ANC services in peripheral and rural set-up where these HW-F are the main functionaries to deliver care.

Ethical clearance-

1. The study was approved by the research Unit of Indira Gandhi National Open University (IGNOU),Delhi. Research problem and objectives were approved by the Doctoral committee of School of health sciences IGNOU. Prior permission was obtained from management of all the selected health units covered in the study.

2. **Source of funding**- Self

3. **Conflict of Interest** - nil

References

1. World Health Organization, UNICEF. Trends in maternal mortality: 1990 to 2010: WHO, UNICEF, UNFPA and The World Bank estimates. **ISBN**: 978 92 4 150363. Published in year 2012.Availablefromhttps://www.who.int/reproductivehealth/publications/monitoring/9789241503631/en/
2. Ministry of Health Family welfare(MOH&FW) statistics report 2015
3. Operational Guidelines on Maternal and Newborn Health for ANMs, LHVS and Staff Nurses by GOI 2010: Maternal Health Division. Guidelines for antenatal care and skilled attendance at birth by ANMs/LHVs/SNs. New Delhi: Ministry of Health and Family Welfare,

Government of India; 2010.Google Scholar

4. Sarkar R. A follow up study of Auxilliary nurse midwives working in Tribal areas of Tripura, who were qualified during 1977-80 in G.B Nurses Training Centre Tripura Unpublished Master of Thesis University of Delhi (1982)
5. National Health Policy, 2000 (India)
6. Prakasamma DM. Situational Analysis of Public Health Nursing in India. Hyderabad: Academy of Nursing Studies 2005. And www.iosrjournals.org 18 | Page.
7. The UNICEF report on "Building IEC Capacity in Government Partners". (2007).
8. Morrison, G.R. Designing Effective Instruction. 6th Edition, John Wiley & Sons, Hoboken, New Jersey 2010.
9. Haruna, M., Yeo, S., Watanabe, E., Matsuzaki, M., Ota, E., Nakayama, K., et al. Perceptions of women and health-care providers in Tokyo of appropriate weight gain during pregnancy. *Nursing and Health Sciences,* (2010). *12*, 21-26.
10. Novick, G. Women's Experience of Prenatal Care: An Integrative Review. *Journal of Midwifery & Women's Health,* (2009), *54*(3), 226–237.
11. Bridgit Omowumi Akin- Otiko, Appraisal of Observance of Behaviour Change Communication Programme for Maternal and Child Health at First Level of Midwifery Practice in Kaduna State Nigeria. 2013 Sep; 2(3): 28–33. Published online 2013 Sep 15.PMCID:PMC4228538
12. Kaushik Lodhiya K et.al. A Study on Knowledge and Skills of Female Health Workers Regarding Maternal Care under RCH Programme National Journal of Community Medicine Vol 3 Issue 1 Jan-March 2012 Page 35.

Type of manuscript: Research

A Quasi Experimental Study to Assess the Effectiveness of IEC on Knowledge, Attitude and Practice Regarding Breast Self-Examination among Female Supportive Staff Working in A.C.S Medical College & Hospital

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Abstract

Breast cancer is a cancer that begins in the tissue of the breast. It occurs when the breast cells alter and develop out of control. Normally, the cells form a tumor. The cancer is referred to as "invasive" if it has gone beyond the breast. It's possible that it'll only spread to adjacent tissues and lymph nodes. To assess the Pretest and Posttest level on Knowledge, Attitude and Practice regarding BSE among female supportive staff. To assess the Effectiveness of IEC on Knowledge, Attitude and Practice. To assess the Relationship between Knowledge, Attitude and Practice regarding BSE. To find out the association between mean differed score of Knowledge, Attitude and Practice regarding BSE with selected socio demographic variable. A quasi-experimental study was conducted in A.C.S medical college and hospital with female supportive staff. The technique were selected Simple Random sampling technique based on the inclusive and exclusive criteria. Overall sample is 75 female supportive staff. They are divided into three groups and the data is collected by pre and posttest method. After collecting the pretest data the IEC booklet was distributed to the participants. In pretest most of the female supportive staff (93.33%) had inadequate knowledge, (4%) had moderate knowledge and (2.67%) had adequate knowledge regarding BSE. Whereas in the post test after the administration of IEC, (89.33%) had adequate knowledge and (10.67%) had moderate knowledge. In the pretest most of the female supportive staff (100%) had inadequate practice regarding BSE. In posttest after the administration of IEC, (48%) had inadequate practice, (32%) had moderate practice and (20%) had adequate practice. In the pretest most of the female supportive staff (49.3%) had moderately favorable attitude, (48%) had unfavorable attitude and (2.67%) had favorable attitude. In posttest after the administration of IEC, (56%) had moderately favorable attitude, (38.67%) had favorable attitude and (5.33%) had unfavorable attitude. The pretest mean score of knowledge was 4.65±1.89, mean score of practice was 0.15±0.36 and the pretest mean score of attitude was 7.33±2.26. Comparison revealed that the mean pretest and posttest Knowledge, Attitude and Practice regarding BSE. The demographic variables of female supportive staff significantly associated with the Knowledge and there is no significant association with Attitude and Practice. This study concludes that there is improvement in the level of Knowledge, Attitude and Practice of BSE among female supportive staff which indicates that the Information booklet is effective.

Keywords: *Quasi experimental, IEC, Breast Self-Examination, Female supportive staff, A.C.S Medical College & Hospital.*

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Introduction

"From every wound, there is a scar, and every scar tells a story, a story that says 'I survived'."

– Kim. Breast cancer is a cancer that begins in the tissue of the breast. It occurs when the breast cells alter and develop out of control. Normally, the cells form a tumor. The cancer may not spread further in some cases. This is referred to as "in situ." The cancer is referred to as "invasive" if it has gone beyond the breast. It's possible that it'll only spread to adjacent tissues and lymph nodes. [1]

It can spread through the lymph systems include lymph nodes, lymph vessels and lymph fluid found throughout the body. Ductal carcinoma, which starts in the cells of the ducts, is the most prevalent type of breast cancer. Lobular carcinoma is a kind of breast cancer that starts in the lobes or lobules and is more commonly detected in both breasts than other types of breast cancer. Breast cancer fatality rates in women in the United States are greater than any other malignancy except lung cancer.[2] In India breast cancer has ranked number one cancer among Indian females with age adjusted rate as high as 25 per 100,000 women and mortality 12 per 100,000 women. The incidence of breast cancer in women observed in Chennai is 40.6 per 100,000 women was the highest in the country.[3]

Breast cancer is the most frequent type of cancer that women develop over their lives (except for skin cancer). It can strike at any age, but it becomes considerably more common after the age of 40, and the risk increases as women age. Some women may have a higher risk of breast cancer than others due to a variety of variables. However, every woman should be aware of breast cancer and what can be done to prevent it. In developed and developing countries, breast cancer is shown as a major health problem. Breast cancer is the leading malignant tumor and it consists 30% of cancers among women. Breast cancer is the second leading cause of cancer deaths.[4]

According to the American Cancer Society, about 1.3million women will be diagnosed with breast cancer annually. Worldwide about 465,000 will die from the disease. Breast cancer incidence in women in the United States is 1 in 8(about 13%).In 2012, an estimated 192,370 new cases of invasive breast cancer were expected to be diagnosed in women in the U. S along with 62,280 new cases of noninvasive (in situ) breast cancer. In India, the incidence of breast is increasing, with an estimated 80,000 new cases were diagnosed annually. According to reports, one in every 22 Indian women would develop breast cancer over her lifetime.[5]

Background of The Study:

Breast Cancer is the most common disease among females. It carries poor prognosis when it was detected too late. Patients usually present at late stages due to lack of awareness among breast examination of various aspects of breast cancer.

Indian Scenario: Breast cancer accounts for 14% of cancers in Indian women. It is reported that in every 4 minutes an Indian women is diagnosed with breast cancer. Breast cancer is on the rise, both in rural and urban India. A 2018, report of breast cancer statistics recorded 1,62,468 new cases are registered and 87090 reported deaths.[6]

Need for the Study

Breast cancer is the most common cancer in women, affecting 2.1 million women each year, and it is also the leading cause of cancer-related death in women. Breast cancer claimed the lives of 627,000 women in 2018, accounting for almost 15% of all cancer deaths among women. While incidence of breast cancer is greater among women in more developed countries, they are rising in practically

every location around the world.

Materials and Methods

A Quasi experimental study was conducted in A.C.S Medical College and Hospital with female supportive staff. The technique were selected Simple Random sampling technique based on the inclusive and exclusive criteria. Overall sample is 75 female supportive staffs working in A.C.S Medical College. The participants are divided into three groups and the data is collected by pre and posttest method. After collecting the pretest data the IEC booklet was distributed to the participants. This study conducted within four weeks.

Result

Section A: Description of the Demographic variables of female supportive staff.

The Demographic variables showed that most of the female supportive staff, 53(70.7%) were aged between 41 – 50 years, 72(96%) had educated up to SSLC, 64(85.4%) were Hindus, 72(96%) were sweepers, 38(50.7%) belonged to joint family, 50(66.7%) were residing in urban area, does not have any family member with breast cancer and with gynecological problem.

Section B: Assessment of level of Knowledge, Attitude and Practice regarding BSE among female supportive staff.

TABLE I: FREQUENCY AND PERCENTAGE DISTRIBUTION OF LEVEL OF KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING BSE AMONG FEMALE SUPPORTIVE STAFF.

N = 75

Level of Knowledge	Pretest		Post Test	
	No.	%	No.	%
Inadequate Knowledge (≤50%)	70	93.33	0	0
Moderately adequate Knowledge (51 – 75%)	3	4.0	8	10.67
Adequate Knowledge (>75%)	2	2.67	67	89.33
Level of attitude	No.	%	No.	%
Unfavorable Attitude (≤50%)	36	48.0	4	5.33
Moderately Favorable Attitude (51 – 75%)	37	49.3	42	56.0
Favorable Attitude (>75%)	2	2.67	29	38.67
Level of practice	No.	%	No.	%
Inadequate Practice (≤50%)	75	100.0	36	48.0
Moderately adequate Practice (51 – 75%)	0	0	24	32.0
Adequate Practice (>75%)	0	0	15	20.0

The table 1 showed that in the pretest most of the female supportive staff 70(93.33%) had Inadequate Knowledge, 3(4%) had moderately adequate Knowledge and 2(2.67%) had Adequate Knowledge regarding BSE among female supportive staff. Whereas in the post test after the administration of IEC, 67(89.33%) had Adequate Knowledge and 8(10.67%) had moderately adequate Knowledge regarding BSE among female supportive staff.

In the pretest most of the female supportive staff 37(49.3%) had Moderately Favorable Attitude, 36(48%) had Unfavorable Attitude and 2(2.67%) had Favorable Attitude regarding BSE among female supportive staff. Whereas in the post test after the administration of IEC, 42(56%) had Moderately Favorable Attitude, 29(38.67%) had Favorable Attitude and 4(5.33%) had Unfavorable Attitude regarding BSE among female supportive staff.

In the pretest most of the female supportive staff 75(100%) had Inadequate Practice regarding BSE among female supportive staff. Whereas in the post test after the administration of IEC, 36(48%) had Inadequate Practice, 24(32%) had moderately adequate Practice and 15(20%) had Adequate Practice regarding BSE among female supportive staff.

Section – C: Effectiveness of IEC on level of Knowledge, Attitude and Practice regarding BSE among female supportive staff.

TABLE II: EFFECTIVENESS OF IEC ON LEVEL OF KNOWLEDGE REGARDING BSE AMONG FEMALE SUPPORTIVE STAFF

N = 75

Level of knowledge	**Mean**	**S.D**	**Paired 't' value**
Pre test	4.653	1.899	t = 28.424 p = 0.0001(S)
Post test	12.026	1.200	
Level of attitude	Mean	S.D	Paired 't' value
Pre test	7.333	2.262	t= 6.740 p= 0.0001
Post test	9.533	1.695	
Level of practice	Mean	S.D	Paired 't' value
Pre test	0.013	0.115	t= 42.125 p= 0.0001
Post test	3.8	0.77	

The table 2 showed that the pretest mean 4.653 with the standard deviation of 1.899 and the posttest mean 12.026 with the standard deviation of 1.200. The calculated‘t’ value (7.5029) which indicated that there was an extremely statistically significant difference in the pre and posttest level of Knowledge regarding BSE among female supportive staff. In pretest mean 7.333 with the standard deviation of 2.262 and the posttest mean 9.533 with the standard deviation of 1.695. The calculated ‘t’ value (6.740) which indicated that there was an extremely statistically significant difference in the pre and posttest level of Attitude regarding BSE among female supportive staff. In pretest mean 0.013 with the standard deviation of 0.115 and the posttest mean 3.8 with the standard deviation of 0.77. The calculated ‘t’ value (42.125) which indicated that there was an extremely statistically significant difference in the pre and posttest level of Practice regarding BSE among female supportive staff.

Section D: Relationship between Knowledge, Attitude and Practice regarding BSE among female supportive staff.

TABLE III: CORRELATION BETWEEN PRETEST KNOWLEDGE, ATTITUDE AND PRACTICE SCORES REGARDING BSE AMONG FEMALE SUPPORTIVE STAFF.

N = 75

Variables	Mean	S.D	Karl Pearson's Correlation Value
Knowledge	4.65	1.89	r = 0.076 p = 0.516, N.S
Practice	0.15	0.36	
Knowledge	4.65	1.89	r = 0.181 p = 0.119, N.S
Attitude	7.33	2.26	
Practice	0.15	0.36	r = 0.039 p = 0.739, N.S
Attitude	7.33	2.26	

N.S – Not Significant

The table 3 portrayed that the pretest mean score of Knowledge was 4.65±1.89, mean score of Practice was 0.15±0.36 and the pretest mean score of Attitude was 7.33±2.26. The calculated Karl Pearson's Correlation value of r = 0.076 between Knowledge and Practice, r = 0.181 between Knowledge and Attitude and r = 0.039 between Practice and Attitude showed statistically Non-significant at $p<0.05$ level.

TABLE VI: CORRELATION BETWEEN POSTTEST KNOWLEDGE, ATTITUDE AND PRACTICE SCORES REGARDING BSE AMONG FEMALE SUPPORTIVE STAFF.

N = 75

Variables	Mean	S.D	Karl Pearson's Correlation Value
Knowledge	12.13	1.20	r = 0.305 p = 0.008, S**
Practice	3.53	1.13	
Knowledge	12.13	1.20	r = 0.392 p = 0.001, S**
Attitude	11.13	2.20	
Practice	3.53	1.13	r = 0.259 p = 0.025, S*
Attitude	11.13	2.20	

The table 4 portrayed that the posttest mean score of Knowledge 12.13±1.20, posttest mean score of Practice 3.53±1.13 and the posttest mean score of Attitude 11.13±2.20. The calculated Karl Pearson's Correlation value of r = 0.305 between Knowledge and Practice, r = 0.392 between Knowledge and Attitude and r = 0.259 between Practice and Attitude showed a substantial positive correlation which was found to be statistically significant at $p<0.01$, $p<0.01$ and $p<0.05$ level respectively. This clearly infered that when the Knowledge regarding BSE among female supportive staff increases their Practice and Attitude level also increases.

ASSOCIATION OF MEAN DIFFERED SCORE OF KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING BSE AMONG FEMALE SUPPORTIVE STAFF WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

Demographic variables of female supportive staff significantly associated with the Knowledge and there is no significant association with Attitude and Practice.

Discussion

The present study findings are consistent with, in pretest, the data revealed that overall aspects of 70(93.33%) members had Inadequate Knowledge,

3(4%) had moderately adequate Knowledge and 2(2.67%) had Adequate Knowledge regarding BSE among female supportive staff. In posttest, the data showed after providing of IEC, 67(89.33%) has Adequate Knowledge and 8(10.67%) had moderately adequate Knowledge regarding BSE among female supportive staff. In present study pretest, most of the female supportive staff 37(49.3%) had Moderately Favorable Attitude, 36(48%) had Unfavorable Attitude and 2(2.67) Favorable Attitude regarding BSE. Whereas in the posttest after providing IEC, 42(56%) had Moderately Favorable Attitude, 29(38.67%) had Favorable Attitude and 4(5.33%) had Unfavorable Attitude regarding BSE. In Present study, pretest, most of the female supportive staff 75(100%) had Inadequate Practice regarding BSE among female supportive staff. Where as in the posttest after providing of IEC, 36(48%) had Inadequate Practice, 24(32%) had moderately adequate Practice and 15(20%) had Adequate Practice and this study supported by similar study, conducted by Shrestha S et,al.,(2017) on Knowledge, attitude and practice regarding Breast Self-Examination among female health personnel. Two third of the respondents 232 (72.5%) had average level of knowledge, followed by 70 (21.8%) had poor level of knowledge and only 18 (5.6%) had good level of knowledge. Most of the respondents 304 (95%) had positive attitude whereas only 16 (5%) had negative attitude regarding BSE. Most of the respondents 290 (90.63%) performed BSE whereas only 30 (9.37%) respondents do not perform BSE.[8]

In present study the pretest and post test level of Knowledge, Attitude and Practice statistically significant difference regarding BSE among female supportive staff and this study supported by similar study, conducted by Brindha.S (2017) on Effectiveness of IEC on level of knowledge regarding breast self-examination among women working in Export Company. The comparison of pretest and posttest level of knowledge and attitude regarding breast self-examination among women working in Export Company was done by using paired t' test. The mean score of level of knowledge was increased from 14.6 to 22.03 which showed a marked difference of 8.03 and the standard deviation was decreased from 2.86 to 1.86. The mean score of level of attitude was increased from 15.07 to 25.05 which showed a marked difference of 10.02 respectively the standard deviation was decreased from 3.86 to 1.86 after the administration of Information education communication package. The paired' test value of knowledge was 10.14 highly significant at the level of $p<0.001$. It indicates the effectiveness of information education communication package on level of knowledge regarding breast self-examination among women working in Export Company. The paired t test value of attitude was 11.14 highly significant at the level of $p<0.001$.Thus it indicated the effectiveness of information education communication package on level of attitude regarding breast self-examination among women working in Export Company.[9]

In present study findings, Correlation between pretest Knowledge, Attitude and Practice scores regarding BSE among female supportive staff. A positive correlation was found to be statistically significant at $p<0.05$ level.

Correlation between posttest, Attitude and Practice scores regarding BSE among female supportive staff. A positive correlation was found to be statistically significant at $p<0.05$ level.

This clearly interfered that when the Knowledge regarding BSE among female supportive staff that

increases their Practice and Attitude and this study supported by Similar study conducted by Kalliguddi (2019) to assess the Knowledge, attitude, and practice of breast self-examination amongst female, IT professionals in Silicon Valley of India reveled that Knowledge and Practice, Attitude and Practice are extremely correlated; knowledge and attitude are not correlated.[10]

The demographic variables of female supportive staff significantly associated with the Knowledge and there is no significant association with Attitude and Practice and this study supported by Similar study conducted by kalliguddi (2019) to assess the Knowledge, attitude, and practice of breast self-examination amongst female, IT professionals in Silicon Valley of India reveled that there was a positive correlation between age and Knowledge, age and Practice, however, a negative correlation between age and Attitude.[10]

Summary:

Extensive review of literature and experts guidance helped the researcher to design the methodology and purpose of the study. The study was to assess the Effectiveness of IEC on Knowledge, Attitude and Practice regarding BSE among female supportive staff working in A.C.S Medical College & Hospital. The main study was conducted from 01.02.2021 to 28.02.2021 and 75 samples were selected using the simple random sampling technique. Data collection was done for period of less than 4 weeks. The data collected was analyzed using both descriptive and inferential statistics.

Conclusion

In both developed and developing countries, breast cancer is the most common cancer among women. Because of increased life expectancy, urbanization, and adoption of western lifestyles, the incidence of breast cancer is rising in the developing countries. Breast cancer incidence is generally low in low-resource areas with weak health systems, and the majority of women are detected late, therefore early detection programme based on knowledge of early signs and symptoms and fast referral to diagnosis and treatment are a possibility.[7]

Conflict of Interest: The authors have no conflicts of interest regarding this investigation.

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Ethical Clearance: Ethical clearance is obtained from A.C.S Medical College and Hospital Ethical committee.

References

1. Breast cancer | breast cancer symptoms [Internet]. MedlinePlus. U.S. National Library of Medicine; 2021 [cited 2021Oct26]. Available from: https://medlineplus.gov/breastcancer.html
2. Breast cancer [Internet]. World Health Organization. World Health Organization; [cited 2021Oct26]. Available from: https://www.who.int/news-room/fact-sheets/detail/breast-cancer
3. Malvia S, Bagadi SA, Dubey US, Saxena S. Epidemiology of breast cancer in Indian women. Asia-Pacific Journal of Clinical Oncology. 2017;13(4):289–95.
4. Onishi N, Kataoka M. Breast cancer screening for women at high risk: Review of current guidelines from Leading Specialty Societies. Breast Cancer.

2020;28(6):1195–211.

5. Tarver T. Cancer facts & figures 2012. American Cancer Society (ACS). Journal of Consumer Health On the Internet. 2012;16(3):366–7.
6. Cytecare T. Statistics of breast cancer in India: Cytecare Hospitals [Internet]. Cytecare Hospital in Bangalore. Cytecare Hospital in Bangalore; 2021 [cited 2021Oct26]. Available from: https://cytecare.com/blog/statistics-of-breast-cancer.
7. Alkhashlan T. Knowledge of breast cancer among rural women among Saudi Arabian population. International Journal of Medicine in Developing Countries. 2019;:1.
8. Shrestha Pradhan S, Shrestha R, Parajuli P, Khagi RB, Bhandari B. Knowledge, attitude and practice regarding breast self examination among female health personnel. Journal of Kathmandu Medical College. 2018;6(4):156–60.
9. Effectiveness of information education communication ... [Internet]. [cited 2021Oct25]. Available from: http://repository-tnmgrmu.ac.in/6868/7/300115617brindha.pdf.
10. Gore CA, Kalliguddi S, Sharma S. Knowledge, attitude, and practice of breast self-examination amongst female IT professionals in Silicon Valley of India. Journal of Family Medicine and Primary Care. 2019;8(2):568.

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The Primary Caregiver Experiences in Serving Children Victims of Physical Violence in Banda Aceh City: A Phenomenology Study

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Abstract

This study aims to explore primary caregivers' experiences in serving children victims of physical violence in Banda Aceh City. The experience in question involves perception, adaptation response, physiological delivery, assisting the adaptation process related to self-concept role function, and assisting the child's adaptation process related to aspects of interdependence. This research was qualitative research with a phenomenological approach. The main informant of this research is the primary caregiver as the key informant who provides care and fulfills the needs of children who are victims of physical violence. Characteristics of key informants are living at home with child victims of violence, meeting children's daily needs, and explaining their experiences well. Research data was collected through interviews and relevant literature studies and then analyzed using the Colaizzi technique. The results of this study are 1) The primary caregiver understands that the physical violence felt by the child is a consequence of the wrong actions that have occurred, 2) The primary caregiver feels the negative impact of physical violence on the child, 3) The primary caregiver helps the violent child in the physical aspect. Present physiological needs by seeking material support, 4) The primary caregiver helps children with physical violence in the aspect of self-concept by providing moral support, 5) The primary caregiver helps children who are victims of physical violence in the aspect of role function with the support of strategies that improve the child's role function, and 6) The primary caregiver helps children who are victims of physical violence in the aspect of interdependence by seeking counseling assistance.

***Keywords**: Experience, Primary Caregiver, Childer, Violence*

Introduction

Violence against children is a worldwide phenomenon that creates great challenges for the health care system because it has severe consequences for victims under 18 ages. The category of violence against children can be divided into four parts: physical violence, psychological or mental violence, sexual violence, and social violence. According to WHO (2016), one in four adult children has experienced violence at the age of children and adolescents. On average, 50% of children in the world experience physical, emotional, and sexual violence[(1)].

Meanwhile, in Indonesia, UNICEF (2015) stated that 40% of children aged 13 -15 years reported

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having been physically assaulted at least once a year, 26% reported having received physical punishment from their parents or caregivers at home, and 50% of children reported being bullied at school[2,3]. For the context of Aceh Province, the Office of Women's Empowerment, Child Protection, Population Control and Family Planning (DP3AP2KB) reported that cases of violence against women and children in 2020 decreased from the previous year. Throughout 2020 116 cases consisted of 69 cases against women and 47 against children. This number is the smallest of the last six years, namely in 2015, there were 144 cases, 2016 as many as 176 cases, 2017 as many as 140 cases, 2018 as many as 144 cases, and 2019 as many as 137 cases[4,5].

Although it has decreased, the number of acts of violence against children is still quite worrying. Moreover, physical violence against children is not only short-term but also long-term. Physical violence against children also impacts their mental and psychological health[6]. One study stated that the psychological impact of violence against children is a prolonged trauma that makes children unable to enjoy their childhood well even though they have received the right help. This trauma can also carry over until they reach adulthood[7]. Another study also stated that children who were victims of violence had a 2.15-fold risk of mental disorders. These psychiatric disorders include anxiety, depression, bipolar disorder, sleep disorders, post-traumatic stress disorder, psychotic disorders, and organic mental disorders[8].

In Indonesia, some regulations regulate the handling of violence against women and children in an integrated manner. This program plays a role in providing integrated service centers for women's empowerment and child protection in every area so that if there are acts of violence against children, they can be reported immediately[9]. The programs provided are in the form of complaint services, victim assistance services, legal consultation services, psychological/psychiatric consultation services, home visit services, referral services, and data and information services. One of the efforts to overcome acts of violence against children is to use primary caregivers, namely providing basic needs for children who are victims of physical violence and finding solutions to psychological problems suffered by victims of violence. The service mechanism through the primary caregiver is listed in the Decree of the Minister of Health of the Republic of Indonesia Number 1226/MENKES/SK/XII/2009 concerning guidelines for the management of integrated services for victims of violence against children and women in hospitals[10].

At the implementation level, primary caregiver services do not always run well, and there are various challenges faced, especially in meeting the needs of children who are victims of violence. Theoretically, to provide targeted and quality interventions for primary caregivers, it is necessary first to understand primary caregivers' experiences in assisting the adaptation response of children who are victims of physical violence. Several studies have stated that experience influences providing services and care, including primary caregivers[11–14]. Therefore, this study aims to explore primary caregivers' experiences in serving children victims of physical violence in Banda Aceh City. The experience in question involves perception, adaptation response, physiological fulfillment, assisting the adaptation process related to self-concept role function, and assisting the child's adaptation process related to aspects of interdependence.

Method

This research was qualitative research with a phenomenological approach. In this study, researchers used two categories of informants: key informants and associate informants. Key informants are the primary caregiver that provides care and fulfill the needs of children who are victims of physical violence. Key informants consist of mothers, fathers, grandmothers, or other closest relatives who accompany children who are victims of physical violence. Characteristics of key informants are living at home with child victims of violence, meeting children's daily needs, and explaining their experiences well. Associate informants are parties who participate or are in charge of handling the problem of violence against children in Banda Aceh City. This study's data collection tools include researchers as the main data collection tool, demographic data forms, interview guides, and field notes. This research has obtained a permit from the Nursing Research Ethics Commission (KEPK) of the Faculty of Nursing, Syiah Kuala University, on January 4, 2021. Data analysis was carried out using the Colaizzi technique[15].

Result and Discussion

This study was interviewed eight informants consisting of key informants and associate informants.

Table 1: Informants Caracteristic

No	Age	Gender	Relation	Education	Profession
1	36	Female	Biological children	Elementary School	Housewife
2	53	Female	Foster Children	Bachelor	Civil Servant
3	52	Female	Foster Children	Diploma 3	PNS
4	36	Female	Foster Children	Senior High Scholl	Housewife
5	35	Female	Foster Children	Bachelor	Housewife
6	53	Female	Biological children	Senior High Scholl	Housewife
7	51	Female	Assosiate	Bachelor	Civil Servant
8	44	Male	Assosiate	Bachelor	Private Sector

From the eight informants interviewed, six informants are primary caregivers or key informants, and two informants are associate informants who are directly involved in caring for children who are victims of physical violence. All participants are domiciled in Banda Aceh City. All research informants who have been interviewed are involved in providing direct care to child victims of violence, meeting their needs, and assisting victims in their daily lives.

Based on the interviews, this study has identified seven themes related to the experience of primary caregivers helping children who are victims of physical violence in Banda Aceh City.

Consequences of emotional outbursts and forms of punishment that need to be avoided

In certain circumstances, the primary caregiver considers that the physical violence that occurs is a form of emotional outburst from the parents as a result of the child's behavior, so that the child must receive a reward in the form of a punishment for what has been done. This theme also explains how the primary caregiver's opinion on physical violence that occurs in children is a form of punishment given to children to educate, improve, or control children's behavior so that the primary caregiver understands that one of the acts of violence committed by the closest people, both parents, and closest family, is used as a justification for taking refuge in committing physical violence to children for the best interests of the child.

This study identifies that the primary caregiver's perception of physical violence in children is an emotional outburst that normally occurs in parents towards their children. They consider that violence against children by parents or closest family is natural in educating and shaping children's character (Informant 2 Interview Results). However, the primary caregiver is aware that the violence that occurs can disrupt the child's psychology, such as the child's lack of motivation in academics, inability to control emotions, and inability to interact well socially.

From the data obtained, it is known that the primary caregiver who takes care of children who are victims of physical violence perceives punishment to discipline a child. A child who likes to fight and does not comply with all applicable regulations can provoke parents' emotions to commit acts of violence. This is in line with other studies that state that in Thai society, physical violence perpetrated on children by slapping and hitting is a traditional method passed down from generation to generation in the community. They preserve it as a culture that physical violence is used as a form or way of disciplining a child[16]. However, some primary caregivers think that physical violence is unnecessary and should be avoided. From the results of data analysis, they found that violence against children was something that should not be done. By avoiding acts of violence, children can enjoy childhood well, and they can play, go to school, study, and sleep according to their developmental level.

Feel the negative impact of physical violence on children

Based on the interview results, it is known that the primary caregiver understands that every violent behavior that occurs in children has a fatal impact on the daily life of a child to adulthood. Primary caregivers reveal various forms of children's behavior after receiving acts of violence such as pensive, aloof, easily emotional, violent behavior, doing dangerous actions, and can cause prolonged trauma.

The primary caregiver perceives that the adaptation response experienced by the children in their care is often pensive, daydreaming, depressed, and looking down (Informant 1 Interview Results). Violence also makes children hold grudges and want to take revenge on others. The interview results also show that the primary caregiver understands that violent behavior received by children can change children's behavior, one of which is the child's inability to control emotions. The forms of behavior that emerge are quite diverse, such as children often feeling afraid, sad, depressed, irritable, speaking rudely, and others (Informant 3,4,5 Interview Results). Another thing that also appears in children who are victims of violence is the emergence

of dangerous behaviors such as dangerous things, making noise in the school environment, and can endanger themselves (Informant 2).

From the research that has been done, it can be seen that there is a change in the form of children's behavior patterns due to physical violence on children. These changes are in the form of children's behavior that prefers to be pensive and alone in the room, act rudely towards others, unable to control emotions, annoy their friends at school, and perform dangerous actions. The primary caregiver also revealed that children who have experienced physical violence tend to want to show others that a child treated as weak by someone will eventually psychologically try to show that he or she is strong. If he gets abusive actions from outside, he will turn violent towards others. Another thing that also happens is the trauma experienced by victims of violence in fear that they will be treated with physical violence again in the future. The trauma then changes the pattern of the child's relationship with the surrounding environment so that the child is afraid of being returned to his parents, causing trauma.

That is in line with one study which states that physical violence experienced by children can have the same effect, damaging the development of children in the future. The consequences can negatively impact children's physical and psychological development. One of the psychological impacts on children is that it can cause prolonged trauma so that children cannot enjoy their childhood well even though they have received the right help. This trauma can also carry over until they reach adulthood[7].

Meet daily needs

The interview results show that the primary caregiver always tries her best to help children meet their daily needs even though they find it difficult. The economic hardship makes it very difficult for the primary caregiver to meet the children's daily needs, especially during this pandemic (Informant 1,3,5 Interview Results). The results of this interview indicate that the primary caregiver's efforts to care for and meet the needs of children are also a significant challenge. Unstable economic conditions require them to work outside to meet the needs of their children. This condition certainly harms the fulfillment of daily needs.

Community Support

From the interviews conducted, the primary caregiver revealed that all children's material needs are fully supported by institutions or assistance from foundations and non-governmental organizations. However, sometimes the primary caregiver uses personal expenses to meet the child's needs under certain conditions. Meanwhile, primary caregivers as their accompanying caregivers to meet the needs of their foster children receive assistance from foundations or non-governmental organizations (Informant 2,3,5 Interview Results).

The primary caregiver as a substitute caregiver also revealed that several communities provided material assistance to victims through foundations where children who were victims of violence lived. From the results found during the interview process, it is known that some communities provide self-help in the form of daily necessities such as food, clothing, and medical assistance that supports the rehabilitation process. Some say that institutions or foundations fully support children's material needs or assistance. This is in line with one of the studies, which states that the mechanism that can be done in helping victims of violence against children is by assisting in economic

mechanisms. This is because encouraging social and economic aspects greatly contributes to the recovery process of violence and abuse against children. Helping in this form makes emotional resilience helped indirectly so that the emotional function of victims of violence will quickly recover[17].

Provides Comfort

The primary caregiver in helping children relate to self-concept provides more comfort and attention to children. Comfort is given to embrace children to accept their current situation. Giving love and affection can increase children's motivation not to feel lonely and alone. Giving more attention to children who are victims of physical violence can create openness for children to their caregivers, and it is easier for the primary caregiver to identify and resolve problems with children. The attention and support from the primary caregiver can help children get rid of feelings of sadness and reminisce about an unpleasant past. In addition, primary caregivers also do many ways, such as giving rewards to children who want to do positive activities to divert children's attention to the problems they are experiencing, so that children will be more open to their caregivers and can easily find out and solve problems faced by the child (Informant 2.4 Interview Results).

From the data that has been obtained by researchers from interviews that how caregivers or primary caregivers who are beside children who are victims of violence in providing comfort and a sense of security to children by embracing can create a touch of love, motivate children that they are not alone and assume that they are always there. "Other people who are always near him". They also revealed that the comfort is given to their foster children and gave them more attention and rewards than other children. They also provided support and other support to strengthen the child's aura. The caregiver's attention presents an emotional bond that creates a safe and comfortable relationship for the child so that the child is more open and willing to share stories to distract him from being able to forget the past that has happened. Likewise, with the provision of rewards, for children who are victims of physical violence who have been able to do positive activities or things in getting things done, they feel more appreciated, feel able to be the best again, and feel loved by their caregivers.

Normalization of children's roles

Data from interviews show that primary caregivers are very sensitive to the problems faced by their foster children. They try to do various ways to help the difficulties or suffering experienced by their foster children, and various ways are done to support children against helplessness. They continue to fight with all their might for the future of their foster children. However, sometimes, a caregiver cannot provide support independently to care for, care for and protect their children. The interview results show that in a condition where the primary caregiver cannot provide maximum assistance, they ask for help from child protection agencies to get help in providing counseling to children who are victims of physical violence. Primary caregivers feel happy if children who are victims of physical violence can become helpful people under their care (Interview Results).

Primary caregivers revealed that various forms of support are sought to provide the best for their foster children. To restore the role of children who have received violence, they seek assistance from institutions provided by the government and other private institutions in the city where they live. Caregivers keep trying to make their foster children

become successful children. They never get tired of advising children to accept their situation and follow an everyday life like other children. They give children attention and support to be happy again, and children can return to normal in living their lives. They also include children in every event or activity carried out at the foundation.

Counselling Assistance

In fostering loving relationships with other people, primary caregivers sometimes ask for help from counseling available at one of the institutions or foundations provided by the government or private institutions. Primary caregivers think that sometimes their foster children need help from a counselor to bring back the child's joy. Sometimes children who are physically abused find it difficult to do or maintain good relationships and are less able to carry out social interactions with other people. Therefore, some primary caregivers use the services of a psychologist to recover the trauma felt by their children (Informant 1,6 Interview Results).

From the interview results, it is also known that some children need the help of a psychologist so that children can interact again with other people and build loving relationships with others. According to the primary caregiver, children who have received guidance and counseling from psychologists several times can be happy again as before. The primary caregiver also revealed that the children they take care of have been able to carry out social interactions well. They only try to encourage their foster children always to think positively that not everyone else will do bad things to them. This condition is in line with one of the studies conducted in Romania that individual and group counseling programs for children victims of physical violence have developed the self-image of children who are victims of physical violence and provide education opportunities and can interact socially again with others[18].

Conclusion

The conclusions obtained regarding the primary caregiver experiences in serving children victims of physical violence in Banda Aceh City are:

1. The primary caregiver understands that the physical violence felt by the child is a consequence of the wrong actions they have done.

2. Primary caregivers feel the negative impact of physical violence on children.

3. Primary caregivers help children who are victims of physical violence fulfill their physiological needs by seeking material support.

4. Primary caregivers help children who are victims of physical violence in the aspect of self-concept by providing moral support.

5. Primary caregivers help children who are victims of physical violence in role function by presenting various support strategies that increase the child's role function.

6. Primary caregivers help children who are victims of physical violence in interdependence function by seeking counseling assistance.

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References

1. Muliawati D, Fatmawati E. Identifikasi Tindakan Kekerasan Terhadap Anak Sekolah Dasar Di Masa Pandemi Covid-19. J Kesehat Madani Med [Internet]. 2020;11(02):257–67. Available from: https://jurnalmadanimedika.ac.id/index.php/JMM/article/download/132/89/
2. Novitasari N. Analisis undang-undang nomor 35 tahun 2014 terhadap kekerasan anak pada masa pandemi covid-19. JCE (Journal Child Educ [Internet]. 2021 Oct 19 [cited 2022 Feb 4];5(2):333–51. Available from: https://journalfai.unisla.ac.id/index.php/jce/article/view/599
3. Indopositive. Melawan Kekerasan Pada Anak - IndoPositive - Bahas Psikologi Sehari-Hari [Internet]. https://www.indopositive.org/. 2016 [cited 2022 Feb 4]. Available from: https://www.indopositive.org/2016/07/melawan-kekerasan-pada-anak.html
4. DP3AP2KB. Kasus Kekerasan Terhadap Perempuan dan Anak di Banda Aceh Menurun – Dinas Pemberdayaan Perempuan Perlindungan Anak Pengendalian Penduduk Dan Keluarga Berencana Kota Banda Aceh [Internet]. https://dp3ap2kb.bandaacehkota.go.id/. 2021 [cited 2022 Feb 4]. Available from: https://dp3ap2kb.bandaacehkota.go.id/2021/01/22/kasus-kekerasan-terhadap-perempuan-dan-anak-di-banda-aceh-menurun/
5. AntaraNews. Kasus kekerasan terhadap perempuan dan anak di Provinsi Aceh menurun - ANTARA News [Internet]. https://www.antaranews.com/. [cited 2022 Feb 4]. Available from: https://www.antaranews.com/berita/2634977/kasus-kekerasan-terhadap-perempuan-dan-anak-di-provinsi-aceh-menurun
6. Alodokter. Efek Kekerasan pada Anak Bisa Berlanjut Hingga Dewasa - Alodokter [Internet]. https://www.alodokter.com/. 2018 [cited 2022 Feb 4]. Available from: https://www.alodokter.com/efek-kekerasan-pada-anak-bisa-berlanjut-hingga-dewasa
7. Bunch JM, Iratzoqui A, Watts SJ. Child abuse , self-control , and delinquency : A general strain perspective. 2017;(June).
8. Wang DS, Chung CH, Chang HA, Kao YC, Chu DM, Wang CC, et al. Association between child abuse exposure and the risk of psychiatric disorders: A nationwide cohort study in Taiwan. Child Abus Negl. 2020;101(January):104362.
9. Kemenpppa. KEMENTERIAN PEMBERDAYAAN PEREMPUAN DAN PERLINDUNGAN ANAK [Internet]. 2016 [cited 2022 Feb 4]. Available from: https://www.kemenpppa.go.id/index.php/page/read/30/413/perkuat-koordinasi-untuk-peningkatan-pemberdayaan-perempuan-dan-perlindungan-anak
10. Menteri Kesehatan Republik Indonesia. Pedoman Pelayanan Terpadu Korban Kekerasan Terhadap Perempuan dan Anak di Rumah Sakit. 2009.
11. ’Ibad MR, Ahsan, Lestari R. Studi Fenomenologi Pengalaman Keluarga Sebagai Primary Caregiver dalam Merawat Lansia dengan Demensia di Kabupaten Jombang. Indones J Heal Sci. 2015;6(1):40–51.
12. Mohamad MS, Subhi N, Ibrahim F, Alavi K. Pengalaman keluarga menjaga pesakit mental: satu kajian perbandingan komuniti bandar dan

luar bandar di Perak dan Kedah. Geogr Malaysian J Soc Sp. 2015;11(9):23–31.

