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# International Journal of Nursing Education



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# International Journal of Nursing Education

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# Effectiveness of Concept Mapping Versus Traditional Approach as a Teaching Method on Knowledge Regarding Selected Topics among Nursing Students

Banerjee S.<sup>1</sup>, Kumar S<sup>2</sup>, Dzousa C .M<sup>3</sup>

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## Abstract

Nursing education is facing sensational changes with changing priorities of the rapidly changing society. We know education is the most powerful weapon which can change the whole nation. The goal of nursing education is to prepare nurses who are competent and caring. But the nurse educators cannot continue always teaching with the methods of the 19<sup>th</sup> century and hope to prepare the nursing students for 21<sup>st</sup> century. Rote memorization has been an accepted learning method in the past, but is no longer recommended because deep meaning is not integrated into learning (Kumar, Dee, Kumar, & Velan, 2011). Student nurses must take an active role in the learning experience and become self-directed learners. Concept mapping assists learners to self-critique learning using the decision-making process. Aim of the study: to assess effectiveness of concept mapping versus traditional approach as a teaching method on knowledge regarding selected topics among nursing students.

Design: True Experimental Research design. (Post-test only control group design) was used to conduct the study. Setting: The study was conducted in ST. John's College Of Nursing in Bangalore where GNM, B.Sc., Post. Basic Nursing students are studying with its own tertiary level parent hospital. Subjects & Methods: A total of 100 students who are studying in B.sc 2<sup>nd</sup> year Nursing. The students in the group A (48) were subjected to the traditional method of teaching, and students in the group B (46) were subjected to the concept mapping as a method of teaching. Tools used to collect the data were: 1) Baseline variables: age, medium of instruction of the Board exam, learning style (Individual, group, both) normally adopted. 2) Knowledge Questionnaire: a structured questionnaire consisting of total 40 MCQ questions for both topics Peptic Ulcer-(20 questions) and Intestinal Obstruction-(20 questions). The findings of the study showed that using concept mapping as a complementary strategy for traditional teaching method had a change in the student's overall knowledge scores. The mean percentage of the knowledge scores using concept mapping was 57.10% & using traditional method was 54.90%.

The findings of this study revealed that there is no significant difference in knowledge score of the students using traditional & concept mapping as a method of teaching. There can be other factors such as the ability & competence of the teacher, method of presentation, language & vocabulary used which may also influence the knowledge that is imparted to the students. Hence it can be concluded that each method has its own influence on the knowledge gained.

**Key Words:** Lecture method, concept mapping, knowledge score

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## Introduction

One way to continue to strengthen the science of nursing education is to trace the development of



educational innovations with an eye toward future research.<sup>1</sup> During the last quarter of 20<sup>th</sup> century the number of nurses was doubled for each 100,000 of population across the world. With advance of medical technologies harder medical conditions has come under control. Advances in public health have made the dream of living longer come true. All these have added to the need for quality nursing care. In the era which is usually described as information era, delivering quality care requires nurses who learned their lessons well. This gives improvement of teaching and learning activities a high priority. In last 2 decades the nursing body of knowledge has increased remarkably and simultaneously the current nursing education and the health care systems have become more complicated. Therefore nursing educators realize the importance of looking at the nursing education process. It is expected more than even to prepare graduate nurses who are competent, knowledgeable, and skillful, subsequently safe and quality practice can be achieved.<sup>3</sup> Nursing students must be able to link learned facts, concepts, principles with new knowledge in order to make sound rational decisions in nursing practice.<sup>4</sup> Nursing teachers are being encouraged to use teaching methods which enables the students to be more responsible for their learning & that the application of these methods presupposes different orientations different attitudes. Teachers have to adopt the role of facilitator for learning. Innovative teaching & learning strategies in nursing education are expected to promote nursing students to be actively involved in self-regulated learning, to transform traditional one way delivery of knowledge to cultivate patient centered teaching & learning model. The innovative strategies help nursing students to foster the ability of health informatics, communication skills, collaborative skills, reflection, cultural sensitivity, critical thinking as well as evidence based health care.<sup>5</sup> Nursing as a profession traditionally requires caregivers to have a vast amount of knowledge regarding a variety of topics. Concept

mapping is particularly useful strategy for the synthesis of complex topics, promotion of knowledge & abstract thinking.<sup>6</sup> A concept map is a graphic presentation of the connection between 2 concepts, and the way they are connected with other concepts in a subject. In order to understand a concept, a learner discovers many potential connections among the existing concepts & becomes mentally involved in deciding which concepts to choose & how to connect them. Such a process leads to high cognitive function, advanced cognitive acts such as analyzing, combining, and evaluating. As a student-centered approach, concept mapping allows learners to learn the new information based on what they have already learned by connecting concepts through linking words. The strategy of concepts in a network of multiple connections throughout the whole learning process.<sup>7</sup> Concept mapping helps the learners to learn, researchers to create a new knowledge administrators to better structure & manage organization, writers to write & evaluators assess learning.<sup>8</sup> Rote memorization has been an accepted learning method in the past, but is no longer recommended because deep meaning is not integrated into learning (Kumar, Dee, Kumar, & Velan, 2011). Student nurses must take an active role in the learning experience and become self-directed learners. Concept mapping assists learners to self-critique learning using the decision-making process. New teaching methods must be developed and implemented by nurse educators to assist students to think critically, understand complex relationships, integrate theoretical knowledge into nursing practice, and become lifelong learners (Hinck et al., 2006). One technique that has been suggested is concept mapping.<sup>9</sup>

### **Need for the Study**

As nurses are encountering fast changes in the health care and education systems they are challenging and continually varying complex situations.

Therefore, the teaching strategies should enable the learners to cope with these challenges. In line with this progress era, complexity and the rate of the nursing knowledge production is increasing steadily. Superficial learning and incomplete information have affected the performance of nursing students.

In another study with the aim of determination of the effects of teaching with the concept drawing it seems that concept mapping method increases meaningful learning & boosting up knowledge and information retention. A study suggest that use of more creative methodologies like utilizing web based teaching, portfolios, case studies and a range of other creative teaching strategies in teaching enhance the competencies rather than predominantly using didactic teaching methods such as the lecture method to teach across all subject areas. Student perception refers to the ideas and views related to “what is right and what is wrong” or in other words we can say that “what they think about the educational techniques” that are used in present era. Educational techniques are the means or tools that are used to teach the students. Nursing teachers are being encouraged to use teaching methods which enables the students to be more responsible for their learning .Use of this method can enhance students’ learning experience which is a critical determinant of quality education method on understanding and refine of learning contents.<sup>5</sup>

Therefore the researcher felt that there is a need to develop concept mapping & test its effectiveness with traditional teaching method to assess the knowledge level of the nursing students.

### **Material & Methods**

Formal permission was asked from the principal of St .John’s College of Nursing, Bangalore. Permission was taken from the respective class coordinator and name list of all the students with their clinical rotation were collected.

The participants meeting the selection criteria were identified. Purposive sampling was done depending on their clinical rotation. The sample size calculated for the study minimum was 16 in each group. But total 100 students were included in the main study .One day all the students were gathered in the 2<sup>nd</sup> year B.sc classroom and the investigator introduced and divided them into Group A and B -and also explained the dates when they need to gather for 1<sup>st</sup> week.

On the 1<sup>st</sup> day of the data collection, the study and its purpose were explained using the subject information sheet and informed consent was taken and 1<sup>st</sup>intervention was given to the students. On the 6<sup>th</sup> day post-test I was taken and followed by on 7<sup>th</sup> day 2<sup>nd</sup> intervention was given. On the 13<sup>th</sup> day post-test II was conducted. The schedule of the data collection was with these following steps: Samples were identified based on inclusion criteria by purposive sampling. They were divided into 2 groups, group A & group B by purposive sampling method. Method of teaching was identified with random sampling –Lottery method(1<sup>st</sup> week: concept mapping in morning class and lecture in afternoon class). **Group A received lecture as a teaching method on specific topic (Peptic Ulcer) for 2 hours on day1and group B received teaching on peptic ulcer using Concept mapping method for 2 hours on the same day .On 6<sup>th</sup>day (Post-test I)for both the groups tests were conducted using multiple choice questions on peptic ulcer.**

Method of teaching was identified with random sampling –Lottery method(2<sup>nd</sup>week: concept mapping in afternoon class and lecture in morning class) .Next week or **day 7<sup>th</sup> group A received teaching on intestinal obstruction using lecture method for 2 hours & group B received teaching on intestinal obstruction using concept mapping for 2 hours on the same day On 13<sup>th</sup> day for both the groups tests were conducted using multiple choice questions on**



**intestinal obstruction** .At the end perception of the students regarding teaching methods were asked with an open ended question. The data analysis was done using descriptive and inferential statistics. The plan of data analysis was as follows:

1. Descriptive statistics-Frequency &

percentage to understand the distribution of baseline variables. Mean & mean percentage to understand the knowledge scores of the students.

2. Inferential statistics –ANOVA, Chi-square, t –test were used to determine the association between research variable & baseline variables.

### Results

**Table 1- Distribution of students according to selected baseline variables**

Sl no	Base line variables	Lecture		Concept mapping		Chi square test	p value
		Frequency	percentage	frequency	percentage		
1.	Age <20 yrs					0.33	0.56
	≥20 yrs						
2.	Medium of instruction English	34	70.83%	35	76.09%	1.76	0.18
	Regional language	14	29.17%	11	23.91%		
3.	Learning style normally adopted	44	91.6%	45	97.83%	0.31	0.85
	Individual Group	4	8.33%	1	2.17%		
	both	15	31.25%	13	28.26.%		
		3	6.25%	2	4.35%		
		30	62.50%	31	67.39%		

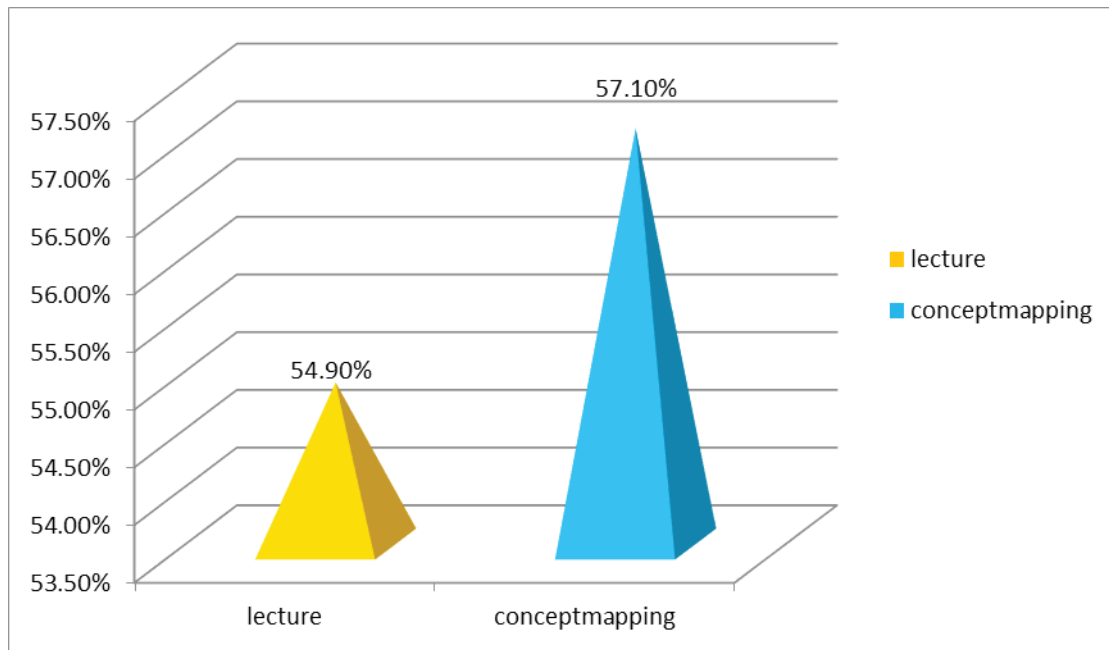
Distribution of students according to selected baseline variables showed that among all the students 70.83% were age group of, <20 yrs in lecture group & 76.09%in concept mapping group.The medium of instruction for board examination the students who

had English were 91.6% in lecture group &97.8% in concept mapping group.For the learning styles what the students had normally adopted in both were of 62.50%.in lecture group &67.39% in concept mapping group. Both the groups were homogenous with p>0.05 for all the baseline variables.

**Table 2: Mean, Mean percentage, SD, Paired t test for overall knowledge of the students using concept mapping & traditional approach as teaching method n =94**

Method of teaching	Range	Mean	Mean percentage (%)	SD	Paired t test	P value
lecture	4 -17	10.98	54.90%	2.42	0.8889*	0.3764 (NS)
concept mapping	6-16.5	11.42	57.10%	2.43		

\*=Paired t test S-Significant NS-Non-significant This table reveals that there is no significant difference in overall knowledge of the students with the use of concept mapping & traditional approach as methods of teaching at 0.05 levels.



The data from above picture shows there is an increased mean percentage of overall knowledge of the students using concept mapping (57.10%) & traditional approach (54.90%) as teaching methods.

**Discussion**

**Findings related to knowledge of the students using concept mapping& traditional teaching methods.**

In the study analysis it showed the overall mean

in lecture method was 10.98and in concept mapping 11.42. Statistical analysis showed no significant difference in mean knowledge scores of the students using concept mapping& traditional teaching methods. ( paired t test--- t value 0.8889 and p value 0.3764 )

A similar study was done in Iran 2010 where concept mapping was compared with lecture to find out its effectiveness on learning with sample size of 66 for 8 sessions during 2 months were in no significant difference was found (p=0.64)<sup>11</sup>

In this study 2 topics were given ----- from gastrointestinal system Peptic Ulcer and Intestinal obstruction for intervention.

A similar study was done in Tehran in 2004 where classes were taken for 4<sup>th</sup> year B.Sc nursing students from cardiovascular system, Medical Surgical Nursing. Lecture together with AV aids was used for control group & concept mapping for the intervention group.<sup>2</sup>

#### **Findings related to knowledge of the students with selected baseline variables of students.**

In this study the mean knowledge score of knowledge was 10.72 for the students who were  $\leq 20$  yrs and 11.61 was for the students who were  $> 20$  yrs. Statistically it was not found significant ( $t = -1.1562$  and  $p \text{ value} = 0.2536$ ).but clinically the value shows that higher the age better the knowledge.

The medium of instruction for board examination, the mean knowledge score of the students who had English was 11.07 whereas the students with regional language had mean score of 10.00. There is an increase in knowledge score in use of English language clinically but it is not statistically significant as we had inadequate no of students in regional language group ( $< 5$ ). It can be attributed to the fact that medium of instruction does not necessarily influence in gained knowledge.

A similar study was conducted Bangalore 2015 to assess nursing students perceptions about traditional & innovative teaching strategies .For medium of instruction English and regional language were used .There was no significant association found with method of instruction and knowledge scores in teaching method. ( $p > 0.05$ )<sup>5</sup>.

#### **OPINIONNAIRE FOR OPEN ENDED RESPONSE**

Along with self-structured knowledge questionnaire, an open ended question stated “Was the teaching method beneficial?” was also administered to the students. Majority of the student responses were:

Lecture: easy to understand, Beneficial  
Concept mapping: Easy to learn as all the points in one page, able to correlate, at the same time they have expressed that it was confusing because of different branches, shapes & inadequate notes, very difficult to grasp and it seemed to be a sudden change from the lecture method .The students also suggested that concept mapping can be used during revision time before the examination.

#### **Conclusion**

The method of teaching that is used for the attainment of knowledge among nursing students plays a vital part in Nursing Education. Nursing teachers are being encouraged to use teaching methods which enables the students to be more responsible for their learning.<sup>13</sup> Innovative teaching & learning strategies in nursing education are directed towards enabling students to be more responsible for their learning.<sup>12</sup>

In this study the knowledge was assessed using concept mapping & traditional approach as a method of teaching for nursing students. The mean percentage of knowledge score was using concept mapping than traditional method of teaching.