13. Julianti E. Pengalaman Caregiver Dalam Merawat Pasien Pasca Stroke di Rumah pada Wilayah Kerja Puskesmas Benda Baru Kota Tangerang Selatan. J Univ Islam Negeri Syarif Hidayatullah Jakarta [Internet]. 2015;xviii + 100. Available from: http://repository.uinjkt.ac.id
14. Ahadi Pradana A. Pengalaman Keluarga dalam Merawat Anggota Keluarga dengan Demensia. J Penelit Kesehat suara Forikes. 2019;10(43):807.
15. Speziale HS, Carpenter DR. Qualitative research in nursing: advancing the humanistic imperative. Philadelphia: Lippincott Williams & Wilkins.; 2003.
16. Rerkswattavorn C, Chanprasertpinyo W. Prevention of child physical and verbal abuse from traditional child discipline methods in rural Thailand. Heliyon. 2019;5(12):e02920.
17. Jones N, Pincock K, Emirie G, Gebeyehu Y, Yadete W. Supporting resilience among young people at risk of child abuse in Ethiopia: The role of social system alignment. Child Abus Negl. 2021;119(P2):105137.
18. Mărgăriţoiu A, Eftimie S. The Impact of a Counselling Program for Abused Children. Procedia - Soc Behav Sci. 2012;46:4746–50.

The Symptoms and Causes of Schizophrenia Perceived by Indonesian People with Schizophrenia: A Phenomenology Study

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Abstract

Many people with schizophrenia are unaware that they have a mental illness. They frequently have trouble detecting their illness symptoms and recognizing the presence of a mental disorder and, more significantly, that they require long-term treatment and care. This has the unintended consequence of causing a poor outcome. This study aims to explore the experiences of symptoms and causes of schizophrenia of Indonesian people with schizophrenia. This study uses a qualitative method with a phenomenological approach. Participants in this study were patients with schizophrenia in Aceh Province, Indonesia. The results of this study identified two themes: confusion over symptoms' nature and severity and out-of-control things that cause schizophrenia. The results of this study found that the majority of people with schizophrenia struggle to understand the severity of their symptoms. Some of their ideas about the reasons for their illness indicate that health professionals should provide more thorough education about their illness.

***Keywords**: schizophrenia, Aceh, Indonesia, causes, symptoms, qualitative study*

Introduction

Schizophrenia is a persistent mental illness characterized by a multifaceted condition [1] and a wide range of symptoms, the specific etiology of which is unknown [2,3]. Most people with schizophrenia are unaware that they have a mental illness. They frequently have trouble detecting their illness symptoms and recognizing the presence of a mental disorder and, more significantly, that they require long-term treatment and care [4].

As a result, individuals with schizophrenia may face uncertainty in their life. [5,6] mentioned that several things cause individuals to be in uncertainty, one of which is lack of insight about the illness symptoms, the causes, and the treatment. Several factors contribute to poor insight in individuals with schizophrenia, including neurocognitive impairment, social cognition, metacognition, and increased self-stigma [7]. According to research, the majority of schizophrenia patients are either partially or entirely aware of their illness [8], and 'stressful life experiences' was the most often cited factor as a cause of schizophrenia, followed by 'disturbance of brain biochemistry,' 'continuous strain,' 'avoidance of everyday life

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difficulties,' and 'failure in life' [9]. In addition, lack of insight in individuals with schizophrenia can have an impact on poor outcomes to the patients [10], such as non-adherence to medication [4,7,11,12] and has been linked to positive schizophrenia symptoms [13]. In those with schizophrenia, poor outcomes can lead to poor quality of life [14].

It is critical to understand how schizophrenia affects people's perceptions. Because more people are aware that they have a mental illness, it could substantially impact prognosis and treatment interventions. Among Indonesian Acehnese, the majority of people with schizophrenia, including their family members, are completely uninformed of the symptoms and causes of their illness. Thus, it would be fascinating to investigate patients' experiences, especially about the symptoms and the causes of the illness, using a qualitative method.

Materials and Method

Design

This study is descriptive phenomenological research that aims to explore the experiences of patients with schizophrenia in Aceh concerning symptoms and causes of the illness.

Participants

This study was conducted in Aceh Besar, Aceh Province, Indonesia. Seven Acehnese with schizophrenia participated in this study. They were outpatients at the Community Health Center (CHC) in Kuta Baro District, Aceh Besar. The sampling criteria included: (1) patients diagnosed with schizophrenia and have had schizophrenia for at least one year, (2) aged 18 years or older, (3)) agreed to be visited at home, and (6) agreed to be interviewed.

Data Collection

The data collection was conducted from March to June 2021. The researcher conducted in-depth interviews for 20-30 minutes face to face with participants at their homes. The interviews were recorded with an audiotaped recorder. All of the interviews were recorded and subsequently verbatim transcribed.

Trustworthiness

In order to address trustworthiness, the researcher did a prolonged engagement, ensured the data was meaningful and credible, established inclusion criteria, required a detailed description of the research setting and participants' context, used an interview guide, and used aaudiotaped for all participants.

Ethical Considerations

The Research Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala, Aceh, Indonesia, provided ethical approval.

Data Analysis

The seven-step phenomenology approach of Colaizzi [15] was used to examine the data acquired in this study: (1) interview recordings were attentively listened to and the participants' comments were verbatim captured to reflect the entire content of the interview; (2) organizing critical statements to provide data that is closely relevant to the topic under investigation; (3) extracted meaningful sentences; (4) the six sub-themes and two themes were created by grouping and categorizing; (5) the study phenomenon's themes were used to organize more thorough overall descriptions; (6) detailed descriptions were summarized; and (7) the participants were given the opportunity to look over the analyzed data.

Results

The participants' perceptions of symptoms and causes of their illness were analyzed into two themes and six sub-themes. Two themes were elucidated as follows:

Theme 1: Confusion over Symptoms' Nature and Severity

Confused and Uncertain about the Symptoms of the Illness

Most of the participants in this study revealed that they were confused and doubtful about the form of the symptoms of the illness they were experiencing.

"I sometimes felt sick, had a fever, and had all kinds of illness symptoms." (P4)

"I can be too sad if I am sad. I can be too happy if I am happy. I can be excessively angry when I'm angry. Sometimes I get mad at everyone." (P7)

"Sometimes the voices came. It's hard for me. (P3)

"When I sit alone, I think about why I felt like a dead person, my body felt like death." (P2)

"In the past, if I had left home, I would have been angry, hung around, and then definitely didn't know the way home. So, I was reminded by my daughter that I should not leave home, but if I stayed at home for a long time, I was bored." (P6)

"I do not know how to describe it. Sometimes the symptoms came, sometimes did not." (P5)

Occasionally Appearing Symptomps of Hallucination

Some survey participants stated that they still hear voices or see unpleasant objects occasionally. As a result, people are disturbed if these hallucinatory symptoms occur regularly.

"When the voices came, the voices told me to keep wandering outside, The voices were sometimes female, sometimes male. Sometimes the voices would tell me to do bad things; for example, they would tell me to take other people's belongings, but I never wanted to do that because I knew I should not." (P1)

"Once when I was working, I saw a group of people attacking each other. They hit my hand with a hammer. I was also disturbed while sleeping, so I couldn't sleep. It made me angry and cursed them." (P4)

"When I was tired, the voices came up, they came a little bit first, then a lot. When my tiredness began to feel heavy, the voices became clearer, then when I was self-conscious, those voices became clearer as if someone was in front of me." (P2)

Theme 2: Out-of Control Things Cause Schizophrenia

The Obnoxious Appearance

One participant revealed that her illness was caused by scary sightings she saw when she was in *dayah* (Islamic traditional boarding school).

"When I was in *dayah*, and we got an exam, I was scared by friends when I learned alone by myself. That was in the middle of the night, around 2 or 1 PM. After that, I often heard the sound of jinn, a kind of ghost sound that looks like. I heard their sounds clearly from the room wall. " (P2)

Another participant revealed that his illness was caused by his scary sightings that triggered his anger.

"I saw some shadows of figures, I wondered who

they were, if they were human, why did they form like that. It made me angry with them." (P4)

Black Magic

Two participants of this study expressed that their illness was caused by black magic.

"I thought, I was under the control of someone's black magic. This hurt me a lot."(P4)

"It looks like I got black magic control." (P8)

Brain Disorder

Three participants stated that a brain disorder caused their illness.

"…because there was a disorder in my brain, so it is considered something inappropriate." (P6)

"I think it was because there was a problem in my brain, that is why I am not as normal as I used to be." (P7)

"There is a disturbance in the brain. Maybe this is the fate of my life, hahaha …" (P5)

Violence

One participant perceived that her illness occurred because her family members often hit her.

"I got this kind of illness because I used to get hit by my brother. Now my husband does the same thing, he keeps hitting me." (P5)

Discussion

This study found that most of the participants expressed confusion with the nature and the severity of the symptoms they experienced. They revealed that their symptoms sometimes disappeared but occasionally appeared. One symptom that was often present and considered very disturbing in daily life was hallucinations. Although they did not use the term 'hallucinations' due to poor insight [7,16], for those intermittent symptoms, participants were still able to describe the form of the symptoms that they were listening to sounds that only they could hear or see certain objects that only they could see. This happens throughout the participants' life while suffering from schizophrenia. For those who live in the community, mainly if untreated schizophrenia patients remained symptomatic and the symptoms presented episodically, the severity of the illness worsened as the duration of the illness increased [17]. Those severity symptoms were found to be associated with poor outcomes like hospitalization and social dysfunction [18], cognition deterioration [19], lower work performance [20], and the lack of clinical state of recovery and relapse [21].

Regarding the causes of their illness, all participants reported various answers of causes of schizophrenia, e.g., obnoxious appearance, black magic, brain disorders, and violence. Participants perceived that they had seen the *obnoxious* appearances, which prompted them to be afraid or get angry. This commonly occurs when the positive symptoms of schizophrenia, such as hallucinations, delusions, and delusions, arise abruptly [22]. Another symptom of schizophrenia, paranoia, also triggers excessive suspicion that someone else has done something terrible to them [23]. Suspicious conduct frequently leads people with schizophrenia to believe that their illness is caused by black magic, as revealed by participants.

Interestingly, the outcomes of this investigation demonstrated that a brain disorder causes schizophrenia. Changes in brain chemistry, such as increased dopamine neuron activity anomalies in the neurotransmitters norepinephrine, serotonin,

acetylcholine, and gamma-aminobutyric acid, are one of the causes of schizophrenia (Townsend, 2015). However, that result cannot be a meaningful conclusion that the participants understand more deeply about the theoretical causes of their disease. In Indonesian society, it is normal for the perception of brain disorders to occur when a person experiences a mental disorder. In addition to the other causes of schizophrenia, one participant considered violence to be one of the causes of schizophrenia. This runs counter to the popular belief that people with mental disorders, particularly schizophrenia, are the same as those who commit violence and engage in violent conduct (Hodgins 2008; Hodgins, 2011). Studies found that the occurrence of violence in schizophrenia patients cannot be separated from traumatic experiences or have experienced violence as a kid or prior to developing schizophrenia, and made victimization and adverse events one of the causes of aggressive behavior [26,27]. Traumatic events, in this case, familial violence, had triggered the emergence of symptoms of mental disorders, mainly when the individual lived in the community and the unpleasant actions were perpetrated by those closest to them. That condition that could be exposed to violence negatively affects their social functioning [28]. Unfortunately, the violence is more often perpetrated by people closest to individuals with mental disorders, such as spouses or other family members. Some even get it from both their partners and other family members. The violence can be physical violence, sexual violence, and psychological violence [29,30]. Of all participants, only one participant stated that the cause of her illness was the violence she had experienced from her brother used to beat her up a lot before she married. She continues to receive the same treatment from her husband when after married.

Conclusion

This study show strong evidence that most people with schizophrenia in Aceh Province, Indonesia, have various perceptions about their illness regarding the symptoms and causes. During their illness, people with schizophrenia struggle to understand the severity of their symptoms. Some of their ideas about the reasons for their illness indicated that health professionals should provide more thorough education about their illness.

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References

1. Tandon R, Gaebel W, Barch DM, et al. De fi nition and description of schizophrenia in the DSM-5. 2013;150:3-10. doi:10.1016/j.schres.2013.05.028
2. Kahn RS, Sommer IE, Murray RM, et al. Schizophrenia. *Nat Rev Dis Prim*. 2015;1(November). doi:10.1038/nrdp.2015.67
3. Silveira C, Marques-Teixeira J, De Bastos-Leite AJ. More than one century of schizophrenia: An evolving perspective. *J Nerv Ment Dis*. 2012;200(12):1054-1057. doi:10.1097/NMD.0b013e318275d249
4. Lysaker PH, Buck KD, Salvatore G, Popolo R, Dimaggio G. Lack of awareness of illness in schizophrenia: Conceptualizations, correlates and treatment approaches. *Expert Rev Neurother*. 2009;9(7):1035-1043. doi:10.1586/ern.09.55
5. Mishel MH. Uncertainty in illness. *J Nurs Scholarsh*. 1988;20(4):225-232.

6. Mishel MH. Uncertainty in Illness Theory. *J Nurs Scholarsh*. 1990;22(4):256-262.

7. Lysaker PH, Vohs J, Hillis JD, et al. Poor insight into schizophrenia: Contributing factors, consequences and emerging treatment approaches. *Expert Rev Neurother*. 2013;13(7):785-793. doi: 10.1586/14737175.2013.811150

8. Gómez-de-regil L. Schizophrenia Research : Cognition Insight and illness perception in Mexican patients with psychosis. *SCOG*. 2015;2(1):33-38. doi:10.1016/j.scog.2015.01.002

9. Gómez-de-Regil L. Causal attribution and illness perception: A cross-sectional study in mexican patients with psychosis. *Sci World J*. 2014;2014. doi:10.1155/2014/969867

10. Rossi A, Arduini L, Prosperini P, Kalyvoka A, Stratta P, Daneluzzo E. Awareness of illness and outcome in schizophrenia. *Eur Arch Psychiatry Clin Neurosci*. 2000;250(2):73-75. doi:10.1007/s004060070037

11. Olfson M, Marcus SC, Wilk J, West JC. Awareness of illness and nonadherence to antipsychotic medications among persons with schizophrenia. *Psychiatr Serv*. 2006;57(2):205-211. doi:10.1176/appi.ps.57.2.205

12. Tessier A, Boyer L, Husky M, Baylé F, Llorca PM, Misdrahi D. Medication adherence in schizophrenia: The role of insight, therapeutic alliance and perceived trauma associated with psychiatric care. *Psychiatry Res*. 2017;257:315-321. doi:10.1016/j.psychres.2017.07.063

13. Baier M, DeShay E, Owens K, et al. The relationship between insight and clinical factors for persons with schizophrenia. *Arch Psychiatr Nurs*. 2000;14(6):259-265. doi:10.1053/apnu.2000.19088

14. Boyer L, Aghababian V, Richieri R, et al. Insight into illness, neurocognition and quality of life in schizophrenia. *Prog Neuro-Psychopharmacology Biol Psychiatry*. 2012;36(2):271-276. doi:10.1016/j.pnpbp.2011.10.008

15. Wirihana L, Welch A, Williamson M, Christensen M, Bakon S, Craft J. Using Colaizzi's method of data analysis to explore the experiences of nurse academics teaching on satellite campuses. *Nurse Res*. 2018;25(4):30-34. doi:10.7748/nr.2018.e1516

16. Lysaker PH, Dimaggio G, Buck KD, et al. Poor insight in schizophrenia : links between different forms of metacognition with awareness of symptoms , treatment need , and consequences of illness. *Compr Psychiatry*. 2011;52(3):253-260. doi:10.1016/j.comppsych.2010.07.007

17. Ran M, Xiang M, Huang M, Shan Y. Natural course of schizophrenia: 2-Year follow-up study in a rural Chinese community. *Br J Psychiatry*. 2001;178(FEB.):154-158. doi:10.1192/bjp.178.2.154

18. Di Michele V, Bolino F. The natural course of schizophrenia and psychopathological predictors of outcome: A community-based cohort study. *Psychopathology*. 2004;37(2):98-104. doi:10.1159/000078090

19. Napal O, Ojeda N, Sánchez P, et al. The course of the schizophrenia and its impact on cognition: A review of literature. *Actas Esp Psiquiatr*. 2012;40(4):198-220.

20. Herbener ES, Harrow M. Course and symptom and functional correlates of passivity symptoms in schizophrenia: An 18-year multi-follow-up longitudinal study. *Psychol Med*. 2021;51(3):503-510. doi:10.1017/S0033291719003428

21. Haro JM, Altamura C, Corral R, et al. Understanding the course of persistent symptoms in schizophrenia: Longitudinal findings from the pattern study. *Psychiatry Res*. 2018;267(August 2017):56-62. doi:10.1016/j.psychres.2018.04.005
22. Feyaerts J, Kusters W, Van Duppen Z, Vanheule S, Myin-Germeys I, Sass L. Uncovering the realities of delusional experience in schizophrenia: a qualitative phenomenological study in Belgium. *The Lancet Psychiatry*. 2021;8(9):784-796. doi:10.1016/S2215-0366(21)00196-6
23. Tschacher W, Kupper Z. Perception of causality in schizophrenia spectrum disorder. *Schizophr Bull*. 2006;32(SUPPL.1). doi:10.1093/schbul/sbl018
24. Hodgins2008 - Violent behaviour among people with schizophrenia- a framework for investigations of causes, and eff.
25. Joyal CC, Côté G, Meloche J, Hodgins S. Severe mental illness and aggressive behavior: On the importance of considering subgroups. *Int J Forensic Ment Health*. 2011;10(2):107-117. doi :10.1080/14999013.2011.577136
26. Hodgins S. Aggressive behavior among persons with schizophrenia and those who are developing schizophrenia: Attempting to understand the limited evidence on causality. *Schizophr Bull*. 2017;43(5):1021-1026. doi:10.1093/schbul/sbx079
27. Hodgins S, Klein S. New Clinically Relevant Findings about Violence by People with Schizophrenia. *Can J Psychiatry*. 2017;62(2):86-93. doi:10.1177/0706743716648300
28. Wang QW, Wang QW, Hou CL, et al. Frequency and correlates of violence against patients with schizophrenia living in rural China. *BMC Psychiatry*. 2020;20(1):1-8. doi:10.1186/s12888-020-02696-9
29. Kageyama M, Solomon P, Kita S, et al. Factors related to physical violence experienced by parents of persons with schizophrenia in Japan. *Psychiatry Res*. 2016;243:439-445. doi:10.1016/j.psychres.2016.06.036
30. Oram S, Trevillion K, Feder G, Howard LM. Prevalence of experiences of domestic violence among psychiatric patients: Systematic review. *Br J Psychiatry*. 2013;202(2):94-99. doi:10.1192/bjp.bp.112.109934

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Factors Related to the Internet Use on High School Students in Banda Aceh

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Abstract

The use of the internet to access information has become a necessity and continues to increase to affect lives positively and negatively. This study aims to determine the risk factors associated with internet use in high school students in Banda Aceh. This study uses a quantitative method with a cross-sectional approach. The population was all high school students in the Kuta Alam District, Banda Aceh, amounting to 3,860 students. The sample amounted to 362 students selected using the Slovin formula with the Proportional Random Sampling technique. This study found that the factors that have a significant relationship with internet use in high school students are school, family, physical health, and mental health factors. While the aspect of family economic status has no relationship with internet use in high school students. The mental health factor is the most strongly associated with internet use among high school students in Banda Aceh.

Keywords: *Risk Factors, Internet Use, High School Student, Banda Aceh*

Introduction

The use of the internet to access knowledge has become a necessity. It continues to increase to positively and negatively affect life. Some internet users spend much time in cyberspace, so it often negatively impacts activities of daily living to psychological problems due to unhealthy internet use. Hootsuite reports that the total number of active internet users globally is 4.437 billion, or 58 % of the total population [1]. In its report, We Are Social & Hootsuite shows that Northern Europe has a percentage of the population of countries that use the internet (95%). Followed by Western Europe (92%), North America (88%), Southern Europe (83%), Eastern Europe (78%), Western Asia (72%), South America (72%), Oceania (70%), Americas (66%), Southeast Asia (66%), East Asia (63%), Caribbean (60 %), South Africa (60%), Asia (54%), Northern Africa (53%), South Asia (48%), West Africa (36%), East Africa (23%) and Central Africa (22%)[2].

In Indonesia, We Are Social & Hootsuite reported that around 64% of the population use the internet with an age range of 16-64 years. Internet users in Indonesia have various types of devices such as smartphones (94%), mobile phones (21%), laptops/desktop computers (66). %), tablets (23%), TV streaming devices (5.7%), game consoles (16%), smart home devices (7.8%), smartwatches/wristbands

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(13%), and virtual reality devices (5.1%)[2]. The average time spent by internet users aged 16-64 years in Indonesia is 7 hours 59 minutes. Internet users in Indonesia use social media an average of 3 hours 26 minutes, watch television 3 hours 04 minutes, listen to music streaming 1 hour 30 minutes, and play console games 1 hour 23 minutes[2]. Kominfo found that 98% of children and adolescents know about the internet, and 79.5% are internet users. Likewise, UNICEF shows that 98.3% of Indonesian children and adolescents have internet access to smartphones. Moreover, 90.7% of children and adolescents access social media, play online games, and watch movies.

The Indonesian Internet Service Providers Association (APJII) released data that Aceh Province is one of the regions in Sumatra that contributes to the number of internet users with a percentage of 1.5%. The population using the internet in Aceh is 50% of the total population. When viewed from the side of age, those who use the internet the most in Aceh are 15-19 years old with a percentage of 91% using a smartphone (93.9%), and the average time spent more than 8 hours and over is 19.6 %). The reasons for using the internet are playing social media (19.1%), communicating via messages (16.4%), and filling spare time (15.2%). The most frequently visited types of content are watching movies/videos (45.3%), playing games (17.1%), and listening to music (13.3%)[3].

Theoretically, excessive internet use of more than four hours per day can increase the risk of internet addiction[4,5]. Sayuti et al., in their study, stated that the prevalence of internet addiction varied, namely (4%) and (19.1%) in adolescents, as well as (0.7%) and (18.3%) in young adults. In Asia, about (40%) adolescents suffer from internet addiction, and the highest prevalence in adolescents is in the Philippines (51%), followed by Japan (48%) and Hong Kong (32%)[6]. Excessive internet use can pose risks such as poor parent-child relationships, high parental conflict, and lack of attention or supervision from those closest to them[4,5]. Likewise, adolescents at school age can be at risk of poor social interaction between teachers and peers and decrease learning achievement scores in school [4,7–9].

Some studies confirm that using the internet excessively will cause mental health problems and psychiatric conditions that can interfere with lives, such as attention deficit hyperactivity disorder, depression, and anxiety [7,10]. The American Psychiatric Association (DSM-5), World Health Organization (WHO), (International Classification of Diseases, Eleventh Revision [ICD-11]) and the American Society of Addiction Medicine have suggested that Internet addiction falls into the category of addiction. The World Health Organization (WHO) also include gaming disorders in its ICD-11 [11]. Several studies also mention that the negative risks from excessive internet use can be economically detrimental. Then raise individual problems such as physical health, sleep disorders, diet problems, dry eyes, back/neck pain, headaches, and Carpal Tunnel syndrome [5,7,12–14].

In general, internet addiction is individual behaviour carried out continuously on online activity. It can cause psychological dependence on the internet, called a pathological disorder [15]. Based on the explanation above, this study aims to determine the risk factors associated with internet use among high school students in schools in the Banda Aceh City area. One of the urgency of this research is that internet use has affected the lives of teenagers [16]. It means that high school students who are teenagers are

basically at the highest risk for excessive internet use [17]. However, on the other hand, the internet plays an important role in the education and socialization of teenagers [18].

Method

This study was conducted at the high school level (SMA) Kuta Alam District, Banda Aceh City Region. The data collection began on August 7 to September 13, 2021. This research was a quantitative approach with an analytical survey design with a cross-sectional approach to determine variables' prevalence, distribution, and relationship. The variables of this study consisted of risk factors (School, Family, Mental Health, Physical Health, and Family Economic Status) as Independent Variables and Internet Use Behavior in High School Students as Dependent Variables. The population in this study were all high school students who attended Kuta Alam District, Banda Aceh City area, totalling 3,860 students. The sampling technique used Proportional Random Sampling to determine the number of samples in each school and determine the proportion according to the number of students in each school. The sample size in this study was 362 high school students who were selected using the Slovin formula.

The data collection tool used is in the form of a questionnaire divided into six parts: demographic data from the respondents, the Generalized Problematic Internet Use Scale 2 (GPIUS-2) Questionnaire. Problematic Internet Use Scale 2 (GPIUS-2)[19], Hemingway Measure of Adolescent Connectedness (HMAC) School Connectedness and Family Connectedness Questionnaire[20]. The researcher only took the school connectedness domain in the School Connectedness measuring instrument, including relationships with the school, teachers, and peers. Then, the Family Connectedness measurement instrument only took the family connectedness domain because it relates to the research variables in this study. Then the Mental Health Inventory Questionnaire (MHI) was developed by Veit and Ware in 1983, and the Physical Health Questionnaire (PHQ) was developed by Spence et al. (1987)[21]. Finally, the Economic Status Questionnaire includes the parents' latest education level, occupations, and the number of parental expenses in meeting internet usage needs.

The data collected were analyzed using the SPSS application help through a univariate, bivariate, and multivariate. The univariate test used descriptive statistics to determine the mean, median, standard deviation, 95% confidence interval, and frequency distribution. Then bivariate analysis using Chi-square with 95% confidence degree (α=0.05) was conducted to see the relationship between risk factors and internet use in Banda Aceh high school students. Finally, a multivariate test used multinomial logistic regression analysis.

Result

This study was conducted at the high school level (SMA) Kuta Alam District, Banda Aceh City Region. The data collection began on August 7 to September 13, 2021, from 362 respondents. Characteristics of respondents consist of age, class, and the type of tool used to connect to the internet.

Table 1 : Respondent Characteristic (n=362)

Characteristics	Frequency (f)	Percentage (%)
Age		
14 years old	12	3,3
15 years old	157	43,4
16 years old	121	33,4
17 years old	69	19,1
18 years old	2	0,6
19 years old	1	0,3
Class		
X	183	50,6
XI	103	28,5
XII	76	21,0
The type of tool used to connect to the internet		
Smartphone	349	96,4
Laptop	53	14,6
Tablet	22	6,1

Table 1 shows that the age group that participated the most in this study was the 15-year-old group, with the highest number of 157 students (43.4%) and 183 students in class X (50.6%). The type of tool most often used by teenage students to connect to the internet is a smartphone, with 349 (96.4%) students using it.

The results of the Chi-square test regarding the relationship between risk factors with internet use in high school students in Banda Aceh are as follows:

Table 2 : The relationship between risk factors with internet use (n = 362)

Risk Factors		Internet Use			Total	p-value
		Light	Medium	Heavy		
School	Low	29 (22,1%)	59 (27,4%)	12 (75,0%)	100 (27,6%)	0,000
	High	102 (77,9%)	156 (72,6%)	4 (25,0%)	262 (72,4%)	

***Cont...* Table 2 : The relationship between risk factors with internet use (n = 362)**

Family	Low	25 (19,1%)	49 (22,8%)	11 (68,8%)	85 (23,5%)	0,000
	High	106 (80,9%)	166 (77,2%)	5 (31,3%)	277 (76,5%)	
Mental Health	Less	35 (26,7%)	64 (29,8%)	12 (75,0%)	111 (30,7%)	0,000
	Good	96 (73,3%)	151 (70,2%)	4 (25,0%)	251 (69,3%)	
Physical Health	Bad	23 (17,6%)	56 (26,0%)	9 (56,3%)	88 (24,3%)	0,002
	Good	108 (82,4%)	159 (74,0%)	7 (43,8%)	274 (75,7%)	
Family Economic Status	Low	55 (42,0%)	97 (45,1%)	3 (18,8%)	155 (42,8%)	0,117
	High	76 (58,0%)	118 (54,9%)	13 (81,3%)	207 (57,2%)	

Table 2 shows a relationship between school factors and internet use in high school students in Banda Aceh City with a p-value of 0.000 <0.05. In the family aspect, we obtained a p-value of 0.000 <0.05, so it can be concluded that there is a significant relationship between family factors with internet use in high school students in Banda Aceh City. The test results on mental health variables obtained a p-value: 0.000 <0.05, which means a significant relationship between mental health factors and internet use in high school students. Table 2 also shows that the physical health variable with a p-value of 0.002 < 0.05 also has a significant relationship with internet use among high school students in Banda Aceh City. The measurement results on the economic aspect of the family showed a p-value of 0.117>0.05, which means that there is no significant relationship between the factors of family economic status and internet use in high school students in Banda Aceh City.

Furthermore, a multinomial logistic regression test was conducted to see the overall risk factors that had the strongest relationship with internet use among high school students in Banda Aceh. The results of the analysis can be seen in the following table:

Table 3 : Risk Factors on internet use among high school students in Banda Aceh (n = 362)

Internet Use		B	Std. Error	Wald	Sig	Exp(B)	95%Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Low	School	1,508	0,687	4,817	0,028	4,517	1,175	17,365
	Family	1,633	0,670	5,942	0,015	5,117	1,377	19,014
	Mental Health	1,742	0,659	6,987	0,008	5,706	1,569	20,758
	Physical Health	1,348	0,611	4,866	0,027	3,849	1,162	12,749
	Family Economic Status	-,977	0,709	1,896	0,169	0,377	0,094	1,512
Medium	School	1,281	0,666	3,700	0,054	3,602	0,976	13,294
	Family	1,513	0,645	5,507	0,019	4,542	1,283	16,079
	Mental Health	1,712	0,640	7,147	0,008	5,541	1,579	19,443
	Physical Health	0,866	0,583	2,204	0,138	2,376	0,758	7,452
	Family Economic Status	-1,104	0,696	2,518	0,113	0,332	0,085	1,296

Table 3 shows that of all the risk factors tested in this study, it was found that mental health was the most strongly associated risk factor for internet use in high school students in Banda Aceh with a Sig value of 0.008.

Discussion

The study results found that the school factor had a significant relationship with internet use and had a p-value of 0.000 <0.05. The results of this study are in line with previous research conducted by Fernandes et al.[22] with a p-value is 0.000, which indicates that there is a strong and meaningful relationship between academic stress and internet addiction. The study of Sayuti et al. [6] also confirms this result, that internet addiction causes many problems, ranging from school problems such as being lazy to study, sleeping in class, paying less attention to the delivery of learning materials from the teacher, declining achievement, not going to class, arguing with teachers and dropping out of school. Related to this, Hawi et al.[23], in their study, found that 92.3% of participants with Internet Game Disorder (IGD) reported that they were preoccupied with games on the internet. Of these participants, 75% reported that they woke up at night to continue playing, leading to a lack of concentration at work. Class resulting in decreased academic achievement.

The relationship between internet use and school factors has a considerable influence, especially with the development of electronic media and the widespread use of smartphones and mobile internet, making some teenagers addicted to internet use so that they fail to achieve academic achievement [24]. In addition, they can change their social interactions with teachers and peers, such as arguing with teachers, preferring to be alone, and no longer interested in making friends because of internet use activities [25].

The results of this study indicate that family factors have a significant relationship with internet use (p-value 0.000 < 0.05). These results are consistent with research conducted by Xin et al., which stated that negative relationships with parents, inconsistent maternal care, neglect, and lack of parental monitoring of internet use[26]. Likewise, other studies state that there is a significant relationship between the variables of family attachment to internet addiction[22].

The family is the main source for a child's physical and psychological development. Children need families to play an important role in educating and providing learning about many things at this time. Advanced technology, such as the internet, can have positive and negative effects. The positive effect is facilitating the search for information on learning tasks and increasing knowledge insight. The negative effects are becoming dependent, exposed to pornography, lazy, losing time, and making wrong associations. It can happen if there is a lack of parental supervision and affection between parents and children [27].

This study found that mental health had a significant relationship with internet users in high school students on the mental health variable. The results showed a p-value of 0.000 < 0.05. This result is in line with previous research, which stated that internet use was significantly correlated with mental health with a value ($r = 0.39$, $p < 0.001$). The mental health subscale correlates with withdrawal symptoms, impaired adaptive functioning, virtual life orientation, and tolerance[28]. It is also in line with other studies that reported that students who experienced anxiety and depression had the highest prevalence of internet addiction (10.3%) and (8.2%)[29]. Related to this, excessive and uncontrolled internet use, in particular, can harm mental health and psychiatric conditions, such as attention-deficit/hyperactivity disorder, depression, and anxiety disorders, so that it can interfere with life. Teenagers who use the internet too much are more likely to complain of depression and hostility. In interpersonal relationship problems, adolescents are more likely to complain about somatization, show aggressive behaviour, and refuse to communicate[10].

The next variable examined in this study is the physical health factor with a p-value of 0.002 <0.05, which means that physical health is also significantly related to internet use in high school students. Likewise, another study reported that internet addiction resulted in poor sleep quality and insomnia. Lack of sleep due to internet use that occurs continuously over a long time can cause damage to bones, tissues, and cardiovascular tissue[30]. Another study explains that excessive internet use can affect health and strengthen being overweight. Research by Nursalam et al.[31] found that 125 (69.4%) respondents used SNS (Social Networking Services) more than 5 hours per day, and as many as 96 respondents (53.3%) experienced insomnia. The results of this study indicate that the level of social media use is related to insomnia ($p = 0.004$). This study and several other studies confirm that the rapidly developing internet technology also causes harmful side effects if used excessively[32]. The side effects caused by using the internet for too long on physical health can be swollen eyes, thinness, dirty skin, and sleep problems. [6] In addition, it can cause headaches and pain in the muscles of the face, neck, and spine [33].

The last risk factor studied in this study is the family economic factor. This study found that family economic status did not significantly correlate with

internet use among high school students in Banda Aceh (p-value 0.117>0.005). The results of this study are in line with Shek & Yu's research which revealed that family economic status did not have a significant effect on participants' addictive behaviour related to internet use[35,36].

Conclusion

This study concludes that risk factors consisting of school, family, mental health, and physical health factors are significantly associated with internet use among high school students in Banda Aceh. Meanwhile, family economic status has no relationship with internet use among high school students in Banda Aceh. Of the four factors related to internet use among high school students in Banda Aceh, mental health is the strongest factor associated with student internet use.

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References

1. Hootsuite. Digital Report April 2019. 2019.
2. We Are Social & Hootsuite. Indonesia Digital report 2020. *Glob Digit Insights*. 2020:247.
3. APJII. Penetrasi & Profil Perilaku Pengguna Internet Indonesia Tahun 2018. *Apjii*. 2019:51.
4. Li D, Li X, Zhao L, Zhou Y, Sun W, Wang Y. Linking multiple risk exposure profiles with adolescent Internet addiction: Insights from the person-centered approach. *Comput Human Behav*. 2017;75:236-244. doi:10.1016/j.chb.2017.04.063
5. Masya H, Candra DA. Faktor-Faktor yang Mempengaruhi Perilaku Gangguan Kecanduan Game Online pada Peserta Didik Kelas X Di Madrasah Aliyah Al Furqon Prabumulih Tahun Pelajaran 2015/2016. *KONSELI J Bimbing dan Konseling*. 2016;3(2):97-112.
6. Sayuti E, Thahar B, Soemantri eky soeria, Rasyid hermawan nagar. Journal of International Dental and Medical Research ISSN 1309-100X http://www.jidmr.com Copy Denture Norlela Yacob and et al. *J Int Dent Med Res*. 2018;11(3):1636-1639.
7. Kaya N, Asti T, Kaya I, et al. Association between attitudes towards Internet usage and health practices in high-school students in 2 schools in Turkey: a cross-sectional study. *East Mediterr Heal J*. 2016;22(11):824-831. doi:10.26719/2016.22.11.824
8. Khoury JM, Neves M de CL das, Roque MAV, de Freitas AAC, da Costa MR, Garcia FD. Smartphone and facebook addictions share common risk and prognostic factors in a sample of undergraduate students. *Trends Psychiatry Psychother*. 2019;41(4):358-368. doi:10.1590/2237-6089-2018-0069
9. Černja I, Vejmelka L, Rajter M. Internet addiction test: Croatian preliminary study. *BMC Psychiatry*. 2019;19(1):1-11. doi:10.1186/s12888-019-2366-2
10. Choi M, Park S, Cha S. Relationships of Mental

Health and Internet Use in Korean Adolescents. *Arch Psychiatr Nurs*. 2017;31(6):566-571. doi:10.1016/j.apnu.2017.07.007

11. Derevensky JL, Hayman V, Lynette Gilbeau. Behavioral Addictions: Excessive Gambling, Gaming, Internet, and Smartphone Use Among Children and Adolescents. *Pediatr Clin North Am*. 2019;66(6):1163-1182. doi:10.1016/j.pcl.2019.08.008
12. Jiang Q, Huang X, Tao R. Examining Factors Influencing Internet Addiction and Adolescent Risk Behaviors Among Excessive Internet Users. *Health Commun*. 2018;33(12):1434-1444. doi:10.1080/10410236.2017.1358241
13. Broadbent J, Dakki MA. How Much Is Too Much to Pay for Internet Access? A Behavioral Economic Analysis of Internet Use. *Cyberpsychology, Behav Soc Netw*. 2015;18(8):457-461. doi:10.1089/cyber.2014.0367
14. Wu XS, Zhang ZH, Zhao F, et al. Prevalence of Internet addiction and its association with social support and other related factors among adolescents in China. *J Adolesc*. 2016;52:103-111. doi:10.1016/j.adolescence.2016.07.012
15. Sari AP, Ilyas A, Ifdil I. Tingkat Kecanduan Internet pada Remaja Awal. *JPPI (Jurnal Penelit Pendidik Indones*. 2017;3(2):45. doi:10.29210/02018190
16. Kwon M, Kim SA, So WY. Factors associated with adolescents' internet use duration by suicidal ideation. *Int J Environ Res Public Health*. 2020;17(2). doi:10.3390/ijerph17020433
17. Mathew P, Krishnan R. Impact of problematic internet use on the self-esteem of adolescents in the selected school, Kerala, India. *Arch Psychiatr Nurs*. 2020;34(3):122-128. doi:10.1016/j.apnu.2020.02.008
18. Gómez P, Rial A, Braña T, Golpe S, Varela J. Screening of Problematic Internet Use among Spanish Adolescents: Prevalence and Related Variables. *Cyberpsychology, Behav Soc Netw*. 2017;20(4):259-267. doi:10.1089/cyber.2016.0262
19. Caplan SE. Theory and measurement of generalized problematic Internet use: A two-step approach. *Comput Human Behav*. 2010;26(5):1089-1097. doi:10.1016/j.chb.2010.03.012
20. Karcher MJ, Ed D, Ph D. The Hemingway : ©Measure of Adolescent Connectedness. *Education*. 2000;(May 2000):1-88.
21. Schat ACH, Kelloway EK, Desmarais S. The Physical Health Questionnaire (PHQ): Construct validation of a self-report scale of somatic symptoms. *J Occup Health Psychol*. 2005;10(4):363-381. doi:10.1037/1076-8998.10.4.363
22. Fernandes dkk F, yang Berhubungan dengan F, Fernandes F, Yulian Sari A. Faktor-faktor yang Berhubungan dengan Kecanduan Internet pada Siswa SMAN "X" Padang. *NERS J Keperawatan*. 2021;17(1):1-13.
23. Hawi NS, Samaha M, Griffiths MD. Internet gaming disorder in Lebanon: Relationships with age, sleep habits, and academic achievement. *J Behav Addict*. 2018;7(1):70-78. doi:10.1556/2006.7.2018.16
24. Husarova D, Blinka L, Madarasova Geckova A, Sirucek J, Van Dijk JP, Reijneveld SA. Do sleeping habits mediate the association between time spent on digital devices and school problems in adolescence? *Eur J Public Health*.