**Conflict of Interest:** None declared

**Source of Funding:** None

**Ethical Clearance:** This research has been declared ethical by the Institutional Ethical Committee (IEC), St. John’s Medical College and Hospital, Bangalore with the number: 46/2018

**Implications:**

The result of the study can be implicated in

following areas of nursing education, nursing practice, nursing administration & nursing research.

#### q Nursing Education:

· As lecture continues to be “the” most feasible method of teaching concept mapping can still be utilized together to enhance the critical thinking skills, comprehensibility & develop relatedness of various concepts involved in the topic of significance.

· The findings of the study will help in incorporating concept mapping as a method to improve the academic outcomes.

· Teachers can be encouraged & sensitized to use concept mapping together with their other teaching strategies.

#### q Nursing Practice :

Clinical methods of teaching (Nursing rounds ,case presentations) can incorporate concept mapping as a strategy to discuss patient care ,thereby developing critical thinking ,decision making skills of students as well as staffs.

#### Nursing Administration:

Concept mapping can be initiated as part of CNE/CPD to educate staffs to avoid the monotony of the regular classes.

#### q Nursing Research:

-It is apparent that further research is necessary using a combination of teaching methods to demonstrate a better quality of education & service.

-The findings of the study will provide a basis to undertake more research to compare different teaching methods.

#### Limitations:

- Lack of introductory sessions on concept

mapping

- Only 2 sessions were conducted.

■ The exchange of subject content could have happened before the posttest was conducted.

- The evaluation was based only on MCQs.

#### Recommendation:

■ A study can be conducted to evaluate concept mapping as a clinical teaching method.

■ Study can be conducted to assess knowledge & effectiveness of concept mapping.

■ Studies can be conducted utilizing different evaluation techniques.

■ Further studies can be done to assess the effectiveness using combination of teaching methods.

#### References

1. Daley J B, Morgan S, Black B S , Concept Maps in Nursing Education: A Historical Literature Review & Research Directions. Journal of Nursing Education 2016;55(11): 631-639
2. ParsaYekta Z, Nasrabadi N A ,Concept Mapping as an educational strategy to promote meaningful learning .Journal of Medical Education Summer 2004;5(2):47-50
3. Khrais H, Saleh A ,The outcomes of Integrating Concept Mapping In Nursing Education:An Integrative Review.Open Journal of Nursing2017;7:1335-1346
4. Dr.Taie S E, Concept Mapping as an Innovative Teaching Strategy to Enhance Cognitive Learning in Nursing Administration Course. International Journal for Innovation Education & Research 2014;2(7):11-25
5. Gandhi S, Mythili D, ThirumoorthyA, Nursing student’s perceptions about Traditional &

- Innovative Teaching Strategies-A pilot study. *Journal of Krishna Institute of Medical Sciences University* 2015;4(1):123-129
6. Aghakhani N, Nia SH, Eghtedar S, Torabizadeh C, The effect of concept mapping on the learning levels of students in taking the course of nursing care of patients with glandular diseases subject in Urmia University of Medical sciences ,Iran. *Jundishapur Chronic DisCare*2015;4(2):1-5
  7. Sciarra E, The relationship between learning styles & affinity for concept mapping among graduate nursing students. *Journal of nursing education & practice*2016;6(5):28-31
  8. .Menaga P. Concept mapping :an introduction. *Nightingale Nursing Times* 2015;10(4):9-11
  9. .Nirmala T, Shakuntala SB .Concept mapping an effective tool to promote critical thinking skills among nurses. *Nitte University Journal of health science* 2011;1(4):21-26
  10. Farrag E R Concept mapping strategy: an effective tool for improving maternity nursing students' achievement.*Journal of Nursing Education & practice* 2017;7(3):10-18
  11. Sarhangi F, Masumi M, Ebadi A, Seyyed M M , Rahmani A Comparing the effect of lecture –and concept mapping based learning on cognitive learning levels.*Iranian Journal of Critical Care Nursing*2010;3(1):1-5
  12. Clayton LH. Concept mapping: An effective,active teaching, learning method .*N Edu Pers.*2006;27(4):197-203
  13. Masoumy M, EbadiA, RaisifarA,HosseinyR, Javanbakhtian R, comparison of two teaching methods on nursing students' learning &retention:concept mapping or lecture? *Iranian Journal of Medical Sciences* 2012;12:498-507
  14. Aein F, Frouzandeh N .Investigating efficacy of concept mapping in students' learning of nursing process of pediatric patients. *Journal of Shahreord University of Medical Sciences* 2012;14:55-63
  15. VaishaliA , . Thresiamma KT A Study to Assess Effectiveness of Teaching Methods on Retention of Knowledge among Nursing Students in Colleges of Pune City: *International Journal of Science and Research* 2016;5(6):713-718
  16. AtefehG,EzzatP,Maryam E, The effectiveness of Conceptual Map Teaching Method on Short & long term learning in Nursing students. *Journal of Medical Education Development center Iran* .2010;7(2):113-119
  17. Ghojazadeh M, Aghaei HM ,Mohammad NB, Reza P, Hazrati H , Saber A A, Using concept Maps for Nursing Education in Iran: A systematic Review .2014,3(1):67-72
  18. Madhystha S. *Manipal manual of Anatomy*, 2nd Edition,Delhi:CBC Publication; 2011,268-274
  19. Black M.J, Hawks HJ, *Medical Surgical Nursing Clinical Management for Positive outcome*, 8th Edition; Volume I, New Delhi: Elsevier;2009,713-717
  20. is,L.S.Heithkemper MM, Dirkksen RS,O'BrienGP, *Medical Surgicalnursing assessment of clinical problems* .11<sup>th</sup> edition . Missouri: Elsevier;2009P-1107-1111
  21. SrinivasanM,VenugopalA, *Target high mini staff nurses recruitmentexam*2<sup>nd</sup> edition, Delhi:CBC publishers & distributors;2016 P-216
  22. Nugent MP, Green SJ, Saul HAM,Pelian KP. *Mosby's comprehensive review of nursing for the NCLEX-RN examination*,20th edition, New york:Elsevier;2015, P-1239

# The Roles of Health Cadres in the Implementation of Mental Health Programs in Indonesia

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## Abstract

**Background:** Mental health cadres hold the pinpoint roles in the implementation of all mental health programs, both at sub-district and village levels.

**Objectives:** Analyzing the roles of health cadres in the implementation of mental health programs at the health center in Aceh, a province in Indonesia.

**Research Method:** The research method that will be used is observational, using the cross sectional design. All included people in this study are all cadres who reside in the district of Aceh Besar, Aceh province. The sample was using a total sampling technique of 584 cadres.

**Result:** It was found that there was a relationship between a cadre's education with the role of a cadre in the implementation of mental health programs in the working area of the health centre in the district of Aceh Besar, Aceh province ( $p \leq 0,05$ ). It was found that the relationship between training, knowledge, attitude, facilities and supervision with the role of a cadre in the implementation of mental health programs in the working area of the health centres in the district of Aceh Besar ( $p \leq 0,05$ ). The most influencing variable or the most dominant variable that influences the role of a cadre in the implementation of mental health programs in the district of Aceh Besar is supervision.

**Conclusion:** It can be concluded that supervision is the most dominating factor that influences the role of a cadre in the implementation of mental health programs in Aceh province's health centre.

**Key Words:** Education, training, knowledge, attitude, facilities and supervision.

## Background

Mental or mental health includes a person's emotional, psychological and social well-being. Mental health affects the way a person thinks, feels and acts. Mental health also helps determine how a person handles stress, relates to others and makes choices. Mental health is important at every

stage of life, from childhood and adolescence to adulthood. Data for 2019 shows that 970 million people worldwide have a mental health disorder or substance abuse. Anxiety is the most common mental illness in the world, affecting 284 million people. Globally, mental illness affects more women (11.9%) than men (9.3%). Major depression, anxiety, alcohol use disorder, schizophrenia, bipolar disorder and dysthymia (continuous mild depression) were identified as the main causes of mental disorders. The mortality rate for people with mental disorders was significantly higher than in the general population,

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with a median loss of life expectancy of 10.1 years. It is estimated that mental disorders cause 14.3% of deaths worldwide, or about 8 million deaths each year<sup>1</sup>

The 2018 Basic Health Research of Indonesia (RISKESDAS) stated that the proportion of households in Indonesia who had family members with schizophrenia/psychosis mental disorders was 6.7%, depression 6.1% and mental emotional disorders 9.8%. Interestingly, as one of the provinces in Indonesia, Aceh Province has significant amount of mental health problems. It was reported that schizophrenia/psychosis mental disorders were 8.7%, depression 4.4% and mental emotional disorders 9.0%. Furthermore, the coverage of household treatment in Indonesia with antiretroviral therapy for schizophrenia/psychosis was 85.0% and depression 9.0%. Meanwhile, the coverage of household treatment in Aceh Province who has family members with schizophrenia/psychosis mental disorders was 83.5% and depression 11.7%<sup>2</sup>

Aceh Besar, as a district in the province, established six indicators of the success of the program's achievements, namely: 1) the percentage of health centres that carry out community mental health efforts; 2) percentage of health service facilities as recipients of mandatory reporting of addicts; 3) percentage of mental health awareness in villages; 4) the percentage of people with mental disorders (PMD) who receive mental health services and are independent; 5) percentage of PMD who are free from chains; and 6) the number of senior high schools and the equivalent that carry out efforts to prevent and control mental health and drug problems<sup>3</sup>

Based on these indicators, the mental health programs in the district of Aceh Besar, Aceh province in 2019 obtained the following results: 1) the percentage of health centres that carried out community mental health efforts was 90% (2019 target: 90%); 2) the

percentage of health service facilities as recipients of mandatory reporting of addicts is 50% (2019 target: 50%); 3) the percentage of mental health awareness in villages is 20% (2019 target: 20%); 4) the percentage of people with mental disorders PMD who receive mental health services and are independent are 50% (2019 target: 50%); 5) the percentage of PMD who are free from chains is 50% (2019 target: 50%); and 6) the number of senior high schools and the equivalent that carry out prevention and control of mental health and drug problems is 30% (2019 target: 30%).

Based on data from the District Health Office, Aceh Besar, in 2020, had 584 mental health cadres that are not evenly distributed in all villages in sub-districts in the district of Aceh Besar<sup>4</sup>. Several previous studies related to the evaluation of the implementation of mental health programs at health centres have been conducted qualitatively by Santoso (2019) with the results: 1) personnel involved in mental health programs have a minimum education of Diploma in Nursing; 2) have never received training related to mental health; 3) inadequate program funds; 4) early detection of cases has not been maximized; and 5) standard operational procedures for the implementation of mental health services are not available.

Next, Hothasian, Suryawati and Fatmasari (2019) in their research describe the evaluation of inputs: 1) sufficient mental health personnel; 2) the available funds are sufficient; 3) facilities and materials are sufficient; 4) availability of standard operational procedures; 5) Unavailability of specific schedule. Process evaluation: 1) routine early detection is carried out; 2) the diagnosis is good; 3) limited stock availability of certain drugs; 4) difficulties in the tiered referral system; 5) extension activities are not optimal. Evaluation of output: 83 severe PMD who received mental health services are as much as 94.7% (target 100%)<sup>5</sup>

Islami (2016) in his research on evaluating mental health programs in the district of Aceh Besar shows the results, namely all health centres have not implemented mental health service standards, certified mental health doctors and nurses in health centres are still limited, mental nurses are not evenly distributed in all health centres, medicines are not adequate, mental health cadres are still limited and people's perceptions of going to traditional healers instead of going to health centres for treatment <sup>6</sup>

Based on the description above, it is known that the implementation of mental health programs in health centres, especially in the district of Aceh Besar has not run optimally. There are several factors related to the success of mental health programs at the health centres. There was a relationship between nurses' perceptions of political support, funding, cooperation, organizational capacity, program evaluation, communication and strategic planning factors with the success of mental health activities in the community<sup>7</sup>. Fatoni (2011) in his research shows that the education of nurses in mental health programs is Diploma in Nursing, program planning is carried out by the Head of the health centre, and the performance of the health centre is in the poor category in implementing mental health programs. Mental health programs have not been implemented in accordance with minimum service standards<sup>8</sup>.

This study is therefore undertake to investigate the role of health cadres in implementing mental health programs at health centres in accordance with the Decree of the Minister of Health of the Republic of Indonesia number: 406/Menkes/SK/VI/2009 concerning guidelines for community mental health

services in primary health care facilities, namely counselling, outpatient services, health services referrals, home visit services, documentation and their relationship to the successful achievement of mental health programs at the health centres in the district of Aceh Besar.

## **Methods**

This study is a quantitative research using a correlational design, with a cross sectional study approach to determine the implementation of mental health programs and related factors at the health centre in the district of Aceh Besar. The population in this study were 584 mental health cadres in 12 sub-districts within the district. Aceh Besar and the entire population were sampled. The research instrument is in the form of an online questionnaire using the google form <https://bit.ly/3hdCIW5>, <https://bit.ly/3wpVv5f>, <https://bit.ly/3gKZDrN>, <https://bit.ly/2TXGutvand> equipped with explanations, informed consent and filling guidelines. The data analysis carried out includes descriptive analysis and inferential analysis.

## **Results**

### **a. Univariate Analysis**

Univariate analysis is an analysis towards research variables in the form of a frequency distribution and is served in a percentage table towards characteristic variables, knowledge, training, attitude, facilities, supervision, and the role in the implementation of mental health programs.

#### **(1) Characteristics of Mental Health Cadres**

The characteristics of the data in this study include age, gender, education, and occupation.

**Table 1: The Frequency Distribution of Mental Health Cadre Characteristics at Health Centres in the Work Area in The District of Aceh Besar**

No.	Characteristics	Amount	
		f	%
1.	Age		
	20-30 years old	384	65,8
	31-40 years old	200	34,2
	> 40 years old	0	0
2.	Gender		
	Man	2	0,4
	Woman	542	99,6
3.	Education		
	Basic	78	13,4
	Secondary	254	43,5
	High	252	43,2
4.	Occupation		
	PNS	7	1,2
	Entrepreneur	38	6,5
	Housewife	482	82,5
	Farmer	57	9,8
	Amount	584	100

Source : Data Primer, 2021

Based on age characteristics, it is known that most of the cadres are in the 20-30 year age group, as many as 384 people or 65.8% and the female category with a percentage of 93.4%. From the last education

variable, it is known that 43.5% of cadres have secondary education. In terms of work, it is known that 82.5% of cadres are housewives.

(2) Training, Knowledge, Attitude, Facilities and Supervision

The training referred to in this study is training related to mental health programs, with the knowledge variable is grouped into two, namely high and low, the attitude variable is grouped into two, namely positive and negative, facilities are grouped into two, namely complete and incomplete, and the supervision variable is grouped into two, namely there is and there is not. The results of complete data processing can be seen in the following table:

**Table 2: The Distribution of Training Frequency, Knowledge, Attitude, Facilities and Supervision of Mental Health Cadres in the Implementation of Mental Health Programs**

No.	Variable	Amount	
		f	%
1.	Training		
	Yes	453	77,6
	No	131	22,4
2.	Knowledge		
	High	229	39,2
	Low	355	60,8
3.	Attitude		
	Positive	278	47,6
	Negative	306	52,4
4.	Facilities		
	Complete	309	52,9
	Not Complete	275	47,1
5.	Supervision		
	There is	369	63,2
	There is not	215	36,8
6.	Role of Nurses		
	Has a role	376	64,4
	Less role	208	35,6
	Amount	584	100

Source : Primary data (2021)

Table 2 shows that 77.6% of cadres have also received training on mental health, most of the majority cadres have low knowledge, namely 60.8%, the majority of cadres have a negative attitude, namely 52.4%, and there are 52.9% cadres who stated that the facilities were complete. Based on the supervision variable, it is known that most of the cadres stated that there was supervision in the implementation of mental health programs, namely 63.2%, and there were 64.4% of cadres who played a role in the implementation of

mental health programs in Aceh Besar District.

b. Bivariate Analysis.