2018;28(3):463-468. doi:10.1093/eurpub/ckx198

25. Nurjannah D. Penggunaan Gadget dengan Perkembangan Interaksi SOsial Anak Usia Pra-Sekolah Berbasis Teori Adaptasi Sister Calista Roy. *Stikes Insa Cendikia Jombang*. 2017.
26. Xin M, Xing J, Pengfei W, Houru L, Mengcheng W, Hong Z. Online activities, prevalence of Internet addiction and risk factors related to family and school among adolescents in China. *Addict Behav Reports*. 2018;7(June 2017):14-18. doi:10.1016/j.abrep.2017.10.003
27. Kadir A, Hidayat A. Peran Orangtua Dalam Pemanfaatan Media Sosial Terhadap Pendidikan Anak. 2016:1-5.
28. Kim SY, Kim MS, Park B, Kim JH, Choi HG. The associations between internet use time and school performance among Korean adolescents differ according to the purpose of internet use. *PLoS One*. 2017;12(4):1-14. doi:10.1371/journal.pone.0174878
29. Malak MZ, Khalifeh AH, Shuhaiber AH. Prevalence of Internet Addiction and associated risk factors in Jordanian school students. *Comput Human Behav*. 2017;70:556-563. doi:10.1016/j.chb.2017.01.011
30. Do KY, Lee KS. Relationship between problematic internet use, sleep problems, and oral health in Korean adolescents: A national survey. *Int J Environ Res Public Health*. 2018;15(9):1-14. doi:10.3390/ijerph15091870
31. Nursalam N, Octavia M, Tristiana RD, Efendi F. Association between insomnia and social network site use in Indonesian adolescents. *Nurs Forum*. 2019;54(2):149-156. doi:10.1111/nuf.12308
32. Kim HJ, Min JY, Min KB, Lee TJ, Yoo S. Relationship among family environment, self-control, friendship quality, and adolescents' smartphone addiction in South Korea: Findings from nationwide data. *PLoS One*. 2018;13(2):1-14. doi:10.1371/journal.pone.0190896
33. Tikhonov MN, Bogoslovskii MM. Internet addiction factors. *Autom Doc Math Linguist*. 2015;49(3):96-102. doi:10.3103/s0005105515030073
34. Shek DTL, Yu L. Internet addiction phenomenon in early adolescents in Hong Kong. *Sci World J*. 2012;2012. doi:10.1100/2012/104304
35. Xu J, Shen L xiao, Yan C huai, et al. Parent-adolescent interaction and risk of adolescent internet addiction: A population-based study in Shanghai. *BMC Psychiatry*. 2014;14(1). doi:10.1186/1471-244X-14-112
36. Prakash S, Yadav JS, Singh TB. An online cross-sectional study to assess the prevalence of Internet Addiction among people staying at their home during Lockdown due to COVID-19. *Int J Indian Psychol*. 2020;8(3):424-432. doi:10.25215/0803.052

A Study to Evaluate the Structured Teaching Programme on Knowledge regarding Neurological Examination among Nursing Students in Selected College of Nursing, Dehradun, Uttarakhand

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Abstract

The objective of the study is to assess the knowledge of Neurological Examination furthermore to find out the mean difference between pre and post test score as well as association between the pre test level of knowledge and with their demographic variables. A pre-experimental study was conducted on Neurological Examination with 54 nursing students of Basic Bsc 3rd year in State college of nursing, 107 Chander nagar Dehradun.. The Pre test data was collected by using self-administered questionnaire and mean was of **(12.2.).** The obtained data was analyzed using descriptive statistics. (Teaching was given regarding anatomy and physiology of nervous system as well as OSPE conducted for neurological examination. After 7 days of intervention post test was conducted for the same group of students and mean score was **(16.8)**.SD of the pre and post test score was (2.9&1.91**)** and t test was done to find out the difference between pre and post test score. Calculated' T 'value is **(5.9)** and tabulated value is **2.66**. So findings are suggesting that calculated value is higher than tabulated value. It shows that the effectiveness of structured teaching on Neurological Assessment. Further there was association of knowledge of neurological examination with their demographic variables and it was statistically significant at p< o.o5 level. The study findings conclude that the student nurses had good knowledge after structured teaching programme regarding neurological examination.

Keywords: *Neurological Examination, mental disorder, diagnosis, mean score.*

Introduction

"The brain is the organ of destiny. It holds within the it's humming mechanism Secrets that will determine The future of the human race.

Wilder Penfield.

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The nervous system is enormously keen system which regulates and integrates the body actions. Conducting neurological assessment depends on the professional's knowledge as regards structure of nervous system and its function and very entirely the skills required to identify and interpret abnormalities.[1]

Neurological examination is not as similar as physical examination. It is a vital evaluation of the performance of the nervous system there by assessing the functioning of definite parts of the body which

are operated through nervous system. Neurological examination provides us the critical report about function of Brain.[2]

Neurological examination consists of both anatomical and functional assessment. In this we basically assess the physical function, mental function, motor function and sensory functions. Neurological examination plays a very vital role as the neurological disorders are very critical and through this examination we can critically evaluate the client and can take prompt actions.1 With increased occurrence of neurological crisis, cerebro-vascular accidents, road traffic accidents and other neurological issues, neurological examination has become more important for healthcare personnel's caring the patients.[2]

Assessing client emotion a neurological disorder is a challenge to the student nurses. Neurological disorders are mostly critical and major concern for each day living activities & existence.

Advanced nursing assessment and clinical cognitive skills are necessary for managing Neurological patient and in providing Nursing Care. Working nurses must know the proper parameters to be evaluated, correct practice for assessing the patient and appropriate way of recording. Nurses should be able to understand the recorded data, and should know to identify the noticeable variations in the neurological examination.[3]

World Health Organization reported, up to 1 billion people worldwide are affected by neurological disorders range from migraines to epilepsy and dementia, and this figure will increase with population's age.[4]

But literature reveals that they are not competent enough in neurological examination, either they have insufficient knowledge or lack of opportunity to practice their skills because of various reasons. The above mentioned factors like lack of knowledge, time, skills, confidence and competency of nursing students regarding neurological examination motivated the investigator to develop a video assisted teaching programme with the purpose of helping the student nurses acquire and update the knowledge and skills and be competent in neurological examination.

Methodology

The study design used was pre experimental study design. Samples were selected through convenience sampling. 54 students were contributed in this study. The study was conducted among Basic Bsc 3rd year nursing students of selected college of nursing in Dehradun city.

From a population of about 500 student nurses studying in the same college were selected and the study was conducted, 54 Basic Bsc students were participated in this study. The Participants were contacted directly and were asked for their willingness to contribute in the study. Survey was sent through Google form to almost 54 students. Data collection was done in the month of august 2021. 20 minutes were given to solve the questions, as it has time limit. Data was analyzed using the SPSS 20.0 version. Ethical approval was acquired from the Institute Research.

Result

Section I: Demographic Variables Most of Age of the participants were (1,85%) of 19 year students. Half of age group were (20.3%) of 20 years. Maximum (77.7%) of students were in their 21-30 years. 7% of male students and 93% students are females. 96.2% students are Hindu religion . Muslims

were 1.85% & Christians were 1.85 %. Type of stay 51.5% students are coming from home and 48.5% students are staying in hostel. 41.5% of students are having previous experience regarding neurological examination and 58.5%were not having previous experience of neurological examination.68.4% students had a source of information regarding neurological examination from health professionals. 23.5% from mass media,16.6 from friends and 9.1% having Nill source of knowledge.

Section II: Knowledge about Neurological Assessment

18% of the participants knew what Neurological Assessment is. Only (15%) responded appropriately to the question, relating to the components of the Neurological Assessment. Only 5% of the members knew that vital signs are not a part of the Neurological Assessment. About (16 %) of the nurses knew how to conduct the Neurological Assessment. Results indicated effectiveness of structured teaching programme on neurological examination among student nurses is good.

Discussion Present work was done to evaluate the effectiveness of students about the Neurological Assessment and identify demographic factors associated with their knowledge. Po st test mean score level **(16.8)** is higher than the pre test mean score **(12.2).**It shows that the effectiveness of structured teaching programme of neurological examination. It is recommended that studies should be conducted on other Medical personnel too.

Conclusion The current study displays that the effectiveness structured teaching programme on Neurological examination among student Nurses studying in selected college of nursing of Dehradun city is good. We as the part of the healthcare team should take some improvement steps and make our student nurses more efficient and skilful by doing other teaching strategies.

It is recommended that studies should be conducted on other Medical personnel too.

Table:.1 ASSOCIATION BETWEEN PRE-TEST LEVEL OF KNOWLEDGE OF NURSING STUDENTS REGARDING NEUROLOGICAL ASSESSMENT AND THEIR SELECTED SOCIO DEMOGRAPHIC VARIABLES .

S.NO	Demographic characteristics	Frequency	Percentage	Chi square
1	Age 19 years 20 years 21-30 years	 1 11 42	 1.85% 20.37% 77.7%	4.42 NA
2	Gender Male Female	 4 50	 7.4% 92.59%	2.5 NA

Cont... **Table:.1 ASSOCIATION BETWEEN PRE-TEST LEVEL OF KNOWLEDGE OF NURSING STUDENTS REGARDING NEUROLOGICAL ASSESSMENT AND THEIR SELECTED SOCIO DEMOGRAPHIC VARIABLES .**

3	Religion Hindu Muslim Christian Sikh	 52 1 1 0	 96.2% 1.85 1.85 0	48.49 S
4	Type of Stay Home Hostel	 28 26	 51.85% 48.14%	0.243 NA
5.	Previous knowledge regarding Neurological Assessment Yes No	 22 32	 41.5% 58.5%	3.032 NA
6.	Source of knowledge regarding practice Nil Mass media Friends Health Professionals	 10 13 1 30	 18.5% 24.07% 1.85% 55.5%	31.15 S

**Significant at P≤0.05 level, S: Significant, NS; Non significant

Table-7 describes the association between pre-test level of knowledge of nursing students regarding neurological assessment and their selected socio demographic variables in experimental group. The obtained chi square values for Religion and source of knowledge regarding practice were higher values (48.49 and 31.15 respectively) when compared to the table value 6.6 at P≤0.05 level of significance. So there is a significant association between pre-test level of knowledge of nursing students with their socio demographic variables like a type of Religion and source of knowledge regarding practice in experimental group. Hence research hypothesis H2 is accepted.

Table No.2 Criterion measure of Knowledge of pre test Score

Levels of Knowledge	Knowledge Score	Range of Score	Frequency	Percentage
Good	Above 75%	21– 30	04	7.4
Average	50 – 75 %	11- 20	45	83.3
Poor	Below 50%	01 - 10	5	9.25

Table No.3 KNOWLEDGE REGARDING NEUROLOGICAL ASSESSMENT AMONG NURSING STUDENTS

Table-: Effectiveness Structured teaching on knowledge regarding neurological assessment among nursing students

Group	Aspect	Level of knowledge		Paired t'test
		Mean	SD	
Experimental Group	Pre test	12.2	2.90	23.38
	Post test	16.8	1.91	18.60

**Significant at p≤0.01 level, df 29, t-value 2.6

Table 3 depicts the effectiveness of structured teaching on knowledge regarding neurological assessment among nursing students. It is inferred that, in experimental group the overall paired't' test value was 18.60, it is significant in table value 2.6 at p≤0.01 level. So it is proved that the structured teaching was effective in improving the knowledge of nursing students regarding neurological assessment. The obtained't' value 18.61 in experimental group was higher than table value 2.6 at p≤0.01 level; hence the hypothesis H1 is accepted.

Conflicts of Interest: Nil

Source of Funding: Nil

References

1. Author: Sharon L. Lewis Surgical Nursing – Assessment &management of clinical problem' 7TH Edition published by Elsevier, India, p: 1406 – 1426.
2. Philadelphia: Lippincott Williams & Wilkins. Kellahear, Text book of Medical Surgical Nursing' 9th Edition, Published by Lippincott company, Philadelphia Newyork.p:1610-1682 .
3. Zagade TB. An observational study of the

neurological assessment on the clients with altered sensorium with a view to prepare a learning package and to evaluate the efficacy of the staff nurses in terms of gain in practice in KLES hospital and medical research centre, Belgaum, Karnataka: KLES Institute of nursing sciences. 2006. (Unpublished Thesis.

4. WHO. Country Profile: Atlas, Geneva: Neurological problems statistical analysis (serial online) 2006 Mar (Cited on 11 may 2006); p. 380-386.

5. Chintamani, medical &surgical nursing, Elsevier, 1466-1469.

6. Brunner & Siddartha's Medical Surgical Nursing, 10th edition, Lippincott Williams and willikins, 1904-1908.

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Nurses Psychological Well-Being During Covid19 Outbreak in Saudi Arabia

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Abstract

Background: The global coronavirus disease pandemic of 2019 (COVID-19) has caused health care provider to experience extraordinary psychological stress. **Objective:** This study assessed the psychological well-being of nurses during the COVID-19 outbreak and factors associated with it. **Methods:** An online survey was sent to all nurses working at the Ministry of Health Hospitals and living in Tabuk city, Saudi Arabia. A total of 219 nurses were completed the survey. The Depression, Anxiety and Stress Scale – 21 items (DASS-21) assessed the psychological well-being of respondents in the previous week. **Results:** One -quarter of nurses (24.7%) reported extremely severe symptoms of anxiety, more than one third (37%) reported extremely sever symptoms of stress, less than one quarter (14.1%) reported extremely sever symptoms of depression. Higher anxiety scores were significantly associated with direct contact with confirmed COVID 19 cases (p= 0.08), general health status (p= 0.001) and marital status (p= 0.042). Higher DASS-21 Stress scores were significantly associated with working more than eight hours per shift (p=0.024), marital status(P=0.036) and general health status (p <0.001). Higher DASS-21 Depression scores was significantly associated general health status (p <0.001).

Conclusions & implication for practice: The COVID-19 outbreak has had a significant effect on the psychological well-being of Saudis nurses, particularly nurses who were married, had contact with COVID 19 cases, had working more than eight hours per shift, and had poor general health status. Protecting the psychological health of nursing staff is essential, nursing leaders are in charge of providing social support for nurses so that they will be able to cope with their anxiety, stress, and depression.

Key Words: *COVID19, Psychological wellbeing, Saudi Arabia, Nurses.*

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Introduction

Coronaviruses are a large family of viruses that cause common cold, pneumonia, and severe acute respiratory syndrome (SARS). Coronavirus (COVID-19) was first identified in China in December 2019. The outbreak of a new coronavirus disease (COVID-19) was declared as Public Health

Emergency by WHO January 2020, which is labeled as a pandemic in March 2020 [1]. In Saudi Arabia, there are 503,734 confirmed cases of COVID-19 with 8,006 deaths according to WHO Health Emergency Dashboard from January,3, 2020 to July14, 2021. In order to slow the spread of the COVID 19 virus several measures were implemented in Saudi Arabia, including social and physical distancing and the closure of non-essential services and schools. Ministry of health in Saudi Arabia implemented several measures to protect employees while providing best care for patients, including infection control measures, such as the use of personal protective equipment (PPE).

The demands on healthcare staff during a pandemic are extraordinary and long lasting. The success of public health outcomes is highly dependent on the skills and determination of the healthcare workforce. Ideally, a full complement of staff is with no infection-related absenteeism and working to their maximum potential with no burnout. Staff psychological wellbeing is of critical importance [2] . Covid-19, the result of multiple causes of unimaginable tragedy and death, exposes healthcare workers to unprecedented challenges, including rationing personal protective equipment (PPE) and ethical dilemmas surrounding access to ventilators and other essential medical supplies [3].

In addition, studies have found that medical staff are also experiencing depression and anxiety due to the COVID-19 outbreak because of an increase in patient volume. Medical professionals who are not specialized in infectious disease may be faced with greater pressure when dealing with infected patients. Burnout is becoming increasingly recognized as a serious problem among medical professionals [4].

Since the outbreak of the COVID 19, some studies have examined the psychological problems among healthcare workers (HCW). For example, a cross sectional study reported that the prevalence of depression, anxiety, and stress was 42.5%,42.7%,30.7%, respectively among medical resident working in front and second line [5]. Moreover, frontline HCW from four hospitals in Wuhan city were surveyed during the COVID-19 outbreak and reported elevated depression (12.7%) and anxiety (20.1%). Symptoms associated with greater perceived stress, poor sleep quality, and absence of perceived psychological preparedness were linked to higher risk for depression and anxiety [6]. Another cross-sectional study conducted in china reported that the overall prevalence of depression among Emergency room (ED) nurses was 43.61% [7].

The few studies to date that have examined the impact of a coronavirus outbreak on the psychological well-being of nurses in Saudi Arabia, for example, a cross-sectional study reported that the prevalence of generalized anxiety disorder was of and 51.4% among 502 healthcare providers in Saudi Arabia ,and nurses had higher anxiety scores than other health care workers [8]. A descriptive study conducted in Saudi Arabia showed that one third of health care workers experienced anxiety disorder, and the study determined that living with family members, being female, and having a family history of anxiety disorder increased anxiety disorder risk [9]. Furthermore, our study findings will be a great assistance to nurses because if they can control their anxiety and stress, they will be more productive in their lives and work, and they will be able to provide safe and high-quality care to their patients. On the other hand, hospital administration will be aware of the nurses' stress and psychological well-being, allowing them to devise

strategies on how to help their staff get through this pandemic period successfully. The aim of this study was to assess psychological well-being of nurses during COVID 19 outbreak in Saudi Arabia, the specific objectives of the study were to assess: (1) level of depression, anxiety, and stress among nurses. (2) Assess factors significantly associated with higher levels of depression, anxiety and stress among nurses.

Methods

Design& participants

Data for this study were collected via a cross-sectional survey during the COVID-19 outbreak on June 2021 to August 2021. The aims of the study were explained and the participants gave their informed consent to participate in the study. This study included both male and female nurses working in the ministry of health hospital at Tabuk city, Saudi Arabia at the time of the study.

Recruitment

Convenience sampling technique were used to collect responses. An online survey was sent to all nurses who were working at the Ministry of Health Hospital and living in Tabuk city, Saudi Arabia. They received the online survey through emails and phone messages, which was arranged by collaborators in the internal communication channels at the nursing administrators in each hospital. A total of 219 nurses completed the online survey.

Data collection

Data were collected for this study by online survey contained two parts. Part1, socio-demographic characteristics and work condition, including age, gender, marital status, level of education, working hours, years of experience, general health status, working with COVID 19 cases, and live with children. Second, Depression Anxiety Stress Scales DASS-21 [10], which is a widely used and valid tool for assessing depression, anxiety and stress symptoms during the past weeks, and has 21 items with Likert scale answers rated from 0 (no distress) to 21 (most distress). The total mean score for depression was categorized as (mild, 10–13; moderate, 14–20; severe, 21-27; extremely severe, more than 28), and for anxiety was categorized as (mild, 8–9; moderate, 14–20; severe, 21–27; extremely severe, more than 20) and for stress was categorized as (mild, 15–18; moderate, 19–25; severe, 26–33; extremely severe, more than (34) [10]. In our study Cronbach's a was 0.96 for depression, anxiety and Stress subscales. Arabic version of (DASS-21) is valid and reliable for screening for depression, anxiety and stress.

Statistical Analysis

Data collected were coded, entered and analyzed using Statistical Package for the Social Sciences (SPSS version 21). Descriptive statistics, such as mean, standard deviation (SD), frequency, and percentage were used to report demographic data. DASS-21 subscale scores and the proportion of respondents scoring in clinical ranges were calculated as outlined by the instrument's authors [10], in order to determine the clinical staff who have experienced 'normal', 'mild', 'moderate', 'severe' or 'extremely severe' depression, anxiety or stress. These labels assist in characterizing the degree of distress severity relative to the general population. Cohen's d is reported, along with qualitative descriptors: small (0.20), medium (0.5), large (0.8) and very large (1.3). Logistic regression using enter default method was used for regression analysis for relationship between demographic characteristics and DASS-21 Depression, Anxiety and Stress subscale scores as

outcome variables. P value was significant <.05, 95 % CI was used with regression analysis.

Ethics approval

This study was approved by the Institutional Review Board (IRB), General Directorate of Health Affairs, Tabuk, Saudi Arabia (Reference no. H-07-TU-077, 24 May 2021).

Results

Sociodemographic characteristics

A total number of 219 respondents from governmental hospital & primary health care center in Tabuk city, Saudi Arabia completed the electronic survey (Table 1); their ages ranged from 20 to 60 years, with (56.6%) aged from 20 to less than 30 years of age. The majority were female (84.9%), had diploma in nursing (61.2%), and single (50.7%) (Table 1).

Table (2) shows that more than half of nurses working less than eight hours (58%), (29.2%) of them had less than five years of experience, (58.9%) live with children, (42.9) had excellent health status had Covid 19 vaccine (88.6%). Finally, more than half of the studied worked with COVID19 cases (71.8%),

Psychological well-being

Table (3) shows the scores for symptoms of anxiety, stress and depression among studied sample. The mean scores on the DASS-21 for anxiety, stress and depression for all respondents were 1.78±1.55, 2.39±1.77 and 1.99±1.63, respectively. Mean scores for studied sample in Stress and Depression subscales were statistically significantly higher than normative data; effect size was medium for the Stress subscale, and very large for the Depression subscales. The prevalence of anxiety among nurses was (61.2%), almost one quarter of nurses (24.7%) reported extremely severe symptoms of anxiety compared to (10.5%) reported sever symptoms of anxiety. However, mild to moderate levels of anxiety were reported by (26%) of nurses.

Moreover, the prevalence of stress among nurses in our study was (74.4%). Approximately, more than one third of nurses (37%) reported extremely sever symptoms of stress compared to (37.4%) of nurses reported mild to severe symptoms of stress. In addition, the prevalence of depression among studied sample was (57.9%). Almost one quarter of nurses (22.4%) reported moderate symptoms of depression compared to (11.4%) of nurses reported mild symptoms of depression. However, severe to extremely sever symptoms of depression were reported by (21.4%) of nurses (Table3)

Factors associated with anxiety, stress and depression in the participants

Regression analysis demonstrated that the most significant risk factors for anxiety among studied sample were marital status, direct contact with COVID 19 cases, and general health status.

Higher DASS-21 anxiety scores were significantly associated with marital status (p= 0.042), direct contact with confirmed COVID 19 cases (p,0.08), and general health status (p=0.001) (Table 4). Significant risk factors for stress were marital status, working hours, and general health status. Higher DASS-21 stress scores were significantly associated with marital status (P=0.036), working hours (p=0.024), and general health status (p<0.001) (Table 4). The observed significant risk factor for depression was general health status of the participants. Higher depression scores were significantly associated with general health status of nurses (P,0.001) (Table 4).

Table (1): Percentage distribution of the studied nurses according to their demographic characteristics (n=219)

Variables	Total Sample (n=219)	
	N	%
Age (Years)		
20:<30	124	56.6
30:<40	65	29.7
40:<50	25	11.4
50:<60	5	2.3
Gender		
Female	186	84.9
Male	33	15.1
Level of Education		
Diploma	134	61.2
Bachelor	68	31.1
Postgraduate	17	7.8
Marital status		
Single	111	50.7
Married	101	46.1
Divorced	7	3.2

Table (2): Percentage distribution of the studied nurses according to their work condition (n=219)

Variables	Total Sample (n=219)	
	Number	**%**
Working hours		
≤8	127	58.0
>8	92	42.0
Years of Experience (years)		
<1	53	24.2
1:<5	64	29.2
5:<10	42	19.2
≥10	60	27.4
General health status		
Poor	5	2.3
Good	92	42.0
Fair	28	12.8
Excellent	94	42.9
Working with COVID19 cases		
Yes	61	71.8
No	24	28.2
Live with children		
Yes	129	58.9
No	90	41.1

Table (3): Respondents' scores on the Depression, Anxiety and Stress Scale – 21 items (DASS-21) subscales

DASS-21 subscale	Nurses (219)	Score ranges for clinical cut-off points B	Nurses (219)	
			N	%
Anxiety				
Mean (s.d.) score	1.78±1.55	Normal (0-3)	85	38.8
P-value (vs 2.57A)	NS	Mild (4-5)	25	11.4
Cohen's d		Moderate (6-7)	32	14.6
		Severe (8-9)	23	10.5
		Extremely severe (≥10)	54	24.7
Stress				
Mean (s.d.) score	2.39±1.77	Normal (0-3)	56	25.6
P-value (vs 1.74A)	<.001*	Mild (4-5)	22	10.0
Cohen's d	.36 (medium)	Moderate (6-7)	33	15.1
		Severe (8-9)	27	12.3
		Extremely severe (≥10)	81	37.0
Depression				
Mean (s.d.) score	1.99±1.63	Normal (0-4)	91	41.6
P-value (vs 3.99A)	<.001*	Mild (5-6)	25	11.4
Cohen's d	1.22 (Very Large)	Moderate (7-10)	49	22.4
		Severe (11-13)	22	10.0
		Extremely severe (≥14)	32	14.6

Table (4): Regression analysis of the relationship between demographic variables and anxiety, stress and depression of studied nurses (n=219).

Dependent variable	Independent variables (Predictors)	Unstandardized coefficients		Beta	P value	95% CI
		B	Std.Err			
Anxiety	Gender (1 female, 2 male)	.293	.292	.068	.317	-.316-,.842
	Marital status (1 single,2 married,3 divorced)	.449	.219	.163	.042*	-.030-,835
	Education (1dipoma,2 bachelor,3 post graduate)	.097	.219	.041	.659	-.372-,453
	Live with children (1yes, 0 No)	-.299-	.243	-.095-	.220	-.778-,.180
	Years of Experience (1 <1,2 1:<5),3 5:<10,4 ≥10)	-.113-	.091	-.083-	.214	-.292-,.066
	Working hours(<8hrs,>8hrs)	.096	.061	.105	.114	-.023-,.216
	Work with COVID19 cases (1yes, 0 No)	.653	.242	.176	.008*	.175,1.130
	General health status (1poor, 2 good, 3fair, 4 excellent)	-.346-	.106	-.217-	.001*	-.555-,-.137-
Stress	Gender (1 female, 2 male)	.138	.338	.028	.684	-.529-,.804
	Marital status (1 single,2 married,3 divorced)	.537	.254	.170	.036*	.036,1.037
	Education (1dipoma,2 bachelor,3 post graduate)	.056	.253	.021	.826	-.443-,555
	Live with children (1yes, 0 No)	-.236-	.279	-.066-	.399	-.786-,314
	Years of Experience (1 <1,2 1:<5),3 5:<10,4 ≥10)	.017	.215	.011	.939	-.408-,441
	Working hours(<8hrs,>8hrs)	.167	.074	.159	.024*	.022,312
	Working with COVID19 cases (1yes, 0 No)	.390	.287	.092	.176	-.176,.955
	General health status (1poor, 2 good, 3fair, 4 excellent)	-.438-	.122	-.240-	<.001*	-.679-,-.198-

Cont... Table (4): Regression analysis of the relationship between demographic variables and anxiety, stress and depression of studied nurses (n=219).

Depression	Gender (1 female, 2 male)	.136	.154	.060	.377	-.167-,439
	Marital status (1 single,2 married,3 divorced)	.169	.115	.117	.145	-.058-,.396
	Education (1dipoma,2 bachelor,3 post graduate)	.035	.113	.028	.758	-.188-,.257
	Live with children (1yes, 0 No)	-.151-	.127	-.092-	.234	-.401-,099
	Years of Experience (1 <1,2 1:<5),3 5:<10,4 ≥10)	-.074-	.073	-.103-	.316	-.219-,.071
	Working hours(<8hrs,>8hrs)	.064	.033	.132	.057	-.002-,129
	Work with COVID19 cases (1yes, 0 No)	.440	.263	.113	.095	-.078,957
	General health status (1poor, 2 good, 3fair, 4 excellent)	-.198-	.056	-.237-	<.001*	-.309-

Discussion

It is important to investigate Psychological well-being among nurses due to the possible impacts of such conditions on their health and on the quality of patient care [11]. This study aimed to investigate the effects of the COVID-19 outbreak on the psychological wellbeing of nurses in Saudi Arabia. We also assessed factors associated with higher levels of depression, anxiety and stress among nurses. In this study, the prevalence of anxiety among nurses was 61.2%, this includes mild (11.4%), moderate (14.6), severe (24.7), and extremely sever symptoms of anxiety (10.5%). Moreover, our study indicated that the prevalence of stress among nurses was 74.4%, this includes mild (10%), moderate (15.1%), sever (12.3%), and extremely sever symptoms of stress (37%). In addition, the findings of the current study found that the prevalence of depression among studied sample was 57.9%, which includes mild (11.4%), moderate (22.4%), sever (10%), and extremely severe symptoms of depression (14.1%). The higher prevalence of anxiety, stress and depression among nurses in our study may be related to that the majority of them were female, married, live with their children, more than one third of them worked more than 8 hours per day, and more than two thirds of the studied sample had direct contact with COVID 19 cases. Furthermore, the current study results revealed that nurses who were married, provide care for COVID 19 patients and had poor health status reported higher symptoms of anxiety. Also, results indicated that married nurses who work more than eight hours per day, and had poor health status reported higher symptoms of stress. The current study results showed that depression symptoms were higher among nurses who had poor health status.

During the COVID-19 outbreak, Australian study similarly reported that among 668 health care workers, 29% of nurses had mild to extremely severe anxiety symptoms, a greater percentage than other

health care workers, 24.5% of them had mild to moderate symptoms of stress, and 17% experienced extremely severe symptoms of depression, also results showed that nurses who had poor general health and had contact with confirmed COVID-19 cases were significantly reported higher levels of depression, anxiety and stress than those were in better health and had no COVID-19 contact [12]. Furthermore, a Chinese study similarly reported a high prevalence of psychiatric symptoms among 1257 health- care providers, mainly depression, anxiety and distress (50.4%, 44.6% and 71.5% respectively), nurses reported more severe degrees of all measurements of mental health symptoms than other health care workers [13]. However, the prevalence of depression and anxiety symptoms among nurses in the current study was much higher compared to Egypt (32% and 20.5%, respectively), and marital status were significantly associated with increase prevalence of depression and anxiety among health care workers [14] . Another study from Saudi Arabia reveled that the prevalence of anxiety among 441 healthcare workers during the COVID-19 pandemic (33%) ,which is lower than the prevalence in our study [9] .

A similar depression and anxiety prevalence were found among 502 healthcare providers in Saudi Arabia (55.2% and 51.4%, respectively), nurses had higher scores in anxiety than other health care worker, depression and anxiety among nurses may be explained by work-related stress and high job demands [14]. On the other hand, it has been reported that nurses exhibit higher levels of anxiety and depression than doctors [15]. Another similar finding was found in an Egyptian study recently, which showed that stress symptoms were present in (33.3%) of health care workers [16].

Similarly, a study conducted in Ethiopia revealed that anxiety, depression, and stress are common among nurses, with prevalence levels of 69.6%, 55.3%, and 20.5%, respectively, working in the night shift & lack of training were associated with increased the risk of developing psychiatric symptoms among nurses [17]. A health service's nurses have direct, intense, and sustained contact with patients and are particularly vulnerable to infection, so providing them with psychological support during outbreaks and assessing their levels of anxiety, depression, and stress should be taken into consideration by health authorities [15]

Moreover, a study from China revealed that anxiety and depression symptoms were prevalent among 223 nurses. However, the prevalence of depression and anxiety symptoms among nurses in our study was higher compared to china 40.8% and 26.4%, respectively [19]. Other study revealed that nurses who directly involved with COVID-19 patients reported higher rates of mental health symptoms especially frontline nurses who experiencing more moderate to severe symptoms of depression, distress and burnout [19]. Another study indicates that COVID-19 has a considerable impact on the psychological wellbeing of front-line hospital staff, nurses may be at higher risk of adverse mental health outcomes during this pandemic [20]. It is not surprising that nurses reported significantly higher prevalence of anxiety, stress and depression, the current COVID-19 pandemic is affecting nurses' mental wellbeing, according to the literature, nurses are confronted with additional sources of stress as health-care workers cope with the novel coronavirus, nurses are now worried about a lack of supplies; insufficient staffing and long working hours; isolation from family and friends; discrimination and negative treatment from community members concerned about nurses spreading the virus; managing family responsibilities; concern for ill patients; and a significant risk of contracting the virus [21]. Indeed,

increasing awareness, utilizing appropriate protective equipment or reducing work hours are suggested as practical approaches to improve nurses mental health circumstances [11]. In conclusion , creating community awareness, training of nurses, and providing special attention for nurses with chronic disease will help to minimize the psychological impact of the COVID-19 pandemic on nurses and protect their mental health [22]. Finally, more attention should be paid to the mental health of the married nurses, had poor health status, direct contact with COVID 19 cases, and working more than eight hours per shift. In addition, awareness of stressors and an understanding of what has helped and what has impacted well-being are important in guiding future workplace support systems for nurses.

Limitations

The sample was limited to Tabuk city; thus, it may not represent all nurses in KSA. Although similar populations and health systems, however, there still be some differences like availability of resources, number of COVID 19 cases and training courses. To improve statistical significance and the generalizability of the results, future studies on this subject should use all nurses in KSA with larger sample size.

Conclusion

This study describes the psychological wellbeing of nurses during the COVID 19 outbreak and factors associated with it. The COVID-19 outbreak has had a significant effect on the psychological well-being of Saudis nurses, particularly nurses who were married, had contact with COVID 19 cases, had working more than eight hours per shift, and had poor general health status. Our findings conclude that nurses would benefit from further targeted supportive interventions during the current and future outbreaks of infectious diseases

Implication for practice:

Based on the findings of this study, it appears that it is important to investigate psychological well-being among nurses due to the impacts such conditions may have on their health and patient care. Protecting the psychological health of nursing staff is essential. Therefore, nursing leaders are in charge of providing social support for nurses so that they will be able to cope with their anxiety, stress, and depression.

Conflicts of Interest: The authors have no competing interests to report.

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References

1. WHO. Mental Health and Psychosocial Considerations During COVID-19 Outbreak. World Heal Organ [Internet]. 2020;(January):1–6. Available from: file:///C:/Users/muled/Downloads/COVID referances/Mental health and psychosocial considerations during the.pdf
2. Gavin B, Hayden J, Adamis D, McNicholas F. Caring for the psychological well-being of healthcare professionals in the COVID-19 pandemic crisis. Ir Med J. 2020;113(4):5–7.
3. Ahmed S, Alhumam A. Analyzing the implications of covid-19 pandemic: Saudi arabian perspective. Intell Autom Soft Comput. 2021;27(3):835–51.
4. Chan SF, La Greca AM. Perceived Stress Scale (PSS). Encycl Behav Med. 2020;1646–8.
5. Khoodoruth MAS, Al-Nuaimi SK, Al-Salihy Z, Ghaffar A, Khoodoruth WNC, Ouanes S. Factors associated with mental health outcomes among medical residents exposed to COVID-19. BJPsych Open. 2021;7(2).

6. Kang L, Li Y, Hu S, Chen M, Yang C, Yang BX, et al. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. The Lancet Psychiatry. 2020;7(3):e14.
7. An Y, Yang Y, Wang A, Li Y, Zhang Q, Cheung T, et al. Prevalence of depression and its impact on quality of life among frontline nurses in emergency departments during the COVID-19 outbreak. J Affect Disord [Internet]. 2020;276(April):312–5. Available from: https://doi.org/10.1016/j.jad.2020.06.047
8. AlAteeq DA, Aljhani S, Althiyabi I, Majzoub S. Mental health among healthcare providers during coronavirus disease (COVID-19) outbreak in Saudi Arabia. J Infect Public Health [Internet]. 2020;13(10):1432–7. Available from: https://doi.org/10.1016/j.jiph.2020.08.013
9. Alzaid EH, Alsaad SS, Alshakhis N, Doaa A, Rania A, Mahdi A. Prevalence of COVID-19-related anxiety among healthcare workers: A cross-sectional study. J Fam Med Prim Care [Internet]. 2020;9(9):4904–19. Available from: http://www.jfmpc.com/article.asp?issn=2249-4863;year=2017;volume=6;issue=1;spage=169;epage=170;aulast=Faizi
10. Lovibond PF, Lovibond SH. The stucture of negative emotional states: Comparsion of the depression anxiety stress scales (DASS) with beck depression and anxiety inventories. Behav Res Ther. 1995;33(3):335–43.
11. Kamran A, Malekpour A, Naeim M. The psychological impact of covid-19 outbreak on nurses working in iran. Addict Disord their Treat. 2021;
12. Sara H, Karen W, Melody T, Suellen B, Susan S, Shane C, et al. Psychological well-being of Australian hospital clinical staff during the COVID-19 pandemic. Aust Heal Rev. 2020;
13. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Netw Open. 2020;3(3):1–12.
14. Alateeq DA, Aljhani S, Althiyabi I, Majzoub S. Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID- 19 . The COVID-19 resource centre is hosted on Elsevier Connect , the company ' s public news and information . 2020;(January).
15. Spoorthy M., Pratapa S., Supriya M. Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19 . The COVID-19 resource centre is hosted on Elsevier Connect , the company ' s public news and information. Asian J Psychiatr. 2020;(January).
16. Youssef N, Mostafa A, Ezzat R, Yosef M, Kassas M El. Mental health status of health-care professionals working in quarantine and non-quarantine egyptian hospitals during the covid-19 pandemic. East Mediterr Heal J. 2020;26(10):1155–64.
17. Mekonen E, Shetie B, Muluneh N. The Psychological Impact of COVID-19 Outbreak on Nurses Working in the Northwest of Amhara Regional State Referral Hospitals , Northwest. 2020;
18. Zhang W, Wang K, Zhao W, Xue Q. Mental Health and Psychosocial Problems of Medical

Health Workers during the COVID-19 Epidemic in China. 2020;100053(45):242–50.

19. Ali SK, Shah J, Talib Z. COVID-19 and mental well-being of nurses in a tertiary facility in Kenya. 2021;1–10. Available from: http://dx.doi.org/10.1371/journal.pone.0254074
20. Kock JH De, Latham HA, Leslie SJ, Grindle M, Munoz S, Ellis L, et al. A rapid review of the impact of COVID-19 on the mental health of healthcare workers : implications for supporting psychological well-being. 2021;1–18.
21. Stelnicki AM, Carleton RN, Reichert C. Nurses' Mental Health and Well-Being: COVID-19 Impacts. Can J Nurs Res. 2020;52(3):237–9.
22. Di Tella M, Romeo A, Benfante A, Castelli L. Mental health of healthcare workers during the COVID-19 pandemic in Italy. J Eval Clin Pract. 2020;26(6):1583–7.

Effect of Selected Stretching Exercises on the Pain Level of Primary Dysmenorrhea among College Students

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Abstract

Dysmenorrhea is a common gynecological condition with painful menstrual cramps of uterine origin. Primary Dysmenorrhea is widely prevalent, more than 70% of teenagers and 30-50% of menstruating women suffer from varying degree of discomfort. The primary objectives of the study were to assess the effect of selected stretching exercises on pain level of primary dysmenorrhea. Quasi experimental method was used and data was collected from 40 students who have suffered from Primary Dysmenorrhea by purposive sampling technique was used. Data was collected with the help of VAS (Visual Analogue Scale). The result showed pain was significantly reduced after exercise on day 1, day2, day3. i.e. Day 1 shows 43.78% reduction, day 2 shows 53.92% reduction and day 3 shows 80.14% reduction of pain. Significant difference of pain score on day 1 according to age before exercise among college student as P<0.01 i.e. as age increases pain decreases significantly. **Conclusion- S**elective stretching exercises were found to be effective in the level of dysmenorrhea among college students. It is also proven that pain level is high on first day of menstruation than second and third. Further studies can be conducted to see effects of pain on further aspects of life like psychological effects. Effectiveness of interventions can be check for the association with symptoms to have a broader picture.

Key words- *Effect, Stretching exercise, Pain, Primary Dysmenorrhea, College, students*

Introduction

Common problem among the adolescents and young adult girls is painful menstruation which is termed as dysmenorrhea. The word dysmenorrhea is derived from the Greek words Dys (difficult, painful, or abnormal), meno (month) and rrhea (flow). Dysmenorrhea affects the daily routine activities and quality of life in females. Dysmenorrhea can be divided into two broad categories of primary and secondary.[1]

Primary Dysmenorrhea begins a few years after menarche when ovulatory cycles set in. It is due to PGF2α produced in the endometrium during ovulatory cycles. The pain in the suprapubic and radiates to back and thigh. Associated nausea, vomiting, diarrhea, and syncope are seen in some women. Women with anxiety and stress are more prone to this disorder. Primary dysmenorrhea generally disappears after a few years, especially after a vaginal delivery. Primary Dysmenorrhea is due to increase in the level of Prostaglandin F2 alpha (PGF2α). In ovulatory cycles, Progesterone level rises after ovulation .This causes

an increase in PGF2α in the endometrium, leading to increase the tone of the myometrium and uterine contractions. Levels of Leukotriene's and Vasopressin in the endometrium are also elevated and play a role in Primary Dysmenorrhea.[3] Primary Dysmenorrhoea refers to one that is not associated with any identifiable pelvic pathology. It is now clear that pathogenesis of pain is attributable to a biochemical derangement. It affects more than 50% of postpubescent women in the age groups of 18 to 25 years.[2]

Research question

What will be Effect of selected Stretching Exercises on the Pain level of Primary Dysmenorrhea among College students?

Review of Literature

Kavitha M. (2017), conducted study to assess the effectiveness of muscle stretching exercises on pain and discomfort during primary dysmenorrhea among 50 BSc nursing students in a selected college of nursing at Kannur. The one group pretest post-test was designed by the investigator to assess the effectiveness of muscle stretching exercises on pain and discomfort during primary dysmenorrhea. Samples were selected by purposive sampling technique .The study result shown that, Muscle Stretching exercises are the effective, simple, non-medicinal measure to reduce the pain and Discomfort during primary dysmenorrhea. [4]

Narges M.T, Marjan A .S , and **Abbas A.(2017)** **,**A Randomized Clinical Trial is performed to compared the Effect of Stretching Exercises and Mefenamic Acid on the Reduction of Pain and Menstruation Characteristics in Primary Dysmenorrhea. This randomized clinical trial was conducted on the female students of Mazandaran University of Medical Sciences, Iran, over five months in 2014. This study concluded that, regular exercise can be useful as an easy, accessible, and inexpensive approach to improve dysmenorrhea; however, the quality, intensity, and duration of exercise can influence the results.[5]

Raheela K , Tahir M , Waqar A , Muhammad N. B , Mirza S B. (2016),Randomized controlled trial is conducted to assess the effectiveness of tens versus stretching exercises on Primary dysmenorrhea among 66 students at Royal group of colleges Gujranwala, Pakistan. The ages of them were 16-25 year. sixty six females were divided into two groups. The group A was treated with TENS while group B was treated with stretching exercises. The data was collected from the subjects through structured questionnaire, VAS scale and SF-36. The results shown that TENS is more effective for pain improvement but to improve quality of life stretching exercises are more effective.[6]

Objectives:

1. To find out the pain level of Dysmenorrhea among college students.

2. To assess the effect of selected stretching exercises on pain level of primary dysmenorrhoea.

3. To correlate the pain level of Dysmenorrhea with selected demographic variables.

Research methodology:

Approach: Quantitative research.

Research Design: Quasi experimental one group pretest posttest design

Setting: This study was conducted in selected college of Pune city

Duration of study – 1 year.

Study population: Nursing students with primary dysmenorrhea

Sample technique: Purposive sampling technique

Sample size: As per prevalence 40 cases identified out of 150 populations

Calculated sample size was 36 at 95% confidence level

Data collection duration: Training duration -3 days per week, 2 times in a day. Total study duration was 4 weeks

Inclusive criteria:

1. Female who are suffering from primary dysmenorrhea
2. Female who are having regular menses
3. Female with age group of 17-30 years.
4. Female who are willing to participate

Exclusion criteria:

1. Female diagnosed with PCOD and on treatment
2. Female who are regularly practicing yoga and exercises.

Ethical consideration:

Study proposal approved by institutional ethical committee and from university. The study proposal explained to all the participant and Inform consent taken from each participant before data collection.

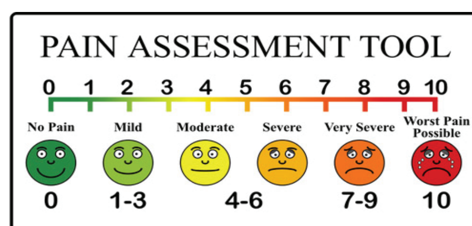
Data collection tool- self structured questionnaire

1. **Section A**: Socio Demographic Profile of girls who are having primary dysmenorrhea.
2. **Section B**: (Visual Analogue Scale)

Description of the tool

1. **Section A**: Socio Demographic Profile of girls who are having primary dysmenorrhea like, Age Weight, Height, Age of menarche ,Length of menstrual cycle, No. of sanitary pads used per day, Onset of menstrual pain, Drug history.
2. **Section B**: (Visual Analogue Scale)

VAS (Visual analogue Pain scale)



(Pain was assessed on first, second, and third day of menses before and after the exercise.)

Validity: Tool was validated by nursing experts, Obstetrician, librarian and statistician.

Reliability: In this study standardized tool is used i.e VAS (Visual analogue scale). Reliability was high, ICC = 0.99 [95%CI 0.989 to 0.992].

Data collection method:

a) **Permission from concerned authorities:**

Formal permission was obtained from the respective Principal of college of nursing. Written informed consent was obtained from subjects before completing the tool and confidentiality was maintained.

b) **Period of data collection:**

The data collection process began from 1/11/2017 to 31/12/2017. Each subject was explained about the study and its purpose. The data collection was done

strictly under the standard and laid down conditions. The criteria of the study were kept in mind while selecting the samples.

c) Process of data collection:

It was planned to select the subjects for study who have primary Dysmenorrhea. To select the sample needed for the study, the investigator approached the proper authorities for obtaining the necessary permission and cooperation. The nature of the study was briefly explained and it was ensured by the investigator that the normal routine of the students won't be disturbed. Demographic data of the students between 17-30 years were collected. On the first, second and third day of menses pain score was checked with the help of (VAS)visual analogue scale, then Selective stretching exercises were given in complete one menstrual cycle and again pain score was checked on first, second and third day during second menstrual cycle. Data was recorded in the format developed for the purpose.

Plan of data analysis:

The data analysis was planned to include descriptive and inferential statistics and present them in form of tables, graphs and figures. The data was planned to be set in excel file and analysis done by using statistical test.

Results

Organization of Data

The collected data is tabulated, organized and analyze under the following heading.

Section 1: Description of samples according to demographic data of college students.

Section 2: Description of analysis of data to assess the effect of selected stretching exercises on the level of dysmenorrhea among college students.

Section 3: Description of analysis of data to correlate the pain level of Dysmenorrhea with selected demographic variables.

SECTION 1: Description of samples according to demographic data of college students

a) Age –Majority 75% of college students are seen in age group of 21-25yrs, 20% are in age group of <20yrs and only 5% are seen in 26-30 yrs.

b) BMI – majority 70 % college students had BMI in range of 18.5-24.99, while 17.5% in range of 25 and above and only12.5% noticed in <18.5

c) Age of menarche – 67.5% of college students started menarche at age 13-14 years while 32.6 % started menarche at age 15-16 years.

d) Length of menstrual cycle –57.5% college students reported length of menstrual cycle of 29-32 days while 42.5% reported length of menstrual cycle of 25-28 days.

e) No. of sanitary pad used on day 1 at 1st menstrual cycle - 50% college students reported that they were using three sanitary pads, 47.5% were using four sanitary pads and only 2.5% students were using five sanitary pads on first day of first menstrual cycle.

f) No. of sanitary pad used on day 2 at 1st menstrual cycle – 50% college students reported that they were using three sanitary pads, 37.5 % were using four sanitary pads and only 12.5% were using two sanitary pads on 2nd day of first menstrual cycle.

g) No. of sanitary pad used on day 3 at 1st menstrual cycle – 50% college students were using three sanitary pads, 42.5% were using two sanitary

pads ,5% were using four sanitary pads and only 2.5% were seen of using one sanitary pad on 3rd day of 1st menstrual cycle.

h) No. of sanitary pad used on day 1 at 2nd menstrual cycle – Majority 72.5% college students reported of using three sanitary pads while 27.5 % were using four sanitary pads on 1st day of second menstrual cycle after exercise.

i) No. of sanitary pad used on day 2 at 2nd menstrual cycle - 60% college students were using three sanitary pads, 27.5 % were using four sanitary pads and only 12.5 % were using two sanitary pads on 2nd day of second menstrual cycle after exercise.

j) No. of sanitary pad used on day 3 at 2nd menstrual cycle - 52.5% college students reported that they were using two sanitary pads, 40% were using three sanitary pads ,5% were using four sanitary pads and only 2.5% were using one sanitary pad on 3rd day of 1st menstrual cycle.

k) Onset of menstrual pain – Majority 75% college students reported onset of menstrual pain on first day of menses where as only 25% reported onset on second day.

l) Drug history- Majority 80% college students were not having drug history and only 20 were taking drug to manage pain.

SECTION 2: Analysis of data to assess the effect of selected stretching exercises on the level of dysmenorrhea among college students.

Table 1: Pain level before exercise at 1st menstrual cycle among college students

Pain score	Before exercise at 1st cycle		
	Day 1 (%)	Day 2 (%)	Day 3 (%)
No	0	0	1 (2.5)
Mild	0	1 (2.5)	7 (17.5)
Moderate	14 (35)	32 (80)	32 (80)
Severe	26 (65)	7 (17.5)	0
Total	40 (100)	40 (100)	40 (100)

Table 1 shows that, majority 65% students reported severe pain, 35% moderate pain and no student reported mild pain and no pain on day 1 of 1st menstrual cycle before exercise. Where as on day 2, majority 80% student were having moderate pain, 17.5% were having severe pain and only 2.5% were having mild pain, no student had no pain. And day 3, pain score shows that majority 80% students were having moderate pain, 17.5% were having mild pain and 2.5% were noticed with no pain.

Table 2: Pain level after exercise at 2nd menstrual cycle among college students.

Pain score	After exercise at 2nd cycle		
	Day 1 (%)	Day 2 (%)	Day 3 (%)
No	0	0	15 (37.5)
Mild	4 (10)	31 (77.5)	25 (62.5)
Moderate	36 (90)	9 (22.5)	0
Severe	0	0	0
Total	40 (100)	40 (100)	40 (100)

Above table 2 shows that pain score was recorded after exercise at 2nd menstrual cycle. majority 90% students had moderate pain, 10% had mild pain and no one had severe & no pain on 1st day. Whereas, majority 77.5% students had mild pain, 22.5% had moderate pain and no one had severe and no pain on day 2. On day 3 majority 62.5% had mild pain and 37.5% students had no pain.

Table 3: Comparison of pain level before and after stretching exercise among college students

Pain score at	Before exercise		After exercise		Wilcoxon z value	P Value
	Mean	SD	Mean	SD		
Day 1	7.88	0.883	4.43	0.813	5.55	<0.0001
Day 2	6.25	1.256	2.88	0.911	5.56	<0.0001
Day 3	4.03	1.368	0.80	0.723	5.49	<0.0001

Above table 3 shows the comparison of pain score before and after stretching exercise among college students. It showed that pain was significantly reduced after exercise on day 1, day2, day3. i.e. Day 1 shows 43.78% reduction, day 2 shows 53.92% reduction and day 3 shows 80.14% reduction of pain.

Section 3: Description of analysis of data to correlate the pain level of dysmenorrhea with selected demographic variables

Table. 4 Association between pain level and age before exercise among college students

Age (Yrs)	N	Pain score on day1		Pain score on day2		Pain score on day3	
		Mean	SD	Mean	SD	Mean	SD
≤20	8	8.63	.518	6.88	1.458	4.13	1.553
21 – 25	30	7.73	.868	6.17	1.177	4.07	1.337
26 – 30	2	7.00	.000	5.00	.000	3.00	1.414
F Value		5.17		2.17		0.58	
P Value		0.01		0.13		0.56	

Above table 4 shows that, there is significant difference of pain score on day 1 according to age before exercise among college student as P<0.01 i.e. as age increases pain decreases significantly where as not significant difference of pain score on day 2, day3 according to age as P>0.05 i.e. as age increase pain decrease but not statistical significant.

Discussion

Finding of the study it can be concluded that there was a significant reduction in the pain level during the menstruation. Investigator identified that selective stretching exercises was found to be effective in the level of dysmenorrhea among college students. It is also proven that pain level is high on first day of menstruation than second and third. Study also showed the significant association of age and pain level of dysmenorrhea, as age increases women's are adapting pain. But no significant difference found with other demographic variables such as BMI, age of menarche, length of menstrual cycle, Number of sanitary pads used, onset of menstrual pain and drug history.

Following study also supports the present study

Shabnam O, Fatemeh Bi, Fatemeh N. A, and Khyrunnisa B (2016) A Cross-sectional study was conducted on Primary Dysmenorrhea and Menstrual Symptoms in 1000 Indian Female Students aged 11-28: Prevalence, Impact and Management. Standardized Self-reporting questionnaires were used to obtain relevant data. Pain intensity was assessed by using the Numerical Pain Scale (NPS). Study results showed that Prevalence of dysmenorrhea was 70.2%. Majority of the subjects experienced pain for one- or 1-2-days during menstruation. 23.2% of the dysmenorrheic girls experienced pain for 2-3 days.

Shahnaz S.J, Rahman S.H, Maghsoud E.G. (2012), conducted study on Effects of stretching exercises on primary dysmenorrhea in 179 single adolescent girls aged 15-17 years with moderate-to-severe primary dysmenorrhea. The participants were randomly divided into 2 groups: an experimental group (n = 124) and a control group (n = 55). In the

intervention group, the subjects were requested to complete an active stretching exercise for 8 weeks (3 days per week, 2 times per day, 10 minutes each time) at home. In the pre-test, all of subjects were examined for pain intensity (10-point scale), pain duration, and the use of sedative tablets in 2 continuous menstruation cycles. The post-test was examined 8 weeks later. The study revealed that, exercises are effective in reducing pain intensity, pain duration, and the amount of painkillers used by girls with primary dysmenorrhea.

Nahal H ,Mary S.L., Wan Y, Rejali Z(2015) A cross sectional study was conducted on Prevalence of Primary Dysmenorrhea and Factors Associated with Its Intensity Among 311 Undergraduate female students aged 18 to 27 years in Isfahan University of Medical Sciences, Iran. Socio-demographic characteristics and menstrual factors were obtained through interviews with the help of a pretested questionnaire. Results showed that higher intensity of dysmenorrhea was associated with younger ages, and some previous studies confirmed that the intensity of primary dysmenorrhea decreased as age increased.[7]

Marzieh A, Naeimeh T, and Maliheh A (2017), cross sectional study is conducted on The Relationship between Age at Menarche and Primary Dysmenorrhea in Female Students of Shiraz Schools. Questionnaire was applied on 2000 female students. The result shown that about 69.3% of the participants had experienced at least 1 episode of menstrual bleeding. Among postmenarcheal subjects, 77.7% had dysmenorrhea, while 22.3% did not. Study concluded that although two-thirds of students suffered from primary dysmenorrhea, no significant relationship was found with age at menarche.[8]

Implication of the study

The implication of the study can be discussed in five broad areas namely; clinical nursing practice, nursing education, nursing research and in community setting.

Clinical practice:

· This study provided evidence for practicing the selective stretching exercises on level of dysmenorrhea.

· Practicing the selective stretching exercises is cost effective for womens who comes in Gynaecology OPD with the complaints of primary dysmenorrhea and easy for the nurses to measure the pain level with the help of visual analogue scale. It can be prevent disturbances in daily activities.

Nursing education:

· The education curriculum must include imparting knowledge as well as emphasize on developing skills which are required to identify and prevent complications.

· Nursing education should help in inculcating values and sense of responsibility in practicing cost effective method to reduce the pain of primary dysmenorrhea.

Nursing research:

· It contributes in delivering quality care to our clients. The findings and design of this study can be utilized for conducting further collaborative or interdisciplinary studies.

Community:

· Measuring pain by using visual analogue scale is easy and fast.

· All community worker as well as nurses will advice to practice selective stretching exercises for

the level of dysmenorrhea.

Recommendations:

· A comparative study can be conducted with control group.

· Further studies can be conducted to see effects of pain on further aspects of life like psychological effects.

· Effectiveness of interventions can be check for the association with symptoms to have a broader picture.

· **Sources of Financial Support:** Self funding

· **Conflict of Interest :** Nil

Bibliography

1. Gosai Devangi R. Effects Of Aerobic Exercise On Primary Dysmenorrhoea In College Students. Rk University: School Of Physiotherapy. 2015 July.15.
2. Padubidri VG, Daftary NShirish, Howkins& Bourne Shaw's .Textbook of Gynaecology: 14th ed. Elsevier; 2008.75.
3. Seshadri Lakshmi . Essentials of Gynaecology:1st ed. New delhi: Wolter's Kluver (India) pvt Ltd; 2011. 93-94
4. Kavitha M. A study to assess the effectiveness of muscle stretching exercises on pain and discomfort during primary dysmenorrhea among b.sc nursing students in a selected college of nursing at Kannur.International Journal of Advanced Scientific Research .2017 ; 2(4): 13-18.
5. Narges M.T, Marjan A .S, and Abbas A. Comparison of the Effect of Stretching Exercises and Mefenamic Acid on the Reduction of Pain and Menstruation Characteristics in Primary Dysmenorrhea: A Randomized Clinical Trial. Oman medical journal.2017; 32(1): 47–53.
6. Raheela K , Tahir M , Waqar A , Muhammad N. B , Mirza S B. conducted study on effectiveness of tens versus stretching exercises on Primary dysmenorrhea in students. Int. J Rehabil. Sci. 2016;5(2).
7. Shahnaz S.J, RahmanS.H ,Maghsoud E.G. Effects of stretching exercises on primary dysmenorrhea in adolescent girls. Biomedical Human Kinetics.2012; 4:127 – 132.
8. MarziehAkbarzadeh, Nae imehTayebi , and MalihehAbootalebi ,The Relationship between Age at Menarche and Primary Dysmenorrhea in Female Students of Shiraz Schools . Shiraz E-Med J. 2017 ; 18(9).

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In Flight Cardiac Arrest (IFCA) Survival: A Concept Analysis

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Abstract

Background: The number of inflight medical emergencies has risen in recent years, mainly due to more and more of us jetting off each year. Sudden Cardiac Arrest can strike at any time. Managing cardiac arrest in flight is really challenging and the survival depends on many factors. It's been estimated that 1000 people die during commercial flights each year. This study clarifies the concept of Inflight Cardiac Arrest survival by using concept analysis. **Methods:** To analyze the concept, relevant literature was analyzed using Walker and Avant's concept analysis. **Results:** The major antecedents of inflight cardiac arrest are cardiac causes, non -cardiac causes, flight conditions and lethal cocktail. Defining attributes of inflight cardiac arrest survival are in flight attributes, Chain of survival, availability of trained personnel and emergency equipment and remaining flight time to destination. Consequences of inflight cardiac arrest are physiologic consequences of victim and emotional consequences of the victim, family, personnel involved and co passengers. **Conclusion:** Inflight cardiac arrests are increasing in incidence. Lack of a carotid pulse is the gold standard for diagnosing cardiac arrest. Good quality Cardiopulmonary Resuscitation and early defibrillation are key factors for inflight cardiac arrest survival.

Key words: *Concept analysis, Inflight Cardiac arrest, Inflight medical emergency, and Survival.*

Introduction

In-flight medical emergencies (IME) are estimated to occur in approximately 1 per 604 flights, or 24 to 130 IMEs per 1 million passengers. The most common IMEs involve syncope or near-syncope (32.7%) and gastrointestinal (14.8%), respiratory (10.1%), and cardiovascular (7.0%) symptoms. Diversion of the aircraft from landing at the scheduled destination to a different airport because of a medical emergency occurs in an estimated 4.4% (95% CI, 4.3%-4.6%) of IMEs. Protections for medical volunteers who respond to IMEs in the United States include a Good Samaritan provision of the Aviation Medical Assistance Act and components of the Montreal Convention. Medical volunteers should identify their background and skills, perform an assessment, and report findings to ground-based medical support personnel through the flight crew. [1]

Most of the inflight cardiac arrests (IFCA) are reported by the leading newspapers. These are few reported cases of IFCA. In 2017, Alan Bourne boarded his Jet 2 flight to Birmingham from Majorca. Shortly before take-off, Alan suffered a Sudden Cardiac Arrest. Despite trained staff performing CPR, Alan couldn't be saved. [2] Davina Tavener was travelling with Ryanair to Lanzarote with her husband and

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two children. Her husband became concerned when Davina failed to return from the toilet, where it was discovered, she had collapsed. A consultant surgeon was on board, and along with staff attempted to revive Davina, with no success. [3]

A 69-year-old Ukrainian, who had a history of heart ailment and undergone a bypass surgery 20 years ago, was found 'unresponsive and unconscious' in the flight at 1.30 AM. Airport sources said the crew had carried out pulmonary resuscitation, but to no avail. The flight landed at 3:25 AM and the patient was seen by the doctor at the airport. The victim was declared brought dead due to cardiac arrest.[4] A 65-year-old passenger died of cardiac arrest on an IndiGo flight to Chennai. He got fits and succumbed to cardiac arrest. The victim was boarding the IndiGo flight, from Mumbai to Chennai, when he suffered a cardiac arrest in the aircraft. The flight was held up for four hours. The crew on board immediately alerted the ground staff who arranged for a doctor. The victim couldn't be saved.[5]

Lack of a carotid pulse is the gold standard for diagnosing cardiac arrest. As a result of loss of cerebral perfusion, the victim will rapidly lose consciousness and can stop breathing. Near-death experiences are reported by 10 to 20 percent of people who survived cardiac arrest, which demonstrates a certain level of cognitive processes that are still active during resuscitation.[6] Treatment for cardiac arrest includes immediate Cardiopulmonary Resuscitation (CPR) and, if a shockable rhythm is present, defibrillation.[7] Two protocols have been established for CPR: Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).[8]

Management of inflight cardiac arrest:

Management of inflight cardiac arrest is really challenging. Initial assessment includes checking for breathing and pulse. [9] If no pulse or sign of life, start chest compression only CPR, with addition of bag-valve- mask ventilation (BMV) (30 compressions to 2 ventilations when emergency medical kit is available and someone skilled is present. Obtain and apply AED as soon as possible and follow instructions for defibrillation. If no shock is advised, or after a shock is delivered, resume CPR if there is no pulse. if no response to CPR and AED, initiate an intravenous line. Administer epinephrine (0.1 mg/mL) 1 mg intravenously. Instruct flight crew to notify the ground team and pilot. If no shock is delivered, the decision to divert will be influenced by how long ongoing CPR exists without return of circulation. [1]

According to American Heart Association (AHA) the 6 links in the adult out-of-hospital Chain of Survival are:

1. Recognition of cardiac arrest and activation of the emergency response system- Early recognition if possible. For every minute a patient stays in cardiac arrest, their chances of survival drop by roughly 10%.[10]

2. Early CPR with an emphasis on chest compressions- Early CPR improves the flow of blood and of oxygen to vital organs, an essential component of treating a cardiac arrest. By keeping the brain supplied with oxygenated blood, chances of neurological damage are decreased.

3. Rapid defibrillation- Early defibrillation is effective for the management of ventricular fibrillation and pulseless ventricular tachycardia.

4. Advanced resuscitation by Emergency Medical Services and other healthcare providers

5. Post-cardiac arrest care.

6. Recovery (including additional treatment, observation, rehabilitation, and psychological support).

A strong Chain of Survival can improve chances of survival and recovery for victims of cardiac arrest. If one or more links in the chain are missing or delayed, then the chances of survival drop significantly.[11]

Prognosis of out of hospital cardiac arrest

IFCA comes under Out of Hospital Cardiac Arrest. The overall chance of survival among out-of-hospital cardiac arrest, is 6%. For those who have an in-hospital cardiac arrest, the survival rate is estimated to be 24%. [12,13] A study of survival rates from out-of-hospital cardiac arrest found that 14.6% of those who had received resuscitation by paramedics survived as far as admission to hospital. Of these, 59% died during admission, half of these within the first 24 hours, while 46% survived until discharge from hospital. This reflects an overall survival following cardiac arrest of 6.8%. Of these 89% had normal brain function or mild neurological disability, 8.5% had moderate impairment, and 2% had major neurological disability. Of those who were discharged from hospital, 70% were still alive four years later.[14]

A scoping review on Automated External Defibrillator (AED) placement on commercial aircraft, reported incidence and outcomes of AED utilization for IFCA. Nine observational studies were identified. Eight reported instances of successful shock delivery using AED. Seven studies reported survival following AED use: of these, six reported administrations of a shock for IFCA survivors, whilst one study reported deployment of an AED without shock delivery. Overall, survival following in-flight AED use was 9%, with 37% survival reported where patients presented with shockable rhythm. Findings suggest in-flight AED use is feasible and associated with improved outcomes from IFCA.[15]

Materials and Methods

Study design: Concept Analysis

A Concept analysis is a way of examining the structure and function of specific concepts, allowing us to clarify and refine ambiguous concepts in nursing theories. Thus, concept analysis is important and useful for theorists in constructing relationships between concepts, as well as hypotheses and instruments for researching these concepts [16]. In the present study concept analysis by Walker and Avant was used. Walker and Avant's method elucidates the concept by providing antecedents, consequences, and empirical referents. The eight steps included are as follows: (a) Select the concept to be analyzed (b) Determine the aim and purpose of the study (c) Identify all uses of the concept (d) Determine the defining attributes of the concept (e) Construct model cases illustrating this concept (f) Construct additional cases, including borderline, related, contrary, invented, and illegitimate cases (g) Identify the antecedents and consequences of the concept (h) Identify empirical referents.[16]

However, according to Walker and Avant [16] even though they provided eight steps that seems sequential for analyzing the concept, in fact the steps can be iterative. In addition, many previous studies that used the Walker and Avant method also showed flexibility in arranging the steps and laying out the results [17]. Thus, in this paper, Specific layout of this paper is as the following: (a) Select the concept to be

analyzed. (b) Determine the aim and purpose of the study. (c) Identify all uses of the concept. (d) Identify antecedents of the concept. (e) Identify attributes of the concept. (f) Identify consequences of the concept. (g) Identify empirical referents. (h) Construct a model case illustrating this concept. (i) Construct a borderline case.

Data Collection

A literature review was conducted to define the concept "Inflight cardiac arrest- Survival". To find the relevant literature, online databases like Google scholar and PubMed were searched. These literature databases were searched using the keywords "in flight cardiac arrest" inflight medical emergencies", survival after inflight cardiac arrest". 40 relevant articles and few case reports were found; of which 9 articles were excluded as they were literature review in general about all inflight medical emergencies and some guidelines to be followed. Twenty-seven articles were particularly discussing about inflight cardiac arrest and survival. About 5-6 newspaper reported cases about inflight cardiac arrests were also reviewed.

Data Analysis

Relevant studies were read in detail. Characteristics of Inflight cardiac arrest -survival that appeared repeatedly throughout the literature were recorded and categorized into antecedents, attributes, and consequences. Studies were continuously read until achieving informational saturation. Information from reviewed studies contributed to the final decisions for antecedents, the cluster of attributes consequences and empirical referents.

Results

Walker and Avant [16] recommended using dictionaries, thesauruses, and any possible literature to identify the use of the concept. "Inflight cardiac arrest -survival" was not available as a single terminology. Hence it was split into "Inflight", "cardiac arrest" and "survival". Inflight means occurring or provided during an aircraft flight. Cardiac arrest is a sudden loss of blood flow throughout the body resulting from the failure of the heart to pump effectively. It is a rapidly fatal medical emergency requiring immediate intervention with CPR until further treatment can be provided. Cardiac arrest results in rapid loss of consciousness and breathing may be abnormal or absent. [18,19]. The dictionary meaning of survival is "the state or fact of continuing to live or exist, typically despite an accident, ordeal, or difficult circumstances.

Antecedents

Walker and Avant[16] defined antecedents as "those events or incidents that must occur prior to the occurrence of the concept". In terms of inflight cardiac arrest, several antecedents can be shown as leading up to the occurrence of the phenomenon. The **first antecedent is the cardiac causes of cardiac arrest.** Cardiac causes account for 75% of cardiac arrest [4,20,32]. The most common cause of cardiac arrest is an underlying heart problem like coronary artery disease which decreases the amount of oxygenated blood supplying the heart muscle. This, in turn, damages the structure of the muscle. Less common causes include major blood loss, lack of oxygen, very low potassium, heart failure, inherited heart arrhythmias and intense physical exercise.[20]

The second antecedent is the non-cardiac causes of cardiac arrest, which account for about 25% of cardiac arrests. Non-cardiac causes of cardiac arrest may result from temporary disturbances in the body's homeostasis. This may be the result from changes in electrolyte ratios, oxygen saturation, or

alterations of other ions influencing the body's pH.[21]

The third and particularly very specific for IFCA are the flight conditions. IFCA is a relatively rare but challenging event. Atmospheric pressure falls with altitude and above about 10,000 feet, blood desaturation leads to hypoxia. The aircraft cabin is pressurized to maintain an effective altitude below 8000 feet, which provides adequate protection for healthy travelers. With increasing altitude, there is a fall in atmospheric pressure and a decrease in ambient air density and temperature. Ascent to an altitude of 10,000 feet (3048 m) produces a significant fall in the partial pressure of oxygen in the alveoli, but because of the relationship between the oxygen saturation of hemoglobin in blood and oxygen tension, there is only a slight fall in the percentage of oxygen saturation of hemoglobin in the blood. However, hemoglobin saturation falls quickly upon further ascent, resulting in hypoxia with a decrease in an individual's ability to perform complex tasks.[22]

The fourth antecedent is 'Lethal cocktail'

Passengers are potentially exposed to increased stress from flying; getting to the airport and gate on time, altered circadian rhythms and lower cabin oxygen tensions, all of which may trigger underlying coronary artery disease and sudden cardiac death .[14,23]

Air travel exposes the passenger to several constraints (like physical constraints, stress) that can be correlated and lead to an inflight medical event, especially for passengers with chronic conditions or fragile health. [24]

Defining attributes of inflight cardiac arrest survival

According to Walker and Avant's[16] methodology, to determine the defining attributes of IFCA survival, the relevant literature was reviewed and then noted and summarized the characteristics that repeatedly appear. The identified attributes are 1. In flight attributes 2. Chain of survival of cardiac arrest 3. Availability of trained personnel 4. Passenger attributes and 5. Remaining flight time to destination**.**

1. In flight attributes

a) Failure to recognize cardiac arrest early

Collapsed passengers may be mistaken for being asleep, leading to a delay in resuscitation attempts, which results in poor survival outcomes.[12] Training aircrew to recognize cardiac arrest (unresponsive passenger who is not breathing) is crucial to early recognition[3,4]. Since aircrew need to respond early and promptly, the first aircrew to identify the cardiac arrest would need to call for help and start CPR. It is, therefore, crucial for airline operators to ensure that all aircrew, and not only the cabin crew-in-charge, be trained and currently certified in CPR and in the use of the AED. For airline operators, it is important that their training be accredited by their own National Resuscitation Councils to avoid any claims from potential litigants of low quality of care rendered. Not all in-flight cardiac arrests are witnessed because cabin crew or fellow passengers might simply assume that the victim is sleeping.[25]

b) Delayed time to defibrillation

Prior to 1990, it was a standard airline practice to divert aeroplanes to the nearest major airport if there was a cardiac arrest on board. Considering that it requires 10–15minutes for even a taxiing aero plane to return to its bay and more than 20 minutes for an emergency landing from cruising altitude, (1) it is not surprising that with VF being the most likely initial

arrest rhythm and its successful reversion dependent on time-sensitive defibrillation, most, if not all these patients, did not survive. With the advent of the AED, airline crew now have the capacity to initiate early CPR and early defibrillation with improved survival rates.[25.30]

c) Cabin environment

The restrictive environment of the cabin may interfere with the management of IFCA, as treatment may be hampered by poor access, restricted space, interference from noise and vibration that makes it difficult to assess pulse and breathing for CPR, and lack of privacy from having to work in a confined space.[13] The lack of space may make it difficult for rescuers to kneel comfortably by the side of the patient to perform standard CPR.[23,25]

2. Chain of survival

A strong Chain of Survival can improve chances of survival and recovery for victims of cardiac arrest. If one or more links in the chain are missing or delayed, then the chances of survival drop significantly.[11]

3. Availability of trained personnel and emergency equipment

Literature review had shown that in the event of IFCA most of the time fellow passengers volunteered to provide the emergency care. The cabin crew must be well trained for early identification and interventions including BLS and use of AED. Minimum requirements for emergency medical kit equipment in the United States include an Automated External Defibrillator (AED); equipment to obtain a basic assessment, hemorrhage control, and initiation of an intravenous line; and medications to treat basic conditions.[1] Variability of the skills in medical volunteers present unique challenges. Though in many airlines the cabin crew are trained for handling IME, their confidence to act quickly and promptly in such emergency situations is questionable, necessitating the real need of periodic renewal of training.[25]

4. Passenger attributes

Reported Shockable Rhythms (RSR) and Reported Non-Shockable Rhythms (RNSR) in the victim are important factors determining efficiency of BLS, use of AED and survival.[24.29]

5. Remaining flight time to destination

Because flight diversion may require interruption of CPR and may impact flight safety, the volunteer rescuer, cabin crew, flight crew, and medical consultation services should discuss the possible outcome and operational considerations before recommending a diversion for a patient with a non-shockable rhythm.[25.30]

Consequences

Walker and Avant [16] defined the consequences of a concept as the outcomes or results of the occurrence of the concept. The consequences of IFCA are mainly the physiologic consequences of victim, emotional consequences of the victim, family, personnel involved and co passengers.

a) Physiologic consequences of victim

Some victims may experience chest pain, shortness of breath or nausea immediately before entering cardiac arrest. Additionally, an elevated heart rate and feelings of light-headedness may occur.[19] If not intervened by CPR and defibrillation, cardiac arrest typically leads to death within minutes. [26] If CPR is successful, complete recovery is not

guaranteed as many survivors experience an array of disability including partial paralysis, seizures, difficulty with walking, speaking, or memory, limited consciousness, or persistent vegetative state and brain death. [27] It depends on how early the IFCA was identified and chain of survival was initiated.

b) The emotional consequences of the victim, family, personnel involved and co passengers.

Literature review revealed mix of emotions. In the event of successful survival, it's a moment of happiness and gratitude for the victim, family, personnel involved and co passengers. It remains a unique memorable experience in their lives. In contrary in the event of an unsuccessful survival it always remains a sense of grief and leaves a pain in memory of everyone involved. All IFCA, especially in case of unsuccessful survival is an opportunity for the airline authorities to check on their preparedness for similar incidents in future and to fill gaps if any.

The concept analysis of IFCA Survival according to Walker and Avant model is shown in figure 1.

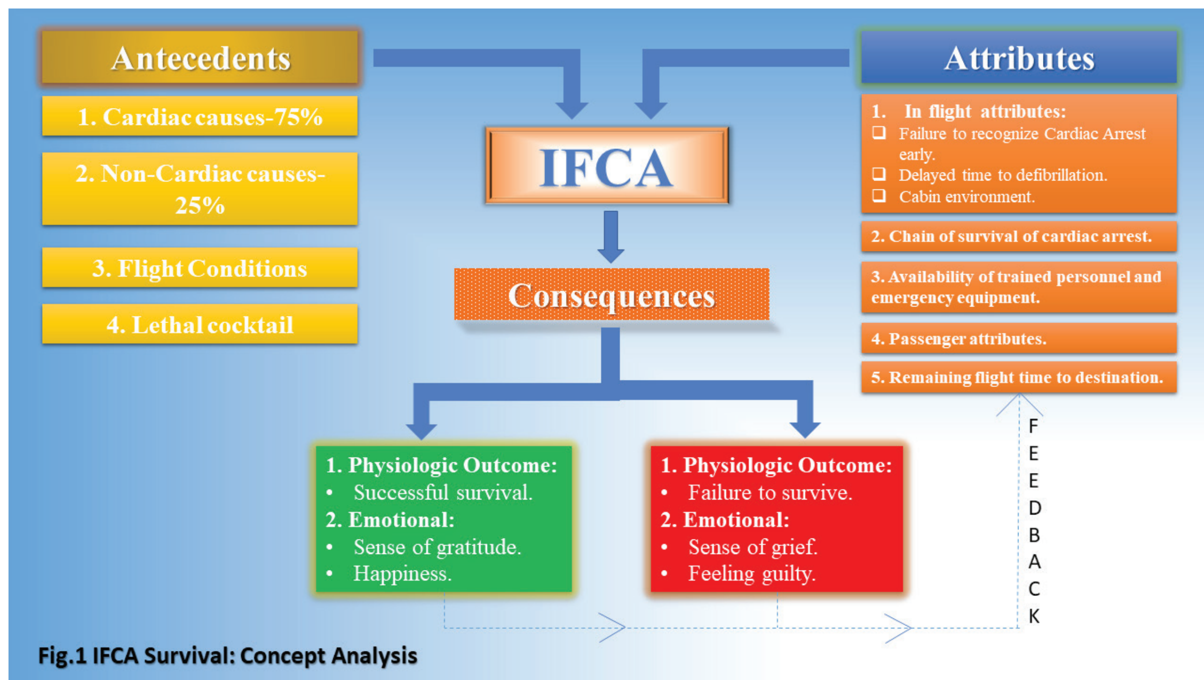

Fig.1 IFCA Survival: Concept Analysis

Empirical Referents

Empirical referents are the categories of actual phenomena that make us measure and recognize its existence or presence. Once identified, the empirical referents are useful in regard to developing the instrument since they are developed based on theoretical analysis of the concept [16]. In case of cardiac arrest absence carotid pulse is the golden standard to confirm the diagnosis.[11] Studies have reported empirical referents of cardiac arrest as unresponsiveness, no movement or response, absence of respiration (apnea), no pupil reflex, agonal respiration, irregular and sporadic breath, labored or noisy breath, gurgling or gasping sound, absence of detectable carotid pulse, not measurable blood pressure, arrhythmia, ventricular fibrillation, and asystole.[28]

Model Case:

On 10th October 2021, the author provided emergency care for an IFCA victim, wherein the efforts turned out to be fruitful in saving the life of a 48-year-old male passenger. He was a case of post covid lung fibrosis and pulmonary thrombosis travelling for further medical care. The passenger along with his friend boarded the flight. While boarding itself he was having intermittent cough and was receiving oxygen by nasal cannula. Almost 1-hour 15min before landing, the friend seated beside found him unusual and tried to wake him up. Overhearing this, the author who was occupying a near seat rushed to the passenger and found him unresponsive, carotid pulse was not palpable and the victim was not breathing. Immediately chest compressions were started and alerted the cabin crew. Meanwhile the cabin crew asked for more medical assistance. Two passengers who identified themselves as staff nurses volunteered. The victim was made to lie down in the aisle and cardiac compressions were continued. It was challenging to kneel and give chest compressions in the constricted space. One of the cabin crew was instructed to raise up his both legs as to promote blood supply to vital organs. By keeping the brain supplied with oxygenated blood, chances of neurological damage are decreased. His oxygen saturation was 40%. The oxygen cylinder was changed with new one and chest compressions with BMV was delivered at a ratio of 30:2. Later one more passenger who identified as a staff nurse joined the team. Compressions and BMV continued for around 25 minutes and the passenger regained pulse rate and started to breath spontaneously. Vital signs after 45 minutes were as follows; Heart rate of 102 bpm, RR of 16/ Min, BP 120/70 mmHg and Oxygen saturation 94% with 5 L of oxygen. The victim was fully conscious with no neurological deficits. The client was given adequate emotional support about his health. Upon landing, an ambulance was arranged, victim was examined by a medical doctor, and was transferred to hospital. The victim was hospitalized and discharged home after 10 days of treatment with advice to continue low levels of oxygen intermittently for couple of weeks and follow up.

Borderline case

A passenger on board Air India's AI 906 from Lagos (city in Nigeria) to Mumbai died. An airline official said that the passenger was unwell and was seen to be restless before he collapsed. A doctor on board along with crew, who are trained to handle such medical emergencies, made an all-out attempt to revive the person, aged 42, who had collapsed, through resuscitation but all their efforts went in vain. He was declared dead on board by the attending doctor. [29]

Discussion

IFCA survival is a real challenge. There is lack of detailed studies on IFCA Survival. Majority of the available studies are on the antecedents and predisposing factors. According to US Federal Aviation Administration (FAA) 177 of the events occurred on the aircraft (either in flight, at the gate, or while taxiing), 10 events occurred on the ground and one event occurred when the victim was en route to the airport. Of the 177 events that occurred on the aircraft, 119 were thought to be of cardiac origin, Sixty-four of these 119 passengers were reported as having died. For the remainder,42 passengers had unknown dispositions and 10 passengers were reported as having survived. Significant predictors for survival-to-hospital were reported shockable rhythm (RSR) and remaining flight time to destination. The study results showed that the percentage of RSR cases

was 24.6%. The survival to hospital admission was 22.7% (22/97) for passengers in RSR compared with 2.4% (7/297) in the RNSR group. Survival-to-hospital from IFCAs is best when an RSR is present. Good quality CPR and early defibrillation are key factors for IFCA survival.[30] In the present model case, the remaining flight time was around 1 hour 15 minutes and the victim received timely good quality CPR from the fellow passengers who identified themselves as nurses.

In the present model case, emergency medical equipment was available, but the crew was not confident to perform the resuscitation. Another study also reported similar finding. A study on retention of CPR and AED skills, first aid knowledge and perceived levels of confidence among cabin crew twelve months after recurrent training was done. The 35-cabin crew undertook a mock resuscitation scenario using the AED and bag-valve-mask carried in the medical kit. Of the 35 subjects, 33 subjects failed to use the bag-mask correctly, 18 performed chest compressions at the incorrect site, only 13 achieved the correct compression depth, only 20 placed the AED pads correctly, and the average time to first shock was 110 seconds after commencement of the resuscitation. While theoretical first aid knowledge was high, the participants held low levels of self confidence in their CPR and AED skills.[31] The results of this study indicate that cabin crew may not have sufficiently high levels of skill to manage a cardiac arrest adequately. This suggests that existing approaches to training of cabin crew require further investigation and modification.

Evaluation of the model case reveals the antecedents as non-cardiac cause (post covid lung fibrosis), flight conditions and lethal cocktail. During the management of the present model case, emergency equipment like ambu bag and mask and assessment tools like aneroid sphygmomanometer, stethoscope and pulse oximeter were available. Which really helped in providing the emergency care. Kneeling to provide chest compressions in aisle was really challenging. Though cabin crew were present and helped in shifting the victim down to the aisle and elevating the lower extremities, their competence in acting promptly in delivering CPR is questionable. Availability of other three staff nurses was a blessing to perform monitoring of oxygen saturation, changing the oxygen cylinder and to give emotional support to the victim. The cabin crew need to be given periodic training on BLS and ACLS.[30] Many passengers fly at a time in an airline and taking all measures to safeguard the lives of passengers is crucial. Availably of AED in airplanes is essential. One study reported that equipping helicopter emergency medical systems (HEMS) with mechanical chest compression devices MCDs may be beneficial, with non-trauma patients potentially benefitting more than trauma patients.[32]

Most arrests were bystander-witnessed and presented with a shockable rhythm. Pre-EMS therapies including cardiopulmonary resuscitation and AED application were common regardless of arrest location.[33] IFCAs are a subset of out-of-hospital cardiac arrest (OHCA). Prognosis for non-shockable rhythms is very poor. The best chance for non-shockable rhythms is good quality CPR or no cardiac arrest. Diverting for non-shockable rhythms might be futile and risks probably outweigh any benefit.[34]

Implications

All aircrafts to be supplied with emergency medical kit including AED and supplies for emergency assessment and resuscitation. Cabin crew to be trained and currently certified in CPR and in the use of the

AED. Cabin crew need to be given follow up training on managing IME to improve their confidence to act in similar situations. At times there may not be any medical personnel on board, wherein life of the victim will solely be in the hands of the crew.