To find out the relationship between education, training, knowledge, attitudes, facilities and supervision of cadres with roles in the implementation of mental health programs, a chi square test was carried out with a 95% confidence level, the results of complete data processing can be seen in the following table:

**Table 3: The Relationship Between a Cadre’s Education and The Implementation of Mental Health Programs**

Variable	Role		Jlh	p Value	OR
	Has a Role	Less Role			
Education					
Basic	26 (33,3%)	52 (66,7%)	78 (100%)	0,000	0,22
Mid/High	350 (69,2%)	156 (30,8%)	506 (100%)		
Amount	376(64,4%)	208(35,6%)	584(100%)		
Training					
Yes	376 (83,0%)	77 (17,0%)	453 (100%)	0,000	0,17
No	0 (0%)	131(100%)	131 (100%)		
Amount	15 (62,5%)	9 (37,5%)	24 (100%)		
Knowledge					
High	164 (71,6%)	65 (28,4%)	229 (100%)	0,004	1,70
Low	212 ( 59,7%)	143 (40,3%)	355 (100%)		
Amount	15 (62,5%)	9 (37,5%)	24 (100%)		
Attitude					
Positive	197 (70,9%)	81 (29,1%)	278 (100%)	0,002	1,72
Negative	179 ( 58,5%)	127 (41,3%)	306 (100%)		
Amount	15 (62,5%)	9 (37,5%)	24 (100%)		
Facilities					
Complete	212 (68,6%)	97 (31,4%)	209 (100%)	0,030	1,47
Not Complete	164 ( 59,6%)	111 (40,4%)	275 (100%)		
Amount	15 (62,5%)	9 (37,5%)	24 (100%)		
Supervision					
There is	325 (77,9%)	92 (22,1%)	417 (100%)	0,000	8,03
There is not	51 ( 30,5%)	116 (69,5%)	167 (100%)		
Amount	376 (64,4%)	208 (35,6%)	584 (100%)		

Source : Primary data (2021)

Table 3 shows that out of 78 cadres with basic education, 33.3% have a lesser role in the implementation of mental programs than cadres with higher education (59.8%). The results of the chi square test obtained p value = 0.000, thus it can be concluded that there is a relationship between cadre education and the role of cadres in the implementation of mental health programs in the Public Health Centre Work Area in Aceh Besar District ( $p \leq 0.05$ )

Furthermore, of the 77 cadres who stated that they had received training, there were 83.0% who played a role in the implementation of the mental program, which was higher than the cadres who had never received training (0%). The results of the chi square test obtained p value = 0.000, thus it can be concluded that there is a relationship between training and the role of cadres in the implementation of mental health programs in the Public Health Centre Work Area in Aceh Besar District ( $p \leq 0.05$ ). Based on the results of data processing, it is known that of 229 cadres with high knowledge, 71.6% played a role in the implementation of the mental health program, which is much higher than cadres with low knowledge. The results of the chi square test obtained p value = 0.04, thus it can be concluded that there is a relationship between knowledge and the role of cadres in the implementation of mental health programs in the Public Health Centre Work Area in Aceh Besar District ( $p \leq 0.05$ ). Of the 278 cadres with a positive attitude, 70.9% had a role in the implementation of the mental program, much higher than the cadres with a negative attitude (58.5%). The results of the chi square

test obtained p value = 0.002, thus it can be concluded that there is a relationship between attitudes and the role of cadres in the implementation of mental health programs in the Public Health Centre Work Area in Aceh Besar District ( $p \leq 0.05$ ). The results showed that of the 209 cadres who stated that the facilities were complete, 68.6% had a role in the implementation of the mental health program, which was higher than the cadres who stated that the facilities were incomplete (59.6%). The chi square test obtained a p value = 0.020, thus it can be concluded that there is a relationship between facilities and the role of cadres in the implementation of mental health programs in the Health Centre Working Area in Aceh Besar District ( $p \leq 0.05$ ). Of the 417 cadres who stated that there was supervision, 77.9% had a role in the implementation of the mental program, which was higher than the cadres who stated that there was no supervision (22.1%). The results of the chi square test obtained p value = 0.000 cadres, thus it can be concluded that there is a relationship between supervision and the role of cadres in the implementation of mental health programs in the Public Health Centre Work Area in Aceh Besar District ( $p \leq 0.05$ ).

### c. Multiple Logistic Regression Test

Based on the results of the bivariate statistical test, the multivariate analysis included education, training, knowledge, attitudes, facilities, and supervision. Furthermore, the research variables were analysed using logistic regression analysis. The results of the multivariate analysis can be seen in Table 4.

**Table 4: The Final Model of Logistic Regression Analysis of the Role of Health Cadres in the Implementation of Mental Health Programs at Community Health Centres in The District of Aceh Besar**

No	Variable	Odd Ratio	CI 95%	P value
1	Training	8,251	2,46-26,4	0,002
2	Supervision	9,808	6,90-27,6	0,000



From the results of this multivariate test, it can be seen that the most dominant variable influencing the role of cadres in Aceh Besar District is the supervision factor with OR = 9.808.

### **Discussion**

The results of the chi square test obtained p value = 0.000, thus it can be concluded that there is a relationship between a cadre's education and the role of cadres in the implementation of mental health programs in the Public Health Center Work Area in Aceh Besar District ( $p < 0.05$ ). The results of this study are in line with research conducted where the results of her research show that that health cadres and community leaders have an important role in socializing mental health, this is because cadres are the spearhead for reporting as well as handling and following up on mental problems in the environment<sup>9</sup>.

The role of mental health cadres is to participate in improving and maintaining the mental health of the community. Cadres as influential people in health services need to improve their knowledge and skills in handling or providing health services, for example in handling and caring for mental disorders patients so that cadres in carrying out their duties are better and more precise. One of the efforts to increase the knowledge and skills of cadres is the provision of health education and skills in treating mental disorders patients after *pasungor* chain. In this effort there must be support from the community and the patient's family, health education is very effective, especially for health cadres who have not much knowledge about mental disorders and their treatments, usually health cadres pay less attention to mental disorders, most cadres only focus on common diseases that occur in society in general.

The results of the chi square test obtained p value = 0.002, thus it can be concluded that there is a relationship between attitude and the role of cadres

in the implementation of mental health programs in the Public Health Center Work Area in Aceh Besar District ( $p \leq 0.05$ ) because mental health cadres are a helping hand from community health centers.

The results of this study are in line with the research conducted Sahriana which states that the primary identification is in the form of data collection, providing health education, cadre attitudes and providing motivation. The role of mental health cadres in secondary prevention programs is early detection and socialization. The role of mental health cadres in tertiary prevention programs is to be kind in providing motivation and reminding patients to take medication regularly, besides that cadres convey to families to monitor patients taking medication. The implications for nursing are found that collaboration between cadres, families, communities and health services is needed to overcome mental health problems in the community. These findings can be used as a basis for information that can be used as a reference for developing community mental health programs<sup>10</sup>.

The results of the chi square test obtained p value = 0.020, thus it can be concluded that there is a relationship between facilities and the role of cadres in the implementation of mental health programs in the Public Health Center Work Area in Aceh Besar District ( $p \leq 0.05$ ).

Health facility is a tool and/or place used to organize health service efforts, whether promotive, preventive, curative, or rehabilitative carried out by the Central Government, Regional Government and/or the community. To achieve a good level of public health, health care facilities are needed and can provide affordable health services for all levels of society in the context of improving health, maintaining health, treating disease, and restoring health. The provision of Health Service Facilities is the responsibility of the Central Government and Local Governments

in accordance with the provisions of Law Number 36 of 2009 concerning health which states that the government is responsible for the availability of Health Service Facilities for the community to achieve the highest degree of health. The results of this study are in line with research conducted by Santoso which states that health facilities are an important factor in the implementation of all health programs and can directly affect the performance of health workers<sup>11</sup>.

The results of the chi square test obtained p value = 0.013, thus it can be concluded that there is a relationship between supervision and the role of cadres in the implementation of mental health programs in the Public Health Center Work Area in Aceh Besar District ( $p \leq 0.05$ ).

Supervision is an observation or direct observation of the implementation of routine work. The results of this study are in line with research conducted by Rahmawati where the results of her research show that the role of leadership supervision is an aspect of the manager's or leader's duties as a supervisor<sup>5</sup>. Supervision becomes a facilitator who coordinates and provides direction on employee performance as well as supervises and evaluates the point of achievement of work targets. The role of leadership supervision on employee performance includes planners, directors, observers, trainers, and evaluators shows that there is an influence of the role of a health center leader in improving the health center's performance.

### **Conclusion**

Based on the results of data processing, it can be concluded that there is a relationship between a cadre's education, training, knowledge, attitude, facilities, and supervision and the role of cadres in the implementation of mental health programs. Among these, supervision is the most predominant factor perceived by the health workers. It can be concluded that the improvement in the performance of the health

center could be influenced by the supervisory role of the health center leadership as planners, directors, directors, trainers, and assessors.

**Ethical Clearance** : The study obtained ethical clearance from the Health Ethical Committee at the ZainoelAbidin General Hospital Banda Aceh, Indonesia.

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### **References**

1. WHO. Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020: World Health Organization. 2020.
2. Balitbangkes. Laporan Nasional Riset Kesehatan Dasar tahun 2018. Jakarta: Kementerian Kesehatan RI; 2018.
3. Dinkes. Indikator program kesehatan jiwa Kabupaten Aceh Besar (2018 - 2022). Jantho: Dinas Kesehatan Kab. Aceh Besar; 2018.
4. Dinkes A. Data perawat CMHN dan kader kesehatan jiwa tahun 2020. Jantho: Dinas Kesehatan Kab. Aceh Besar; 2020.
5. Hothasian, J. M., Suryawati, C. & Fatmasari EY. Evaluasi Pelaksanaan Program Upaya Kesehatan Jiwa Di Puskesmas Bandarharjo Kota Semarang Tahun 2018. *J Kesehat Masy (e-Journal)*, 7(1), 75-83. 2019;
6. Islami M. Evaluasi Pelaksanaan Program Kesehatan Jiwa Masyarakat Oleh Puskesmas Di Kabupaten Aceh Besar. Universitas Gadjah

- Mada; 2016.
7. Junardi, J., Keliat, B. A. & Daulima NHC. Analisis Faktor-Faktor Yang Berhubungan Dengan Keberhasilan Pelaksanaan Kegiatan Community Mental Health Nursing Di Aceh. *Idea Nurs Journal*, 8(1), 1-11. 2017;
  8. Fatoni S. Analisis Faktor Penurunan Capaian Program Kesehatan Jiwa Dinas Kesehatan Kabupaten Sidoarjo (Evaluasi Program). UNIVERSITAS AIRLANGGA; 2011.
  9. Faradila E. Peran Kader Kesehatan Dan Tokoh Masyarakat Dalam Promosi Kesehatan Jiwa Pada Pasien Pasca Pasung Di Sukoharjo. *Kesehat Masy*. 2019;
  10. Sahriana. Peran Kader Kesehatan Jiwa Dalam Program Kesehatan Jiwa Komunitas di Masyarakat. Univeristas Airlangga Surabaya. 2018;
  11. Santoso T. Evaluasi pelaksanaan program kesehatan jiwa di puskesmas simpang parit kecamatan renah pembarap tahun 2018. *J Kesehat dan Sains Ter* 5(2), 36-50. 2019;

*Original Research - Quantitative*

# Leadership and Management Preparedness after Completing Induction Programme for Newly Graduate Nurses: A Cross-Sectional Study

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## Abstract

**Background:** Leadership and management skills are essential and foundational in nursing, yet they are very complex and built through years of work experiences.

**Aim:** To examine newly graduate nurses' preparedness of their knowledge, attitude and practice of leadership and management skills after a one-year induction programme in the clinical setting.

**Methods:** A cross-sectional study on newly graduated Registered Nurses in Brunei Darussalam using a survey developed from key indicators of the Nursing Board for Brunei Darussalam and International Council of Nurses.

**Results:** Knowledge level of leadership and management skills ranged from 66.1% to 100%. Attitude score was between 15.2% to 93.2%. Practice score was between 19.0% to 94.9%. The results showed that nurses with clinical experiences are more prepared in terms of knowledge, attitude and practice of various leadership and management skills compared to those immediately working in managerial position. Some leadership and management skills (such as task-oriented management and conflict management) were enhanced, and yet certain essential skills (such as advocacy and communication with patients) were diminished as nurses acquired more work experiences.

**Conclusion:** A well-defined framework on foundational leadership and management skills is deemed important that should commence from nursing educational preparation and consistently assessed and monitored throughout the nursing profession.

**Keywords:** graduate; nurses; leadership; management; induction; Brunei

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### Introduction

Leadership and management are essential and foundational skills in nursing profession, yet there are very complex skills and built through years

of work experiences. Nursing leadership could be defined as ‘a social and relational process of positive influence and engaged decision making linked to actions and attitudes that benefit nursing, patients, and the healthcare environment’<sup>1(p5)</sup>. Nursing care management, on the other hand, is characterized by ‘a set of knowledge, tools, instruments, and skills needed to organize the nursing teams’ work needed to maximize performance as to reach institutional goals’<sup>2</sup>. In nursing, leadership and management skills are essential to organize patient care, to be in-charge of ward and clinical settings, and carry out organizational directives<sup>3</sup>.

The International Council for Nurses (ICN) Framework of Competencies outlined the importance of nurses to be competence in leadership and management skills<sup>4</sup>. It highlights the skills required for each level of nurses including support worker, enrolled nurse, registered nurse, specialist nurse, and advanced practice nurse. In focus of this study, leadership and management skills expected of a registered nurse encompasses advocacy, create positive work environment, adapts leadership style and approaches, conflict management, promote respect and confidence in the team, prioritize workload and manage time, contribute to review of policies and procedures, and contribution to educational and professional development.

In Brunei, the importance is similarly accentuated in the Core Competency Standards for Registered Nurses and Midwives in Brunei Darussalam. The Nursing Board of Brunei (NBB) required all nurses to act at all times with professionalism and competence manner including competence in leadership and management skills<sup>5</sup>. It highlights essential skills to be effective leaders and managers including demonstrate ability to think critically, make sound management decision, delegate, and use resource effectively, support and cooperate in a clinical team,

promote, and maintain professional roles, provide safe work environment, organize, and manage workloads effectively, uphold dignity and integrity, and be accountable for organizational empowerment and effective team.

This research study examined newly graduate nurses’ leadership and management preparedness in terms of knowledge, attitude, and practice after completing induction program in Brunei. It is anticipated that findings from this study can help nurse managers and policy makers to develop a standardized program or training to equip students and newly graduate nurses with knowledge and skills in leadership and management their required so they can work in the healthcare system competently and positively.

## **Methods**

### **Study aim, design, settings, and samples**

The study aim to examine the newly graduate nurses’ knowledge, attitude, and practice on their preparedness of leadership and management skills after completing Induction Program. A cross-sectional study was conducted at the largest hospital in Brunei (Raja Isteri Pengiran Anak Saleha Hospital – RIPAS) for 10 months from August 2020 until May 2021. The targeted populations were newly graduate nurses who had been joining the services less than 3 years and had completed one-year Induction Program organized by the Ministry of Health.