Conclusion and Acknowledgement

The Present study is an eye opener to understand the concept of survival following inflight cardiac arrest. Availability of trained personnel and initiating good quality CPR is the key to survival. Cardiac arrests can happen any time. Resuscitating a victim of IFCA is an unforgettable experience for the healthcare workers or volunteers. The author is thankful to the cabin crew and volunteering staff for their timely support.

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References

1. Gill M C, Doyle TJ, Yealy DM. In-flight medical emergencies: a review. JAMA. doi:10.1001.
2. Sudden cardiac arrest on board flight smarteklife 3rd august 2018.
3. Mother-of-two, 47years old collapsed and died in toilet on Ryanair flight on plane that wasn't carrying defibrillators**.** 16 June 2015. Mail one daily newspaper.
4. The Indian Express 29th May 2016.
5. 65-yr-old man onboard IndiGo flight dies of cardiac arrest The Indian Express 29th May 2016.
6. Parnia S, Spearpoint K, Fenwick PB. Near death experiences, cognitive function, and psychological outcomes of surviving cardiac arrest. Resuscitation 2007. 74 (2): 215–221.
7. How Is Sudden Cardiac Arrest Treated? NHLBI. June 22, 2016.
8. ECC Committee, Subcommittees and Task Forces of the American Heart Association American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2005 112 (24): IV1-203.
9. Ochoa FJ, Ramalle-Gómara E, Carpintero JM, García A, Saralegui I. Competence of health professionals to check the carotid pulse. Resuscitation 1998. 37 (3): 173–175.
10. Resuscitation Council (UK) Guidelines 2005.
11. The 6 links in the adult out-of-hospital Chain of Survival: (https://cpr.heart.org/en/resources/cpr-facts-and-stats/out-of-hospital-chain-of-survival)
12. Institute of Medicine. Strategies to Improve Cardiac Arrest Survival: A Time to Act. 2015. doi:10.17226/21723.
13. Jollis JG, Granger CB. Improving Care of Out-of-Hospital Cardiac Arrest: Next Steps. Circulation. 2016 134 (25): 2040–2042. doi:10.1161.
14. Cobbe SM, Dalziel K, Ford I, Marsden AK. Survival of 1476 patients initially resuscitated from out of hospital cardiac arrest. BMJ. 1996. 312 (7047): 1633–1637. doi:10.1136.
15. Sheehan, Patrick; Quinn, Tom. Use, outcomes, and policy on the placement of Automated External Defibrillators on commercial aircraft for the management of in-flight cardiac arrest: a

scoping review. Irish Journal of Paramedicine. 2020. 5(1).

16. Walker, L. and Avant, K. Strategies for theory construction in nursing. 4th Edition, 2005. Appleton & Lange, Norwalk.
17. Brush BL, Kirk K, Gultekin L, Baiardi JM. Overcoming: a concept analysis. Nurs Forum. 2011 Jul-Sep;46(3):160-8. doi: 10.1111.
18. Field JM. The Textbook of Emergency Cardiovascular Care and CPR. Lippincott Williams & Wilkins. 2009. p. 11.
19. What Are the Signs and Symptoms of Sudden Cardiac Arrest? NHLBI. 2016
20. What Causes Sudden Cardiac Arrest? NHLBI., 2016.
21. Wang VJ, Joing SA, Fitch MT, Cline DM, John Ma O, Cydulka RK. Cydulka RK (ed.). Tintinalli's emergency medicine manual 2017.
22. Gradwell DP, Rainford DJ. Ernsting's aviation medicine 5th ed. CRC Press; 2016.
23. Charles R a Cardiac arrest in the skies Singapore Med J 2011; 52(8): 582-585.
24. Guiu G, Monin J, Perrier E, Manen O. Epidemiology of inflight medical events. Int J Travel Med Glob Health. 2019;7(1):10-12. doi:10.15171.
25. Ruskin KJ, Ricaurte EM, Alves PM. Medical guidelines for airline travel: management of in-flight cardiac arrest. Aerosp Med Hum Perform. 2018; 89(8):754–759.
26. Kuisma M, Alaspää A. Out-of-hospital cardiac arrests of non-cardiac origin. Epidemiology and outcome. European Heart Journal. 1997 18 (7): 1122–1128.
27. Adams JG. Emergency Medicine: Clinical Essentials (Expert Consult – Online). 2012. Elsevier Health Sciences. p. 1771.
28. Lee KI, Oh HS. Concept Analysis of Cardiac Arrest: Identifying the Critical Attributes and Empirical Indicators. Korean J Adult Nurs. 2014 Oct;26(5):573-583. doi: 10.7475
29. Passenger on board Air India's Lagos-Mumbai flight dies, cardiac arrest suspected. Hindustan times July 14,2020.
30. Alves PM, DeJohn CA, Ricaurte EM, Mills WD. Prognostic factors for outcomes of in-flight sudden cardiac arrest on commercial airlines. Aerosp Med Hum Perform 2016; 87(10):862–868.
31. P. H. Mahony, R. Griffiths and P. Larsen Retention of knowledge and skills in first aid and resuscitation by airline cabin crew. Resuscitation 2007. 76 413-418
32. Pietsch U, Reiser D, Wenzel W, Knapp J, Tissi M, Theiler L, Rauch S, Meuli L and Roland A. Mechanical chest compression devices in the helicopter emergency medical service in Switzerland. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine 2020. 28:71
33. Neal A, Chatterjee MD, Kume K, Drucker C, Peter J, Kudenchuk, Thomas D, Rea. Incidence, Mechanism, and Outcomes of On-Plane Versus Off-Plane Cardiac Arrest in Air Travelers. MPH J Am Heart Assoc. 2021,10.
34. Paulo M. Alves. Flight diversions for non-shockable cardiac arrest cases. Are they justifiable? – Med Aire Claude Thibeault – IATA Neil Nerwich – International SOS

Determinants of Verbal Abuse among Nurses at a Government-Owned General Hospital in Indonesia

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Abstract

Background: Verbal abuse experienced by nurses has a significant impact on work so that it can reduce work morale, productivity and work quality. There are several factors that influence verbal abuse in nurses including age, gender, previous education, period of employment, employment status, work unit, work shift, marital status, and organizational climate.

Objective: The purpose of this study was to determine the factors that influence verbal abuse among nurses at government-owned general hospital in a province in Indonesia

Methods: This study applied a quantitative design with cross sectional approach. The sample in this study was 391, and obtained with a simple random sampling technique

Results: The results of this study found that the factors that influence verbal abuse among nurses at the hospital are age, employment status, work shifts, and organizational climate.

Keyword : *Verbal Abuse, Sociodemography Factor, Organizational Climate.*

Introduction

Hospitals as a service facility engaged in a variety yet complicated labor problems. In 2011 to 2013, the occurrence of violence in the workplace, especially in hospitals, ranged between 23,540 and 25,630 each year with 70% to 74% occurring in health and social services. For health care workers, the incidence of workplace violence is 10-11%. Nurses in hospitals who provide direct nursing care to patients and families are more susceptible to violence in the workplace, especially verbal abuse [1].

A survey conducted at six hospitals in the United States related to the incidence of verbal abuse in nurses, it was found that 69.4% of nurses experienced verbal abuse in the workplace [2]. There is also another survey conducted in eight provinces in China about the impact of verbal abuse on nurses working in hospitals, it was found that 75% of nurses experienced verbal abuse at work [3]. Another survey conducted in Jordan regarding workplace violence, found that 71.2% of nurses experienced verbal abuse in the last 12 months [4].

The occurrence of violence in the workplace, especially verbal abuse in the health sector is a phenomenon that needs to be taken seriously throughout the world, which is one of the workers

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experiencing the highest rate of violence compared to other workers in the United States [5]. The percentage of sources of physical violence experienced by nurses is 43.5% obtained from patients. The percentage of verbal abuse experienced by nurses is around 55.6% obtained from the patient's family [6].

The incidence of verbal abuse of nurses in hospitals is also found in developing countries such as Indonesia. A study on work violence and work stress on nurses conducted at the Bitung city hospital found that 54.3% of nurses experienced verbal abuse. In the study, it was found that the forms of verbal abuse experienced by nurses were in the form of harsh words, insults, insults, and threats [7]. In Indonesia, research on verbal abuse has been widely studied in school settings or in adolescent settings, not much research has been done on verbal abuse in work settings. Related research on the incidence of bullying in nurses in the city of Banda Aceh was carried out at the Meuraxa General Hospital where the results of the study found that the incidence of bullying in nurses at Meuraxa Hospital was in the high category [8].

Methods

Data collection in this study was carried out from November 24 to December 6, 2021 at a Regional General Hospital using an online questionnaire measuring instrument via a google form which was distributed to all respondents. From a total of 410 respondents, as many as 391 respondents participated in this study so that the response rate was 95%. Respondents consisted of nurses working at inpatient wards, intensive care, emergency and operating rooms. The data that has been collected is then processed and analyzed using univariate, bivariate, and multivariate analysis. Data collection was conducted by three instruments, namely sociodemographic questionnaire, organizational climate and verbal abuse, which was adapted from the Verbal abuse Questionnaire [9]. Before testing the instrument, the verbal abuse questionnaire was translated and adapted. This adaptation process aims to achieve different language versions of the English instrument which are conceptually equivalent in each country/culture. The method used is back translation. Organizational climate questions are reliable with a score of 0.971, and verbal abuse questions are reliable with a value of 0.943.

Results

Univariate Analysis

Table 1 : Frequency Distribution of Verbal abuse

No		n	%
1	**Exposed to verbal abuse during the past 6 months**		
	Yes	133	34,0%
	No	258	66,0%
	Total	391	100%

Based on the table 1 above, it is known that out of 391 respondents at the hospital, 133 experienced verbal abuse (34%).

Table 2 : Frequency Distribution

No	Variable	n	%
1	**Age**		
	Young Adult (18- 40 years)	372	95,1%
	Middle Adult (41-60 years)	19	4,9%
	Total	391	100%
2	**Sex**		
	Male	89	22,8%
	Female	302	77,2%
	Total	391	100%
3	**Previous Education**		
	Vocational	179	45,8%
	Professional	212	54,2%
	Total	391	100%
4	**Period of Employment**		
	≤ 5 years	202	51,7%
	> 5 years	189	48,3%
	Total	391	100%
5	**Employment Status**		
	Permanent	147	37,6%
	Temporary	244	62,4%
	Total	391	100%
6	**Work Unit**		
	Emergency	52	13,3%
	Inpatient	339	86,7%
	Total	391	100%
7	**Work Shift**		
	Shift	50	12,8%
	Non Shift	341	87,2%
	Total	391	100%
8	**Marital Status**		
	Married	58	14,8%
	Not Married	333	85,2%
	Total	391	100%
9	Organizational Climate		
	Positive	192	49,1%
	Negative	199	50,9%
	Total	391	100%

Based on table 2 above, it is known that from 391 respondents, most of the respondents are young adults (18-40 years) totaling 372 respondents (95.1%), most of the respondents are female, amounting to 302 respondents (77.2%), most of the respondents' education was professional, amounting to 212 respondents (54.2%), most of the respondents' tenure was less than or equal as five years employment (≤ 5 years) totaling 202 respondents (51.7%), most of the respondents' employment status was temporary amounted to 244 respondents (62.4%), most of the respondents' work units were inpatient rooms totaling 339 respondents (86.7%), most of the respondents' work shifts were shifts totaling 341 respondents (87.2%). The marital status of the respondents was married, amounting to 333 respondents (85.2%). The organizational climate in the General Hospital is negative (50.9%).

Bivariate Analysis

Table 3 : Relationship of verbal abuse with factors that influence verbal abuse

No	Variable	Exposed to Verbal abuse during the past 6 months		n	p-value
		Yes	No		
1	**Age**				
	Young Adult (18- 40 years)	132 (35,5%)	240 (64,5%)	372	0,014
	Middle Adult (41-60 years)	1 (5,3%)	18 (94,7%)	19	
2	Sex				
	Male	29 (32,6%)	60 (67,4%)	89	1,844
	Female	104 (34,4%)	198 (65,6%)	302	
3	**Last Education**				
	Vocational	61 (34,1%)	118 (65,9%)	179	1,000
	Professional	72 (34,0%)	140 (66,0%)	212	
4	**Period of Employment**				
	≤ 5 years	72 (35,6%)	130 (64,4%)	202	0,551
	> 5 years	61 (32,3%)	128 (67,7%)	189	
5	**Employment Status**				
	Permanent	61 (41,5%)	86 (58,5%)	147	0,021
	Temporary	72 (29,5%)	172 (70,5%)	244	

***Cont...* Table 3 : Relationship of verbal abuse with factors that influence verbal abuse**

6	**Work Unit**				
	Emergency	13 (25,0%)	39 (75,0%)	52	0,188
	Inpatient	120(35,4%)	219 (64,6%)	339	
7	**Work Shift**				
	Shift	8 (16,0%)	42 (84,0%)	50	0,007
	Non Shift	125 (36,7%)	216 (63,3%)	341	
8	**Marital Status**				
	Married	20 (34,5%)	38 (65,5%)	58	1,000
	Not Married	113 (34,0%)	258 (66,0%)	333	
9	**Organizational Climate**				
	Positive	53 (27,6%)	139 (72,4%)	192	0,012
	Negative	80 (40,2%)	119 (59,8%)	199	

Table 3 above shows that out of 372 young adult nurses, 132 (35.5%) experienced verbal abuse. Among the 19 middle-adult nurses, 1 nurse (5.3%) experienced verbal abuse. There is a relationship between age and verbal abuse of nurses at the hospital under study (p=0.0014). Among the 147 Permanent employment status of nurses, 61 (41.5%%) experienced verbal abuse. Among the 244 contract nurses, 72 (29.5%) experienced verbal abuse. There is a relationship between employment status and verbal abuse of nurses at the General Hospital (p value 0.021). Among the 50 nurses who work with a regular work schedule, 8 (16%) experience verbal abuse. Among the 341 nurses who work on a three-shift schedule, 125 (36.7%) experienced verbal abuse. There is a relationship between work shifts and verbal abuse of nurses at the General Hospital (p=0.007). Among the 199 nurses with an unfavorable organizational climate, 80 (40.2%) experienced verbal abuse. There is no relationship between organizational climate and verbal abuse of nurses at the General Hospital under study (p=0.012).

Multivariate Analysis

Table 4 : Multivariate Variable Candidate Selection Results

No	Variable	p-value	OR	CI 95%	
				Lower	Upper
1	Age	0,014	9,900	1,307	74,992
2	Employment Status	0,021	1,694	1,104	2,600
3	Work Unit	0,188	0,608	0,313	1,184
4	WorkShift	0,007	0,329	0,150	0,723
5	Organizational Climate	0,012	0,567	0,371	0,867

Based on table 4, it can be seen that the independent variables that have a p-value <0.25 are age (p=0.014), employment status (p=0.021), work unit (p=0.188), work shift (p=0.007), and organizational climate (p=0.012).

a. Regression Logistic Backwards Method

The results of the multivariate analysis of the logistic regression test with the backwards method can be seen in table 5 below:

Table 5 : Outcomes of Logistic Regression Factors Associated with Verbal abuse

No	Variable	OR	CI 95%		p-value
			Lower	Upper	
Step 1					
1	Age	11,288	1,412	90,256	0,022
2	Employment Status	1,618	0,996	2,630	0,052
3	Work Unit	0,987	0,455	2,141	0,973
4	WorkShift	0,353	0,142	0,873	0,024
5	Organizational Climate	0,658	0,412	1,050	0,079
Step 2					
1	Age	11,299	1,415	90,256	0,022
2	Employment Status	1,618	0,996	2,630	0,052
3	WorkShift	0,351	0,149	0,827	0,017
4	Organizational Climate	0,657	0,412	1,049	0,078

Based on table 5, it can be seen that there was a change in the p value in the model which resulted in the variables being excluded from the model, namely: the work unit variable was removed in the first step because it had the largest p-value (0.973). The model stops at the second step because no more variables are excluded and is considered the best model.

The goodness of fit test shows that the model is feasible and in accordance with the results of the Hosmer and Lameshow test showing the results (X2 = 13.66, p = 0.057, df = 7). The results of the Omnibus Test of Model Coefficient have a value of 0.000 indicating that the p value <0.05, which means that the model experiences a reduction in the Chi-Square

value at each step so as to produce the best model. The value of Nagelkerke R Square at each step so as to produce the best model. The value of Nagelkerke R Square shows the result of 0.212 which indicates that each variable that is most related to verbal abuse has a 21.2% chance of influencing verbal abuse and 79.8% is another factor outside of these factors.

Discussions

Based on the results of research that has been carried out, it is known that the incidence of verbal abuse experienced by nurses at the hospital was as many as 133 respondents (34%) experienced verbal abuse in the workplace. In this study, as many as 34% of nurses experienced verbal abuse. Verbal abuse experienced by nurses had a significant impact on work so that it could reduce work morale, increase job dissatisfaction, eliminate caring culture in organizations where turnover rates are high, reduce productivity, increase work errors, and overall lowering the quality of a service[10].

Nursing care are parts of the core services in hospitals, therefore, hospital administrators must pay serious attention to the causes and symptoms of verbal abuse in the workplace, because if not addressed immediately it can result in decreased work performance, decreased work motivation, increased work pressure, increased nurse absenteeism, and an increase in nurses' desire to leave the hospital (turnover). If this happens, it will reduce the quality of nursing services and in the end will reduce the quality of health services in hospitals.

From the results of the study, it is known that the age of nurses at the hospital is mostly young adults (18-40 years). The percentage of verbal abuse incidents in nurses at the hospital is higher among young adults nurses (35.5%) compared to middle adults, namely 5.3%. From the statistical test results obtained p value <0.05 ($p = 0.014$) which means that there is a significant relationship between the age of nurses and the incidence of verbal abuse in nurses in the workplace and the OR value = 9.900. This means that young adults' nurses are nine times at risk of becoming verbal abuse victims in the workplace. Based on the results of the research above, it is known that there is a relationship between the age of nurses and the incidence of verbal abuse among nurses at the hospital. Young adults nurses are more likely to experience verbal abuse at work than middle-aged ones.

Conclusions

Nurses are prone to verbal abuses. The results of this study found that the factors that influence verbal abuse among nurses at the hospital are age, employment status, work shifts, and organizational climate. In cognizant of these issue, continuous effort to minimize the incidence required further attentions. Organizational support to overcome the occurence of verbal abuse among nurses in the workplace may include tasks assignment based on the nurse's career path, close supervision between leader and staff, or assertive attitude in the workplace.

Ethical Clearance: Ethical Clearence for the study obtained from committee of ethic Zainoel Abidin Hospital with an approval number: 350/EA/FK-RSUDZA/2021.

Source of Funding : This is a self-funded study.

Conflict of Interest : There is no conflict of interest to disclose.

References

1. (OSHA) OS and HA. Guidelines for Preventing

Workplace Violence for Health Care & Social Service Workers. US OSHA. 2016;

2. Pompeii. Physical Assault, Physical threat, and verbal abuse perpetrated againts hospital workers by patients or visitors in six hospital. Am J Ind Med. 2015;1194–1204.
3. Zhang. Impact of workplace violence and compassionate behaviour in hospitals on stress, sleep quality and subjective health status among Chinese nurses. Br Med J Open. 2018;
4. Al Omari. Workplace violence against nurses working in psychiatric hospitals in Jordan. Psychiatr Nurs J. 2019;58–62.
5. Bureau of Labor Statistics U. DL. Chart A. Incidence rates for occupational injuries and ilnesses with days away from work by selected occupation. 2016; Available from: https://www.bls.gov/news.realese/osh2.nr0.htm
6. Zahra AN, Feng J. Workplace violence against nurses in Indonesian emergency departments. Enferm Clin. 2018;28:184–90.
7. Damapoli. Relationship between Violence and Work Stress in Nurses in the Emergency and Intensive Care Units of Hospitals in Bitung City and North Minahasa Regency. J Kesmas. 2019;8.
8. Qamal L. Factors Associated with Incidents of Bullying in the Workplace on Nurses at Meuraxa Hospital. 2021.
9. Harper. What is The Experience of Emergency Department Nurses with lateral Verbal Agression. Gardner- Web Univ. 2015;
10. Gates DM, Gillespie GL. Violence Against Nurses and its impact on Stress and productivity. J Nurs Econ. 2011;29(2):59–66.

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Concept Mapping to Enhance Critical Thinking in Nursing Students

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Abstract

Background: Teaching strategies are embraced to engage and support students in learning and realizing the potential through the guiding tools. Concept mapping is an innovative and effective strategy to facilitate meaningful learning and promote critical thinking among nursing students.

Material: Concept map is a learning tool as it links concepts and sub-concepts in a diagrammatic manner. This teaching strategy encourages in-depth learning of concepts, better comprehension, and correlation in clinical practice. This leads to enhanced critical thinking and improved decision making.

Conclusion: Concept mapping is a new pedagogical approach that can be used to developed students' critical thinking skills. However, it means development of higher-order reasoning and cognitive skills.

Keywords: *Concept maps, linkage, relationships, critical thinking.*

Introduction

Over the last 25 years, the science of nursing education has advanced significantly, due in large part to nurse educators' dedication to identifying and implementing evidence-based techniques in undergraduate and graduate nursing education. Indeed, inspite of the fact that the utilization of visual and diagrammatic representation of information is not a novel concept, but their benefits in instruction has been realized lately. Stream charts were first used in the early seventies whereas visual representation was widely used in research representations. Concept mapping can be a linkage-based instrument that helps in understanding the affiliation between different thoughts and components.

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Concept Map:

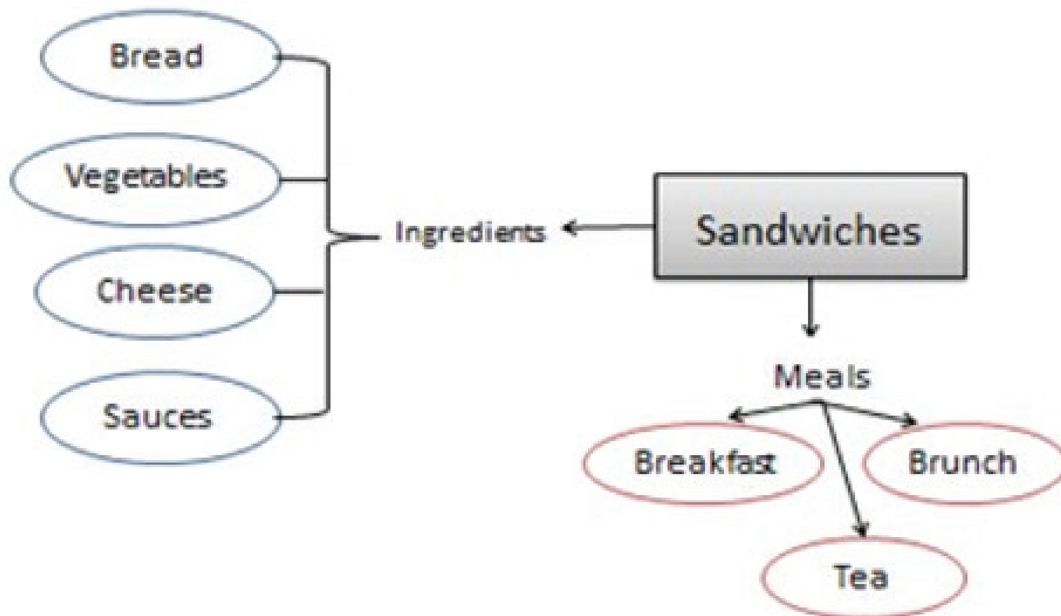
Concept map is used in numerous healthcare professional programs including medical, nursing, and pharmaceutical education to foster critical thinking and clinical reasoning[1]. Concept maps are an educational tool in both teaching new principles and assessing student knowledge. Concept mapping involves the identification and linkage of critical elements in a specific situation or problem. Relationships are identified in a concept map, as are points of intervention to alter outcomes[2].

Concept mapping is a creative educational strategy that may promote critical thinking by rearranging and reordering conceptual understanding and meaning using the deductive or inductive thinking skills[3].

The term concept mapping refers to a graphic or graphical depiction of essential concepts or thinking. The learner can use concept mapping to uncover links between apparently separate concepts while creating a unified knowledge structure. Through visualization of the mapping process, learners can examine their own existing knowledge and learn how to think in more critical and complex ways instead of linearly[3]. This approach encourages in-depth learning rather than rote memory and helps the student to comprehend the overall concept rather than the specifics. Furthermore, creating a concept map necessitates students gathering important information and organizing it in a hierarchical manner. Students must grasp the relative relevance of each thought within the larger context in order to properly create a concept map. Finally, idea mapping should enhance long-term memory of course information. This method is beneficial in nursing education for discovering linkages between knowledge structures gained in previous courses and new topics presently being examined[4]. Concepts such as medical and surgical management, dietary therapy, pharmacological therapy and nursing care can be integrated into a concept map representing relationships. A student has to assemble and compile information even from previously learnt courses to complete a therapeutic framework. The linkages prepared by the students represent the thinking pattern. Every concept map whether simple or complex is made up of two key elements:

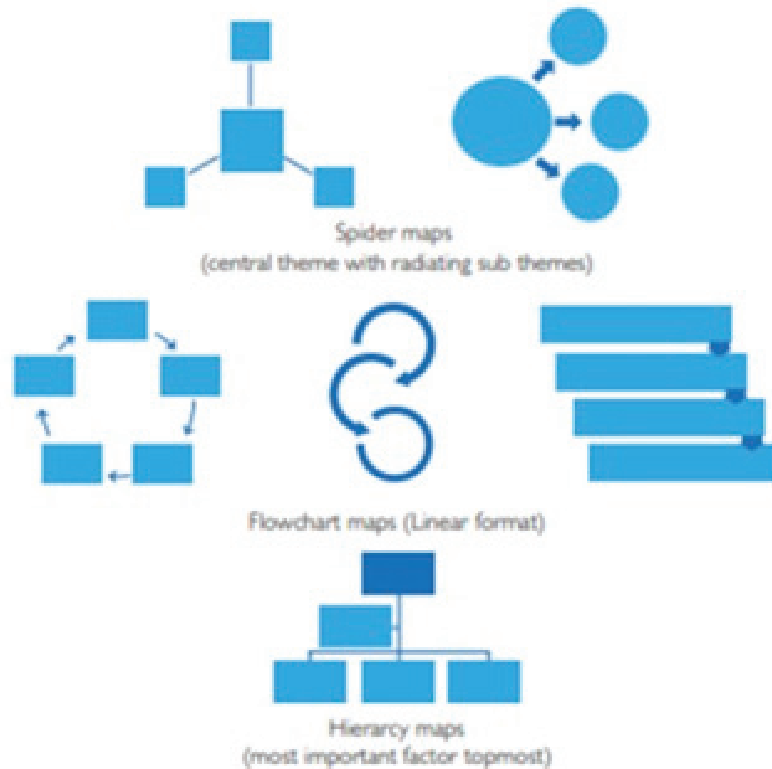
a. Concepts: They can be typically represented by circles, ovals or boxes and are called nodes.

b. Relationships: It can be represented by arrows that connect the concepts. The arrows can include a word or verb for linkage. These arrows are called "cross-links"[5].



Example of a concept map

Making of a Concept Map:



The key step is to focus on the ways ideas are linked to each other.

· Identify the concept.

· Create a visual organizer related to the concept.

· Connect sub concepts with nodes.

· Link nodes with relativity and continuity.

Purpose of a Concept Map:

· Break up the topic into subtopics

· Organize the topics and subtopics

· Boost both comprehension and retention

· Understand relationships

Types of Concept Map:

a. Spider map

b. Flowchart

c. Hierarchy map

d. System map

Uses in learning and instruction:

· Prepare notes

· Associate new concepts to existing one

· In depth knowledge of the concept

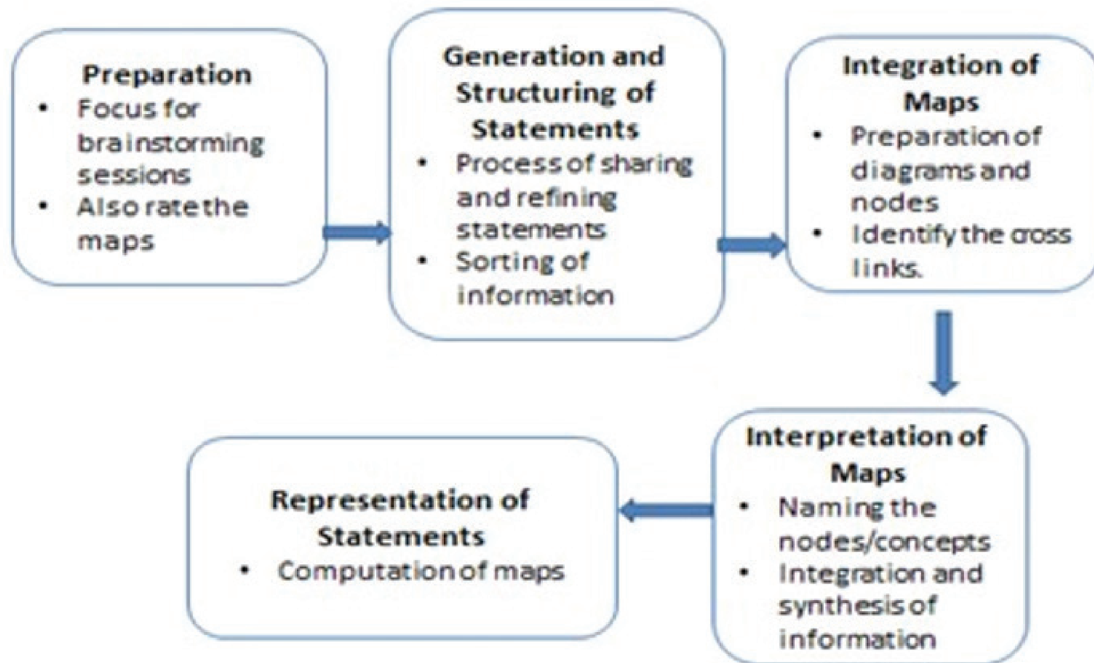
· Synthesize and conceptualize information

· Organizing and focusing on clinically relevant material which will be useful for patient-care

decisions.

- Team building and learning
- Promote creativity
- Employs problem-solving technique
- Evaluate and assess learning
- Summative assessment

Steps for preparation of Concept Maps:



Nursing Education:

Concept mapping is an educational method that encourages learners to organize and analyze material in order to discover, visually represent, and link significant concepts. Concept maps may be successfully utilized to teach concept thinking, enhancing students' critical thinking ability in the current paradigm[6]. It may be used to organize and analyze curricula into a logical sequence of concepts. As a didactic tool, concept maps can aid in the refining and development of concepts in the cognitive structure. Critical thinking is highlighted and integrated into nursing education from the commencement of any nursing program. The most significant increase in it usually occurs at higher educational levels when a student has built up a substantial knowledge base inventory and is ready to apply it to new information in the classroom and in the clinical situation. The critical thinking leads to improved decision making[7]. Although the process of critical thinking begins from the classroom with the help of problem-based learning or case-based learning and simulations in the nursing lab and in turn immediately transits to the clinical area in implementation. This lays the foundation for theory-to-practice application.

It also helps the learner to completely integrate the concepts by creating his or her own conceptual

map, which finally leads to meaningful learning. This teaching strategy can be utilized in the baccalaureate program for courses like Adult Health Nursing, Child Health Nursing, Community Health Nursing and Nursing Research, etc.

Concept mapping is also a metacognitive approach to learning that can help students to learn meaningfully and enhance critical thinking skills by encouraging them to process information deeply for true understanding rather than by rote memorization [8]. The use of concept map teaching technique in nursing will enhance the critical thinking abilities, sense of achievement, self-confidence, and ability to create a concept map individually. Furthermore, it was known that students can more readily recognize and comprehend things they do not know and understand, may better understand the subject, and it has a beneficial influence on learners.

Clinical Practice:

Concept mapping is an effective educational strategy that may promote critical thinking skills through meaningful learning[9]. Clinical concept mapping can be developed by the nurse administrators and practitioners to revise and reinforce learned concepts of critical care, hemodynamic monitoring, protocol implementation, etc. It aids in organization of patient data; therapy processes and promotes a holistic visualization of the patients. Preparation of maps also helps in integration of complex concepts, pathophysiology concepts, etc. into the care of patients with complicated conditions.

In the clinical setting, the tool can be used to correlate a patient's diagnosis, symptoms, treatments, interventions, and outcome criteria. This is an effective teaching method for promoting critical thinking and is an effective way to evaluate students' clinical judgment because it is a raw visual representation of a student's thinking[10]. Reflection-on-action contributes to the growth of clinical knowledge development and increases clinical judgment in future situations [12]. However, it has been referred in studies that it increases critical thinking and essential decision-making skills. Also, by preparing maps, it decreases the level of anxiety to block the interference in learning process.

Challenge:

Concept map can be an essential instrument in the clinical setting, nursing teachers must overcome the difficulties in implementation. Instructors must learn how to utilize this clinical teaching style effectively. The success of using concept maps in the clinical setting depends on their development and alignment to the activity. The instructor needs to organize information in such a way that it aids the learner in achieving the best possible learning results. From simple to complicated, primary linkages and essential themes are presented in a logical order.

Learning to use the tool in the clinical setting may be a lengthy process for the students to acquire, and they should be familiar with the process of concept mapping prior to the reconstruction process in the clinical setting. This is a crucial step if concept maps are to stay coherent[11].

One significant challenge for teaching members, besides the resources required to create the instructions and the grading rubrics, was that students were generally resistant to this process. Students are familiar, and thus more comfortable with multiple-choice exams, journal clubs, patient case assignments, and group activities. They are not familiar with

concept mapping[12].

Conclusion

Concept mapping is a novel educational approach that may be used to develop students' critical thinking skills. When we talk about critical thinking, we imply developing higher order thinking and cognitive skills. According to Bloom's Taxonomy of Educational Objectives, cognitive domain is one of the learning domains that focus on the development of intellectual abilities such as critical thinking, problem solving and creating a knowledge base. This incorporates review or acknowledgement of particular realities, procedural designs and ideas that serve within the improvement of mental capacities and aptitudes.

Ethical Clearance: This article is a conceptual paper. The topic is discussed in an elaborative way.

Source of Funding: Self

Conflict to Interest: Nil

References

1. Carr-Lopez SM, Galal SM, Vyas D, Patel RA, Gnesa EH. The utility of concept maps to facilitate higher-level learning in a large classroom setting. *American Journal of Pharmaceutical Education*. 2014 Nov 15;78(9).
2. Nguyen A, Blackmon D, Cook L. Concept mapping to improve critical thinking in nurses: A pilot study. *American Research Journal of Nursing*. 2015;1(4):35-40.
3. Chen SL, Liang T, Lee ML, Liao IC. Effects of concept map teaching on students' critical thinking and approach to learning and studying. *Journal of Nursing Education*. 2011 Aug 1;50(8):466-9.
4. Baugh NG, Mellott KG. Clinical concept mapping as preparation for student nurses' clinical experiences. *Journal of nursing education*. 1998 Sep 1;37(6):253-6.
5. Jones SA, Brown LN. Critical thinking: Impact on nursing education. *Journal of Advanced Nursing*. 1991 May;16(5):529-33.
6. Wheeler LA, Collins SK. The influence of concept mapping on critical thinking in baccalaureate nursing students. *Journal of Professional Nursing*. 2003 Nov 1;19(6):339-46.
7. Taie ES. Concept mapping as an innovative teaching strategy to enhance cognitive learning in nursing administration course. *International Journal for Innovation Education and Research.* 2014;2(7):11-25.
8. Moattari M, Soleimani S, Jamali Moghaddam N, Mehbodi F. The effect of clinical concept mapping on discipline based critical thinking of nursing students. Iranian *Journal of Medical Education*. 2013 Jan 10;12(10):756-67.
9. Gul RB, Boman JA. Concept mapping: A strategy for teaching and evaluation in nursing education. *Nurse Education in Practice*. 2006 Jul 1;6(4):199-206.
10. Novak JD. Learning, creating, and using knowledge: Concept maps as facilitative tools in schools and corporations. *Routledge*; 2010 Feb 2.
11. All AC, Havens RL. Cognitive/concept mapping: a teaching strategy for nursing. *Journal of Advanced Nursing*. 1997 Jun;25(6):1210-9.
12. Lasater K, Nielsen A. Reflective journaling for clinical judgment development and evaluation. *Journal of Nursing Education*. 2009;48(1):40-4.

An Evaluation of Caregiver Strain Experienced by Family Members Living with the Elderly in Selected Villages of Tapi, Gujarat

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Abstract

Background: Caregiver strain or burden is a strain experienced by a person who is taking care of a disabled or chronically ill, and an old age person in the family. Caregivers experience burdens in emotional, physical, psychological, economical, and social aspects of their day-to-day life. **Objectives:** The objective of the study was to identify and compare caregiver strain experienced by them in physical, physiological, social, emotional, and economic areas and to find the association of caregiver strain with selected demographic variables. **Methods:** Using convenience sampling technique 247 caregivers were recruited in the selected villages of Tapi District, Gujarat. And after obtaining their consent caregivers were interviewed using the caregiver strain index by Robinson BC. **Results:** 52% of the samples had mild levels of strain, 40% moderate levels, and eight percent of them with severe levels of strain. The economic strain was the highest (54%) and the physiological strain was the least (13%). Relationship with elderly and ability of an elder person to perform Activities of Daily Living had an influence on caregiver strain. **Conclusion:** Caregiver burden and its impact need to be explored in detail and measures need to be taken to reduce their burden in physical, economical, and emotional areas.

Key words: *Evaluation, Caregiver strain, elderly*

Introduction

Care giving responsibilities are the most rewarding responsibilities but it is a stressful and challenging duty as well. The caregiver feels strain when he or she is not able to accomplish their task due to economic burdens, more responsibility, change in the role, and family lifestyle. Caregiver strain or burden experienced can affect a person emotionally, physically, psychologically, socially. The strain experience or symptoms may vary from an individual basis. Caregivers may have symptoms like frustration, depression, unemployment, economic burden. Remedial action is needed to prevent or avoid such types of serious effects. [1][2]

According to the American association of retired persons (AARP) and the National Alliance for care giving (NAC) 2015, around 65 percent million caregivers provided care to the elderly from them 20 percent of caregivers experience burden or strain. According to the National Alliance for care giving

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(NAC) And AARP, from 2015 to 2020 numbers of family caregivers (9.5 million) increased in the US. The study also said that family caregiver's health condition was worse compared to the last five years. With the aging population of caregiver's, health demand is raised. Private and public sectors have the opportunity to work together to find solutions for family caregivers.[3]

According to World Population Prospects: the 2019 Revision, reported that there will be one in six people over the age group of 65 (16%) by 2050. The elder people 80 years and above are expected to triple, from 14.3 crores in 2019 to 42. 6 crores in 2050.[4]

In a report published by Help-Age global network (2019), it states that 139 million populations are above 60 years of age. This is representing 10 percent of India's total Populations. An elders population is predicted to doubles to 19.5 percent in 2050. It is said that 319 million populations are above 60 years of age and it is estimated that in India 1 out of 5 will be a senior citizen age is 60 years and above.[5] The study from India reported that family caregiver's burden is strongly associated with old age persons with physical impairment. [6] The study showed that cognitive impairment in the elderly increases the family caregiver's burden.[7]The earlier study also reported that a daughter-in-law in a care giving role sacrificed her career and separated from her husband.[8]

K.K Gulani in his textbook of Community Health Nursing (2013) reported that in India, the life expectancy is increased and it is estimated that the elderly population will be 142 million by the year 2020 and about 14 % of the population of the country is expected to increase by 2025. [9] The exact population of the elderly is yet to be decided as a census of 2021 is not yet completed. The study studies that caregiver strain depends on gender, types of family, and location of care.[10]

Though there is more elder population in India there is no study done on caregiver strain experienced by family members living with the elderly yet many studies done on caregiver burden experienced by family members living with elders with health problems are available. This study is trying to find an answer to the question of does the family members caring for the elderly feel the strain at different aspects of their life.

The Purpose of the study is to assess and compare caregiver's strain experienced by caregiver's living with the elderly in the following areas: physical, physiological, social, emotional, economic, and to find association of caregiver strains with selected demographic variables.

Material and Methods

The present study was done based on a quantitative approach. A descriptive survey design was used to evaluate the caregiver strain experienced by family members living with the elderly. The study was done in selected villages of the Tapi District, Gujarat. The study population was comprised of caregivers living with the elderly. Non-probability convenient sampling technique was used to select the sample from the target population based on sample selection criteria. **Inclusion criteria** were: Caregivers such as a spouse, children, daughter/son-in-law, brother and sister, Caregivers who are willing to participate in the study, and Caregivers who can read and understand English and Gujarati language. **Exclusion criteria** were Members living in the nuclear family. The Tool of the present study was divided into two parts. **PART-A** tool consists of socio-demographic data of caregivers living with elders and elders profiles Caregivers living

with elders have 4 parameters as Relationship with elderly, Age of caregiver, Family income and duration of stay with elderly and elders profile has 5 parameters such as No. of elders in the family, Relationship, Age of elders, Co-Morbid condition and Performance of ADL. **PART -B** included Caregiver strain index by Robinson BC.[11] It consists of thirteen items that are divided into physical, emotional, social, physiological, and economic areas. Each Correct response was given a score of 1. The total score for a correct response was thirteen and it was converted into arbitrary grades such as 1-3 scores indicates the mild level of stress,4-7 scores indicate moderate level of stress and more than 7 Score indicate a higher level of stress. Content validity of the socio-demographic tool was done by 7 experts. The internal Reliability coefficient is 0.90. The plan for data analysis included Frequency and percentage distribution of socio-demographic data of the caregiver, Mean and standard deviation to assess caregiver strain experience, and Chi-square for the association of caregiver strain experience score with the selected demographic variables.