### **Instrument**

Data were collected through self-developed questionnaire, designed based on the key indicators on leadership and management documented by the Nursing Board for Brunei (NBB) in the “Standards of Practice for Nurses and Midwives”<sup>6</sup> and “Core Competence Standard for Nurses and Midwives,”<sup>5</sup>; and International Council for Nurses (ICN) Framework of



Competencies, Skills and Knowledge for Registered Nurse<sup>7</sup>. There are 32 questions divided into two sections; section 1 (10 questions): demographic data (gender, age, current designation status, year of appointment, year of graduation and year of completing the induction program); sections 2 focus on assessing the nurses' knowledge (8 items), attitude (7 items), and practice (7 items.) The questionnaire was pre-tested among 10 registered nurses to check for comprehensibility of the items, prior to dissemination in the main study.

### **Data collection procedure**

No immediate or direct contact between the research team and the participants in this study. The eligible participants were identified by the gatekeeper (Nursing Officer – Administration [NOA]) who is assigned by the Director of Nursing Services to facilitate the data collection. The Qualtrics link to the questionnaire were provided by the NOA to all participants. The duration for the survey was 3 weeks. A reminder about submitting the questionnaire was given by the NOA weekly and at three days before the survey end.

### **Data Analysis**

RStudio Version 1.2.5033 for Windows was used to enter and analysed the data. The statistical analyses include descriptive, correlational inferential analysis to determine the relationship between the study domains and sociodemographic factors. Independent *t* test, one-way ANOVA and a Fisher's exact test were used in subgroup analysis to compare sociodemographic factors with study outcomes (Knowledge, Attitude and Practice). All statistical tests are two sided and *p*-value less than 0.05 are considered significant.

### **Ethical Considerations**

Full approval from the joint committee of the Pengiran Anak Puteri Rashidah Sa'adatul Bolkihah

(PAPRSB) Institute of Health Sciences Research Ethics Committee (IHSREC) (ERN: UBD/PAPRSBIHSREC/2020/70).

### **Results**

The final total of participants was 59 (response rate = 65.6%). Female nurses' participations (88.1%, SD=13.5) are higher than the male nurses (10.2%, SD=18.8). Female nurses (88.1%) were more likely to be young nurses, aged less than 30 years old (84.7%) and were largely appointed as Staff Nurses (91.5%), with Diploma (76.3%) and work in the ward (62.7%). Many of them graduated before 2018 (79.7%). 67.8% had their induction program from 2019 onwards. This possibly indicated that there is a gap of one year of not practicing as a nurse in between the graduation and employment.

Table 1 presents the overall number and prevalence rate for the newly registered nurses' knowledge on leadership and management based on the correctly answered items. All participants have full score in knowledge on advocacy; accountability; critical thinking and problems-solving skills; and teamwork and collaboration (100%). The nurses also demonstrated substantial knowledge that acknowledged others' contributions and feedback is central for their growth (94.9%). Additionally, it is disturbing to observe that more than half of the nurses illustrated knowledge on leadership and management related to delegation and resource allocation skills were for nurses only (69.5%); and autonomy is less important in-patient care (66.1%).

In table 2, it presents the prevalence rate on the newly nurses' attitude towards leadership and management skills preparedness with their demographic data. There was significant association between year of appointment and question on advocacy for their colleagues and patients. Many nurses who work in the year 2019 onwards (76.4%) (*p*=0.026)



have a positive attitude towards their responsibility as advocate for colleagues and patients as compared to those who have work in the service before the year 2019 (23.5%).

There was also a significant association between year of graduation and question on occupational or environmental hazards. All of those who graduated since 2018 (100%) ( $p=0.011$ ) demonstrated attitude that they should only care for themselves when there were occupational or environmental hazards. This illustrated that the longer the nurses graduated, there were more concern towards the importance of caring only for themselves than others when there were occupational or environmental hazards.

Table 3 present the findings on the newly registered nurse's practice towards leadership and management skills. The finding shows that there is significant difference between participant designation and their attitude towards dealing with conflicts. Participants appointed as Staff Nurses (44.4%) agreed more towards acting professionally when dealing with conflicts compared to the others higher designations (40.0%) ( $p=0.032$ ). This illustrated that Staff Nurses were exposed more to clinical practice and dealt more with patients and their families, hence can practice the leadership and management skills related to conflict management professionally. By contrast, those higher-ranking nurses were less frequent encounter patients and families and were more administratively focus.

It is observed that there is significant finding between year of graduation and the newly registered nurses' attitude towards delegation and resources. There were higher percentage of nurses graduated since 2018 who agreed that delegation and utilization of available resources should be used for their own team (54.6%) compared to other participants graduated since 2019 (45.5%) ( $p=0.022$ ). It can be deduced that the longer they graduated, it is likely that they prioritize resources for their team rather than unnecessarily compromising resources for others.

There were also significant findings between years of induction and workplace safety and positive environments; and years of induction and putting dignity and integrity of the nursing profession and organization at risk. The participants who had completed their induction program since 2019 (73.5%) were observed to be more agreeable towards their responsibilities in ensuring safety, security and having a positive environment at workplace compared to those who had undergone induction program in or prior to 2018 (26.5%) ( $p=0.039$ ).

Similar results were also observed that showed participants who had undergone the induction program since 2019 (89.5%) tend to put dignity and integrity of the nursing profession and organization at risk, compared to those completed the induction program in or prior to 2018 (10.5%) ( $p=0.016$ ).

**Table 1: Responses to knowledge items (correct answer only) (n=59)**

		Correct
		n (%)
1.	advocacy skills are important part of nursing duty.	59 (100.0)
2.	accountability, critical thinking, and problem-solving skills are essential for dealing with conflict situation.	59 (100.0)
3	teamwork and collaboration are significant at work.	59 (100.0)
4	acknowledgement of others' contributions and feedback is central for growth.	56 (94.9)

**Cont... Table 1: Responses to knowledge items (correct answer only) (n=59)**

5.	understanding occupational health, safety and environment precautions is not part of nursing care.	52 (88.1)
6.	understanding goals, vision and mission of the unit/ward are not the responsibility of nurses.	52 (88.1)
7.	delegation and resource allocation skills are for nurses only.	41 (69.5)
8.	autonomy is less important in patient care.	39 (66.1)

**Table 2. Prevalence of attitude and association with the demographic factors.**

DEMOGRAPHIC DATA	Q1 n (%)	Q2 n (%)	Q3 n (%)	Q4 n (%)	Q5 n (%)	Q6 n (%)	Q7 n (%)
Overall (Strongly agree/Agree)	55 (93.2)	52 (88.1)	10 (16.9)	54 (91.5)	1 (1.7)	44 (74.6)	9 (15.2)
Gender							
Female	49 (94.2)	45 (86.5)	6 (11.5)	47 (90.4)	1 (1.9)	39 (75.0)	7 (13.5)
Male	5 (83.3)	6 (100)	3 (50.0)	6 (100)	0 (0.00)	5 (83.3)	1 (16.7)
P-value a	0.319	0.338	0.086	0.427	0.723	0.877	0.839
Age							
<30	46 (92.0)	44 (80.0)	8 (16.0)	46 (92.0)	1 (2.0)	38 (76.0)	7 (14.0)
>30	9 (100)	8 (88.9)	2 (22.2)	8 (88.9)	0 (0.00)	6 (66.7)	2 (22.2)
P-value a	0.379	0.939	0.717	0.758	0.549	0.059	0.916
Designation							
Staff nurse	50 (92.6)	47 (87.0)	9 (16.7)	49 (90.7)	1 (1.85)	41 (75.9)	8 (14.8)
Others	5 (100)	5 (100)	1 (20.0)	5 (100)	0 (0.00)	3 (60.0)	1 (20.0)
P-value a	0.528	0.391	0.777	0.477	0.734	0.651	0.948
Highest Qualification							
Diploma	41 (91.1)	38 (84.4)	6 (13.3)	40 (88.9)	1 (2.2)	33 (73.3)	9 (20.0)
Degree/ Master	14 (100)	14 (100)	4 (28.6)	14 (100)	0 (0.0)	11 (78.6)	0 (0.0)
P-value a	0.248	0.116	0.381	0.192	0.354	0.822	0.304
Employment							
Ward	34 (91.9)	31 (83.8)	7 (18.9)	34 (91.9)	1 (2.7)	27 (72.9)	6 (16.2)
Clinic	21 (95.5)	21 (95.5)	3 (13.6)	20 (90.9)	0 (0.0)	17 (77.3)	3 (13.6)
P-value a	0.599	0.180	0.662	0.896	0.735	0.725	0.485
Year of Appointment							
<2019	13 (23.5)	13 (25.0)	4 (40.0)	16 (29.6)	0 (0.0)	10 (22.7)	4 (44.4)
>=2019	42 (76.4)	39 (75.0)	6 (60.0)	39 (70.4)	1 (100)	34 (77.3)	5 (55.6)
P-value a	0.026*	0.318	0.207	0.154	0.764	0.162	0.539
Year of Graduation							
<2018	44 (80.0)	41 (78.9)	8 (80.0)	42 (77.8)	1 (100)	33 (75.0)	9 (100)
>=2019	11 (20.0)	11 (21.2)	2 (20.0)	12 (22.2)	0 (0.0)	11 (25.0)	0 (0.0)
P-value a	0.810	0.672	0.650	0.238	0.468	0.309	0.011*
Year of Induction Program							
<2018	16 (29.1)	41 (78.9)	4 (40.0)	16 (29.6)	0 (0.0)	14 (31.8)	4 (44.4)
>=2019	39 (70.9)	11 (21.2)	6 (60.0)	38 (70.4)	1 (100)	30 (68.2)	5 (55.6)
P-value a	0.058	0.672	0.717	0.164	0.205	0.757	0.658

a Fisher's exact test \*Significant P-value <0.05

Q1 It is my responsibility to be advocate for my colleagues and patients.

Q2 I uphold dignity and integrity of the nursing profession and organization.

- Q3 I should avoid and ignore conflict in the unit/ward.  
 Q4 I support the ward's/unit's mission and goals and provides feedback to ensure its success.  
 Q5 Upgrading my knowledge and understanding of nursing care are not mandatory.  
 Q6 I use resources effectively and able to delegate according to needs/requirements.  
 Q7 I should only care for myself when there are occupational or environmental hazards.

**Table 3. Prevalence of practice and association of demographic data.**

DEMOGRAPHIC DATA	Q1 n (%)	Q2 n (%)	Q3 n (%)	Q4 n (%)	Q5 n (%)	Q6 n (%)	Q7 n (%)
Overall (Strongly agree/Agree)	56 (94.9)	46 (78.0)	26 (44.1)	11 (19.0)	49 (83.1)	45 (76.3)	19 (33.3)
Gender							
Female	50 (96.2)	42 (80.8)	22 (42.3)	9 (17.3)	43 (82.7)	39 (75.0)	16 (32.0)
Male	5 (83.3)	4 (66.7)	4 (66.7)	2 (33.3)	5 (83.3)	5 (83.3)	3 (50.0)
P-value	0.179	0.419	0.256	0.343	0.969	0.652	0.379
Age							
<30	48 (96.0)	39 (78.0)	23 (46.0)	11 (22.0)	41 (82.0)	39 (78.0)	15 (30.6)
>30	8 (88.9)	7 (77.8)	3 (33.3)	0 (0.0)	8 (88.9)	6 (66.7)	4 (50.0)
P-value	0.371	0.988	0.481	0.119	0.612	0.462	0.281
Designation							
Staff nurse	51 (94.4)	44 (81.5)	24 (44.4)	11 (20.4)	4 (80.0)	41 (75.9)	17 (32.1)
Others	5 (100)	2 (40.0)	2 (40.0)	0 (0.0)	45 (83.3)	4 (80.0)	2 (50.0)
P-value	0.589	0.032*	0.848	0.263	0.849	0.838	0.463
Highest Qualification							
Diploma	43 (95.6)	36 (80.0)	20 (44.4)	7 (15.6)	36 (80.0)	35 (77.8)	12 (27.9)
Degree/ Master	13 (92.9)	10 (71.4)	6 (42.9)	4 (28.6)	13 (92.9)	10 (71.4)	7 (50.0)
P-value	0.689	0.499	0.917	0.275	0.2663	0.626	0.128
Employment							
Ward	35 (94.6)	27 (72.9)	17 (45.9)	7 (18.9)	31 (83.8)	28 (75.7)	13 (36.1)
Clinic	21 (95.5)	19 (86.4)	9 (40.9)	4 (18.2)	18 (81.9)	9 (24.3)	6 (28.6)
P-value	0.884	0.230	0.706	0.944	0.846	0.889	0.560
Year of Appointed							
<2019	15 (26.8)	11 (23.9)	7 (26.9)	1 (9.1)	12 (24.5)	10 (22.2)	3 (15.8)
>=2019	41 (73.2)	35 (76.1)	19 (73.1)	10 (90.9)	37 (75.6)	35 (77.8)	16 (84.2)
P-value	0.804	0.297	0.976	0.136	0.315	0.129	0.202
Year of Graduation							
<2018	45 (80.4)	36 (78.3)	18 (69.2)	6 (54.6)	12 (24.5)	34 (75.6)	14 (73.7)
>=2019	11 (19.6)	10 (21.7)	8 (30.8)	5 (45.5)	37 (75.6)	11 (24.4)	5 (26.3)
P-value	0.566	0.615	0.077	0.022*	0.315	0.160	0.491
Year of Induction Program							
<2018	19 (33.9)	15 (32.6)	8 (30.8)	1 (9.1)	13 (26.5)	13 (28.9)	2 (10.5)
>=2019	37 (66.1)	31 (67.4)	18 (69.2)	10 (90.9)	36 (73.5)	32 (71.1)	17 (89.5)
P-value	0.220	0.900	0.834	0.069	0.039*	0.329	0.016*
a Fisher's exact test *Significant P-value <0.05							
Q1	I communicate effectively with my patients and colleagues.						
Q2	I act professionally when dealing with conflicts.						
Q3	I contribute and participate towards achieving the ward/clinic/unit goals and objectives.						
Q4	I delegate and use available resources only for my team.						
Q5	I ensure the ward/clinic/unit is safe, secure, and always having positive environment.						
Q6	I ensure all nurses abide by the occupational health and safety measures.						
Q7	I always put dignity and integrity of the nursing profession and organization at risk.						

## **Discussion**

To the best of the authors' knowledge, this is the first study that examine leadership and management preparedness in terms of knowledge, attitude, and practice, among newly graduated nurses after undertaking a one-year induction programme.

### **Knowledge**

First, the study found that the newly registered nurses have full correct score for knowledge on advocacy; accountability; critical thinking and problems-solving skills; and teamwork and collaboration. All these are the main indicators for leadership and management in the Core Competencies Standards for Registered Nurses and Midwives, Brunei (Core Competency Domain 3: Leadership and Management)<sup>5</sup> and in International Nurses Council (ICN) Framework of Competencies, Skills and Knowledge for Registered Nurse<sup>7</sup>. Although nurses' induction program in Brunei is not intended towards preparation of leadership and management skills, the program indirectly have instilled some knowledge components. It is feasible that Nursing Leadership Development Model<sup>8</sup> may be incorporated in the current induction program.

Surprisingly, the nurses have low correct knowledge score on the importance of patients' autonomy in patient care. This finding is consistent with a study conducted in the United States that evident that nurses were deficient about on patients' autonomy<sup>9</sup>. Our study was quantitative and did not explore rationales behind this. It could be deduced that new nurses' induction program in Brunei have minimal impact on the knowledge preparedness pertaining to patient autonomy. There is a strong indication for the need to review and revise the existing induction program to strengthen this concept.

### **Attitude**

Advocacy was viewed as important in the early

years of work but attitude towards the importance of advocacy decreases as years of work increases. Nurses' roles as advocator have two main functions: as informer to the patient; and as supporter of the patient's decision<sup>10</sup>. It is possible that in the early years of work, nurses are focused on patients care, hence view their role as patients advocate utmost important<sup>10-12</sup>. By contrast, throughout the work experiences, nurses may become task orientated which consequently result to lack of time spent for communication with patients, hence diminishing their role as advocator<sup>13</sup>. This study findings reflected that the induction program in Brunei is less effective in preparing the new registered nurses on advocacy. Further research needs to be carried out to understand the exact cause.