It consists of thirteen things that are divided into physical, emotional, social, physiological, and economic categories.

Results

Demographic details of the samples: 65 % of the elders were living with their son/daughter,33 % of the caregiver was from the age group of 41-50 years,78 % of them were having an income between 5000-10,000 Rs. per month,82 % of them were involved in the care giving more than 10 years of duration,37 % of them were caring for 2 elder person and 13 % of them had more than 3 elders at home.80 % of the elders were parents living with their children,50% of them were above 65 years of age,32% of the elders were dependent on a caregiver for their ADL,29 % of them had co-morbid condition and 17 % of them were on treatment.

Section A: Assessment of caregivers strain.

Table No. 1. Distribution of overall care giver strain score of the sample.

N=247

Grading of Score		Care giver strain	Percentage (%)
Grade	Score	F	
Mild	1-3	128	52
Moderate	4-7	100	40
High	> 7	19	8
Total Score	13	247	100

As shown in the table no.1 52 percent of caregivers were having a mild level of strain.40 percent were having a moderate level of strain and Eight percent of them were having a high level of strain.

Section B: Comparison of caregivers strain.

Table No.2.Comparison of Mean, Median, Mode, SD of care giver strain of family members living with elderly within the identified areas.

N=247

Sr no.	Emotional	Physical	Physiological	Social	Economical	Total
Total score	**361/988 (37%)**	**211/988 (21%)**	**31/247 (13%)**	**109/494 (22%)**	**268/494 (54%)**	**980/3,211 (31%)**
Mean	1.46	0.85	0.12	0.44	1.08	3.95
Median	2	1	1	0	1	-
Mode	2	0	0	0	1	-
SD	1.12	1.0	0.33	0.65	0.64	3.75

As shown in Table no: 2 caregiver strains was highest (Mean % 54, Mean 1.08) in the economical area and least (Mean % 13, Mean 0.12) in physiological area.

Section C: Association of caregiver strain with selected demographic variables.

Association of caregiver strain with selected demographic variables showed that relationship of elderly with caregiver and elder person's ability to perform ADL was positively associated with caregiver strain (χ^2 = p <0.05).

Discussion

In this study caregiver strain was identified in physical (21%) physiological (13%), social (22%), emotional (37%) and economical (54%) areas.

A study was done to investigate the caregiver strain, age, and psychological well-being of older adults in Hong Kong reported that 22.9 % of caregivers had a high level of strain and 9.9% high levels of depression.[12] however in this study, the emotional strain was higher than the population in the above study.

The findings of the present study revealed that Majority 54 % of caregivers experienced strain in the economical areas compared to 37 % in the emotional area, 22 % in the social area, 21 % in the physical area, and 13 % in physiological area. High level of economical strain experienced by the care givers can be attributed to their low level of socio-economic status.

The association was found significant using chi-square test and the present study results showed that there was a significant association found between caregivers strain with the relationship of caregivers

with elderly ($c^2=13.84$ at $p < 0.05$) and elders ability to performance ADL ($c^2=95.82$ at $p < 0.05$). It means relationship and activity of daily living can influence the caregiver strain.

The above finding is supported by a study was conducted on older persons and caregiver burden and satisfaction in the rural family context. The study finding showed that there were associations found between caregiver's burden and satisfaction care giving with age, Sex, and income of the family. As a care giving role, caregivers expressed satisfaction on a large scale whereas very few women expressed satisfaction as a care giving role. More caregivers (women) reported worsening health and tiredness. Also, evidence found that more age and low family income letdown the satisfaction level of caregivers of elderly.[13]

Conclusion

The study concluded that the caregivers strain experienced by family members living with the elderly having more strain in the economical areas followed by emotional, social, physical, and physiological areas. Family income is the main strain among family caregivers so for at least to reduce the economical burden government or NGO have to offer remedial measures and for rest of the areas such as emotional, social, physical, and physiological, counseling and support measures need to be implemented to prevent adverse effects among caregivers.

Ethical Consideration:

Permission was obtained from the chief district health officer, Zilla panchayat, health, and family welfare department, Tapi, Gujarat. The Researcher took consent from family caregivers meeting the inclusion criteria.

Recommendations:

1. The study can be repeated on a large-scale sample to validate and for better generalization of the findings.

2. The study can be done by using different teaching strategies.

3. The study can be done on factors associated with the quality of life of caregivers.

4. The study can be done on economic strain on family caregivers for the elderly.

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Conflicts of Interest: No conflict of interest was reported.

References

1. String fellow A. What is Caregiver Role Strain? [Internet]. Seniorlink.com. 2021 [cited 7 December 2021]. Available from: https://www.seniorlink.com/blog/what-is-caregiver-role-strain.
2. What is Caregiver Strain? [Internet]. Carepartnersct.com. 2021 [cited 7 December 2021]. Available from: https://www.carepartnersct.com/caregiver/what-caregiver-strain.
3. Care giving N. Care giving in the United States 2020 [Internet]. AARP. 2021 [cited 7 December 2021]. Available from: https://www.aarp.org/ppi/info-2020/caregiving-in-the-united-states.html
4. Ageing [Internet]. Unsecretariat.net. 2021 [cited 7 December 2021]. Available from: https://www.unsecretariat.net/sections/issues-depth/ageing/index.html

5. Ageing population in India [Internet]. HelpAge Asia. 2021 [cited 7 December 2021]. Available from: https://ageingasia.org/ageing-population-india/
6. Ajay S, Kasthuri A, Kiran P, Malhotra R. Association of impairments of older persons with caregiver burden among family caregivers: Findings from rural South India. Archives of Gerontology and Geriatrics. 2017;68:143-148.
7. Misra S, Oswal R, Patel M. Family burden in caregivers of elderly with cognitive impairment residing in rural and tribal population of a district in Western India – A baseline study. Indian Journal of Community Medicine. 2020;45(4):445.
8. Ugargol A, Bailey A. Family care giving for older adults: gendered roles and caregiver burden in emigrant households of Kerala, India. Asian Population Studies. 2018;14(2):194-210.
9. Duxbury L, Higgins C, Smart R. Elder care and the impact of caregiver strain on the health of employed caregivers. Work. 2011;40(1):29-40.
10. Gulani K.K, Community Health Nursing (Principles & Practices). 2nd ed. Delhi: Kumar publication; 2017.
11. [Internet]. Nslhd.health.nsw.gov.au. 2021 [cited 7 December 2021]. Available from: https://www.nslhd.health.nsw.gov.au/carer/Documents/Caregiver%20Strain%20Index%20PDF.pdf
12. Caregiver strain, age, and psychological well-being of older spousal caregivers in Hong Kong - Esther Oi-wah Chow, Henry CY Ho, 2015 [Internet]. SAGE Journals. 2021 [cited 7 December 2021]. Available from: https://journals.sagepub.com/doi/10.1177/1468017314549709.
13. Rani i. Older Persons, and Caregiver Burden and Satisfaction in Rural Family Context [Internet]. Academia.edu. 2021 [cited 7 December 2021]. Available from: https://www.academia.edu/9789444/Older_Persons_and_Caregiver_Burden_and_Satisfaction_in_Rural_Family_Context

Knowledge of Mucormycosis among Undergraduate Nursing Students of AIIMS New Delhi

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Abstract

"Mucor" is a fungus which is normally present in the environment and in soil. It causes disease only when immunity is critically low. Early detection and management of the Mucormycosis is very crucial. Delay reporting symptoms of the infection should be avoided and treatment should be initiated at the earliest

AIM: The aim of this study is to *assess the Knowledge of Mucormycosis among Undergraduate Nursing Students of AIIMS New Delhi"*.

Method A descriptive cross sectional survey was adopted using online platform as direct contact with the participants is not possible during this period. An online questionnaire was used to assess knowledge of Mucormycosis among the undergraduate Nursing students of AIIMS, New Delhi. Population selected are B.Sc Nursing 2nd, 3rd and 4th year and post basic 1st and 2nd year students who are studying in College of Nursing, AIIMs, New Delhi using smart Phone and Whats app.

Result: All the nursing students (N=230) had good and homogenous knowledge about mucormycosis with mean knowledge score 7.99 (minimum 3 and maximum10) and SD±1.1. Most of the students (88.7%) would like to include the topic in the syllabus as they would like to know in detail about the disease. 90% of the Students showed a greater appreciation and willingness to attend seminar/webinar on this topic of Mucormycosis.

Conclusion: In the current study, although most of the study participants possess a good knowledge toward the prevention of COVID-19, it is surprising to know that the students are seeking formation from unverified sources such as social media and internet. These results are impactful and should be addressed through standardized training opportunities and distribution of official sources about mucormycosis .There is also a need to Constantly updated refresher training from authentic sources which will contribute to better performance of the student Nurses in clinical areas

Keyword: *Knowledge, Mucormycosis, undergraduate nursing students.*

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Introduction

The surge of Covid 19 in its second wave has left a trail of disease and death in the form of black

fungus or Mucormycosis. Mucormycosis is a life-threatening fungal infection characterized by host tissue infarction and necrosis that occurs mostly in immunocompromised patients and is associated with an increasing incidence and mortality despite the availability of therapeutic tools.[1]

Black fungus has now become epidemic and therefore it is very important to take all necessary measures to prevent it from spreading.

Nursing students have an inevitable role in caring and most importantly giving education to patients with any infectious disease. Therefore the Nursing students need to understand the magnitude of the disease and give adequate teaching regarding the control and prevention of Mucormycosis to the patient during their training period. It is important to increase awareness of mucormycosis among nursing students who will be an important future health care providers. It is important for nursing students to stay up-to-date on current guidelines for the diagnosis and treatment of mucormycosis and remain cognizant of emerging literature on the topic.[2]

Since the diagnosis of mucormycosis is challenging and treatment should start as early as possible in order to decrease mortality[3] , we should help the nursing students in understanding the risk factors and clinical presentation of mucormycosis to provide prompt treatment to the patient.

It is important to increase awareness of mucormycosis and to stay up-to-date on current guidelines for the diagnosis and treatment of mucormycosis and remain cognizant of emerging literature on the topic.4

Objectives of the Study:

1. To assess the knowledge of Mucormycosis secondary to Covid 19 among undergraduate nursing students of AIIMS, New Delhi.

2. To assess the need to include the guidelines for the care of the patient with Mucormycosis in the undergraduate syllabus.

Material and Methods

The study was conducted among the undergraduate nursing students, College of Nursing, All India Institute of Medical Sciences, New Delhi. The questionnaire was administered to all 230 of the undergraduate nursing students studying at the College of Nursing, AIIMS . Of them there were 62, 59, 38 and 26 students studying in the First, Second, Third and Fourth year respectively of the B.Sc. (Honors) Nursing programme and 26 and 19 students were studying in Post Basic Nursing Programme.

Descriptive cross sectional survey was conducted using online platform as direct contact with the participants was not possible during this period. An online questionnaire was used to assess knowledge of Mucormycosis among the undergraduate Nursing students of AIIMS, New Delhi. The tool consists of 10 items based on the knowledge, prevention and treatment of Mucormycosis.

Data collecting instruments consist of three sections:

Section I pertains to information about survey, and consent.

Section II pertains to demographic characteristics. (Tool 1)

Section III pertains to questionnaire of

Mucormycosis (Tool2)

In order to ensure the validity of tool, it was given to five experts from nursing. Tool was found to be valid with few corrections, which were incorporated and the final draft of the tool was prepared. Try out was conducted to ensure the clarity of the tools. The reliability of the tool was determined by Cronbach's alpha which is .76 and the tool found to be reliable. Data was analyzed using both descriptive and inferential statistics.

Ethical permission was taken from institutional ethical committee of All India Institute of Medical Science, New Delhi. The objectives of the study explained and informed consent obtained from participants.

Results

OVERALL KNOWLEDGE SCORE OF THE STUDENTS

Table 1. Shows mean Knowledge score and standard deviation of the different groups of the students.

Course	Mean	N	Std. Deviation
BSc(H) Nursing-I	7.97	62	1.187
BSc(H) Nursing-II	7.81	59	1.383
BSc(H) Nursing-III	8.11	38	0.764
BSc(H) Nursing-IV	8.04	26	1.216
BSc(PB) Nursing-I	8.27	26	1.041
BSc(PB) Nursing-II	7.95	19	1.177
Total	7.99	230	1.167

All the nursing students (N=230) had good and homogenous knowledge about mucormycosis with mean knowledge score 7.99 (minimum 3 and maximum10) and SD±1.1.

Table 2. Shows source of information related to mucormycosis.

Source	Frequency	Percentage
Social media	56	24.3
Internet	78	33.9
Newspaper	19	8.3
hospital	24	10.4
Books	16	7.0
television and radio	37	16.1
Total	230	100.0

The most common source of the students' information about Mucormycosis was the internet (33.9%), followed by social media (24.3%) including electronic news websites and social media such as Twitter, Facebook, YouTube, Instagram, Snapchat and WhatsApp, television and radio (16.1%), hospital (10.4%), newspaper (8.3%) and the least source of information is obtained from the books (7%) **.**

Table 3 depicts the information related to willingness of the students to include (incorporate) Mucormycosis in the syllabus.

	Response	Frequency	Percent
Would you like the topic to be included in the syllabus?	No	26	11.3
	Yes	204	88.7

The implication of Table 3 is that most of the students (88.7%) would like to include the topic in the syllabus as they would like to know in detail about the disease.

Table no 4. Presents information related to willingness of the students to attend seminar/webinar on this topic. N=230

	Response	Frequency	Percent
Would you like to attend seminar /webinar on Mucormycosis?	No	23	10%
	Yes	207	90%

Table 4 shows that the 90% of the Students showed a greater appreciation and willingness to attend seminar/ webinar on this topic of Mucormycosis.

Table 5. Correlation between the class and the score. N=230

Year of B.Sc. Nursing	Pearson Correlation	1	0.062
	Sig. (2-tailed)		0.353
k_score	Pearson Correlation	0.062	1
	Sig. (2-tailed)	0.353	

Correlation between B.Sc. (Hons) Nursing Students and knowledge score was not Significant (p 0.353 and r= 0.062).

Table 6: Knowledge mean score between the group and within the group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.495	5	0.899	0.655	0.658
Within Groups	307.488	224	1.373		
Total	311.983	229			

ANOVA test was applied to test the Knowledge mean score between the group and within the group, which shows that it is not significant (p value 0.658).

Conclusion

Findings of this study conclude that all the students (N=230) had good and homogenous knowledge about mucormycosis with mean knowledge score 7.99 (minimum 3 and maximum10) and SD±1.1. The present results are similar to those reported by Amin N. Olaimat whose overall student COVID-19 knowledge score was 80.1%, indicating that most students were knowledgeable about this pandemic.[5] The knowledge reported by Zhong et al. also found that the overall knowledge score was 90% among Chinese residents during the rapid rise period of COVID-19 cases in Hubei Province.[6]

In the current study, the most common source of the student's information about Mucormycosis was the internet (33.9%). Alzoubi et al. stated that social media was the most common source of information for Mutah university students.[7]

Based on the results of the current study, majority of the students would like to include the topic in the syllabus as they would like to know in detail about the disease. Majority of the students also expressed their willingness to attend seminar/webinar on this topic.

Amin N. Olaimat suggested health education programs about viral infections and other infectious diseases should be continuously implemented to university students through a required credit course during their studies.

TS Suryanarayanan also suggested to first educate society about the disease so as to enhance their knowledge regarding these diseases so that they might directly engage in the implementation of protective health measures to contain infectious diseases such as the COVID-19 pandemic.[8]

In the current study, although most of the study participants possess a good knowledge toward the prevention of COVID-19, it is surprising to know that the students are seeking formation from unverified sources such as social media and internet. These results are impactful and should be addressed through standardized training opportunities and distribution of official sources about mucormycosis .There is also a need to Constantly updated refresher training from authentic sources which will contribute to better performance of the student Nurses in clinical areas.

Conflict of Interest; None

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References

1 Pilmis B. Alanio A. Lortholary O. Lanternier F. Recent advances in the understanding and management of mucormycosis. Published 2018 Sep 7. doi:10.12688/f1000research.15081.1 Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6134337/

2 Brettholz AM. Mccauley SO. Mucormycosis: Early Identification of a Deadly Fungus. J Pediatr Oncol Nurs. 2018 Jul/Aug;35(4):257-266. Epub 2018 Mar 21. PMID: 29560764. Available from https://journals.sagepub.com/doi/full/10.1177/1043454218763092

3 Dimitrios P. Kontoyiannis. Russell E. Lewis: How I treat mucormycosis. *Blood* 2011; 118 (5):1216–1224. Available from https://doi.org/10.1182/blood-2011-03-316430

4 Mucormycosis early Identification of deadly Fungus. 2018 [cited March 21 2018]. Available from https://journals.sagepub.com/doi/full/10.1177/1043454218763092.

5 Olaimat AN. Aolymat I. Shahbaz HM.Holley RA. Knowledge and Information Sources About COVID-19 Among University Students in Jordan: A Cross-Sectional Study. (2020) *Front. Public Health* 8:254. doi: 10.3389/fpubh.2020.00254.

6 Zhong BL. Luo W. Li HM et al. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. Int J Biol Sci. 2020;16(10):1745-1752.

7 Alzoubi H. Alnawaiseh N. Al-Mnayyis A.Abu-Lubada M. Aqel A.Al-Shagahin H. COVID-19 - knowledge, attitude and practice among medical and non-medical university students in Jordan *J. Pure Appl Microbiol*. (2020) 14:17–24. doi: 10.22207/JPAM.14.1.04.

8 *T.S. Suryanarayanan R. Uma Shaanker*. COVID-19 and Black Fungus: What Is Mucormycosis?Health, The sciences. Available from https://science.thewire.in/the-sciences/covid-19-and-black-fungus-what-is-mucormycosis

A Study to Assess the Knowledge of Staff Nurses Regarding First 24 Hours Care of Patients with Myocardial Infarction admitted to ICU/Emergency in Hospital Pt. B.D. Sharma, PGIMS Rohtak with a View to Develop Self-Instructional Module

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Abstract

Coronary Artery Disease (CAD) includes-Coronary Atherosclerosis and Myocardial Infarction. The most common cause of cardiovascular disease in India is atherosclerosis, an abnormal accumulation of lipid, or fatty substances, and fibrous tissue in the lining of arterial blood vessel walls. These substances block and narrow the coronary vessels in a way that reduces blood flow to the myocardium Objectives of the study: To assess the knowledge of staff nurses regarding first 24 hours care of patients with Myocardial Infarction admitted to ICU.To analyze the relationship between knowledge of staff nurses regarding first 24 hours care of patients with Myocardial Infarction admitted to ICU with selected socio-demographic variables. To develop a self-instruction module regarding first 24 hours care of patients with Myocardial Infarction Material and Methods: The scientist conducted the study exploitation quantitative approach and non- experimental style on a hundred staff nurses by non likelihood purposive sampling technique. Structured knowledge questionnaire was used to assess the knowledge of staff . Descriptive and inferential statistics accustomed analyze the info. Results: The study that most of the staff nurses (74%) had moderate knowledge, with only 10% having adequate knowledge and 16% had inadequate knowledge.

Conclusion: The study provides us with evidence that most of the staff nurses (74%) had moderate knowledge, with only 10% having adequate knowledge and 16% had inadequate knowledge.The findings revealed that if the staff nurses has given adequate knowledge regarding first 24 hours care and immediate management of patient with MI, they can manage the patient immediately and can save life of patient without delay. There issignificant association between knowledge with selected demographic variables.

Keywords*: Coronary artery disease, Myocardial Infection, staff nurses , self structured module*

Introduction

Coronary artery sickness (CAD) is that the most prevailing style

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of disorder in adults. For this reason, nurses should acknowledge varied manifestations of arteria coronaria conditions and proof based mostly strategies for assessing, preventing and treating these disorders.[1] The world Burden of sickness study instructed, coronary vascular sickness incidence death rate of 272 per 100'000 population in Asian country, that is over the world average of 235 per 100'000 population. In Asian country mortality in terms of years of life lost thanks to coronary vascular sickness multiplied by fifty nine, that is, from 23.2 million in 1990 to thirty seven million in 2010 (Prabhakaran & Jheemon, 2016). Register General of Asian country rumored that coronary cardiovascular disease caused terrorist organization of total deaths and twenty sixth of adult deaths in 2001-2003, that multiplied up to twenty third of total deaths and thirty second of adult deaths in 2010-2013.1 within the year 2015, World Health Organization has foreseen that, Asian country can have one hundred million or hr of world's heart patients.[2] In 2011, World Health Organization (WHO) rumored the age standardized CVD mortality among males and females in Asian country (per 100'000) at 363-443 and 181-281, severally.1In the year 2007, WHO calculable that globally twenty nine per cent of deaths were because of vessel diseases and among them, 25-28 per cent of deaths were because of MI.[2] And over a meg Americans had a brand new or continual acute coronary syndrome and to blame for over 250,000 deaths annually.[1] once the blood offer to the center is compromised for over twenty minutes, irreversible tissue harm and death occur, that is, a MI. though any condition that disrupts blood flow to the center will cause tissue harm, arterial sclerosis is that the commonest cause. arterial sclerosis is that the buildup of fatty deposits or plaque within the walls of the arteries. The plaque within the arteries will break through the epithelium and are available in touch with blood flow. The rough surface of the plaque activates the body's coagulation mechanisms, and a coagulum forms. The coagulum, or clot, occludes the vessel and prevents blood flow to the portion of the cardiac muscle equipped by that vessel. Lack of blood flow suggests that lack of gas and tissue harm happens.[4]

Need for the Study

MI a important health standing which needs standardized care policies, further as its want qualified and complete health supplier to get sensible outcome of management. With the modification in life vogue, the speed of MI augmented since individuals tend to like urban life with less physical efforts. In such circumstance and thanks to important standing of the patients throughout the primary twenty four hours, treatment ought to be supervised by qualified health care suppliers among WHO nurses represents the nearest line of care employees. Through out observe, it's has been discovered that nurses' performance towards MI in again and again don't satisfy the desired level, this necessitates additional analysis and workup. The opportunities of coaching provided for nurses in such field ar restricted by several difficulties that expected to be mirrored on developing the nurses' performance.[5] Nurses ar an outsized a part of the treatment and interference method. Nurses should keep several problems in mind for a patient experiencing Associate in Nursing acute MI. One such initiative is that the One during a Million Hearts Initiative, a joint effort of the

U.S. Health and Human Services Department, the Centers for sickness management and non-profit-making teams, like the AHA. The goal of this program is to stop one million heart attacks and strokes in five years. As a part of the group's effort, they promote the ABCS–appropriate analgesic medical aid, pressure level management, cholesterin management, and smoking stop.[6]

Statement of the problem
A study to assess the information of employees nurses concerning 1st twenty four hours care of patients with MI admitted to ICU Emergency in hospital Pt. B.D. Sharma, PGIMS Rohtak with a read to develop self-instructional module.

Objectives of the Study

1) To assess the information of employees nurses concerning 1st twenty four hours care of patients with MI admitted to ICU.

2) To analyze the link between information of employees nurses concerning 1st twenty four hours care of patients with MI admitted to ICU with hand-picked socio-demographic variables.

3) To develop a self-instruction module concerning 1st twenty four hours care of patients with MI.

Operational definitions

Knowledge: It refers to the extent of understanding of the employees nurses concerning 1st twenty four hours care of patients with MI.

Staff Nurses:

The qualified nurses UN agency have completed 3 years of General Nursing and Midwifery course and dealing at PGIMS Rohtak.

Myocardial Infarction: Myocardial Infarction is that the sphacelus of some of heart ensuing from shrivelled blood offer by a partial or complete blockage of artery.

ICU:

ICU could be a specially staffed and equipped ward dedicated to the management of patients with life threatening sicknesses, injuries or complications.

Self-Instruction Module: It refers to the consistently organized directions designed for the employees nurses to produce info on 1st twenty four hours care of patients with MI.

Assumption

• The employees nurses might have adequate information concerning 1st twenty four hours care of patients with MI.

• The employees nurses information might vary with hand-picked demographic variables.

Hypothesis

H1: there'll be important association between the information of employees nurses concerning 1st twenty four hours care of patients with MI with hand-picked demographic variables.

H0: there'll be no association between information of employees nurses concerning 1st twenty four hours care of patients with MI with demographic variables.

Limitations

1. Single setting of ICU/Emergency in Pt. B.D. Sharma, PGIMS Rohtak was taken.

2. Tiny portion of population was taken as sample.
3. Sampling technique was purposive, no organization was taken.
4. The study is proscribed to employees' nurses solely

RESEARCH METHODOLOGY

· RESEACH APPROACH:

Quantitative approach adopted by the researcher for the accomplishment of the present study.

· RESEARCH DESIGN :

Non- experimental research design.

· SETTINGS OF THE RESEACH:

The present study was conducted in ICU/ Emergency PGI , Rohtak, Haryana.

· POPULATION:

In this study, the target population consisted staff nurses working in PGIMS, Rohtak.

· SAMPLE :

The sample in this study includes staff nurses working in PGIMS, Rohtak.

· SAMPLE SIZE :

In the present study, the sample size comprised of 100 staff nurses working in PGIMS.

· SAMPLING TECHNIQUE:

The sample for this study was drawn by non-probability purposive sampling technique.

PLAN FOR DATA ANALYSIS

Ø Descriptive and inferential statistics was used to analyze the data.

Ø Frequency and percentage would be computed to describe demographic data.

ORGANIZATION OF FINDINGS

The analysis of data from study is presented under the following headings:

SECTION-A: Demographic characteristics of the participants in terms of frequency and percentage.

SECTION-B: Knowledge score of study sample regarding first 24hours care of patient with MI

SECTION-C: Association of the test knowledge scores with selected demographic variables.

SECTION-A: Demographic characteristics of the participants in terms of frequency and percentage

Table :1 Frequency and percentage of demographic characteristic of the sample N=100

Sr. No.	Socio-demographic variables	Frequency	Percentile
1.	**Age (in years)**		
	a) 21-30	88	88%
	b) 31-40	12	12%
	c) >40	0	00

Cont... **Table :1 Frequency and percentage of demographic characteristic of the sample N=100**

2.	**Gender**		
	a) Male	17	17%
	b) Female	83	83%
3.	**General education**		
	a) Diploma	40	40%
	b) Graduation	50	50%
	c) Post-graduation	10	10%
4.	**Experience in ICU'S:**		
	a) 0-2	56	56%
	b) 2-4	20	20%
	c) 4-6	10	10%
	d) >6	14	14%
5.	**Present working area**		
	a) ICCU	27	27%
	b) Emergency department	58	58%
	c) CCU	8	8%
	d) WARD-25	7	7%
6.	**Source of information:**		
	a) Seminar/Workshop/Conference	25	25%
	b) No source of information	75	75%

Table 1: Reveals that among the subjects chosen majority of staff nurses (88%) were belong to age group 21-30 years whereas 12% were belong to 31-40 years age group and none of the staff nurse belongs to > 41 years age group**.** Table also depicts that 50% of staff nurses were graduates while 40% had done Diploma in Nursing and 10% had done PG in Nursing. The table also depicts that 56% of staff nurses had 1-2 years' experience in ICU, whereas 20% had 2-4year's experience, 10% had 4-6 years' experience and 14% had >6 years' experience in ICU. Table also shows that 75% of staff nurses had no source of information regarding first 24 hours care of MI patient while 25% had attended Workshop/Seminar/Conference regarding it.

SECTION-B: Knowledge score of study sample regarding first 24hours care of patient with MI

Table: 2 Knowledge level of the staff nurses regarding first 24 hours care of patients with MI

N=100

Knowledge level	Range of score	Staff nurses	
		Frequency (f)	Percentage (%)
Adequate	21-30	10	10
Moderate	11-20	74	74
Inadequate	0-10	16	16
Total	30	100	100.0

Table no. 2 Data presented in the table depicts that most of the staff nurses (74%) had moderate knowledge, with only 10% having adequate knowledge and 16% had inadequate knowledge.

SECTION-C: Association of the test knowledge scores with selected demographic variables.

TABLE NO.3- ASSOCIATION OF DEMOGRAPHIC VARIABLES WITH KNOWLEDGE

Sample Characteristic	F	Adequate	Moderate	Inadequate	Chi-Test	p-Value	df	t-value
1.Age a.21-30 year b.31--40 year c.>40	88 12	14 2	64 9	10 1	0.09	0.95NS	2	5.99
2. Gender a. Male b. Female	17 83	0 16	14 59	3 8	4.34	0.11NS	2	5.99
3.Level of Education a. Diploma b. Graduate c.Post-Graduate	40 50 10	8 4 4	28 42 3	4 4 3	13.13	0.01*	4	9.49
4. Experience in ICU a. 0-2yrs b. 2-4yrs c. 4-6yrs d. >6yrs	56 20 10 14	6 5 3 2	45 14 6 8	5 1 1 4	9.20	0.16NS	6	12.59

Cont... **TABLE NO.3- ASSOCIATION OF DEMOGRAPHIC VARIABLES WITH KNOWLEDGE**

5. Present working area a. ICCU b. ED c. CCU d. Ward-25	27 58 8 7	7 6 1 2	16 47 5 5	4 5 2 0	7.76	0.25NS	6	12.59
6. Source of information a.Workshop/ conference/seminar b. No source of information	25 75	3 13	19 54	3 8	0.40	0.19NS	2	5.99

Table no.3 showed that 64% staff nurses had moderate knowledge, 14% had inadequate knowledge and 10% had adequate knowledge among the age of 21-30 years. Only 2% staff nurses had inadequate, 9% had moderate and only one had adequate knowledge among 31-40 years of age. In the age >40 years, no one had adequate, inadequate & moderate knowledge. The calculated Chi-square value (0.09) is lower than the tabulated chi-square value (5.99) at df (2) &0.05 level of significant. So null hypothesis is accepted, it prove that there is no significant association between knowledge level and age of sample.

Discussion

This study concluded that that most of the staff nurses (74%) had moderate knowledge, with only 10% having adequate knowledge and 16% had inadequate knowledge.

There are less programmes organized by the health department especially for staff nurses so that they can improve and update their knowledge time to time. Most of staff nurses were not provided any extra training related to ICU care of patients. The written material prepared by the investigator in the form of information booklet will help in improving their knowledge.

Nursing implications

The implications of the study had been discussed in relation to nursing practice, nursing education, nursing administration and nursing research.

Nursing practice

Development of information module on first 24hrs care of patient with MI.

v Serve as guide for doctor, nurses and other HCP for ready references and help in managing MI patient in emergency.

v Staff nurse's knowledgeregarding first 24hrs care of patient with MI can help to provide better care.

v A piece of literature generated by the present study will be used by future researchers.

Nursing Education

Finding of the study have implication for nursing education. With the emerging health care trends nursing education must focus on reduction of neonatal mortality and morbidity.

v Very often, the physicians can't reach on time of emergencyand nurses have to care and manage the patient comes in ICU/emergency. Therefore, nurses must be equipped with knowledge and skill to make accurate decision regarding MI in emergency, so stress should be given in nursing curriculum to strengthen the knowledge and clinical experience of student nurses in adequate care of MI emergency.

v Students can refer this study for their reference purpose.

v The methodology also gives guidelines to reach people for collecting information.

v The primary task is to help the nurse to master at basic level and evaluate the update content as an ongoing future.

Nursing administration

Administration plays a key role in an organization for the staff development programs. Nursing is a rapidly growing profession. In present era advanced technology, recent advances in care there is always demand for quality care to be provided. So, it is the main responsibility of the nursing administrative authority to initiate, conduct and carry out educational programs for the teaching and training of the students.

v The nursing administrators should focus on health promotion through outreach and mass health education programme etc. health workers can be given training on first 24hrs care of MI patient, the nursing administrators should train the students and staffs in the emergency while providing care.

v Professional interaction between the nurse and the other HCP will help to improve professional standards and create better image.

Nursing administrators can plan an in-service education programs to take leadership role in educating college students and staff nurses regarding first 24hrs care of MI patient. Nurses should take up responsibility to publish more information module and other health educational packages.

Nursing research

Nurse researcher should take efforts to conduct interactive session regarding first 24hrs care of MI patient among staff nurses for enhancing their knowledge.

v Further research can be carried out on this aspect to assess the effectiveness information module regarding first 24hrs care of MI patient.

v The study will serve as a variable reference material for future investigators.

v The result of the study can be published in nursing journals.

The findings of the study can be presented in various local, state or national.

Recommendations

v Based on the findings of the study, the study can be replicated on larger sample to validate the findings of the study.

v Similar study can be carried out to assess the knowledge, attitude and practice regarding first 24hrs care of MI patient among HCP in different areas and

settings.

v The study can be done in different districts and different states of India as the knowledge may vary.

v The short-term training programme on first 24hrs care of MI patientand its effectiveness can be analysed through a pre and post-test method.

Ethical Clearance- Taken from Pt. B.D Sharma University, Rohtak .

Source of Funding- Self

Conflict of Interest - NIL

References

1. Scirica BM, Sabatine MS, Morrow DA, et al: The Role of Clopidogrel in Early and Sustained Arterial Patency After Fibrinolysis for ST-Segment Elevation Myocardial Infarction The ECG clarity- 28 Study. J Am Coll Cardiol. 2006, 48: 37-42.
2. Padmavathi S. "A concerned effort in prevention of heart diseases in India", journal of health promotion of education in south East Asia. 21:3, 2-3, 2006.
3. Binu Xavier, IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 2, Issue 6 (Nov. – Dec. 2013), PP 14-19 www.iosrjournals.org
4. Moss AJ, Zareba W, Hall WJ, et al: for the Multicentre Automatic Defibrillator Implantation Trial II Investigators. Prophylactic Implantation of a Defibrillator in Patients with Myocardial Infarction and Reduced Ejection Fraction. N Engl J Med. 2002, 346: 877-883.
5. Mohamed HJ. Risk Factors for Coronary Heart Disease among Patients Admitted to Al-Shaab Specialized Teaching Hospital in Khartoum (Doctoral dissertation, National Ribat University).
6. Andreson J, Adams C, Antman E, et al: ACC/AHA guidelines for the management of patients with unstable angina/non-ST elevation myocardial infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice 74 Guidelines. J Am Coll Cordial. 2007, 50
7. Antman E, Hand M, Armstrong P, et al: focused update of the ACC/AHA 2004 Guidelines for the Management of Patients with ST-Elevation Myocardial Infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2008, 51: 210-2147.
8. (Scirica BM, Sabatine MS, Morrow DA, et al: The Role of Clopidogrel in Early and Sustained Arterial Patency After Fibrinolysis for ST-Segment Elevation Myocardial Infarction The ECG clarity- 28 Study. J Am Coll Cardiol. 2006, 48: 37-42.)

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A Study to Evaluate the Effectiveness of Structured Teaching Programme Regarding Control of Anemia and Worm Infestation among Male Adolescents at Madurai

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Abstract

Background: The main objective of the study was to evaluate the effectiveness of Structured Teaching Programme regarding control of anemia and worm infestations among male adolescents at Madurai.

Methods and Results : This study was employed at true experimental research design. Totally 60 male adolescents were included in the study. The study result showed that among control group pretest mean was 9.86 and standard deviation was 0.54. Post test mean 9.84 and standard deviation 0.60. Difference in mean percentage was 0.02. Worm infection status was same (46.7 % no worm and 53.3 moderate worm load) in pretest and post test without any change. Among experimental group pretest mean was 9.84 and standard deviation was 0.60. Post test mean was 12.23 and standard deviation was 1.05. Difference in mean percentage was 2.38. Worm infection status in pretest was 60% moderate worm load and 40 % no worm infection and all participants of experimental group were free from worm infection in post test. The t value was 7.62 and p value of the study was less than 0.001.

Conclusion: The structured teaching programme had highly significant on control of anemia and worm infestation among male adolescents

Keywords: *Anemia, Adolescent health, Male adolescents, Worm infestation.*

Introduction

Adolescent stage is vital stage in human life. It is a stage of transformation of human form child to early adult. The physiological and psychological development is occurring at adolescent period. Hemoglobin is essential to carry the oxygen to the tissue. Decreased hemoglobin causes anemia and less supply of oxygen to tissues which affect normal growth and development among adolescents. Adolescents are highly active and interacting with the society for their socialization. There is a high chance for worm infection by the contaminated soil and contaminated food. The main cause of anemia among adolescents is worm infestation. Through proper educational awareness may modify the behaviour of the adolescents and bring the changes in their social activities and reduce the worm infestation and anemia.

Statement of the Problem

A study to evaluate the effectiveness of structured teaching programme regarding control of anemia and worm infestation among male adolescents at Madurai

Objectives

1. To assess the pretest level of demographic variables among male adolescents at Madurai in experimental and control group

2. To evaluate the effectiveness of structured teaching programme regarding control of anemia and worm infestation among male adolescents in experimental group

3. To find the association between anemia, worm infestation and selected socio demographical variables in experimental and control group

Hypotheses

H1: There is a statically significant difference between pre and post test of anemia and worm infestation among male adolescents in experimental group

H2: There is a statically significant association between anemia, worm infestation and selected socio demographic variables among male adolescents in experimental and control group

Methodology

The research study was employed with quantitative research approach. The research design was true experimental research design. The pretest-posttest control group design was adopted for conducting this study. Totally 60 male adolescents aged between 12-18 years were participated in this study. Random sampling technique was used and male adolescents who satisfied the inclusion criteria were selected for this study.

Selection and Development of Study Instrument

The instruments used in the study were demographic variable proforma, and blood hemoglobin and stool examination. Demographic variables proforma consist of age, religion, occupation of parent, educational status of parent, family income and residential area of the adolescents.

Data Collection

The data were collected from the students for the period of eight weeks. Rapport was established with adolescents after a brief introduction about the study and its purpose. The written consent was obtained from the adolescents after fully explaining the procedure of the study. Based on the criteria for sample selection, Totally 60 male adolescents with anemia and worm infestation were selected using lot method of random sampling and assigned as experimental and control group. The Pretest screening of hemoglobin and motion ova cyst done for both group students. Structured teaching programme regarding preventions anemia and worm infestations with laptop, pamphlet and power point presentation was given to the experimental group. The control group was allowed to stay as routine. Post test screening of hemoglobin and stool examination was done after two months among both groups. Data were analyzed for the findings.

Results and Discussion

The findings revealed that among control group, most of the participants 53.3% had moderate anemia and 46.67% had mild anemia in pretest and 40% had mild anemia and 60% had moderate anemia in post test. Pretest mean was 9.86 and standard deviation was 0.54. Post test mean 9.84 and standard deviation 0.60. Difference in mean percentage was 0.02. Worm infection status was same (46.7 % no worm and 53.3 moderate worm load) in pretest and post test without any change.

Among experimental group 66.7 % had mild anemia and 33.3 % had moderate anemia in pretest and 53.3 % had mild anemia and 46.7 % had normal hemoglobin status in post test. Pretest mean was 9.84 and standard deviation was 0.60. Post test mean 12.23 and standard deviation 1.05. Difference in mean percentage was 2.38. Worm infection status in pretest was 60% moderate worm load and 40 % no worm infection and all participants of experimental group were free from worm infection in post test. The t value was 7.62 and p value of the study was less than 0.001 which was highly significant. Hence the hypothesis H1 There is a statically significant difference between pre and post test of anemia and worm infestations among male adolescents in experimental group was retained.

There was no association between selected demographical variables and anemia, worm infection among male adolescents. Hence hypothesis H2 There is a statically significant association between anemia, worm infestation and a selected socio demographic variable among male adolescents in experimental and control group was detained.

Table 1 Frequency and percentage wise distribution of pretest and post test anemia status among male adolescents in experimental and control group.

Anemia status by hemoglobin level	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
Normal	0	0	0	0	0	0	14	46.7
Mild anemia	14	46.67	12	40	20	66.7	16	53.3
Moderate anemia	16	53.33	18	60	10	33.3	0	0
Severe anemia	0	0	0	0	0	0	0	0
Overall	30	100	30	100	30	100	30	100

Table 2 Frequency and percentage wise distribution of pretest and post test worm infestation level among male adolescents in experimental and control group.

Level of stool examination	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
No worm infection	16	46.67	16	46.67	12	40	30	100
Moderate worm load	14	53.33	14	53.33	18	60	0	0
Heavy worm load	0	0	0	0	0	0	0	0
Overall	30	100	30	100	30	100	30	100

Table 3 Evaluate the effectiveness of Structured teaching programme by pretest and post test Mean, Standard deviation, 't' value

Group	Pretest		Post Test		Difference in Mean	't' value	p- value
	Mean	SD	Mean	SD			
Control group	9.86	0.54	9.84	0.60	0.02	9.09	p<0.001***(HS)
Experimental Group	10.30	0.78	12.23	1.05	1.93		

Conclusion

The structured teaching programme had highly significant on control of anemia and worm infestation among male adolescents. It is non invasive and non pharmacological interventions which is highly feasible. The authors were recommended to implement health awareness programme regarding anemia and worm infestations among male adolescents to promote positive health.