### **Practice**

This study finding illustrated that new graduate nurse who are exposed more to clinical practice, dealt more with patients and their families, hence, more prepared to practice the leadership and management skills related to conflict management. This is consistent with a similar study conducted in Evelina London Children's Hospital that demonstrated nurses spent approximately 450 hours over a 24-week period in managing conflict<sup>14</sup>. Nurses' induction program in Brunei sufficiently prepares newly registered nurses with skills on conflict management.

This study findings revealed that newly graduate nurses tend to put nursing profession dignity and integrity at risk, especially among those who recently completed their induction program. Since, the eligible participant in this study only focus on the new nurses that had been working in the health services less than three years, most probably these new nurses are still deficit in experiences and understanding on dignity and integrity in nursing profession. Nursing professional value includes respectfulness, responsiveness,

compassion, trustworthiness and integrity<sup>7</sup>.

### Implications to Practice

Nurses should be actively engaged in the evaluation process to ensure a two-way perspectives: nurse administrative; and the nurses<sup>15</sup>. The current programme could also adopt structures from more established programme such as from the NHS Trust (The Royal Wolverhampton), that provides longer preceptee status (12-months) involving structured induction, learner-centered study for interprofessional and professional-specific learning, and peer support<sup>16</sup>.

A continuous system of monitoring can ensure that nurses will be theoretically knowledgeable and also continuously ready and be confidence to practice leadership and management throughout their nursing profession<sup>15</sup>.

Another strategy to increase leadership and management preparedness is through simulation training. This method could be infused into the Induction Program. Teaching nurses through simulation could allow them to practice and demonstrate competence in areas involving knowledge, skills, critical thinking and communication skills<sup>17</sup>.

### Limitations

The results of this study should be interpreted within its limitations. This study only represents newly graduate nurses in the study site. The results may not be generalized to the newly graduate nurses nationwide. Further qualitative studies should be carried out to understand newly registered nurses' perceptions and experiences on the preparedness on leadership and management skills.

### Conclusion

Leadership and management preparedness in nursing practice should encompassed a continuity of

education and training for the nursing students at the education institution and when they graduated and start working at the health institution. A continuous system of monitoring of development of the leadership and management skills should exist to ensure that the skills are sustained and efficient. Further in-depth qualitative study is required to explain rationales for the deficit in leadership and management preparedness.

### References

1. Miles JM, Scott ES. A New Leadership Development Model for Nursing Education. *J Prof Nurs*. 2019;35(1):5-11. doi:https://doi.org/10.1016/j.profnurs.2018.09.009
2. Christovam BP, Porto IS, Oliveira DC de. Nursing care management in hospital settings: the building of a construct. *Rev da Esc Enferm da USP*. 2012;46:734-741.
3. Scully NJ. Leadership in nursing: The importance of recognising inherent values and attributes to secure a positive future for the profession. *Collegian*. 2015;22(4):439-444.
4. International Council of Nurses. *Nursing Care Continuum Framework and Competencies*.; 2008.
5. Ministry of Health. *CORE COMPETENCY STANDARDS FOR REGISTERED NURSES AND MIDWIVES IN BRUNEI DARUSSALAM TABLE OF CONTENTS*.; 2013.
6. Department of Nursing Services M of HB. Standards of Practice for Registered Nurses and Midwives. Ministry of Health, Brunei.
7. Affara F. *ICN Framework of Competencies for the Nurse Specialist*.; 2009.
8. Scott ES, Miles J. Advancing leadership capacity in nursing. *Nurs Adm Q*. 2013;37(1):77-82. doi:10.1097/NAQ.0b013e3182751998
9. Booher L, Yates E, Claus S, Haight K, Burchill

- CN. Leadership Self-Perception of Clinical Nurses at the Bedside: A Qualitative Descriptive Study. *J Clin Nurs*. 2021.
10. Vitale E, Germini F, Massaro M, Fortunato R. How patients and nurses defined advocacy in nursing? A review of the literature. *J Heal Med Nurs*. 2019;63:64-69.
  11. Kalaitzidis E, Jewell P. The Concept of Advocacy in Nursing: A Critical Analysis. *Health Care Manag (Frederick)*. 2020;39(2):77-84. doi:10.1097/HCM.0000000000000292
  12. Davoodvand S, Abbaszadeh A, Ahmadi F. Patient advocacy from the clinical nurses' viewpoint: a qualitative study. *J Med ethics Hist Med*. 2016;9.
  13. Nsiah C, Siakwa M, Ninnoni JPK. Barriers to practicing patient advocacy in healthcare setting. *Nurs Open*. 2020;7(2):650-659. doi:10.1002/nop2.436
  14. Forbat L, Sayer C, McNamee P, Menson E, Barclay S. Conflict in a paediatric hospital: a prospective mixed-method study. *Arch Dis Child*. 2016;101(1):23-27.
  15. Ellenbecker CH, Fawcett J, Jones EJ, Mahoney D, Rowlands B, Waddell A. A Staged Approach to Educating Nurses in Health Policy. *Policy, Polit Nurs Pract*. 2017;18(1):44-56. doi:10.1177/1527154417709254
  16. NHS Trust. 12 Month Preceptorship Programme.
  17. Buxton M, Phillippi JC, Collins MR. Simulation: A New Approach to Teaching Ethics. *J Midwifery Women's Heal*. 2015;60(1):70-74. doi:10.1111/jmwh.12185



# Masculinity and Asian Men's Health: a Critical Review

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## Abstract

Literature demonstrated significant consequences to men's health outcome secondary to their adherence to certain masculine behaviour and norm. In the West, the norms surrounding masculinity includes the idea that men should be healthy, strong, and self-sufficient. Western studies revealed that men adherence to this ideology of masculinity reflects their reluctance to seek for health help resulting in their poor health service utilisation and poor health outcomes. However, it is posited that masculinity is not the declaration of one's true self, but it is rather socially constructed, rather fluid in its nature and varies across different context. Therefore, this concept of masculinity needs to be carefully analysed and examine whether it also fits for every man coming from other parts of the world. This paper looks at this issue and questioned its applicability for men living outside the Global North, which has been overlooked.

**Keywords:** *Male, masculinity, facilities and services utilization, men's health, Asian Continental Ancestry Group.*

## Introduction

Epidemiological data are compelling showing that men have a lower life expectancy and poorer health outcomes in comparison to women<sup>1</sup>. It has also been shown that men behave differently from women in terms of the awareness to health and how they use health services<sup>2</sup>. Unlike women, men are more likely to engage in behaviours that have been shown to increase the risk of morbidity, injury, and mortality. Men also often decline to take part in health-promoting activities and use health services less frequent than women and even if they do visit their doctor it tends to be later in the course of a condition leading to poorer health outcomes<sup>1,3,4,5</sup>. This has been argued that these behaviors reflect how men construct and reinforce their 'masculinity' which consequently leads Moore to conclude that masculinity is unhealthy and detrimental to health<sup>3,5</sup>. One of the most cited theory of masculinity by Kimmel is the theory of white

masculinity or known as "hegemonic masculinity"<sup>6</sup>. Hegemonic masculinity, which identified men as being assertive, risk taking, aggressive, dominance, control, physical strength, and emotional restraint. Western studies revealed that men adherence to this ideology of hegemonic masculinity reflects their reluctance to seek for health help resulting in their poor health service utilisation and poor health outcomes<sup>3,7,8,9,10,11</sup>.

*Relevance of Hegemonic masculinity in Asian context:*

There are a growing number of literatures which shown that masculinity influences men's health seeking behaviour and practices in western countries, but we have little idea of how gender, ethnicity alongside with other social determinants intersects and relates with each other and subsequently inform health seeking in multi-ethnic cultures, particularly in South East Asia. Thus, we need to be conscious on

the universal use of “*hegemonic masculinity*” theory to explain men health seeking behavior for every man across different ethnic groups, culture, and setting/country. This is because culture and ethnicity play a big part in shaping men’s health seeking behavior<sup>12</sup>.

A dated but arguably still relevant study from 2005 found unlike others, Arab men showed active information-seeking behaviour and regarded this as gender appropriate in comparison to their white counterparts<sup>12</sup>. They found that Muslim Arabic men identified the ability to fulfill the expected social roles i.e., being a breadwinner and bringing up children is very crucial for them, and a good health is essential to achieve this. This was clearly reflected in their willingness in seeking help from healthcare professional to a much greater extent in comparison to other men from another ethnic group. Later study in 2007 found unlike Caucasian male, South Asian men, find it appropriate and important to seek for help despite being a man<sup>8</sup>.

Discussing similar studies that involved local Southeast Asian men would be valuable to be brought in the discussion to support or contrast above claims. This will enable us to test and possibly challenge the theories on masculinities, which are mostly derived from West/ developed world/ global north, which are often conceptualised within social constructionist perspective<sup>7</sup>. Sadly, not much attention has been given to this.

To date, there is only one study that investigate masculinities and health help seeking behaviour of men in Southeast Asia, specifically in Brunei Darussalam. The study found that Bruneian men’s masculinities are static and context dependent. As much as Bruneian men would delay seeking for help from health care services, men would re-consider their health seeking behaviour if they knew it would compromise and affect their ability to perform role

as son, father, husband, and grandfather – all these required them to be well and healthy<sup>13</sup>. This finding relates well to earlier study involving men from five Asian countries namely China, Japan, Korea, Malaysia, and Taiwan (N=10,934) which investigate on attributes of masculinity. The study found that in general all considered having a career, ability to earn money and family as the most important attributes to masculinity<sup>14</sup>. On reflection, it can be learnt that Asian men’s positive health seeking behaviour was rather influenced by the need to fulfil their responsibility as a man: being the breadwinner and leader who provide food and shelter for their family.

### **Conclusion**

In the preceding discussion, it is apparent that men have a different way of seeking help from health professionals and men are identified as “reluctant users” of healthcare services. This was mainly explained through theories of masculinities originating in the west/developed world/Global North, often conceptualized within social constructionist perspective, which can be argued that this approach may not be appropriate for other populations, for example men in Southeast Asia.

Literature fails to investigate this issue in great depth not just from the perspective of other ethnic group, other than the Whites but also how other psychosocial factor intersects and inform their health help seeking behaviour. Literature that investigated issue from the lens of local Asian men and investigate how and why men from different ethnic background have different viewpoint and experiences on health seeking behaviour is rather scarce. Thus, this review is hoped to act as an eye-opener and ‘conversation-starter’ that could fuel interest in carrying out similar studies in Southeast Asia setting, which promises a fertile area for research.

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### References

1. Richardson N.(2004).*Getting inside Men's health*. Health Promotion Department, South Eastern Health Board.
2. Cecil R, Mc Caughan E, Parahoo K. ‘It’s hard to take because I am a man’s man’: an ethnographic exploration of cancer and masculinity. *Eur J Cancer Care*. 2010; 19(4):501–509. <https://doi.org/10.1111/j.1365-2354.2009.01085.x>
3. Courtenay WH. Constructions of masculinity and their influence on men’s well-being: a theory of gender and health. *Soc Sci Med*. 2000; 50(10):1385–401. [https://doi.org/10.1016/s0277-9536\(99\)00390-1](https://doi.org/10.1016/s0277-9536(99)00390-1)
4. Doyal L. Sex, gender, and health: the need for a new approach. *BMJ*. 2001; 323(7320):1061–3. <https://dx.doi.org/10.1136%2Fbmj.323.7320.1061>
5. Moore SEH. Gender and the ‘new paradigm’ of health. *Sociol Compass*. 2008;2(1): 268-280. <https://doi.org/10.1111/j.1751-9020.2007.00060.x>
6. Kimmel MS. Masculinity as homophobia: fear, shame, and silence in the construction of gender identity. In: Brod, H., & Kaufman, M. (Eds.), *Theorizing Masculinities*. California: Sage Publications Ltd. 1994.
7. Addis ME, Mahalik JR. Men, masculinity, and the contexts of help seeking. *Am Psychol*. 2014; 58(1):5–14. <https://doi.org/10.1037/0003-066x.58.1.5>
8. Galdas P, Cheater F, Marshall P. What is the role of masculinity in white and South Asian men’s decisions to seek medical help for cardiac chest pain? *J Health Serv Res Policy*. 2007; 12(4): 223–229. <https://doi.org/10.1258/135581907782101552>
9. García-Calvente MDM, Hidalgo-Ruzzante N, Del Río-Lozano M, Marcos-Marcos J, Martínez-Morante E, Maroto-Navarro G, et al. Exhausted women, tough men: a qualitative study on gender differences in health, vulnerability and coping with illness in Spain. *Sociol Health Illn*. 2012; 34(6): 911–26. <https://doi.org/10.1111/j.1467-9566.2011.01440.x>
10. Hennessy M, Mannix McNamara P. Gendered perspective of men’s health and health seeking: implications for public health and health promotion. *Int J Med Health Sci Research*. 2014; 1(2):13–28.
11. O’Brien R, Hunt K, Hart G. ‘It’s caveman stuff, but that is to a certain extent how guys still operate’: Men’s accounts of masculinity and help seeking. *Soc Sci Med*. 2005; 61(3):503–16. <https://doi.org/10.1016/j.socscimed.2004.12.008>
12. Hjelm KG, Bard K, Nyberg P, Apelqvist J. Beliefs about health and diabetes in men of different ethnic origin. *J Adv Nurs*. 2005; 50(1):47–59. <https://doi.org/10.1111/j.1365-2648.2004.03348.x>
13. Idris DR, Forrest S, Brown S. (2019). Health help-seeking by men in Brunei Darussalam: Masculinities and ‘doing’ male identities across the life course. *Sociol Health and Illn*. 2019; 41(6):1071-1087. <https://doi.org/10.1111/1467-9566.12885>
14. Ng CJ, Tan HM, Low WY. What do Asian men consider as important masculinity attributes? Findings from the Asian Men’s Attitudes to Life Events and Sexuality (MALES) Study. *J Men’s Health*. 2008; 5(4), 350–355. <https://psycnet.apa.org/doi/10.1016/j.jomh.2008.10.005>

# Exploring Student Nurses' Learning Experience in the Clinical Setting: A Literature Review

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## Abstract

**Background:** Clinical practice is an important part of nursing education as it allows the student to improve their clinical skills, apply theory with practice and also supports their professional growth. It is known that student nurses perceive their clinical practice as rewarding but the clinical learning environment is also presented with numerous challenges. The aim of this literature review is to explore the student nurses' learning experiences in the clinical setting.

**Methods:** To search for the research articles, PubMed and Sciencedirect databases were used. The inclusion criteria for the research articles are that they must be published between 2010 until 2020, with open access in English Language. Research articles must be looking at student nurses' learning experiences. Nine articles were included in this review.

**Conclusion:** Nursing students learn best in an environment that encourages collaborative learning, trust and mutual respect, and a good student-nurse relationship influences the students' learning experience positively. Theory-practice gap, unclear role of student nurses in the clinical placement and negative emotions hindered the learning experience for the students. It is recommended that the clinical instructor shape the learning environment to meet the students' education needs and to motivate the staff nurses to take part in the student nurses' education to decrease the barriers of effective learning.

**Key words:** *clinical placement, clinical practice, learning experience, nursing, student nurse*

## Introduction

The aim of this literature review is to explore the student nurses' learning experiences in the clinical setting. Nursing education provides a combination of theoretical and practical learning experiences in order to provide the student nurses with the knowledge, skills and attitudes that are essential to their future professional practice as a nurse <sup>1</sup>. From the clinical practice, students have the opportunity to make decisions, apply theories, prioritize those decisions, learn time management, and have the chance to practice their clinical skills <sup>2</sup>. Thus, clinical practice is an important part of their training <sup>3</sup> and it is seen

as the heart and essence of learning and education in nursing <sup>4</sup>. It is well known that student nurses perceive their clinical practice as rewarding since it allows the students to improve their clinical skills, apply theory with practice and also support their professional growth <sup>5</sup>.

The clinical learning environment plays a factor in affecting the students' learning. One of the criteria in a supportive learning environment is where the students are encouraged to be independent in their learning and are advised to be self-reliant <sup>6</sup>, and this environment contribute to the students' positive learning as well as emotional well-being <sup>7</sup>. However, the clinical learning

environment also presents numerous challenges to students<sup>5</sup>. In order to enhance the students' learning, the positive and negative aspects of the clinical practice for the student should be identified, by having an insight to the students' experiences of their learning process in the clinical practice<sup>8</sup>. Thus, the rationale of this literature review is to gain an understanding of the existing knowledge regarding student nurses' learning experiences.

To achieve the aim as stated, the objectives include: 1) to obtain the research articles related to the topic from the databases, 2) to synthesis and present the findings from the research articles by using themes, and 3) to identify and discuss the significant and implications of the findings to clinical teaching practice.

### **Methods: Search strategy and results**

In order to search for the literature, there are several steps done before choosing the articles to be reviewed. The first step is to come up with the search terms that correspond to the objective of this literature review. The search terms include 'student nurse', 'learning experience' and 'clinical placement', words with similar meaning with these search terms were also used to ensure that the search would be broad, such as 'nursing student' was used for 'student nurse' and

using 'clinical attachment' and 'clinical environment' for 'clinical placement'. Boolean operators were used to synthesize the search terms such as "(nursing student OR student nurse) AND learning experience AND (clinical environment OR clinical attachment OR clinical placement)".

The databases used as the source of articles in this literature review were PubMed and ScienceDirect. The publication year was set from 2010 to 2020, to ensure that the articles are up to date, with open access which means that the articles are freely downloadable as this review is not funded. The number of records identified through database search from PubMed was 223 articles and ScienceDirect, 790 articles. The articles were then screened based on the title and abstract. The inclusion and exclusion criteria are shown in Table 1. The inclusion criteria for the articles are; it should be research articles such as quantitative study, qualitative study, mixed-method study, systematic review and thesis papers, but commentary and editorials articles will not be included. The articles should be in English Language, articles with other languages will not be included. The participants must be student nurses and not registered nurses nor non-nursing students; and the articles must be looking at the learning experiences in the clinical setting.

**Table 1. Inclusion and exclusion criteria**

<b>Inclusion criteria</b>	<b>Exclusion criteria</b>
<ul style="list-style-type: none"> <li>· Published from 10 years until present time</li> <li>· Open access articles</li> <li>· In English Language</li> <li>· Research articles (qualitative, quantitative, mixed-method, systematic review and thesis)</li> <li>· Participants are student nurses</li> <li>· Looking into learning experiences in the clinical setting</li> </ul>	<ul style="list-style-type: none"> <li>· Not in English Language</li> <li>· Editorial, commentary and newspaper articles</li> <li>· Participants are registered nurses</li> <li>· Participants are non-Nursing students</li> <li>· Not looking at learning experiences in the clinical setting</li> </ul>



After screening the title and abstract, 986 articles were excluded and 27 full-text articles were assessed for eligibility. From there, 18 more articles were excluded from this process due to not meeting the inclusion criteria where in those excluded articles, the participants were not nursing students and were not looking into the student nurses' learning experiences in the clinical setting. Therefore, only nine articles, of which eight are qualitative and one is quantitative study, were included in this literature review.

From the review, four themes have been identified which include 1) Conducive learning environment, 2) Student-nurse relationship, 3) Missing real purpose of clinical placement, with two subthemes a. educational confusion b. treated as workforce and performing routine tasks, and 4) Fear, anxiety and stress: Emotions felt during the clinical placement.

## **Results**

### ***Conducive learning environment***

Conducive learning environment is important for the student nurses in order to have effective learning experiences. The students view a clinical environment as conducive and positive if they are able to learn and practice nursing skills and they concurred that it was highly influenced by the clinical setting and their clinical instructor<sup>8</sup>. There are other different factors that the students regard to being important for a conducive learning environment. The students expressed that they learn best in an environment that encourages collaborative learning, trust and mutual respect, they also explained that the enthusiasm and motivation of their instructor in teaching and patient care positively influence their clinical experience<sup>8</sup>. Whereas, in another study, the students believed that interpersonal communication between students, nurses, lectures, doctors and patients was one of the most important factors that affect their clinical learning, they described that communication with

their classmates in the educational environment was positive and satisfying<sup>9</sup>. Clinical practice is viewed as an opportunity for the students to practice what they have been taught during their classes and the students indicated that they can get the full benefit of clinical practice when they are assigned to the wards that offer care for patients with conditions that they have discussed in class<sup>10</sup>. This means that the ward that they are allocated in is one of the factors that affect their learning experience.

There are several issues that prevent conducive learning environment to occur. Students explained that they were unable to practice certain skills due to lack of resources, lack of diversity of cases and high number of students in one area<sup>8,11</sup>. Also, the students were left unsupervised during clinical placement and as a result, adverse incidents sometimes occurred which confirmed that it is important for the student to be supervised during clinical placement<sup>12</sup>. The implication of these findings suggest that in order to have conducive learning environment, there should be collaborative learning, trust, mutual respect and their instructor's enthusiasm also played a role in contributing to a conducive learning environment. Moreover, having interpersonal communication, limiting the number of students in the ward and having supervision are important to ensure that the students have a good learning experience.

### ***Student-nurse relationship***

The student-nurse relationship plays a role in the learning experience for the student nurses, it can either be a positive or negative experience depending on what kind of relationship that the student and nurse had. For a positive and friendly relationship between students and nurses it can increase the students' self-confidence and learning<sup>9</sup>, whereas poor student-nurse relationship had negative impact on the students' skill acquisition on the ward<sup>11</sup>. Even though



Jahanpour et al.<sup>9</sup> claimed that a positive and friendly student-nurse relationship can facilitate the students' learning, however, in their study, the relationship from the nurses was not respectful in such a way that the nurses did not trust the student's work and they blamed the student if anything happened in the ward. The excessive blame of students due to little mistake was also found in AliafsariMamaghani et al.<sup>13</sup>'s study and along with that, the students said that they are being monitored continuously by staff to mock and hassle them. In Magobolo&Dube<sup>14</sup>'s study on factors influencing high absenteeism found that 77.3% of the participants agreed that students are absent from the clinical area because they are ill-treated by senior staff. This indicates that students are being mistreated by the staff nurses in the clinical area. The nurses' negative attitude towards the student and their mistrust caused an unsupportive atmosphere which was unpleasant to the students<sup>10</sup>. It was suggested by Adjei et al<sup>11</sup> that the learning environment was not friendly due to the lack of bonding between the students and the staff nurses. This implied that the students should create a bond with the nurses as it would be very beneficial for their learning and there must be reasons for the nurses' negative behaviors toward the student but it was not stated in any of the articles reviewed.

### ***Missing the real purpose of clinical placement***

This theme describes how the students are missing the real purpose of doing clinical placement. The students had experience educational confusion which hindered their learning and they were also being treated as part of workforce; instead of learning experience, they perceived it as working experience.

#### **a. Educational confusion**

The students have their own learning objectives to achieve from their clinical placement but they were unable to achieve the goals and are confused on what they are really supposed to learn in the ward. The

same goes to the staff nurses in the ward; they just let the students do the routine tasks without actually teaching other skills to the students. As found in a study, the nurses were often unaware of the learning objective and their expectations of the student were different from the lecturers<sup>9</sup> and it was also stated in another study that there was no clear description of tasks for the nurses and students so they did not know what they were responsible for<sup>10</sup>. The students wanted to achieve their learning objectives but the nurses prioritize in performing nursing skills<sup>8</sup>, meaning that this would prevent the students to achieve their own learning goals.

Another cause of confusion is that there is a theory-practice gap experienced by the student nurses in the clinical practice. The students in Nabolsi et al<sup>8</sup> described their learning experience in the clinical practice as a reality shock, they explained that the theoretical classes focus on providing holistic care to the patients but it is very different in reality. It was also stated that the theory-practice gap in the clinical practice hindered clinical learning as the students have indicated that they had confusions on how to do procedure based on what they learnt in theory<sup>9</sup>, this is significant as Kaylani et al<sup>10</sup> also stated that the mismatch between expectation and reality and the difference between theories and what they observe in clinical have intensified the students' confusion. Adjei et al<sup>11</sup> further support the existence of this theory-practice gap and they claimed that the nurses in the hospitals did not follow standard protocols in providing nursing care. This educational confusion, where the students and nurses were not clear on what their tasks are in the clinical practice and the presence of theory-practice gap, implied that there need to be an improvement made to the nursing education in order for the student and nurses to be clear of what they are expected to do and to ensure that there would not be theory-practice gap. The students in Nabolsi et al

<sup>8</sup>emphasized that the clinical instructor is responsible to shape the learning environment to provide opportunities to achieve their learning objectives. By making improvements, it can ensure that the students would be able to maximize their learning opportunities and experiences in the clinical setting.

### **b. Treated as workforce and performing routine tasks**

Instead of learning in the ward, the student nurses are being misused in the ward to do the routine work of the staff nurses. This is because students are being viewed as additional nursing staff and nurses perceive the students' presence in the ward as a time when they can have some rest and thus, they only delegate the work to the students<sup>12</sup>. Also, from Magobolo&Dube<sup>14</sup>'s study on factors influencing high absenteeism rate of student nurses in clinical area, 70.5% of the respondents agreed that they are absent because they do not want to be treated as the workforce. This shows that there is confusion on the student's purpose of coming to the ward. Due to being viewed as staffs instead of students, this hinders their achievement of their learning outcome<sup>11,12</sup>. It is also difficult for the students to reach their learning outcomes because they are asked to perform routine tasks in the ward that are deemed by students as not educationally important<sup>11,13</sup>. This shows how the lecturers have to communicate clearly with the nurses in the ward to emphasize that the students are there to learn and not to be treated as an additional nursing staff as they are in fact, students.

### ***Fear, anxiety and stress: Emotions felt during clinical placement***

Fear, anxiety and stress are the common feelings found in the articles reviewed, that are experienced by the student nurses from their clinical learning experience<sup>8,10,11,15,16</sup>. Alves&Cogo<sup>15</sup> found that students have anxiety when performing procedures

with patients and reported that the feeling interfered with doing the skills leading them to feel stress which hinders their learning. Similarly, Memarian et al.<sup>16</sup> also found the same results where students expressed anxiety when performing skills due to being observed by their clinical instructor and this have negative impact on learning. This shows how anxiety can negatively affect the student as well as their learning experience and this calls the attention to the readiness of the students for clinical placement.

Fear and stress often accompanied the feeling of anxiety. Kalyani et al<sup>10</sup>suggested that the fear and stress in clinical learning environment could be rooted in unknowns, equipment, fear from harming the patients and receiving negative feedbacks from instructors, patient's guardian or nurses. However, in Adjei et al<sup>11</sup>'s study, almost all of the 33 nursing students expressed their concern about stressful nature of the clinical placement due to the long distance to the hospital and that they have to attend lecture the next day. The argument made by Kalyani et al<sup>10</sup>could be true as supported by Nabolsi et al<sup>8</sup>where the students stated that the negative feelings started to reduce towards the last semester of their study as they feel more confident and better prepared. From this, the implication drawn is that students' psychological well-being are not looked after by lecturers or the nurses and an intervention needs to be done to ensure that the students are not negatively affected from their learning experience in the clinical placement.

### **Conclusion**

In conclusion, nine research articles have been reviewed and the learning experiences of the student nurses' in the clinical setting have been explored. Four themes have emerged from the review 1) conducive learning environment, 2) student-nurse relationship, 3) missing the real purpose of clinical placement and 4) fear, anxiety and stress: emotions

felt during clinical placement. An environment that encourages collaborative learning, trust, mutual respect, and instructor's enthusiasm can allow the student to learn best but there are several issues that prevent a good learning environment to occur such as lack of resources, lack diversity of cases and high number of students. Additionally, a good student-nurse relationship is important as it will increase the student's learning but it was found in a number of articles that students are being mistreated in the ward which hindered their learning. The students are also unable to achieve their learning objectives as they were unsure what they have to learn and the nurses are also unaware about the students' learning objectives. The presence of theory-practice gap further intensified the students' confusion as what they have learnt in the theory classes were not the same in real life situation. The students were also treated as additional staff and were asked to perform basic routine task that was not educationally important from the students' perspective. From the clinical placement experience, the students experienced negative emotions such as fear, anxiety and stress from various factors which also prevent them from maximizing their learning opportunities and this calls for attention to the students' readiness for their clinical placement.

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### References

1. Budgen C, Gamroth L. An overview of practice education models. *Nurse Educ Today*. 2008;28(3):273-283. doi:10.1016/j.nedt.2007.05.005
2. Jahanpour F, Sharif F, Salsali M, Kaveh MH, Williams LM. Clinical decision-making in senior nursing students in Iran. *Int J Nurs Pract*. 2010;16(6):595-602. doi:10.1111/j.1440-172X.2010.01886.x
3. Awuah-Peasah D. The attitudes of student nurses toward clinical work. *Int J Nurs Midwifery*. 2013;5(2):22-27. doi:10.5897/IJNM12.017
4. Dadgaran I, Parvizy S, Peyrovi H. Nursing students' views of sociocultural factors in clinical learning: A qualitative content analysis. *Japan J Nurs Sci*. 2013;10(1):1-9. doi:10.1111/j.1742-7924.2012.00205.x
5. Tiwaken SU, Caranto LC, Jose David JT. The Real World: Lived Experiences of Student Nurses during Clinical Practice. *Int J Nurs Sci*. 2015;5(2):6675. doi:10.5923/j.nursing.20150502.05
6. Adib Hajbaghery M, Rezaei Shahsavarloo Z. Assessing the Nursing and Midwifery Students Competencies in Communication With Patients With Severe Communication Problems. *Nurs Midwifery Stud*. 2014;3(2). doi:10.5812/nms.18143
7. Dimitriadou M, Papastavrou E, Efstathiou G, Theodorou M. Baccalaureate nursing students' perceptions of learning and supervision in the clinical environment. *Nurs Health Sci*. 2015;17(2):236-242. doi:10.1111/nhs.12174
8. Nabolsi M, Zumot A, Wardam L, Abu-Moghli F. The Experience of Jordanian Nursing Students in their Clinical Practice. *Procedia - Soc Behav Sci*. 2012;46(2003):5849-5857. doi:10.1016/j.sbspro.2012.06.527
9. Jahanpour F, Azodi P, Azodi F, Khansir AA. Barriers to Practical Learning in the Field: A Qualitative Study of Iranian Nursing Students' Experiences. *Nurs Midwifery Stud*. 2016;5(2):4-6. doi:10.17795/nmsjournal26920
10. Kalyani MN, Jamshidi N, Molazem Z, Torabizadeh C, Sharif F. How do nursing students

- experience the clinical learning environment and respond to their experiences? A qualitative study. *BMJ Open*. 2019;9(7):1-8. doi:10.1136/bmjopen-2018-028052
11. Adjei CA, Sarpong C, Attafuah PA, Amertil NP, Akosah YA. "We'll check vital signs only till we finish the school": Experiences of student nurses regarding intra-semester clinical placement in Ghana. *BMC Nurs*. 2018;17(1):1-6. doi:10.1186/s12912-018-0292-0
  12. Msiska G, Smith P, Fawcett T. The "lifeworld" of Malawian undergraduate student nurses: The challenge of learning in resource poor clinical settings. *Int J Africa Nurs Sci*. 2014;1:35-42. doi:10.1016/j.ijans.2014.06.003
  13. Aliafsari Mamaghani E, Rahmani A, Hassankhani H, et al. Experiences of Iranian Nursing Students Regarding Their Clinical Learning Environment. *Asian Nurs Res (Korean Soc Nurs Sci)*. 2018;12(3):216-222. doi:10.1016/j.anr.2018.08.005
  14. Magobolo GN, Dube BM. Factors influencing high absenteeism rate of student nurses in clinical areas at a nursing college in the Lejweleputswa District. *Curationis*. 2019;42(1):1-6. doi:10.4102/curationis.v42i1.1985
  15. Alves EATD, Cogo ALP. NURSING STUDENTS' PERCEPTION OF THE LEARNING PROCESS IN A HOSPITAL SETTING. 2014;35(1):102-109.
  16. Memarian R, Vanaki Z, Baraz S. Learning challenges of nursing students in clinical environments: A qualitative study in Iran. *J Educ Health Promot*. 2015;4(1):52. doi:10.4103/2277-9531.162345

# Midwives' Perceptions, Experience and Reasons for Routine Episiotomy in Maternity Teaching Hospitals - Khartoum State-Sudan

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## Abstract

**Background:** Midwives have a crucial role in caring for women with normal labor. Routine episiotomy has no benefit and its use is not scientifically supported. Understanding midwives' perception and experiences would target the situation. This study aimed to explore midwives' perceptions, experience and reasons for routine episiotomy.