Ethical Clearance : Ethical clearance obtained from Institutional human ethical committee of Arupadai Veedu Medical College and Hospital, Puduchery

Source of Funding- Self

Conflict of Interest – I am doing my PhD in nursing at Vinayaka mission research foundation, Salem, India. As per curriculum I have to publish my original research at reputed journal. My specialty is M.Sc., Pediatric nursing. During my clinical posting I have witnessing the majority of male adolescents are with anemia and worm infestation. Indian government are supplying the iron and folic acid tablets weekly to the adolescent girls through WIFS programme but ignoring male adolescents. Review of literatures also evidenced the prevalence of worm infection and anemia among male adolescents. Keeping this mind the investigator conducted this research.

References

1. Maakaron JE, Taher AT, Conrad MEAnemia Practice Essentials, Pathophysiology, Etiology. MesScape (2016)
2. Gupta, Pant B., kumari R. and G. M. Screen Out Anemia among Adolescent Boys as Well, Journal of Community Medicine (2013) 4(1):20–5
3. Halterman JS, Kaczorowski JM, Aligne CA, et alIron deficiency and cognitive achievement among adolescents in the United States. Pediatrics .(2013) 1381–1386.
4. Atto V, Bleyere NM, Konan BA, et alHematological profile of adolescents in Abidjan, International Journal of Bioscience .(2012) 2(6):1–12.
5. De LM, Pena-Rosas RJP, Cusick S, et

alHemoglobin Concentrations for the Diagnosis of Anemia and Assessment of Severity, Vitamin and Mineral Nutrition Information System, Vol 11. Geneva: World Health Organization; (2011) p. 1

6. Baral K, Onta SPrevalence of anemia amongst adolescents in Nepal a community based study in rural and urban areas of Morang District. Nepal Medical College Journnal 11(3): . (2009) 179–182.

7. Khanum H., Rahman M.M., Uddin M.H. Intestinal parasitic infestation among the outdoor patients of Dhaka University Medical Centre, Bangladesh. Univ j.zool. Rajshah. 2010;28:45–49

8. Shrestha B. Intestinal parasitic infestation in healthy school children of Lalitpur district. J Nepal Med Assoc. 2001;41:266–270

9. Ragunathan L., Kalivaradhan S.K., Ramadass S. Helminthic infections in school children in Puducherry, South India. J Microbiol Immunol Infect. 2010;43(3):228–232

10. Bisht D., Verma A.K., Bhardwaj H.H.D. Intestinal parasitic infestation among children in a semi-urban Indian population. Trop Parasitol. 2011;1(2):104–107

Lightboard: Inexpensive and Easy-To-Develop Media for Making Nursing Practicum Videos

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Abstract

Since the outbreak of the SARS-CoV-2 virus in Indonesia, the Government has closed schools and conducting learning from home, which forces universities to use distance education. One alternative is to use videos that have been shown to have a positive effect on student learning, satisfaction, engagement, interest, inspiring, and facilitating problem-solving. There is a new medium known as a "lightboard", which is most often made up of a panel of glass surrounded by LED light that makes the writing luminous and highly visible on the camera. The purpose of this study was to develop a inexpensive and easy-to-develop lightboard media to make nursing practicum video. This study uses research and development methods. The object being developed is a lightboard media to make a practicum video. The results showed that the video made with lightboard as a medium have fulfilled the aspect of simplicity, clarity, convenience, educative, and attractiveness. Lightboards have proven to be effective as a medium for making practical videos that are inexpensive and easy-to-develop. Authors strongly recommends nursing study programs to use lightboards as a medium for making nursing practicum videos. Furthermore, research to test the effectiveness of light board media on other practical materials is recommended.

Keywords: *lightboard; video; nursing; learning*

Introduction

Since the outbreak of the SARS-CoV-2 virus in Indonesia on March 2, 2020, the Government of the Republic of Indonesia has issued various policies to break the chain of spread of the virus, One of them is closing schools and conducting learning from home, which forces universities to use distance education.

Costley & Lange suggest using video as an alternative because it has been shown to have a positive effect on student learning, satisfaction, engagement and interest [(1)]. Alpay et al, states that video as a communication tool can facilitating problem-solving, assisting in the mastery of learning, and inspiring and engaging students[(2)].

McCorkle & Whitener mention that there is a new technology for making effective practical teaching videos, known as "lightboard" [(3)]. The lightboard is a low-tech hardware for recording instructional videos created by Michael Peshkin, and registered under the name Lightboard Open Source Hardware Initiative [(3)].

Lightboards are most commonly constructed as a panel of glass surrounded by a strip of small LED lights that illuminate dry erase markers to make writing highly visible on camera [(3)]. When using the Lightboard, instructors write text on a glass that is brightly illuminated such that text is highly visible on the board [(4)].

The purpose of this study was to develop a inexpensive and easy-to-develop lightboard media to make nursing practicum video. The authors uses the technique of interpreting the results of blood gas analysis by Hennessey and Japp as an example of a course given with lightboard media in this study [5].

Material and Methods

This study uses research and development methods. Research and development methods refers to activities for innovation by institutions or corporations to develop or improve their existing products or service [6]. The object that being developed was a lightboard media to make a practicum video. The authors simplifies the steps of the research and development method into three parts, namely: (1) the preliminary study stage; (2) media development stage; and (3) the evaluation stage.

1. Preliminary study

In the preliminary study stage, authors searched for literature related to lightboard and the interpretation of blood gas analysis. The author uses the simplified interpretation method of blood gas analysis results by Hennessey and Japp [5].

2. Media Development

In the media development stage, the researchers carried out:

a. Initial design

At this stage, the researcher prepared all the raw materials needed to make light board media, along with other equipment for video production. The authors followed the construction considerations by Hay & Wiren as a design in this study [7].

The following were the materials prepared:

- Acrylic glass
- LED strip light
- Wood
- Clamp
- Neon marker
- Microfiber Wipe
- Plastic cleaner
- Microphone
- Black cloth
- Camera & tripod
- Lighting

b. Video production

Authors records a video of the interpretation of the results of the blood gas analysis that is delivered on a lightboard media

c. Design validation by experts

Authors ask 5 participants, consisting of: 2 material experts (1 ICU nurse with more than 10 years experience, and 1 critical care nursing lecturer); 2 experts in learning communication media (1 lecturer in multimedia science and 1 professional video editor); and 1 learning design expert, to assessed the video. Authors used the Chaeruman online learning media evaluation instrument to assess whether the video has met the standards of effective learning video [8].

d. Small group trial

In small group trial the video were tested on Akademi Keperawatan Husada Karya Jaya's students who had passed the Emergency Nursing course

(n=30). Respondents were asked to watch and fill out a developed questionnaire (using google form). Aspects assessed by respondents are: (1) Simplicity; (2) Clarity; (3) Convenience; (4) Educational; and (5) Attractiveness, using a 4-point Likert scale (not enough; enough; good; very good).

e. Large group trial

Similar to the small group trial, in the large group trial, respondents (n=304) were also asked to watch videos and fill out a questionnaire (using google form). Aspects assessed by respondents are: (1) Simplicity; (2) Clarity; (3) Convenience; (4) Educational; and (5) Attractiveness, using a Likert scale.

Respondents who are included in the study are:

- 3-Year Diploma Nursing Student
- Have passed the emergency nursing course
- Willing to be a respondent by filling out a questionnaire (google form)

3. Evaluation

In the evaluation stage, the researcher create a final model of the lightboard media.

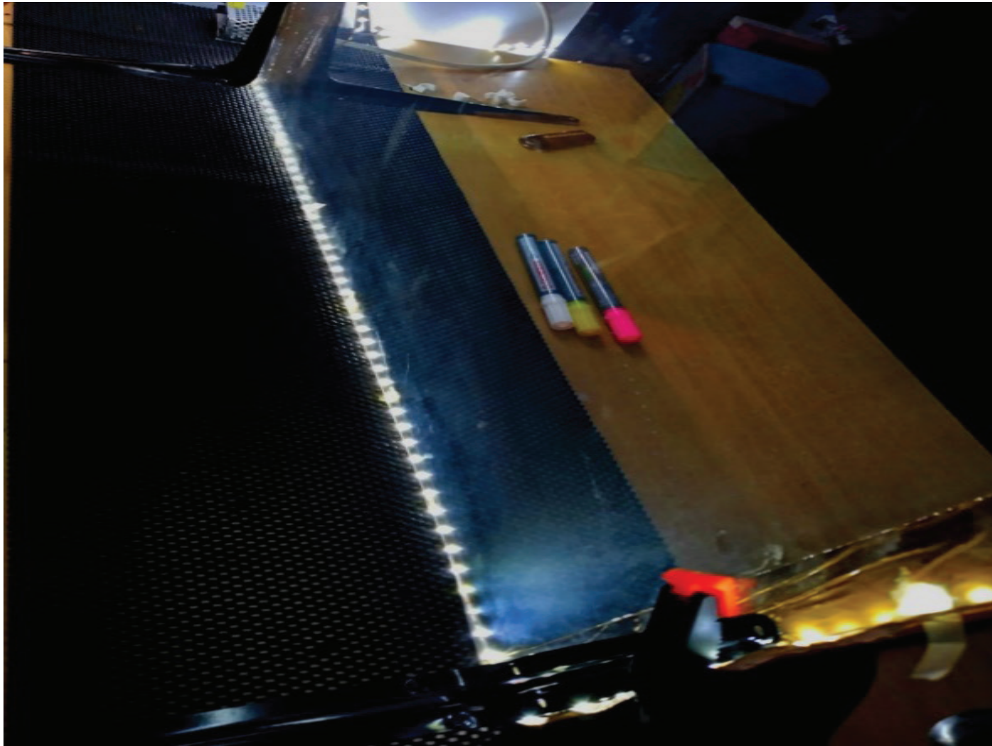
Results

Initial Design

Authors use a custom built 100 x 100 cm plexiglass (acrylic glass). Wood was used as a frame so that the plexiglass can stand stable. The LED strip light is looped around the plexiglass to allow light to spread throughout the panel. Clamp is used for clamping panels to a wooden frame. Neon markers are special markers that glow when exposed to light. Microfiber Wipe is used to erase the text on the panel. The black cloth is used as a background for the teacher.

For the equipment for video production, authors uses a Canon EOS M mirrorless camera, Takara ECO 173A tripod, Boya BY M1 microphone to record the teacher's voice, and round lighting to make the teacher look bright, because the video production using lightboard media is carried out in dark conditions.

Picture 1. Initial Design of Lightboard



Picture 2. Initial Design of Lightboard

Video production

Authors records a video of the interpretation of the results of the blood gas analysis that is delivered on a lightboard media. To record the video, the authors places the camera across the board about 2 meters where the teacher sits with a black background. The teacher writes the technique for interpreting the results of the blood gas analysis on a light board while explaining.

After the video was recorded, the author edits the video using Adobe Premiere software, where the video was reversed so that the text that was seen from right-to-left (appears to be writing backwards) becomes from left-to-right (appears correctly written).

Design validation by experts

Material experts (n=2) judge that the video produced is correct and free from conceptual errors. The expert also considered that the videos produced were up-to-date, both in terms of the scope and depth of the material, as well as in terms of the references used.

Experts in learning communication media (n=2) assessed that audio, narration, and the suitability of language and communication styles were in accordance with the characteristics of nursing students. The expert also considered that the accuracy of the use of intonation, tempo and rhythm with the purpose and content of the material was good.

Finally, the learning design expert (n=1) assessed that the video produced was in accordance with the media delivery strategy and the characteristics of nursing students, which allowed ease and speed of understanding and mastery of interpretation skills of blood gas analysis results. The expert also considered

that video could encourage its application in real life, and it was appropriate to provide the material with lightboard media.

At this stage, based on expert validation, the author draws the conclusion that the initial design of the light board has proven to be effective in conveying the material to the audience.

Small group trial

Videos that have passed expert validation were then tested on Akademi Keperawatan Husada Karya Jaya's nursing students who had passed the Emergency Nursing course (n=30). Respondents were asked to watch and fill out a questionnaire (using google form). The result is the average total very good grade of the five aspects is 88% (see table 1).

Large group trial

Similar to the small group trial, in the large group trial, respondents (n=304) were also asked to watch videos and fill out a questionnaire (google form). Respondents assessed that the video monitoring the results of blood gas analysis using light board media met the aspects of simplicity, clarity, convenience, educational, and attractiveness (see table 2).

Tabel 1. Small Group Trial Results

No	Aspect	Not Good Enough		Good Enough		Good		Very Good		Total	
		n	%	n	%	n	%	n	%	n	%
1	Simplicity	0	0%	0	0%	5	17%	25	83%	30	100%
2	Clarity	0	0%	0	0%	2	7%	28	93%	30	100%
3	Convenience	0	0%	0	0%	3	10%	27	90%	30	100%
4	Educational	0	0%	0	0%	2	7%	28	93%	30	100%
5	Attractiveness	0	0%	0	0%	5	17%	25	83%	30	100%

Tabel 2. Large Group Trial Results

No	Aspect	Not Good Enough		Good Enough		Good		Very Good		Total	
		n	%	n	%	n	%	n	%	n	%
1	Simplicity	0	0%	7	2%	10	4%	287	94%	304	100%
2	Clarity	0	0%	0	0%	6	2%	298	98%	304	100%
3	Convenience	0	0%	8	2%	17	6%	279	92%	304	100%
4	Educational	0	0%	0	0%	20	7%	284	93%	304	100%
5	Attractiveness	0	0%	0	0%	4	1%	300	99%	304	100%

The large group trial showed that the lightboard media have fulfilled the aspect of simplicity, clarity, convenience, educative, and attractiveness with the average respondent giving a very good score on the five aspects is 95,2%.

Evaluation Stage

The evaluation stage is the stage of making the final model of the lightboard media. Because the results of the large group trial were good, the lightboard made in the initial design stage was used as the final model.

Discussion

Lightboard was first coined by Michael Peshkin and registered under the name Lightboard Open Source Hardware Initiative. OSHWA (The Open Source Hardware Association's) defines open source hardware as "hardware whose designs are publicly available so that anyone can study, modify, distribute, create, and sell designs or build other hardware based on those designs" (3). With the registration of the light board as open source, Peshkin, accompanied by the Google Group, has shared the idea and documentation of the light board design for free to the whole world.

Learning videos using light boards provide a stable pedagogical framework for conveying complex concepts (4), and can provide students with understanding, engagement, and satisfaction in learning (9).

Our findings show that light boards are effective in conveying the material to the audience. Respondents showed a very good response to the material explained with the lightboard. However, study programs must pay attention to what skills can be imparted through video lightboards, because not all skills can be taught remotely.

Based on the Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07/MENKES/425/2025 concerning Nursing Professional

Standards, not all nursing skills can be done online. There are skills that must be carried out directly to the patient, for example the skill of venous blood puncture samples written with an ability level of 4 (four). At skill level 4, nursing graduates must be able to do it independently, directly on the client, and be assessed directly through an action test in the clinic.

The results of a systematic review conducted by McCutcheon, Lohan, Traynor, & Martin show that online practicum teaching is no less effective than traditional methods (10), but Kelly, Lyng, McGrath, & Cannon say that online learning is better used to "complement" rather than replace the demonstration method (11).

This study was descriptive in nature, there were several aspects that are not examined in this study, as well as the data analysis techniques used. Authors does not compare the lightboard with other learning media so that the picture of its effectiveness was also limited.

However, authors strongly recommends nursing study programs in Indonesia to use lightboards as a alternative medium for making nursing practicum videos. Furthermore, research to test the effectiveness of light board media on other practical materialsl, or compare it with others learning media is recommended.

Conclusion

Lightboard is a inexpensive and easy-to-develop learning media to make nursing practicum videos as an alternative to online learning during the Covid-19 pandemic, or in the future.

Conflict of Interest: Authors states we have no conflict of interest with the subject matter or materials discussed in this manuscript.

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References

1. Costley J, Lange CH. Video lectures in E-learning: Effects of viewership and media diversity on learning, satisfaction, engagement, interest, and future behavioral intention. Interactive Technology and Smart Education. 2017;14(1):14–30.
2. Alpay N, Ratvasky P, Koehler N, LeVally C, Washington T. Redesigning a statistical concepts course to improve retention, satisfaction, and success rates of non-traditional undergraduate students. Journal of Educational Multimedia and Hypermedia. 2017;26(1):5–27.
3. McCorkle S, Whitener P. The Lightboard: Expectations and Experiences. International Journal of Designs for Learning. 2020 Jan 4;11(1):75–84.
4. Vandermolen J, Vu K, Melick J. Use of Lightboard Video Technology to Address Medical Dosimetry Concepts : Field Notes. Current Issues in Emerging eLearning. 2018;4(1).
5. Hennessey IA, Japp AG. Arterial Blood Gases Made Easy. 2nd ed. New Jersey: Elsevier; 2016.
6. Gustiani S. Research and development (R&D) methods as a momdel design in educational research and its alternatives. Holistics Journal. 2019;11(2).
7. Hay K, Wiren Z. Do-it-yourself low-cost desktop

lightboard for engaging flipped learning videos. Phys Teach. 2019;5:523.

8. Chaeruman UA. Instrumen evaluasi media pembelajaran. Jakarta: Kementerian Pendidikan dan Kebudayaan. Jakarta: Kementerian Pendidikan dan Kebudayaan; 2019.
9. Rogers PD, Botnaru D. Shedding Light on Student Learning Through the Use of Lightboard Videos. International Journal for the Scholarship of Teaching and Learning. 2019 Nov 25;13(3).
10. McCutcheon K, Lohan M, Traynor M, Martin D. A systematic review evaluating the impact of online or blended learning vs. face-to-face learning of clinical skills in undergraduate nurse education. Journal of Advanced Nursing. 2015 Feb;71(2):255–70.
11. Kelly M, Lyng C, McGrath M, Cannon G. A multi-method study to determine the effectiveness of, and student attitudes to, online instructional videos for teaching clinical nursing skills. Nurse Education Today. 2009 Apr;29(3):292–300.

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Stigma in Tuberculosis Sufferers: A Study in Simeulue Regency, Aceh Indonesia

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Abstract

Tuberculosis is an infectious disease and has become a public health problem globally. This study aims to determine the factors associated with Stigma in patients with Tuberculosis in Simeulue Aceh Regency. This research uses a cross-sectional study approach. The study population was patients with Tuberculosis, totaling 112 people in 10 sub-districts in Simeulue Regency. The number of samples is 92 people. The research instrument consisted of respondents' demographics, knowledge, perceptions, psychological factors, socio-cultural, and Stigma. The analysis used the Chi-Square test with a significance level (α) 0.05. The results showed that there was a significant relationship between knowledge (p-value = 0.007), perception (p-value = 0.027), psychological factors (p-value = 0.035) and socio-cultural factors (p-value = 0.006) with stigma in suffered tuberculosis. This study concludes that knowledge, perception, psychological aspects, and socio-culture significantly correlate with Stigma in patients with Tuberculosis in Simeulue Regency. The socio-cultural aspect is the most dominant sub-variable associated with Stigma with a p-value of 0.006 <0.05.

Keyword: *Stigma, Tuberculosis, Patient, Simeulue*

Introduction

Tuberculosis (TB) is one of the public health problems that are a global challenge. Tuberculosis is an infectious disease caused by the bacterium Mycobacterium tuberculosis[(1)]. The Sustainable Development Goals (SDGs) in 2015 emphasized that dangerous contagious diseases such as TB are one of the main concerns of health development goals[(2)]. Globally, WHO noted that in 2017 there were 6.3 million new cases of Tuberculosis. This figure is equivalent to 61% of the incidence of Tuberculosis globally, which is 10.4 million. The number of Tuberculosis sufferers has increased from the previous year, which was 9.6 million people. In addition, the number of deaths caused by Tuberculosis globally is 40 people per 100,000 world population [(2)].

In Indonesia, the number of people with Tuberculosis is also high. In 2017, the number of sufferers was 391 per 100,000 population, with a death rate of 42 per 100,000 population, and the number of new cases found was 425,089 cases. This figure increased from the previous year, namely in 2016 as many as 360,565 patients. The highest number of reported cases occurred in provinces with large

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populations: West Java, East Java, and Central Java. Tuberculosis cases in the three provinces accounted for 43% of the total TB cases in Indonesia [3].

In Aceh Province, the number of tuberculosis sufferers is also quite high. Aceh Health Profile data in 2017 showed that the number of pulmonary tuberculosis cases continued to increase, from 5,072 cases in 2016 to 7,342 cases in 2017. The success rate of tuberculosis treatment in Aceh Province was reported to be 86.7%. This figure is still below the target national government set by the central government is 90%. These data indicate that there are still many cases of Tuberculosis patients in Aceh Province who die, drop out of drugs, and/or are not evaluated properly. The highest tuberculosis cases were reported in Banda Aceh City (304 cases), then Subulussalam (259 cases), Simeulue Regency (221 cases), Gayo Lues (216 cases), and North Aceh (213 cases). The lowest was reported in Bener Meriah Regency as many as 41 cases [4].

In 2018, the number of Tuberculosis sufferers had reported in Simeulue Regency as many as 104 cases. This figure has increased by 112 cases (5). Based on sub-districts, the highest tuberculosis cases were found in East Simeulue District with 39 cases, Salang District with 24 cases, West Simeulue District with 12 cases, Alafan District with 9 Teluk Dalam District with 8 (eight) cases [5].

Health problems caused by Tuberculosis are a major concern for all health workers, including community nurses. Until now, Tuberculosis is still an infectious disease with the highest mortality rate, so it requires complex treatment. Tuberculosis management is not only from treatment but also from prevention. In social life, the prevention aspect has the most fundamental role in reducing the number of Tuberculosis sufferers. It is in accordance with the role and function of community nurses as implementers of nursing services and as health educators [6]. In general, the management of Tuberculosis in the community focuses more on treatment based on new case findings. Its causes the program to be run less effective in eliminating the number of Tuberculosis sufferers.

For this reason, the active role of community nurses in preventing and providing health promotion to the community is very necessary. Health promotion is part of the public health program in Indonesia, not only a process to raise public awareness in terms of increasing knowledge in the health sector but also changing good behavior in the community and other community organizations. According to Mubarak, besides promoting and providing health education to the community, family and community support are important in preventing and treating tuberculosis sufferers. This factor becomes social support that greatly affects the physical and mental readiness of tuberculosis sufferers. The family is included in the social support system and is considered a resource to convey health messages [7].

The family and community's support can be positive but can also appear as a stigma. Stigma is a social process in assumptions or personal experiences of individuals related to certain health problems. Negative Stigma is high in society, which impacts the lack of self-esteem for sufferers, humiliation, discrimination, and being exiled from social life in society [8]. Negative Stigma has also been reported to cause psychological stress for people with Tuberculosis [9]. The Stigma in the community towards tuberculosis sufferers is due to their fear of infection from tuberculosis disease and lack of information and

knowledge related to the disease [10].

The negative Stigma from the community towards Tuberculosis is also still happening in Aceh. This condition can delay handling tuberculosis cases, especially in people with high customs and culture such as Simeulue Regency. As a district with many tuberculosis cases in Aceh, programs run by the government regarding tuberculosis cases still focus on the treatment process and discoveries compared to prevention and social support. Important health promotion efforts are given to the community to increase knowledge, awareness, and community support for people with Tuberculosis. Several studies say that there is still a negative stigma in Tuberculosis patients [11–15]. Ariyanti, in her study, stated that 81.9% of Tuberculosis patients experienced Stigma. As many as 50.4% of Tuberculosis patients experienced Stigma in the form of feelings of worthlessness, shame, fear, hopelessness, guilt, and loss of self-esteem [14].

Negative societal Stigma in patients with Tuberculosis can cause sufferers and their families to cover up their cases often and refuse to get health services. Therefore, this study aims to analyze the relationship between knowledge, perception, psychological and socio-cultural factors, and the Stigma of tuberculosis sufferers in Simeulue Regency.

Method

This research was quantitative with a cross-sectional study. This research was conducted in Simeulue Regency from January 25 to March 2021, precisely in the working areas of the East Simeulue Health Center, Salang Health Center, Teluk Dalam Health Center, Alafan Health Center, and West Simeulue Health Center. The study population was tuberculosis sufferers, totaling 112 people in 10 sub-districts in Simeulue Regency. The sample was determined using a purposive technique with 92 families of Tuberculosis patients with the inclusion criteria: 1) Men and women aged 17-65+, 2) Tuberculosis patients or families with Tuberculosis Patients, 3) Not in treatment, and 4) Willing to be respondents.

The research instrument was a questionnaire consisting of respondents' demographics, knowledge, perceptions, psychological factors, and socio-cultural which were adopted from Astuti's study [16]. Knowledge variable is categorized as good if x 75, sufficient if x 56-74, and less if $x < 55$. Perception is categorized as positive if $x > 6.5$, and negative if $x < 6.5$. Psychological factors are categorized as good if $x > 2.5$ and less $x < 2.5$. Socio-cultural factors are categorized if $x > 2.5$ and less if $x < 2.5$. The value of Stigma against tuberculosis sufferers in this study used an instrument developed by "The United States Agency for International Development/USAID, 2018) and categorized as good and bad categories.

All instruments used have been tested for validity and reliability and are declared valid and reliable. This study has passed the ethical test and received approval from the Research Ethics Committee of the Faculty of Nursing, Syiah Kuala University, with research code 112017101220. Lastly, to determine the relationship between variables, the analysis was carried out using the Chi-Square test with a significance level (α) 0, 05.

Result

This research was conducted in January-March 2021, and data were collected from 92 respondents. The characteristics of the respondents consist of age, gender, employment status, education, income, and History of smoking history.

Table 1: Respondent Characteristic (N:92)

Characteristics	Frequency (f)	Percentage (%)
Age		
26-35	9	9,8
36-45	43	46,7
46-55	21	22,8
56-65	13	14,1
65 +	6	6,5
Gender		
Male	38	41,3
Female	54	58,7
Employment Status		
Not working	22	23,9
Entrepreneur/Farmer/Trader	63	67,4
Civil Servant	7	8,7
Education		
No school	5	0,4
Elementary School	36	39,1
Junior High School	22	23,9
Senior High School	34	36,9
College	8	8,7
Income		
High > 1.700.000	11	12,0
Low < 1.700.000	81	88,0
History of Smoking		
Yes	69	75,0
No	23	25,0

Table 1 shows that the majority of respondents are 36-45 years old (46.7%), female 54 people (58.7%), employment status are entrepreneurs/farmers/traders as many as 63 people (67.4%), low income are 81 people (88.0%), and no history of smoking as many as 79 people (85.9%).

The results of research on knowledge, perceptions, psychological factors, and socio-cultural respondents related to Tuberculosis can be seen in the following table:

Table 2: Knowledge, Perception, Psychological, Socio-Cultural, and Stigma Factors of Respondents on Tuberculosis Patients in Simeulue Regency (N:92)

Indicator	Frequency (f)	Percentage (%)
Knowledge		
Good	66	71,7
Sufficient	18	19,6
Less	8	8,7
Perception		
Positive	79	85,9
Negative	13	14,1
Psychological Factor		
Good	75	81,5
Less	17	18,5
Socio-cultural		
Good	61	66,3%
Less	31	33,7%
Stigma		
Good	34	37%
Bad	58	63%

As presented in Table 2, the study results show that the respondents' knowledge about Tuberculosis is in a good category (71.7%). From the perception side, it is known that the respondents' perceptions are in the positive perception category (85.9%), and from the psychological side, they are in a good category (81.5%). At the same time, the socio-cultural aspects are in a good category too (66.3%). However, Table 2 also shows that most respondents have a bad stigma towards TB sufferers (63%).

The results of research on the relationship between independent variables consisting of aspects of knowledge, perception, psychological factors, and socio-culture with the dependent variable, namely Stigma in Tuberculosis sufferers, are presented in the following table:

Table 3: The relationship between knowledge, perception, psychological factors, and socio-culture with Stigma in Tuberculosis sufferers in Simeulue Regency

Indicators	Stigma in Tuberculosis Sufferers				Total		
	Good		Bad				
	f	%	f	%	f	%	P-value*
Knowledge							
Good	31	24.4	35	41.6	66	100	0.007
Sufficient	2	6.7	16	11.3	18	100	
Less	1	3.0	7	5.0	8	100	
Perception							
Positive	33	41.8	46	58.2	79	100	0.027
Negative	1	7.7	12	92.3	13	100	
Psychological Aspect							
Good	32	42.7	43	57.3	75	100	0.035
Less	2	11.8	15	88.2	17	100	
Social Aspect							
Good	29	47.5	32	52,5	61	100	0.006
Less	5	16,1	26	83,9	31	100	

** Chi-Square Test*

As presented in table 3, the study results show that 35 (41.6%) respondents with good knowledge have a bad stigma on tuberculosis sufferers. The chi-square test results obtained a P-value of 0.007 <0.05, meaning that there is a relationship between knowledge and Stigma in patients with Tuberculosis. The chi-square test showed a p-value of 0.027 <0.05, which means a relationship between perception and Stigma in patients with Tuberculosis. Then, the results of the chi-square test were obtained with a p-value of 0.035 <0.05, which means that there is a relationship between psychological factors and Stigma in Tuberculosis patients. Likewise, with the socio-cultural aspect with a p-value of 0.006 <0.05, there is a socio-cultural relationship with Stigma in Tuberculosis patients. In this study, the most dominant sub-variable associated with Stigma was socio-cultural, with a p-value of 0.006 <0.05.

Discussion

This study showed that 31 (24.4%) respondents had good knowledge of Tuberculosis and had a good stigma on Tuberculosis sufferers. However, there are 35 (41.6%) respondents with good knowledge, had a bad stigma on Tuberculosis sufferers. In this case, even though the respondents have good knowledge, they still have a bad stigma for Tuberculosis sufferers. That condition because Tuberculosis is still a disease that is feared in society, it is easy to transmit to other people and is still considered an awful disease. It means the Stigma in society is still bad for people with Tuberculosis sufferers. It is in accordance with the results of previous studies, which showed that the community had a high stigma (45.5%) against tuberculosis sufferers and stated that people with Tuberculosis is deserved to be rejected by the community (37.8%). In addition, they also think that they will have bad effects if they are close to tuberculosis sufferers (93.3%) This condition shows that not all respondents with good knowledge and higher education have good behavior towards people with Tuberculosis. Sandha & Sari stated it happened because the good knowledge of Tuberculosis can raise concerns about the disease, especially because of its transmission [16].

In terms of perception, this study found that 33 (41.8%) respondents had a positive perception of Tuberculosis and had a good stigma on Tuberculosis sufferers. Perception is a process preceded by sensing, a stimulus received by the individual through a receptor [17]. The results of previous research on public perceptions about Tuberculosis found that 61.2% of respondents had positive perceptions, and 38.8% had negative perceptions about Tuberculosis. The most dominant factor influencing public perception is education.

In psychological factors, it was found that as many as 32 (42.7%) respondents had a good stigma on Tuberculosis sufferers, and 43 (57.3%) respondents had a bad stigma on Tuberculosis sufferers. This study also found that although the psychological factors were good, the Stigma about tuberculosis sufferers remained bad. It is In line with a study by Cremers et al. in 2015, which stated that as many as 80% of Tuberculosis respondents experienced Stigma, and some of them (50.4%) experienced self-stigma in the form of feelings of worthlessness, shame, fear, hopelessness, guilt, and loss of self-esteem [18].

In the socio-cultural aspect, the results showed 29 (47.5%) respondents socio-cultural in the good category and had a good stigma on Tuberculosis sufferers. However, there are 32 (38.5%) respondents with a good socio-cultural have a bad stigma on Tuberculosis sufferers. A total of 5 (16.1%). The chi-

square test results obtained a p-value of 0.006 <0.05, meaning a socio-cultural relationship with Stigma in patients with Tuberculosis.

Related to the Stigma of people with Tuberculosis, Courtwright & Turner [19], said that in addition to increasing knowledge about Tuberculosis, the important thing in reducing Stigma is to provide support to people who are stigmatized. The support given to the patient becomes one of the important things considering that Stigma is also related to the values and attitudes of the individual concerned. Society's view of Stigma reflects culture as an accumulation of beliefs, and Stigma is a belief or view of certain characteristics and characteristics of a group or individual that is unwanted. When someone knows that a friend, neighbor, or even family suffers from Tuberculosis, he will treat those others differently, such as not wanting to be close or talking [20].

Aryani, in his research, shows that the Stigma of Tuberculosis in society is still negative, and some people think that tuberculosis sufferers are disgusting and agree not to let tuberculosis sufferers live in society [21]. The negative Stigma in society causes some people to be ashamed to check their health or illness to health services and tend to choose traditional medicine. This condition has a negative effect on patients with Tuberculosis because Stigma is related to disease harms prevention, service procedures, and policies related to health. Different perspectives related to Stigma in tuberculosis sufferers can lead to various attitudes towards tuberculosis treatment [22]. Therefore, it is necessary to socialize the community in understanding by providing understanding and knowledge of the correct concept of Tuberculosis, how it is transmitted. Both patients and the community can know better to keep themselves from being infected but still appreciate Tuberculosis sufferers and support them until they feel betters.

Conclusion

This study concludes that knowledge, perception, psychological factor, and socio-culture aspect significantly correlate with Stigma in patients with Tuberculosis in Simeulue Regency. The socio-cultural aspect is the most dominant sub-variable associated with Stigma with a p-value of 0.006 <0.05. In general, the respondents' knowledge, perception, psychology, and socio-cultural aspects about Tuberculosis in Simeulue Regency are in the positive and good categories. However, the majority of respondents have a bad stigma against Tuberculosis sufferers (63%).

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References

1. Nazri S. Promosi Kesehatan: Teori dan Aplikasi. Jakarta;
2. WHO. TB burden report 2018 [Internet]. Vol. 63, World Health Organization. 2018. 476 p. Available from: https://apps.who.int/iris/handle/10665/274453
3. Kemenkes RI. Jumlah Kasus Tbc Berdasarkan Jenis kelamin Tahun 2017. https://pusdatin.kemkes.go.id/; 2017.

4. Dinas Kesehatan Aceh. Profil Kesehatan PerKabupaten [Internet]. 2017. Available from: www. bankdata.kemkes.go.id/propinsi

5. Dinas Kesehatan Semeulue. Profil Kesehatan Kabupaten Simeulue. 2019.

6. Nies MA, McEwen M. Promoting the health of the population. BMJ. 2014;349.

7. Efendi F, Makhfudli. Keperawatan Kesehatan Komunitas Teori dan Praktik dalam dalam Keperawatan. Jakarta: Salemba Medika; 2009.

8. Endria V, Yona S. DEPRESI DAN STIGMA TB DENGAN KUALITAS HIDUP PASIEN TUBERKULOSIS PARU. J Ris Kesehat Nas [Internet]. 2019 May 28;3(1):21. Available from: http://ojs.itekes-bali.ac.id/index.php/jrkn/article/view/151

9. Xu M, Markström U, Lyu J, Xu L. Survey on Tuberculosis Patients in Rural Areas in China: Tracing the Role of Stigma in Psychological Distress. Int J Environ Res Public Health [Internet]. 2017 Oct 4;14(10):1171. Available from: http://www.mdpi.com/1660-4601/14/10/1171

10. Tadesse S. Stigma against Tuberculosis Patients in Addis Ababa, Ethiopia. Kumar A, editor. PLoS One [Internet]. 2016 Apr 7;11(4):e0152900. Available from: https://dx.plos.org/10.1371/journal.pone.0152900

11. Nurmala I, Rahman F, Nugroho A, Erlyani N, Laily N, Anhar VY. Promosi Kesehatan. Surabaya: Airlangga University Press;

12. Aryani L. Implikasi Faktor Individu Terhadap Stigma Sosial Tuberkulosis di Kelurahan Tanjung Mas Semarang. J Manaj Kesehat Yayasan RSDr Soetomo [Internet]. 2021 Apr 12;7(1):90. Available from: https://jurnal.stikes-yrsds.ac.id/index.php/JMK/article/view/605

13. Sulistyawati W, Hayuni S. Hubungan Motivasi Perawat Dengan Kualitas Handover Pasien Di Ruang Rawat Inap Rumah Sakit. Nurs Sci J. 2020;4(1):45.

14. Ariyanti S. Hubungan Stigma dengan Kepatuhan Minum Obat pada Pasien TB Paru di Wilayah Kerja Puskesmas Andalah Padang Tahun 2019 [Internet]. Universitas Andalas; 2020. Available from: http://scholar.unand.ac.id/id/eprint/54943

15. Nugroho RA. Studi Kualitatif Faktor Yang Melatarbelakangi Drop Out Pengobatan Tuberkulosis Paru. KESMAS - J Kesehat Masy. 2011;7(1):83–90.

16. Sandha LMH, Sari KAK. Tingkat Pengetahuan dan Kategori Persepsi Masyarakat Terhadap Penyakit Tuberkulosis (TB) di Desa Kecicang Islam Kecamatan Bebandem Karangasem-Bali. E-Jurnal Med Udayana [Internet]. 2017;6(12):131–9. Available from: http://ojs.unud.ac.id/index.php/eum

17. Adam Firmansyah E. Persepsi Masyarakat tentang TB Paru di Desa Blembem Kecamatan Jambon Kabupaten Ponorogo. Universitas Muhammdiyah Ponorogo;

18. Cremers AL, de Laat MM, Kapata N, Gerrets R, Klipstein-Grobusch K, Grobusch MP. Assessing the Consequences of Stigma for Tuberculosis Patients in Urban Zambia. Kumar A, editor. PLoS One [Internet]. 2015 Mar 25;10(3):e0119861. Available from: https://dx.plos.org/10.1371/journal.pone.0119861

19. Courtwright A, Turner AN. Tuberculosis and Stigmatization: Pathways and Interventions. Public Health Rep [Internet]. 2010 Jul 1;125(4_suppl):34–42. Available from: http://journals.sagepub.com/

doi/10.1177/00333549101250S407

20. Simarmata, Pakasi. State a significant relationship between public knowledge and the stigma formed in TB patients.
21. Aryani L, Manglapy YM, Nurmandhani R. Implikasi Faktor Individu Terhadap Stigma Sosial Tuberkulosis Di Kelurahan Tanjung Mas Semarang. J Manaj Kesehat Yayasan RS Dr Soetomo. 2021;7(1):90–104.
22. Cramm JM, Nieboer AP. The relationship between (stigmatizing) views and lay public preferences regarding tuberculosis treatment in the Eastern Cape, South Africa. Int J Equity Health [Internet]. 2011;10(1):2. Available from: http://equityhealthj.biomedcentral.com/articles/10.1186/1475-9276-10-2

Competent Patients' Refusal of Nursing Care: A Focus Group Interview

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Abstract

Competent patients' refusal of nursing care raises important questions, potentially creating stressful situations for nurses. This study explores the nurses' roles and challenges in caring for competent patients' refusal of nursing care in a rural general hospital in Brunei Darussalam. Twenty-two registered nurses participated in the research.The data were analysed using thematic analysis.The study indicated that nurses attempted to respect a competent patient's refusal of nursing care, as the majority wished to avoid any paternalistic or judgmental approach towards such refusal. They recognised the ethical and professional duty to help the patient in their decision making. However, such duty comes with its own set of challenges.

Keywords: *Nurses' roles, challenges, competent patient, refusal of nursing care, qualitative, Brunei*

Introduction

Nurses must always uphold human rights protection and the profession's values and ethics.[1] However, competent patients' refusal of nursing care raises important questions about the real issue of a career for the nurses and nursing care. The nurses were left to follow the doctor's instructions and the patients' wishes to refuse care.[2]As nurses are responsible for informing clients and the community about the care available to them; they are also expected to respect and support clients' rights to accept or decline treatment and care.[3] A competent patient is a person who is fully aware of the consequences of the decision he or she is making. [4-6] However, the refusal of nursing care by competent patients raises serious concerns for nurses and nursing care.[7] For example, a potential conflict exists when the nurse cannot provide interventions and needs a clear moral direction and institutional policies to support practice when challenged with such refusal.[8]

When faced with a reluctance to accept nursing care, the nurses respond to this by giving information until the patient accedes and consent to the care.[9] Such action reflects the principle of informed consent and the ensuing conflict between patient autonomy and the health care professional's obligation to benefit the patient.[10] Refusal of nursing care poses a challenge due to the lack of a formal consent process.