**Methods:** A cross-sectional exploratory study was conducted in three maternity teaching hospitals in Khartoum state on 85 midwives recruited randomly and consented to take part in the study. A questionnaire was constructed for the purpose of the study, and data were collected by interview with midwives, on reasons for and rate of episiotomy and perceptions of midwives were recorded on a Likert scale. Suitable statistical methods were used.

**Results:** A high percentage of the study participants 64(75.4%) were nurse midwives had a midwifery certificate. With long years of experience more than ten years 54 (63.5%). The rate of episiotomies was high 73(85.9%). The midwives reported nine clinical reasons, mainly prevent complications, Prevents the perineum tears and helping birth (93%, 90%, 84.7%) respectively. Midwives perceived that; episiotomy "speeds up the second stage of labor", "prevent perineal tears and urinary and fecal incontinence", "Reduces fetal and maternal distress", shoulder dystocia complications, bleeding, labor pain, instrument-assisted delivery and allow for easier suturing". There was a significant correlation between Midwives practice and their education with, P value = .001.

**Conclusion:** The rate of routine episiotomy was high with Midwives misleading perspectives and views

**Keywords:** *Episiotomy, Midwives, Perception, Primigravida.*

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## Introduction

Midwives have a crucial role in caring for women with normal labor. Routine episiotomy has no benefit and its use is not scientifically supported.

Episiotomy is a surgical incision of the perineum performed in the second stage of labor.<sup>1</sup> Until recently, the procedure was performed routinely on almost all primigravida women who delivered in hospitals.



Now, many recognize that episiotomies are usually unnecessary, and its rates are dropping, though not as quickly as they probably should be.<sup>2</sup>

Traditionally, midwives have used episiotomies with the opinion that it will lessen perineal trauma, minimize postpartum pelvic dysfunction by reducing anal sphincter muscle damage, reduce the loss of blood during delivery and protect against neonatal trauma. While all these are advantages ascribed to the use of episiotomy over the years, studies however have shown that episiotomy itself can cause all these problems.<sup>3</sup> Other complications of episiotomy can include infection, swelling, wound closure complications, localised pain and the possibility of short-term sexual dysfunction.<sup>4</sup>

In developing countries, routine episiotomy remains midwives' common procedure during child birth. The midwives indicated that episiotomy was performed routinely to primigravida to prevent third degree laceration. Also, it appears that many episiotomies are still being performed because people who were trained in the past when routine episiotomy was standard have not changed their practices and then pass to younger midwives.<sup>5</sup>

Routine episiotomies are very common; both in under-resourced settings and in some developed countries.<sup>6</sup> Episiotomies have been associated with an increased risk of severe perineal trauma and can also significantly increase the risk of anal sphincter tears rather than reducing this complication.<sup>7</sup> The incidence of anal sphincter injuries was shown to be higher in patients undergoing a routine episiotomy, compared to patients who underwent a selective episiotomy according to certain criteria, including the state of the perineum (normal or tight), the size of the baby and the length of the second stage of labor. Selective episiotomy is more useful intervention than routine episiotomy in protecting the anal sphincter when

delivering a primiparous lady.<sup>8</sup> Cochrane Review article regarding episiotomies for vaginal birth showed that, compared with routine use, restrictive use of episiotomies resulted in less severe perineal trauma and suturing as well as fewer healing complications.<sup>9</sup>

Episiotomy contributes to postnatal morbidity in terms of higher rates of perineal pain, depression and abnormal sexual functioning after childbirth, compared with women without episiotomy.<sup>10</sup> Researchers reported that; routine use of episiotomy leads to increased risk of anterior perineal trauma.<sup>11</sup>

The evidence does not support maternal benefits traditionally ascribed to routine episiotomy. Outcomes with episiotomy can be considered worse since some proportion of women who would have had lesser injury instead had a surgical incision. The evidence is clear: Routine use of episiotomy is not supported by research and should stop.<sup>12</sup>

World Health Organization (WHO) has taken a clear stand against the routine use of episiotomies<sup>5</sup>. Clinical guidelines regarding intra partum care recommend that episiotomies should only be performed if there is a clinical need, such as during an instrumental vaginal birth or in cases of suspected fetal compromise.<sup>13</sup> Routine use of episiotomy is not recommended for women undergoing spontaneous vaginal birth.<sup>14</sup>

Episiotomy rates around the world is differed, and considerable variations in percentages of the use of routine episiotomy exist between countries, within countries, and even within the same professional provider group, its routine use have been contested for more than two decades and studies have shown that there is a steady decline in the routine use of episiotomy among midwives.<sup>15</sup>

In some developed countries such as the US, episiotomy rates have significantly declined in the



last three decades—from 60.9% in 1979s to 24.5% in 2004.<sup>16</sup>

In the Middle East episiotomy rates remain high despite the dearth of literature and data. Some descriptive studies reported high rates of routine episiotomy in Jordan (60%), Lebanon (62%), and the UAE (64%). Changing the clinical practice from liberal to restrictive episiotomy, decrease the prevalence from 64% in 2006 to 52.2% in 2007, which further declined to 22.4% in 2008.<sup>17</sup>

Episiotomy at the first vaginal delivery significantly and independently increased the risk of repeated episiotomy and spontaneous perineal tears in a subsequent delivery: 23.9% of the women, who experienced routine episiotomy at a previous pregnancy, have had an episiotomy at the subsequent delivery and a 23% increased risk of perineal tears at the subsequent delivery.<sup>18</sup>

According to the International Confederation of Midwives, midwives should hold the responsibility of determining and performing episiotomies.<sup>19</sup>

Research evidence shows that; routine episiotomy is widely used, and a lot of women especially the primigravida are afraid of delivery in an established hospital due to fear of routine use of it.<sup>20</sup> A study conducted in Kurdistan reveal that: majority of midwives (88.7%) thought that the rate of episiotomy was high in their hospitals that were attributed to five factors.<sup>21</sup>

A study conducted in Oman stated that, 26% do routine episiotomy and 68 % perform it within seven days, and one of the reasons to do it to prevent tears 69% study.<sup>22</sup>

Other study illustrates the main clinical reasons reported by midwives for performing an episiotomy were: macrosomia/large fetus (38, 71.7%), breech

delivery (31, 58.5%), shoulder dystocia (29, 54.7%), anticipated perineal tear (27, 50.9%) and fetal distress (27, 50.92%).<sup>23</sup>

Evidence not support routine episiotomy as seen in a study in Iran, which compared a restrictive episiotomy group with a routine group, the rate of maternal short-term complications such as perineum laceration and pain severity was reported to be less in the restrictive group than the routine group.<sup>24</sup>

In another study most common midwife-reported reason for episiotomy among women was primiparity (55.1 %) All women with episiotomy sustained at least a second-degree perineal tear versus 27.1 % among women without episiotomy.<sup>25</sup>

In Cambodia a study reveals that; episiotomy performed with high rate (94.5%), due to various reasons include, fear of perineal tears and lack of time in overcrowded delivery rooms.<sup>26</sup>

The same reason was cited in a study about quality of maternity care practices among skilled birth attendance that performed an episiotomy in order to accelerate the delivery, given the high number of women in the labor ward.<sup>27</sup>

Another study reveals that episiotomy rates range from 20.8% to 54.9%.<sup>28</sup>

Midwives-reported reason for episiotomy among women was primiparity and all women with episiotomy sustained at least a second-degree perineal tear versus 27.1 % among women without episiotomy.<sup>29</sup>

In Sudan episiotomy rate was high among primigravida with FGM or not were (96% and 94% respectively).<sup>30</sup>

The rate of episiotomy remains high in the developing countries. Although the evidences not support the benefit of it and the WHO recommended

the restriction of the use of routine episiotomy.

Sustainable developmental goal focus on the reduction of maternal mortality and enhance the quality of life. An important step in the reduction of episiotomy rates is analysis of the reasons behind the use of an episiotomy.<sup>31</sup>

In Sudan dearth of literature and data exist, sound understanding midwives' perception and experiences would target the situation.

This study was conducted in order to identify perceptions, reasons and experiences of routine episiotomy on primigravida among midwives.

### Material and Methods

A descriptive cross-sectional study was conducted between July and September 2018 in three governmental maternity teaching hospitals. Midwives who had worked in the delivery rooms of these hospitals for at least one year were recruited in the study (n = 85). Data were collected through interviews with midwives as well as via a questionnaire constructed for the purpose of the study after informed consent was obtained and purpose of the study was explained to each midwife during personal interview. The questionnaire sought to determine: midwives' demographic characteristics; perception and experience for performing episiotomies questions on practice, and respondents' perceptions of episiotomy. A relationship with midwives' demographic characteristics; these included the midwives' number of years of experiences in the delivery room and their level of education. Data were analysed and suitable descriptive and inferential Statistic was used, with  $P$  value  $<0.05$  was considered

statistically significant.

### Results

The socio-demographic results. More than half of the respondents their age more than 40 years (57.7 %). The vast majority of the respondents were nurse midwives (had certificate of midwifery) 64(75.3%) .More than two third of the respondents had long experiences more than 10 years 54(63.5%). Seventy three midwives (85.9%) performed episiotomy routinely for primigravida. Episiotomy was conducted in the last week by 58 midwives (68.0%). Table 1.

The routine practice of episiotomy was believed by 67(78.8%), However, the most common reason stated by them, for performing routine episiotomy to prevent complications" (93%). Table 2

Perception of the midwives towards routine episiotomy among primigravid women illustrate that, Majority of the respondents (87 %) agree that, routine episiotomy to primigravid mothers speeds up the second stage of labor. Most of them agreed with the perception that routine episiotomy will prevent perineal tear (84.6 %), prevents urinary and fecal incontinence (88.2%) , fetal distress (88%), reduces maternal distress (88.2%) , helps in the reduction of complications encountered during shoulder dystocia (90.7%) and reduces the bleeding (88.2%). Table 3.

There is significant Correlation between Midwives practice Routine episiotomy to primi gravidas and their education with  $P$  value = .001.

But there is no significant Correlation between Midwives practice Routine episiotomy to primi gravidas and duration of their work in labor room or midwives age with  $P$  value  $>0.05$ .

**Table 1. Socio-demographic characteristics and routine episiotomy practice among participants.**

N = 85	Freq	%
Age < 30	21	24.7
30-39	15	17.6
40-49	26	30.6
>50	23	27.1
Education Certificate	64	75.3
Bachelor	21	24.7
Years of experience <5	21	24.7
5-10	10	11.8
>10	54	63.5
Performed episiotomy as routine on primigravidae	73	85.9
Performed episiotomy as routine on primigravidae in the last 7days	58	68

**Table 2. Reasons provided by participants about routine episiotomy on primigravidae n=85**

N = 85	frequency	%
prevent complications	79	93
As routine for primi gravida	67	78.8
Prevent delaying and keeping time.	57	67.1
Helps in suture and repair properly	53	62.4
Helping birth	72	84.7
Prevents the perineum tears	77	90.6
Prevent bleeding	25	29.4
Prevent fistula	13	15.3
Prevent fetal injury	4	4.7

**Table 3. Perception of the midwives towards routine episiotomy among primigravid women n=85**

Items (Routine episiotomy in primi gravidae)	Strongly agree %	Agree %	Neutral %	Disagree%	Strongly Disagree%
Speeds up the second stage of labor.	52.9	34.1	1.2	7	4.8
Reduces the risk of spontaneous perineal tearing of 2nd and 3rd degree	61.1	23.5	10.6	2.4	2.4
Prevents subsequent pelvic floor dysfunction	30.6	18.8	14.1	30.6	5.9
Prevents urinary and fecal incontinence	67	21.2	2.4	7	2.4
Helps to prevent fetal distress	69.4	17.6	7	4.8	1.2
Helps to prevent maternal distress.	64.7	23.5	2.4	8.2	1.2
Reduce the complications encountered during shoulder dystocia	67.1	23.6	2.3	4.7	2.3
Reduces labor pain	42.4	21.2	8.2	18.8	9.4
Reduces the bleeding rather tearing	60	28.2	2.4	8.2	1.2
Help in easy suturing rather tear.	43.5	25.9	5.9	22.4	2.3
Prevent the mother to go for instrumental delivery	42.4	29.3	3.5	18.8	7
Average	78.8		5.5	15.7	

### Discussion

In this study, the rate of routine episiotomy on primigravida was high as stated by (85.9%) of midwives, although a little decrease found when compared to the study conducted in Sudan before, among primigravida who had FGM or not were (96% and 94%) respectively.<sup>30</sup>

Also goes with the thought of (88.7%) midwives in similar study<sup>21</sup>. And what stated by the study in Cambodia that episiotomy was performed with high rate (94.5%).<sup>26</sup>

But the rate of routine episiotomy in this study, higher when compared to the study conducted in Oman, only 26% do routine episiotomy.<sup>22</sup> This may be due to variation in level of education of midwives. But in this study, routine episiotomies performed on primigravida in last 7 days, was 68 %, this result is consistent with 66.0% involved episiotomies in other study.<sup>22</sup> This clearly indicate, a lack of awareness among care providers. A high rate of episiotomy prone women to unnecessary harms and suffering, in the current study, the midwives reported different numbers of not supported reasons for performing episiotomy as, Prevent delaying and keeping time

reported by (67.1%) which agree with what reported by midwives in Jordan, that insufficient time to wait for the perineum to stretch (56.6%) as a reason for doing it.<sup>25</sup> In Cambodia a study reveals that; lack of time in overcrowded delivery rooms, a reason for doing it.<sup>26</sup> The same reason was cited in a study about quality of maternity care practices among skilled birth attendants, that mention, episiotomy was performed in order to accelerate the delivery, given the high number of women in the labor ward.<sup>27</sup>

Another reason stated by the majority of participants in this study was preventing the perineum tears (90.6 %) which agree with the study that, stated midwives performed it when anticipated perineal tear (50.9%).<sup>23</sup>

Also, in another study that reveals; episiotomy performed because of fear of perineal tears.<sup>26</sup> And other did agree with the reduction of risk in spontaneous perineal tearing 69% in Oman study.<sup>22</sup>

Other reasons stated by midwives in this study were (Prevent complications 93 %, as routine for primi gravida 78.8 % and Helping birth 84%) which were more than what mentioned by midwives of Oman study regarding (Prevent complications 80.3 %, as routine for primi gravida 29.6 % and Helping birth 49.3%) respectively.<sup>22</sup>

Helps in the suture and repair properly stated by 62.4 % in this study, which was more than what mentioned by midwives in Oman (46.5%).<sup>22</sup>

Also, other common midwives-reported reason for episiotomy among primiparous women was primiparity (55.1) which agree with the study that stated, midwives-reported reason for episiotomy among primiparous women was primiparity.<sup>29</sup>

In this study correlation between Midwives practice routine episiotomy to primi gravidas and

their education was found, which agree with other study.<sup>24</sup> Also supported with the study of Midwives' Clinical Reasons for Performing Episiotomies in the Kurdistan, which mention that the midwives' education, experience and knowledge influence their decisions on episiotomy practice.<sup>20</sup>

In this study, majority of midwives had wrong beliefs towards episiotomy, which illustrated by their perception statements "episiotomy is a routine procedure"; "routine episiotomy will prevent perineal tear"; and "helps in easy suturing than suturing a tear". The extent of agreement with these perceptions demonstrates that, there is a lack of awareness on episiotomy and evidence practice, which consistent with the study in Oman.<sup>22</sup>

## Conclusion

Rate of routine episiotomy was high. Most midwives -reported reasons that are not supported by evidences and a large number of them had a misleading perception towards episiotomy. The study strongly **recommended** the implementation of episiotomy protocols and educational programs to change episiotomy practice. Parallel with health educating the pregnant women about birthing practices through antenatal classes this should be implemented to guarantee the practice among the community.