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Informed consent is often not addressed but assumed before nursing procedures because patients usually comply.[11]As a result, compliance can appear to be implied consent and, if assumed, can threaten patient autonomy. The principles of informed consent are well discussed in the ethical literature, requiring that a patient be informed and competent so that voluntary consent is established[11]. It has been suggested that nurses may have incomplete and wrong practices within their roles in the context of informed consent.[12]

Meanwhile, the competent patient might decide against recommended care for many reasons. Some patients decide against care because of psychological factors such as previous 'bad' experiences with the recommended intervention, distrust of the health care team and communication problems.[13]However, the principle of autonomy should not be used to rationalise a hands-off approach when more information and better communication might result in a plan of care that is acceptable to all.[14]For example, nurses might provide several courses of action, such as providing additional information and education or merely respecting the patient's autonomy.[11,15-16]

Methods

Study design

This qualitative descriptive research was conducted in November 2020, focusing on the experiences and perceptions of the targeted participants[17] and exploring the process of interaction, behaviour, meanings, and values of participants in their natural context.[18]

Participants' Characteristics

Registered nurses from one hospital in Brunei Darussalam were recruited through a gatekeeper and face-to-face recruitment briefing. Thirty nurses attended the recruitment briefing, and a total of twenty-two nurses have volunteered to participate in the research. The type of sampling used was purposive sampling, and no relationship was made with the participants before the study period.

Data collection

The study used two types of interviews for the data collection: individual face-to-face interviews and focus group interviews. A total of six key questions related to the research topic were constructed based on the aim and objectives of this study. The duration of each interview was approximately 45 minutes. Field notes are particularly useful for the researcher to engage in reflective practice.[19]All recorded interviews were transcribed verbatim.

Data Analysis

The research team analysed the data using Braun and Clarke's six-step framework.[20]The audio data werefirst transcribed verbatim and were later translated into English. The teamreviewed several times to acquire a general understanding of its main ideas. Coding was performed manuallyusing pen makers and papers to generate the initial codes. Once coding was completed, similar codes were collected and later sorted using a mind-mapping technique. The team further reviewed and sorted the codes, which resulted in three broad themes. The team then critically analysed each theme to identify the essence of the theme and to check whether the theme fitted into the overall data.

Trustworthiness

Trustworthiness was described for the main qualitative content and analysis phases, from data collection to reporting results.[21]The four aspects of trustworthiness in qualitative research are credibility,

dependability, conformability and transferability.[22] All of these aspects were established in this study. All interviews started with warm-up questions about the participants' understanding of a competent patient. This set of questions ensured that the participants shared a similar understanding of competent patients' refusal of nursing care with the researchers. All audio recordings were transcribed verbatim to retain the quality of data analyses and the objectivity of study conclusions.Meanwhile, quotes from the participants were presented in the findings for conformability. The analysis process was finalised to ensure credibility and coherence between the themes and the data.[23]The data was saturated during the last focus group, but two more individual interviews were carried out to ensure no additional information emerged. The participants' age range and experience level were broad, contributing to the findings' transferability.

Ethical considerations

The University Research Ethics Committee approved the study design (reference no: UBD/ PAPRSBIHSREC/2020/54). Participation was informed and voluntary, requiring written consent. The nurses retained the right to withdraw their participation at any time. Confidentiality was assured, and all research data were analysed anonymously.

Findings

The nurses reported that they experienced competent patients' refusal of nursing care as an inherent aspect of the nursing profession. Three major themes were presented in the findings; these were illustrated using verbatim quotes from the participant nurses.

Theme 1: Understanding patient refusal

The nurses were initially asked about their understanding of the competent patient. Most of them indicated that they understood the term used. The majority of the nurses stated that a competent patient is an adult patient aware of and understands their health status. However, at the same time, they also perceived that competent patients could refuse any proposed care given even though they knew the consequences of the refusal:

As competent patients, they know about what is going on with them. They can make their own decision without influence from others or not under any influence of drugs or alcohol. As patients, they know they have the right to refuse (Female 1, FGD1)

The nurses reported that the competent patients' refusal of care either happened directly by verbally saying no or indirectly from the patient's action or reaction. The patient tends to agree to cooperate in front of the doctor but usually does not intend to come for any nursing care given as a follow-up, for example, when the patient has to attend an appointment or any further nursing intervention. Patients will also sometimes ask for another option, for example, after refusing to take medication:

Some patients refused to take the medication from the doctor. They would also wonder if they should go for an alternative path. (Male 5, FGD2)

The majority of the nurses agreed that it was appropriate to understand the reasons forpatients' refusal of nursing care. Some of the nurses responded by reflecting on their own experiences as patients. They knew what it felt like to be a patient:

I have multi health issues. The health professionals treat me as a competent patient because I have been working as a nurse for more than 20 years, but that does not mean I always follow the rules. Sometimes

I refused to follow the treatment plans (Female 10, FGD3)

Theme 2: Giving information

Several nurses mentioned that a patient refused care but accepted after receiving further information about the proposed care. This study identified how the information should be delivered or conveyed so that the patient could reconsider their refusal. The information was critical because it helped acknowledge a sense of responsibility to understand the patient further. Nowadays, patients are perceived to be well-informed; and nurses be exceptionally vigilant not to give the wrong information. Any information given or shared by the nurse will be listened to cautiously and examined by the patient:

Patients seem to know everything and ask for many things. The patient will listen to every piece of information shared and question before agreeing to any care. They are goggling the internet to look for any information. (Female 3, FGD1)

The nurses considered several steps when the patient refused care after relevant information. The nurses frequently citedinforming the doctor first for a second opinion. Meanwhile, nurses' responsibilities include educating the patient about the various advantages of treatment and the drawbacks of not having them. In addition, nurses believe that they must find ways to encourage the patient to change their minds:

Rather than giving instructions, the nurse may want to begin a conversation by asking whether they like to do it now or later, respect their privacy, be flexible and understand. Giving reassurance is essential. One of the examples is asking the patient to take their medication at the right time (Male 8, FGD4)

It is also essential for nurses to be aware that patients who usually refuse care must be treated with empathy:

It is essential to give space and time for the patient to think. Most people do not like being pushed, so the advice is to go slow and do things in their own time. It does not help at all when we push them. They might rebel and refuse to listen to you. (Female 12, FGD4)

Theme 3: Easier said than done

While nurses acknowledged and respected patient refusal of care, they also recognised their primary role and duty in persuading the patient to agree to the proposed care. The nurses established that most patients understood their health status but refused to accept care. The main challenge for the nurses was to convince patients to accept or at least to reconsider the proposed care:

Convincing them can be relatively demanding. Some would listen to us, but some maystill have doubts and ignore what has been told. (Female 4, FGD2)

In most cases, nurses voiced disappointment whenever patients refused the proposed treatment or care. Nurses believed that the decisions they made were in the patient's best interest:

Some patients would probe us back and forth by saying, 'If you become the patient, what would you do?' You have no idea how it feels to be a patient. If you can feel it, then you will know. (Female 2, FGD 1)

A few nurses pointed to existing cultural values when establishing informed consent. The wife will typically wait for her husband to decide for her, although she is competent as a patient:

The wife as a patient will mostly follow all her husband's decisions, especially in obtaining consent for any treatment or care. There is a case that the patient needs to start on antibiotics for her fever, but she needs to discuss it with her husband first. (Female 13, FGD4)

Another challenge was that the hospital is located in a small district with a close-knit community where most people know each other. The nurses reported that most patients were familiar with them, so it was easier for them to negotiate with them and refuse care.

Discussion

From the findings, nurses' roles were influenced by several factors. When nurses encounter a patient who refuses nursing care, the nurses' role is to respond to the refusal. From the first theme findings, the nurses attempted to understand the reason behind the refusal and acknowledged and respected it. The most important thing is that if the patient refuses nursing care, the nurses or health care providers need to understand the reason behind it and rule out the misunderstanding. It is common for there to be miscommunication. This goes back to making sure patients truly understand the options explained to them.[13, 24] Refusing care can occur as a result of barriers, which can be defined as factors that limit access to obtaining quality health care, for example, financial concerns or time constraints.[25, 26]It appears thatby acknowledging the reason behind the refusal of care, the nurse could negotiate to meet the patient's needs. Some nurses shared their own experiences as patients to show empathy.

This studyindicated that nurses were not necessarily judgmental of the patient's refusal of care. The majority of the nurses wished to avoid any paternalistic or judgmental approach towards such refusal. High-quality nursing care is achieved when patients feel heard,understood and considered themselves in safe hands. Similar studies illustrate these points. Nurses were guilty of coercion by offering only one option for care.[24]The findings show that patients like other options or alternative ways of dealing with care. The nurse's responsibility is to ensure that the patient's right to refuse nursing care is respected at all times, and patients have the right to choose their treatment.[3] Therefore, the nurses have a professional and ethical duty to ensure that they do not judge the patient. Nurses should try to help the patients with relevant information to help them decide.

Professional guidance suggests that refusal of treatment by competent adults should be respected.[27] Nurses in this study have clarified steps to deal with the refusal. The first step is about the provision of information. Today's patients are more informed when they ask for more information regarding their health conditions.Most nurses held a positive attitude towards the patient with internet information. It is suggested that nurses be ready and fully prepared if they encounter this kind of patient.[28]The patients may appear to be "difficult" because they are anxious or expect to hear something pleasant from the healthcare professionals to ensure that the internet information they found is relevant to their understanding. The importance of giving time for the patient to think was a good approach. When in doubt, the healthcare professionals must take a step back and get input and validation and review the ethics guidelines.[24]When decisions were made in a hurry, without giving the patient time to think, this affected patient cooperation. If nurses allow patients to decide on their care, the nurses must be first empowered, particularly as they have greater accountability for their actions.[29]The study also indicated the need for nurses to possess

assertive communication skills to advocate for patients. Assertiveness helps enhance relationships avoid power games and is a vehicle for clear outcomes.[30-31] However, increased workloads and time constraints somehow restricted nurses from discussing their patient's concerns effectively[32] and such ineffective professional communication can compromise the quality of care.[33]

Meanwhile, the primary responsibility of the nurses was to ensure the patient received the best possible care. Refusing nursing care does not indicate the end of this responsibility because a healthcare provider still needs to advocate for the patients' decisions and well-being even when those patients have refused care. The nurses in this study discussed the challenges they faced for this theme. Most nurses mentioned that convincing the patient was the most challenging aspect of refusing care. Patients were quickly labelled as demanding, and some nurses do not react positively to being asked about health matters because they sometimes view this as a challenge to their knowledge. Reassuring a patient about any treatment or care risks can positively influence patients' decisions and facilitate better care.[34]

Limitations

This study's limitations include the following factors: single hospital involvement and the potential of biased, whereby nurses may give a popular answer rather than an honest outlook. This may negatively influence the outcome of the study.

Conclusion

The nurses recognised that they have an ethical and professional duty to help the patient through offered information, which could help the patients to reconsider and accept the proposed care. The findings of this study should be valuable in guiding and designing institutional policies or guidelines that enable a balanced approach for nurses to support patients when they refuse care. Future research should examine the perspectives of patients and other healthcare professionals on the refusal of care in the context of healthcare. Specific care activities that patients frequently refuse should also be given serious consideration, and tangible approaches should be established to mitigate these possibilities in the future.

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References

1. American Nurses Association. "Nursing administration: scope and standards of practice." Silver Spring, MD, 2016.
2. Bull E, Sørlie V. Ethical challenges when intensive care unit patients refuse nursing care. Nursing Ethics. 2014; 23(2):214-222.
3. Nursing Board for Brunei, Ministry of Health Brunei Darussalam. Code of Ethics for Registered Nurses and Midwives in Brunei Darussalam. Bandar Seri Begawan: Nursing Board for Brunei, Ministry of Health Brunei Darussalam; 2010 p. 1-16.
4. Buchanan A. Mental capacity, legal competence and consent to treatment. JRSM. 2004; 97(9):415-420.
5. McGowan S. What to do when a patient refuses evidence-based treatment: An ethical dilemma. British Journal of Neuroscience Nursing. 2006; 2(7):345-349.
6. Medicare.gov. Rights & protections in a nursing home. Available from: https://www. medicare. gov/what-medicare-covers/part-a/rights-

in-nursing-home. Html (2018, accessed 12 February, 2020).

7. Keen A, Thoele K, Fite L, Lancaster S. Competent patient refusal of nursing care. Journal of Wound, Ostomy& Continence Nursing. 2019; 46(5):390-395.
8. Dudzinski D, Shannon S. Competent patients' refusal of nursing care. Nursing Ethics. 2006; 13(6):608-621.
9. Aveyard H. The patient who refuses nursing care. Journal of Medical Ethics. 2004; 30(4):346-350.
10. Akyüz E, Bulut H, Karadağ M. Surgical nurses' knowledge and practices about informed consent. Nursing Ethics. 2018; 26(7-8):2172-2184.
11. Aveyard H. Informed consent prior to nursing care procedures. Nursing Ethics. 2005; 12(1):19-29.
12. Akyüz E, Erdem Y. Patients' experiences of informed consent and preoperative education. Clinical Nursing Research. 2020; 105477382096359.
13. Paulsen, E. When Patient Refuse Treatment. Available from: https://www.coursehero.com/file/p28rka9b/Reference-Paulsen-E-2016-When-Patients-Refuse-Treatment. (2016, accessed 2nd February 2021)
14. Grace P, Hardt E. When a patient refuses assistance. American Journal of Nursing. 2008; 108(8):36-38.
15. Karpouzi, K, Davos, CH, Elliott, L. Informed consent: a comparative survey of Greek and British nurse preceptors' beliefs to informed consent. ICUs Nurs Web J 2005; 24: 12 pp.
16. Cole C. Implied consent and nursing practice. Nursing Ethics. 2012; 19(4):550-557.
17. Hammarberg K, Kirkman M, de Lacey S. Qualitative research methods: when to use them and how to judge them. Human Reproduction. 2016; 31(3):498-501.
18. Liamputtong, P. *Qualitative Research Methods* (3rd Ed.). South Melbourne, Vic: Oxford University Press, 2009.
19. Maharaj N. Using field notes to facilitate critical reflection. Reflective Practice. 2016; 17(2):114-124.
20. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006; 3(2):77-101.
21. Elo S, Kääriäinen M, Kanste O, Pölkki T, Utriainen K, Kyngäs H. Qualitative content analysis. SAGE Open. 2014; 4(1):215824401452263.
22. Polit, DF, Beck, CT. Study guide for essentials of nursing research: Appraising evidence for nursing practice. Philadelphia, PA: Wolters Kluwer, 2018.
23. Graneheim U, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Education Today. 2004; 24(2):105-112.
24. Terri, D Look for reasons if patients refuse advice. ACP internist. Available from: https://acpinternist.org/archives/2014/02/informed-refusal.htm, (2014, accessed 11th January 2021)
25. Byrne S. Healthcare avoidance. Holistic Nursing Practice. 2008; 22(5):280-292.
26. Carrillo J, Carrillo V, Perez H, Salas-Lopez D, Natale-Pereira A, Byron A. Defining and targeting health care access barriers. Journal of Health Care For The Poor And Underserved. 2011; 22(2):562-575.
27. Bingham S. Refusal of treatment and decision-making capacity. Nursing Ethics. 2012;

19(1):167-172.

28. Barnoy S, Volfin-Pruss D, Ehrenfeld M, Kushnir T. Nurses attitudes towards the informed patient. Studies in Health Technology and Informatics, 2009, 146,396-399.
29. Christensen M, Hewitt-Taylor J. Empowerment in nursing: paternalism or maternalism? British Journal of Nursing. 2006; 15(13):695-699.
30. Van Niekerk V. Relationship, helping and communication skills. In: van Rooyen, D, Jordan PJ, editors. Foundations of Nursing Practice: Fundamentals of Holistic Care. African Edition. 2nd ed. Edinburgh: Mosby Elsevier; 2016. pp. 181-207. ISBN: 978-0-7020-6628-3
31. Sibiya M. Effective communication in nursing. Nursing. 2018.
32. Helft P, Chamness A, Terry C, Uhrich M. Oncology nurses' attitudes toward prognosis-related communication: A pilot mailed survey of oncology nursing society members. Oncology Nursing Forum. 2011; 38(4):468-474.
33. Ghiyasvandian S, Zakerimoghadam M, Peyravi H. Nurse as a facilitator to professional communication: A qualitative study. Global Journal of Health Science. 2014; 7(2).
34. Benjamin P, Scarlet B. Refusal of Care. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560886/ (2020, accessed 11th January 2021)

The Development of an Instrument for Measuring Interprofessional Collaborative Practice Competency of Health Sciences Students

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Abstract

Different interprofessional frameworks have been developed. To evaluate students' collaborative practice competency correctly, it is necessary to find a reliable, suitable, and valid instrument. This study aimed to develop a tool to measure interprofessional collaborative practice competency of Thai health sciences Students. This research and development were divided into 5 phases: 1) Studying core competency and behavioral indicators; 2) examining content validity of the behavioral indicators; 3) creating a competency measurement tool and determining scoring criteria; 4) testing the tool and checking its reliability, and 5) assessing interprofessional collaborative practice competency of health sciences students.

The results showed that the interprofessional collaborative practice competency consisted of 6 key components: 1) patient-centered care, 2) role clarification, 3) team functioning, 4) collaborative leadership, 5) learning and reflection, and 6) knowledge. There were 30 behavioral indicators with the index of item-objective congruence (IOC) between 0.6-1.00 and the content validity index (CVI) of 0.92. The reliability of the whole tool was 0.93 and each aspect was 0.76, 0.77, 0.75, 0.79, 0.81, 0.77, respectively. The tool was able to classify the competency of health science students between those who had and did not have experience in participating in interprofessional teaching programs. The psychometric analysis of this tool supported its value in measuring the interprofessional collaborative practice competency of Thai health science students. As this study was a cross-sectional study, further assessment for the interprofessional collaborative practice competency among Thai health science students with the longitudinal design is needed.

Keywords: *Interprofessional Collaborative Practice Competency; Health Science Students*

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Introduction

The health care system has become more complex nowadays because of the increasing of chronic diseases and the increasing of older people. As a result, some discrepancies in health care services such as medical error or irrational drug use have occurred. These problems cannot be resolved by only one profession alone, but they require collaborative practices among health care teams.[1,2] The challenge is that at the present, collaborative practice among different professions is more complicated than in the past due to lack of respect for each other, lack of teamwork skills, and lack of knowledge about the roles of other professions.[3]

Therefore, it has been an effort to develop interprofessional education (IPE) in many countries to reduce conflicts among health professions. The World Health Organization defined the IPE as means of teaching and learning that allowed students from two or more professions to learn about, learn from, and learn with each other for effective collaboration among health professions, resulting in improving health outcomes of patients.[4] When students from different professions learn together, it will help them to adjust their interdisciplinary attitudes and promote their readiness to work with multidisciplinary team after they graduate.[3, 5] In Thailand, the National Health Professional Education Foundation started to develop the IPE in 2014.[6] At the present, the IPE has been carried out in many educational institutions, including Colleges of Nursing under the Ministry of Public Health, Thailand. [7-9]

The education institute under the Ministry of Public Health, Thailand is a public higher education institute for the productions of the public health workforce and developing a health workforce to serve the shortage of healthcare personnel of the Ministry of Public Health, Thailand.[10] After graduation, these graduates have to work with other professions. Therefore, as the role of faculty members of this institute, we recognize the importance of developing tools to assess the competence of interprofessional collaboration practice among these health science students. Based on the review of literature, it showed that although the IPE has been implemented for long periods of time, the tools or frameworks for assessing multidisciplinary competency have been varied and their components have been different. Different definitions have been given in different countries, and most of them are frameworks for assessing competencies that are appropriate for people in Western countries.[3] For example, the Canadian Interprofessional Health Collaborative (CIHC) identified six components of collaborative practice: 1) patient-centered care, 2) interprofessional communication, and 3) role clarification, 4) team functioning, 5) collaborative leadership, and 6) interprofessional conflict resolution.[10] In Thailand, the National Health Professional Education Foundation suggested guidelines and principles for interprofessional education and identified the IPE competency into 5 components, included: 1) ethics and shared values, 2) roles and responsibilities, 3) teamwork and leadership, 4) learning and reflection, and 5) communication.[6] It can be seen that both conceptual frameworks have some similarities and differences in some components.

Therefore, the purpose of this study was to develop a tool for measuring interprofessional collaborative practice competency of Thai health sciences students by combining both the Western and the Eastern conceptual frameworks together. We expected that it will help us to have a more complete and clearer tool

for assessing interprofessional collaborative practice competency for Thai health science students. Our specific research objectives were: 1) to examine the components of the interprofessional collaborative competency of health science students, 2) to develop a tool to measure the interprofessional collaborative practice competency of health sciences students, and 3) to compare the interprofessional collaborative practice competency of health sciences students between who did not have and who had experiences in participating in the interprofessional educational program.

Methods

The study was a research and development (R&D) design, divided into 5 phases.

Phase 1) Studying core competency and behavioral indicators: We first developed a pool of items verbatim based on the literature review and the in-depth interview from 20 persons, included 10 faculty members who had experience in teaching students in the interprofessional education program, and 10 preceptors who had experience as mentors of students in the interprofessional education program. The interview took approximately 30-45 minutes for each person and then used the content analysis method to analyze data.

Phase 2: Examining content validity of the behavioral indicators: The items pool from phase 1 were reviewed to assess content validity by 5 experts, including 3 Deputy Directors of the Academic Affairs at Nursing Colleges in Thailand who had experience in teaching students in the interprofessional education program and 2 sub-committee of the National Health Professional Education Foundation, Thailand. After the experts determined the appropriateness, clarity of the language used, and the consistency between the indicated behavior and its definition, the content validity index was calculated.

Phase 3: Creating a competency measurement tool and determining scoring criteria: Researchers created the tool format and set scoring criteria. Then, we asked 3 experts in measurement and evaluation to determine the suitability of the format, assessment method, and scoring criteria.

Phase 4: Testing the tool and checking its reliability: Researchers tested the reliability of the tool by testing with 50 health science students in Colleges under the Ministry of Public Health, Thailand. Participants were asked to self-assessed their interprofessional collaborative practice competency. Then, the data were analyzed for the Alpha Cronbach coefficient.

Phase 5: Testing the construct validity by assessing the interprofessional collaborative practice competency of health science students: We collected participants' demographic characteristics, including gender, age, religion, and grade point average (GPA). The interprofessional collaborative practice competency was examined using a five-point scale of a total of 48 items. This survey involved 280 health science students from 3 Colleges under the Ministry of Public Health, Thailand, which had prepared the interprofessional education program together. The sample size was calculated using the G*Power program, the test power was .95, the error was .05, and the effect size was .25.

Statistical Analysis

The tool's construct validity was evaluated by using an exploratory factor analysis method. A principal factor method was used for factor extraction,

varimax rotation (with an eigenvalue>1.0), and factor loading greater than 0.3 as criteria. The independent t-test was also used with interprofessional education experience (had/did not have) to confirm its construct validity. The test was conducted to determine whether there was a significant difference in the interprofessional collaborative practice competency scores between students who had and did not have experience in participating in the interprofessional program. Cronbach's alpha coefficient was calculated for reliability. Frequency and percentage were used to analyze the demographic data of the samples. Mean and standard deviation were also used to examine the interprofessional collaborative practice competency of the samples.

Ethical Considerations : The ethics review board of SCPHP College, Thailand approved this study.

Results

Content Validity

Throughout the literature review and the in-depth interview process with 20 faculty and preceptors who had experiences in teaching students in the interprofessional program, the first version of the tool composed of 8 main key components: 1) patient-centered care, 2) interprofessional communication, 3) role clarification, 4) team functioning, 5) collaborative leadership, 6) interprofessional conflict resolution, 7) learning and reflection, and 8) knowledge. In addition, 40 items of the behavioral indicators were first developed for an original scale. Then, based on the assessing by 5 experts, the results showed that the Item-Objective Congruence (IOC) for the first version of the tool was between 0.6-1.00 and the Content Validity Index (CVI) was 0.92, the 8 key main components were founded as same as those in phase I. However, the behavioral indicators of the competency were added from 40 to be 48 items for the second round. We then asked 3 experts in measurement and evaluation to determine the scoring criteria. The results of this phase helped us to be clearer for the objective of the measures; the assessors (health science students, friends, and supervisors (instructor/mentor); assessment methods by responding a five-point sub-scale (from least likely to comply with that behavior = 1 to most likely to comply with that behavior=5). The total score ranged from 1 to 5, with higher scores indicating greater collaborative practice competency.

Construct Validity

We tested the construct validity of the tool by comparing interprofessional collaborative practice competency between Thai health science students who had and did not have experience in participating in the interprofessional teaching program. The results of the study showed that most of the samples were female (88.93%). The age of samples ranged from 19-37years (mean=21.31, S.D.=2.11. About 96.07% were Buddhist. The cumulative grade point average ranged from 2.00 to 3.81 (mean=2.83, S.D.=0.36 (Table 1)

Table 1 Demographic characteristics of samples (n=280).

Variable	n	%
Gender		
Male	31	11.07
Female	249	88.93
Age (years); ($\bar{X}\bar{X}$ =21.31; S.D. = 2.11, Min = 19, Max = 37)	10	3.57
≤20	260	92.86
21-25	6	2.14
26–30	3	1.07
31-35	1	0.36
≥ 35		
Religion		
Buddhist	269	96.07
Christian	10	3.57
Islam	1	0.36
GPA ($\bar{X}\bar{X}$ = 2.83, S.D. = 0.36, Min = 2.00, Max = 3.81)	53	18.93
2.00 – 2.50	150	53.57
2.51 – 3.00	61	21.79
3.01 - 3.50	16	5.71
3.51 – 4.00		

For the factor analysis, the results of the study showed that the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.94, indicating that it was appropriate to perform factor analysis on these data. Bartlett's Test of Sphericity was significant (0.000), indicating that data were adequate for factor analysis to be performed. The factor analysis revealed 6 components with eigenvalues exceeding 1, explaining a total of 55.72% of the variance, with component 1 contributing 34.54%, component 2 contributing 5.17%, component 3 contributing 4.63%, component 4 contributing 4.13%, component 5 contributing 3.77%, component 6 contributing 3.48%. It was decided to retain 6 components for further investigation. Then, to ensure the discrimination among factors, we determined a cutoff point of 0.5 for factor loadings. If the loading of a component was less than 0.4. Eighteen items were excluded. The further confirmatory factor analysis was carried out on the remaining 30 items, resulting in items loading higher than 0.40. Factor 1 called "patient-centered care" comprised of 6 items; Factor 2 called "role clarification" comprised of 6 items; Factor 3 called "team functioning" comprised of 4 items; Factor 4 called "collaborative leadership" comprised of 5 items; Factor 5 called "learning and reflection" comprised of 5 items, and factor 6 called "knowledge" comprised of 4 items. The factor results are displayed in Table 2.

Table 2 The factor analysis of the interprofessional collaborative practice competency.

Item	Factor loading					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1. Listen to all parties involved, such as patients, families, and communities in providing care for clients.	0.79	0.16	0.01	0.13	0.00	0.22
2. Appropriately encourage patients and their families to participate in a patient's care plan.	0.45	0.45	0.18	0.06	0.22	0.22
3. Provide easy information to patients and their families that help them to make an appropriate decision.	0.49	0.38	0.09	0.05	0.17	0.07
4. Respect patients' decisions and values in their self-care.	0.60	0.00	0.24	0.23	0.11	0.10
6. Prepare a patient' care plan by concerning the context and cultural diversity of the patients.	0.41	0.40	0.02	0.10	0.30	0.22
8. Effectively communicate with the interprofessional team.	0.22	0.51	0.48	0.02	0.16	0.08
10. Carefully listen to the opinions of the interprofessional team.	0.56	-0.02	0.49	0.17	0.15	-0.03
12. Express your own opinions and feelings to the patients without judgment.	0.21	0.46	0.14	0.25	0.03	-0.05
14. Demonstrate respect for the roles and responsibilities of the interprofessional team.	0.23	0.23	0.68	0.05	0.20	0.14
17. Integrate your competence/role in providing services.	0.06	0.66	0.11	0.26	0.12	0.23
19. Appropriately plan and collaborative work in the interprofessional team.	0.01	0.48	0.15	0.19	0.17	0.39
20. Able to work with the interprofessional teams appropriately.	0.13	0.12	0.57	0.24	0.11	0.38
21. Follow the rules by showing respect and honor to team members.	0.10	0.16	0.48	0.40	0.1	0.26
22. Have unity and accept the decisions of the team members.	0.00	0.11	0.58	0.53	0.09	0.14

Table 2 The factor analysis of the interprofessional collaborative practice competency. (Con.)

Item	Factor loading					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
25. Create an atmosphere for working together.	0.07	0.27	0.14	0.63	0.22	0.05
26. Use participatory decision-making principles.	0.27	0.15	0.00	0.61	0.25	0.21
29. Analyze causes and factors that cause errors in accordance with the situation.	0.03	0.51	0.15	0.39	0.19	0.30
30. Use empirical data/evidence to resolve conflicts.	0.09	0.55	-0.04	0.22	0.18	0.37
32. Use reasons to resolve conflicts.	0.26	0.09	0.09	0.66	0.14	0.19
33. Coordinate to reduce various misunderstandings.	0.07	0.30	0.26	0.61	0.13	0.14
35. Create an atmosphere for acceptance of differences.	0.13	0.25	0.14	0.50	0.21	0.29
36. Seek consensus when conflicts arise by giving everyone's opportunity to express their opinions.	0.30	0.26	0.08	0.31	0.60	0.11
38. Reflect on the findings that you have learned.	0.35	0.03	0.06	0.23	0.59	0.24
39. Reflect on the issues that you would like to learn more about to improve interprofessional work.	0.06	0.02	0.09	0.23	0.74	0.18
40. Able to communicate what has been learned from working with interprofessional areas.	0.05	0.28	0.16	0.09	0.67	0.18
42. Reflect on future interprofessional work plans.	0.02	0.24	0.30	0.16	0.64	0.19
43. Appropriately apply knowledge in your own profession to take care of patients.	0.17	0.12	0.26	0.08	0.15	0.65
44. Appropriately apply knowledge in related sciences, such as population, health economics, public health science, etc. to take care of patients.	0.09	0.20	0.11	0.12	0.10	0.66
47. Effectively integrate your own sciences and interprofessional to take care of patients.	0.19	0.20	0.03	0.18	0.30	0.66
48. Use up-to-date information of all professionals to take care of patients.	0.08	0.11	0.13	0.25	0.20	0.65

Factor 1 was named “Patient-centered care”; factor 2 was named “Role clarification”; factor 3 was named “Team functioning”; factor 4 was named “Collaborative leadership”; factor 5 was named “learning and reflection”; and factor 6 was named “Knowledge”. Values with factor loadings greater than 0.40 as absolute values are indicated with shaded areas.

Internal consistency

We analyzed correlations between each subscale with the total score by using bivariate correlations. The results of the study revealed the presence of all coefficients at 0.5 and above (Table 3), indicating that all subscales were highly correlated with the total scale. Thus, the tool is a reliable and valid instrument comprising 30 items within 6 subscales.

Table 3 Pearson-product moment correlation coefficients between the rotated factors on the scale for the interprofessional collaborative practice competency.

Factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1	-	.595**	.553**	.565**	.574**	.505**
Factor 2		-	.586**	.651**	.594**	.607**
Factor 3			-	.630**	.540**	.533**
Factor 4				-	.617**	.565**
Factor 5					-	.578**
Factor 6						-
Total 30 items	.790**	.844**	.780**	.835**	.814**	.769**

**p≤.01

Then, the total scores for each factor were compared in relation to a learning experience in attending the interprofessional education between students who had and did not have experience in participating in the interprofessional teaching program. The findings of the study showed that the tool was able to classify the competency of these two groups. Students experiencing in participating the interprofessional teaching program had scored on the overall interprofessional collaborative practice competency and in each aspect higher than those who had no prior experience of participating in interprofessional teaching program, with the statistically significant at the .05 level, except for the patient-centered competence. (Table 4)

Table 4: The difference scores of the interprofessional collaborative practice competency between students who had and did not have experience in participating in the interprofessional teaching program. (n=280)

Factors	No experience (n=163)		Had experience (n=117)		Mean Differences		Independent t-test
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
1. Patient-centered care	4.42	0.40	4.50	0.41	0.08	0.05	1.736
2. Role clarification	4.19	0.40	4.33	0.46	0.14	0.05	2.560*
3. Team functioning	4.28	0.51	4.59	0.43	0.31	0.06	5.497*
4. Collaborative leadership	4.26	0.48	4.50	0.45	0.23	0.06	4.142*
5. Learning and reflection	4.17	0.50	4.38	0.48	0.20	0.06	3.439*
6. Knowledge	4.28	0.48	4.48	0.48	0.20	0.06	3.432*
Total	4.27	0.36	4.45	0.36	0.19	0.44	4.205*

*p≤.05

Reliability

By testing the first version of the tool for its reliability with 50 health science students in Colleges under the Ministry of Public Health, Thailand, the results of the study showed that the whole scale had a Cronbach's alpha of 0.98, and values for each aspect were 0.89, 0.76, 0.85, 0.79, 0.85, 0.92, 0.84, 0.88, respectively. After that, we tested the reliability of the 30-item version. The results of the study showed that the overall reliability for the tool was 0.93 and the reliability for the subscales were 0.76, 0.77, 0.75, 0.79, 0.78, and 0.77, respectively.

Discussion

The results of the study showed that the interprofessional collaborative practice competency of Thai health sciences students consisted of 6 key components, including 1) patient-centered care, 2) role clarification, 3) team functioning, 4) collaborative leadership, 5) learning and reflection, and 6) knowledge. When comparing to the 6 components defined by the Canadian Interprofessional Health Collaborative (CIHC),[11] it had been found that the additional components reported from this study were learning and reflection, and knowledge. This may be because reflection is an important competency in

health science education. Particularly, in the nursing profession as it is a competency that promotes experiential learning in a clinic and helps learners to connect theory into practice.[12] Reflective practice is an important method to combine theory and practice together because when one reflects something, he or she needs to consider each experience seriously based on his/her own existing knowledge with the aim of learning and changing behaviors.[12] This is an appropriate way in developing healthcare professional expertise because changing context and growth of health knowledge have been expanding at an advanced level every day.[13]

In addition, to improve quality of care and increase patient safety, all health personnel, including doctors, nurses, or other health care providers need to have both broad and in-depth knowledge in one's own field and related fields such as pharmacology, anatomy, or physiology as this fundamental knowledge will help them for physical examination or symptom interpretation.[14] This may be related to the change in the global context. As we can see that health conditions nowadays are more complex and health service systems are in advance. Therefore, health personnel need to continuously develop their competencies in their own and related fields of knowledge.[14] The finding of this study was congruent with a previous study that reported that ongoing professional development is a need and expectation for nurses across all career stages as it helped them to ensure competency and quality patient care throughout the span of their careers.[15]

When comparing the main components of the interprofessional collaborative practice competency found in this study with the components defined by the National Health Professional Education Foundation, Thailand,[6] it has been found that there was 1 additional main component of the interprofessional collaborative practice competency found in this research, namely: knowledge. There was also a separation of teamwork and leadership competency. This might be because, during the 21st century, Thailand has undergone many changes in health systems such as the promulgation of the National Health Security Act, having a proactive policy to take care of people in each area by dividing the management into health zones or having more complex health conditions of Thai people. Therefore, working as a solo professional is unable to cope with such changing situations, but multidisciplinary work is needed.[2] Consequently, health education is necessary to adapt to the changes of the health care system by adjusting the teaching and learning methods to enable graduates to have competencies to work in a changing environment and can effectively take care of Thai people.[16-17]

Some terms used in both resources might be different, but the performance indicators were similar. For example, whereas the National Health Professional Education Foundation[6] used the term "ethics and shared values in the first main component, this study used the term "patient-centered care" instead. However, the behavioral indicators of both sides were similar. This might be because patient-centeredness is an approach to improve the quality of health care that has been promoted extensively in recent years.[18] When health care providers work with the concept of patient-centered care, it has been shown to be associated with treatment compliance, lead to better health outcomes, reduced readmissions and consultations, and consequently, reduced healthcare costs.[19-20] It is not surprising that the patient-centered care component had been considered as one competency for interprofessional collaborative

practices.

The results of the study showed that the sample group who participated in the interprofessional education program had significantly higher scores of the interprofessional collaborative practice competency in both overall and for 5 components, namely: role clarification, team functioning, collaborative leadership, learning and reflection, and knowledge than those with no experience in participating in the interprofessional education program (p=.05). There was only the patient-centered care component that both groups had similar scores. This might be because the interprofessional education enhanced learners to learn the roles and responsibilities of each profession, helped them to know how to work as a team and how to reflect their thoughts.[8] While the concept of patient-centered care is a concept that the Colleges under the Ministry of Public Health, Thailand have adopted as a conceptual framework for defining the identity of the graduates, containing: service mind, analytical thinking, and the participation of service care. All educational institutions under the Ministry of Public Health, Thailand have used this concept in teaching all students. Therefore, it is not surprising that why all health science students realized the importance of patient-centered care.

Implication for practices

The tool developed from this study can be used for assessing interprofessional collaborative practice competency of Thai health science students. The limitation of this study was that the findings of this study were based on the self-evaluation of students. As a result, it may be possible that individuals may be likely to assess themselves on the positive side. Therefore, as the assessors of this developed tool can be many persons, future research to compare individual's competency scores assessed by instructors, mentors, preceptors, or colleagues, as well as students by themselves may be useful in order to provide the most comprehensive and accurate assessment.

Conflicts of Interest: The authors have no conflicts of interest to declare.

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References

1. Woermann U, Weltsch L, Kunz A, Stricker D, Guttormsen S. Attitude towards and readiness for interprofessional education in medical and nursing students of Bern. *GMS J Med Educ* 2016;33(5). Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5135421/pdf/JME-33-73.pdf
2. Babiker A, El Husseini M, Al Nemri A, et al. Health care professional development: Working as a team to improve patient care. *Sudan J Paediatr*. 2014;14(2):9-16.
3. Roslan NS, Yusoff M, Rahim AF, Hussin ZA. Together we stand, divided we fall: Interprofessional collaborative practice competency from Malaysian medical professionals' perspectives. *J Taibah Univ Medical Sci.* 2016;11(6):533-40.
4. World Health Organization. Framework for Action on Interprofessional Education & Collaborative Practice. 2018; Retrieved

from: https://apps.who.int/iris/bitstream/handle/10665/70185/WHO_HRH_HPN_10.3_eng.pdf;jsessionid= 6A28A816395BA060149F309FB855D5F9? sequence=1

5. Ruebling I, Pole D, Breitbach AP, Frager A, Kettenbach G, Westhus N, et al. A comparison of student attitudes and perceptions before and after an introductory interprofessional education experience. *J Interpro Care.* 2013;28(1), 23-27.
6. National Health Professional Education Foundation. Interprofessional education—IPE. 2010. Retrieved from: https://www.pharmacy.mahidol.ac.th/newsfile/depdocument/pdf
7. Wanchai A, Prathumtone V, Wangruangsatid R, Rungsiyanond J, Wiriyapramote P, Rasiri S, et al. The Effects of the interprofessional education on readiness for interprofessional learning of health science students. *Inter J Nurs Educ.* 2020;12(4): 21-25.
8. Sarakshetrin A, Sriyasak A, Ketin V, Rongmuang D. A development of interprofessional education learning model for health promotion among the elderly in the community. *J Health & Nurs Res*. 2019;35(2): 140-152.
9. Yuenyow T, Howharn C, Promsuan W. Effects of interprofessional education on perception on interprofessional roles and responsibility, and teamwork. *J Nurs Public Health & Educ*. 2018;20(1): 137-147.
10. Praboromarajchanok Institute Act B.E. 2562. Retrieved from: http://www.ratchakitcha.soc.go.th/DATA/PDF/2562/A/043/T_0040.PDF
11. Canadian Interprofessional Health Collaborative. A national interprofessional competency framework. Retrieved from: http://ipcontherun.ca/wp-content/uploads/2014/06/National-Framework.pdf
12. Jorwekar G. J. Reflective practice as a method of learning in medical education: History and review of literature. *Int J Res Med Sci.* 2017, 5(4):1188-1192.
13. Kim YH, Min J, Kim SH. et al. Effects of a work-based critical reflection program for novice nurses. *BMC Med Educ.* 2018; 30. Retrieved from https://doi.org/10.1186/s12909-018-1135-0
14. Arráez-Aybar LA, Sánchez-Montesinos I, Mirapeix RM, Mompeo-Corredera B, Sañudo-Tejero JR. Relevance of human anatomy in daily clinical practice. *Ann Anat.* 2010;192(6):341-348.
15. Price S, Reichert C. The importance of continuing professional development to career satisfaction and patient care: Meeting the needs of novice to mid- to late-career nurses throughout their career span. *Admin Sci.* 2017, 7(2): 17; Retrieved from: https://doi.org/10.3390/admsci7020017
16. Hazrati H, Arabshahi SKS, Bigdeli S, Behshid M, Sohrabi Z. A qualitative approach to identify barriers to multi-professional teamwork among medical professors at Iranian teaching hospitals. *BMC Health Serv Res.* 2021;21(1):479.
17. Head BA, Furman CD, Lally AM, Leake K, Pfeifer M. Medicine as It Should Be: Teaching Team and Teamwork during a Palliative Care Clerkship. *J Palliat Med.* 2018;21(5):638-644.
18. Saha S, Beach MC, Cooper LA. Patient centeredness, cultural competence and healthcare quality. *J Natl Med Assoc.* 2008;100(11):1275-1285.

19. Berghout M, van Exel J, Leensvaart L, Cramm JM. Healthcare professionals' views on patient-centered care in hospitals. *BMC Health Serv Res.* 2015;15:385.

20. Delaney L. Patient-centered care as an approach to improving health care in Australia. *Collegian*. 2018;25, 119–123.

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