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**Ethical Clearance:** The research was submitted after permission was taken from the faculty of nursing sciences University of Khartoum. Official permission was obtained from authorities in the study setting to carry out the study. The study purpose was discussed to all participants then obtaining their consent, they were free to withdraw at any time without any retribution, and confidentiality of the participants and their data was kept.

## References

1. Enyindah CE, Fiebai SE, Anya AO, Okpani. Episiotomy and perineal trauma prevalence and obstetric risk factors in Port Harcourt. Nigeria. *Nigerian Journal of Medicine*.2007;16 (3):242-245.
2. Teckla, Omoni, Mwaura &Omuga. Evaluation of evidence-based episiotomy practice by midwives. *African Journal of Midwifery and Women's Health*, 2010;4(2) :80-87.
3. HolmesD, BakerPN. Midwifery by Ten Teachers. London,UK: CRC Press;2006 P.239–41. [Google Scholar]
4. Fraser, DM,Cooper, MA. Myles' Textbook for Midwives.(15th Ed.). London, UK: Churchill-Livingstone;2009. [Google Scholar]
5. ACOG. Practice Bulletin: Episiotomy — Clinical management guidelines for obstetrician-gynecologists, number 71 *Obstetrics and Gynecology*. 2006;107 (4) 957-962 Google Scholar
6. Ref J,Liljestrand. Episiotomy for vaginal birth: RHL commentary.The WHO Reproductive Health Library ;2003.
7. DuddingTC, Vaizey CJ, KammMA. Obstetric anal sphincter injury: Incidencerisk factors and management. *Ann Surg*.2008; 247:224–37. doi: 10.1097/SLA.0b013e318142cdf4. [PubMed] [CrossRef] [Google Scholar]
8. AlnakashAH, Jafar S, Abdul-RaheemY. Whether selective or routine episiotomy is more useful to protect anal sphincter in primiparous women. *Iraqi Postgrad Med J*.2012;11:26–32. [Google Scholar]
9. CarroliG,MigniniL. Episiotomy for vaginal birth. *Cochrane Database Syst Rev*. 2009;1:CD000081. doi: 10.1002/14651858.CD000081.pub2. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
10. UNCF.The state of the world's children: a fair chance for every child. New York,NY:2016. ([https://www.unicef.org/publications/files/UNICEF\\_SOWC\\_2016.pdf](https://www.unicef.org/publications/files/UNICEF_SOWC_2016.pdf)).
11. DahlenH, HomerC. Perineal trauma and postpartum perineal morbidity in Asian and non-Asian primiparous women giving birth in Australia. *J ObstetGynecol Neonatal Nurs*.2008;37(4):455–463. doi: 10.1111/j.1552-6909.2008.00259.xPubMedCrossRefGoogle Scholar
12. Katherine Hartmann,Gartlehne. Outcomes of Routine EpisiotomyASystematic Review *JAMA*.2005; 293:2141-2148.
13. National Institute for Health and Clinical Excellence. Clinical Guideline 55 Intrapartum care: Care of healthy women and their babies during child birth. 2013. From: [www.publications.nice.org.uk/intrapartum-care-cg55/guidance](http://www.publications.nice.org.uk/intrapartum-care-cg55/guidance) 2013.
14. WHO Reproductive Health Library. WHO recommendation on episiotomy policy.TheWHO Reproductive Health Library; Geneva: World Health Organization;2018
15. MeynL,WeberAM. Episiotomy use in the United States 1979-1997. *American Journal of Obstetrics and Gynaecology*.2002; 6(100):1177-1182.
16. FrankmanEA, WangL, BunkerCH, LowderJL. Episiotomy in the United States: Has anything changed? *American Journal of Obstetrics and Gynecology*.2009;200 (5): e1-e7. Google Scholar
17. Fernandes EE, Benjamin G,Edwards.Using evidence to reduce the rate of episiotomy in a Dubai hospital *Evidence Based Midwifery*.2009; 7 (2):60-63.
18. Lurie S, KedarD, BoazM, Golan A,Sadan O.



- Need for episiotomy in a subsequent delivery following previous delivery with episiotomy. *Archives of Gynecology and Obstetrics*.2013;287 (2): 201-204
19. Crowe, Grace, Miles, Maureen, Nagle,Cate. Exploring midwives' practice and experience of episiotomy. *Women and Birth*.2018;31: (S1). P24. S49-S49. DOI: 10.1016/j.wombi.2018.08.145<https://doi.org/10.1016/j.wombi.2018.08...>
  20. Inyang-EtohEC, UmoyiohoAJ. The practice of episiotomy in a university teaching hospital in Nigeria: How satisfactory? *International Journal Med Biomed Res*.2012;1(1):68- 72 <http://dx.doi.org/10.14194/ijmbr.1111>
  21. Safiya Sabri Piro,HamdiaMirkhan Ahmed Midwives' perspectives regarding episiotomy practice in Kurdistan region/Iraq *Zanco J. Med. Sci*,2016;20:1233-1240 <http://dx.doi.org/10.15218/zjms.2016.0014>
  22. Khadija, Al.-Ghammarietal. Predictors of routine episiotomy in primigravida women in Oman. *Elsevier Applied Nursing Research*.2016; 29: 131-135 <https://doi.org/10.1016/j.apnr.2015.05.002>
  23. ShahrakiAD, Aram S,Pourkabirian S, Khodae S, ChoupannejadSA. comparison between early maternal and neonatal complications of restrictive episiotomy and routine episiotomy in primiparous vaginal delivery. *Journal of Research in Medical Sciences*. 2011;16 (12):1583-1589.
  24. Hamdia M. Ahmed. Midwives' Clinical Reasons for Performing Episiotomies in the Kurdistan Region, *Sultan Qaboos Univ Med J*,2014;14(3):369–374. PMID: 25097773
  25. KhreshehR, Barclay LK. Knowledge, attitude and experience of episiotomy practice among obstetricians and midwives in Jordan. 2019; (18):31619-6. pii: S1871-5192Doi: 10.1016/j.wombi.2019.03.007.
  26. Clémence Schantz, KrueyLeang Sim, Ek Meng Ly, Hubert Barenes, So Sudaroth, Sophie Goyet. Reasons for routine episiotomy: A mixed-methods study in a large maternity hospital in Phnom Penh, Cambodia. *Reproductive Health Matters*. 2015;23(45): 68-77. <https://doi.org/10.1016/j.rhm.2015.06.012>
  27. Ith P, Dawson A, Homer C. Quality of maternity care practices of skilled birth attendants in Cambodia. *International Journal of Evidence-Based Healthcare*.2012;10(1):60–67. 10.1111/j.1744-1609.2012.00254.x.
  28. OlaER, Bello O, Abudu OO, AnorluRI. Episiotomies in Nigeria: Should their use be restricted? *Niger Postgrad Med J*.2002;99:13-16.
  29. Lin Chieh Wu, Rahul Malhotra, John Carson Allen Jr, Desiree Lie, Thiam Chye Tan. Risk factors and midwife-reported reasons for episiotomy in women undergoing normal vaginal delivery. *Archives of Gynecology and Obstetrics*.2013; 288, (6):1249–1256 .
  30. UmbeliTahmed, Salah Ismail, KunnaA, Rabaa Abd Elwahab, Najwa Alfaki, Sulman Mirghani M. Impact of Female Genital Mutilation on second stage of labor, in Primigravida at Omdurman Maternity Hospital in Sudan. *Sudan jms*.2013; 8 (I): 1-4. <https://www.sciencedirect.com/science/article/pii/S0020729207001270>
  31. Rusavý Z1, KalisV, Landsmanová J, Kasovám L, KarbanováJ, DolejšováK et al. Perineal audit: Reasons for more than one thousand episiotomies. *Ceska Gynekol*,2011; 76.:378–85. [PubMed] [Google Scholar]

# Students' Preferences for Teaching Methods and their Performances in Schools of Nursing, Nigeria

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## Abstract

**Background:** Suboptimal academic performance by the majority of students at higher educational level has been linked with ineffective teaching methods by teachers/lecturers. The aim of this study was to assess teaching methods, academic, and clinical performances among student nurses in schools of nursing, in North-west Nigeria.

**Methods:** The study adopted a mixed approach of a cross-sectional design. The sample comprises of 95 tutors, 31 clinical instructors, 698 students, and the final year students from five selected schools. An adapted questionnaire was used for data collection. Quantitative data were analyzed using descriptive and inferential statistic with the aid of IBM SPSS Version 20. The qualitative data were summarize using thematic content analysis.

**Results:** Lectures, demonstration, and discussion were the most frequently used methods of instruction in the schools. The average academic performances of students were credit (C). The academic performance of students in the final examination and Nursing Council Exam was "Pass". Most of the students obtained a C-grade in the clinical examination. The clinical performance rating of the students in both the school and the nursing Council was "Pass" grade. There was a Significant positive correlation between the academic performance of third year students and their clinical performance (<.05). Most students were satisfied with lecture teaching method because of its ability to ensure curriculum coverage.

**Conclusions:** Clinical performance of students increased with an increased academic performance. Students preferred lectures and demonstration as methods of instruction. The tutors should trained and motivated students to use students' centred Learning methods in the administration of their lessons.

**Keywords:** Academic, Clinical, Method, Performance, Teaching.

## Introduction

Discrepancies in the academic performances of nursing students have been observed, although students may be of comparable abilities, learn in the same environment and follow the same syllabus, their academic performance may still vary. Aremu and Sokan<sup>1</sup> describes poor academic performance as a

performance that is adjudged by the examiner(s) as falling below an expected standard; bright students who fail to excel due to other factors, miss the opportunity to advance in education and to get employment.<sup>2</sup>

According to Kalivani,<sup>3</sup> nursing students need both theoretical knowledge and clinical skills to

handle real life situations while caring for the patients and families. Dimkpa and Buloubomere<sup>4</sup> suggested a conducive environment to encourage the students to learn academically and clinically. In addition, the instructional strategies should focus on students' abilities and preferences.<sup>5</sup> Many methods of teaching exist in nursing education; suboptimal academic performance has largely been cited to be the result of ineffective teaching methods.<sup>5</sup>

Omisakin,<sup>6</sup> described tutors' roles that invariably affect the student academic and clinical performances. Eghbalibabadi and Ashouri,<sup>7</sup> based on a comparative study suggested simulation training as an effective teaching strategy to facilitate learning and for the development of students' clinical performance. Gupta<sup>8</sup> revealed that lecture method with the use of blackboard was the most used method of teaching and the method have moderate effect on how students perform academically.

The relationship between teaching methods, academic, and clinical performances of students' nurses has become an object of inquiry for researchers.<sup>9</sup> Theoretical knowledge may enhance the clinical performance. For instance in a correlational study, students who perform well in the classroom setting performed similarly well in the clinical setting.<sup>10</sup> However academic grade does not always reflect the competence of students in clinical setting because there are variables (external and internal) that significantly affect performance of student nurses.<sup>11</sup> This increased complexity, rapidly changing and challenging atmosphere in nursing practice.<sup>12</sup>

Previous studies revealed that effective teaching and evaluating techniques promotes students' academic and clinical performances. The Nursing and Midwifery council of Nigeria (NMCN) has been consistently conducting professional pre-licensure examination for several decades. However,

little has been done empirically in Nigeria to find out the assessment of teaching methods, and their impact on academic and clinical performances of student's nurses. Additionally, while a study found a satisfactory clinical placement among students nurses in another context,<sup>13</sup> the students' satisfaction with the various teaching methods has been giving limited attention. This study was to assess the teaching methods, students' performance, the relationship between the clinical and academic performances and students satisfaction with the teaching methods.

## **Method**

### **Study Design, setting and population**

This study adopt a mixed approach of a crosssectional (correlational) design. The studypopulation were all the 95 tutors, 31 clinical instructors, 698 students and the final year students that sat for the NMCN' Professional Examination for General Nurses in five selected School of Nursing, Northern Nigeria. At first, a random sampling was used to select three (3) states out of the seven (7) state (cluster). In these selected states, all the five (5) were used for the study. We purposively selected 28 students from each school; 14 participants each from 2nd year and 3rd year classes respectively. Each focus group consists of seven (7) discussants. Therefore, the sample size across the five (5) schools was 140 participants/discussants. A total of 73 tutors participated in the study.

### **Instrument for data collection**

This study used a questionnaire, Focused Group Discussion Guide (FOGDIG), and Checklist for Assessment of Academic and Clinical Performance (CAP). The questionnaire was adapted from Questionnaire for the assessment of teaching methods and evaluation techniques and it has two section. Section A has five items assessing sociodemographic

characteristics; section B also has five (5) items focusing on the teaching methods used by the tutors. The focus group discussion contains 4 items to explore satisfaction with teaching methods. Finally, two different checklists were prepared each for 2nd year and 3rd year students to collect data on academic and clinical performances of students.

A pre-test was conducted in a School of Nursing in other state not participating in the main study. A Split Half reliability method from data collected (among 11 participants) shows a Cronbach's Alpha of 0.83 for the questionnaire. The Focus Group Discussion Guide (FOGDIG) was pre-tested using two FGDs groups comprising of 7 participants in each group in a different school. There was consistency in the responses recorded in the two sessions. Five (5) experts in the fields of nursing education and general education validate the content of the three instruments used in the study.

### Data collection

After obtaining ethical clearance and permission was sort from the heads of institutions and the respondents who agreed to participate. Two research assistants were trained for data collection. The questionnaire was the administered to tutors and the students had a Focused Group Discussions (FGDs) using FOGDIG. Four (4) FGDs were conducted in each school (two in each of the 2nd and 3rd year

classes). Each session convened with a group of seven (7) discussants lasting over a period of 20-30minutes. The FGD was recorded in an audiotape with the permission of the discussants. Finally, the previous exam records from the schools was collected and content analysed using Checklist for Assessment of Academic and Clinical Performance (CAP).

### Data analysis

Data on the socio-demography was summarized using descriptive statistics (frequency, percentage, mean and standard deviation). Descriptive statistics were used to examine teaching methods and academic and clinical performances (means/standard deviation). The inferential component of the analysis was Person's correlation. The focus group discussion was analysed using thematic content analysis and the data were presented in form of themes. Each theme was presented with subthemes and participants verbatim quotations.

## Result

### Sociodemographic characteristic

The mean age of the tutors (in Table 1) was 36.4921 years, majority were males (74.6%), having BNSc/ BSc/B.Ed/HND (58.7%) as the highest qualification. The students had a mean age of 19.2 years; majority (69%) were females; and most (37.1%) were in the 3rd year of study.

**Table 1. Sociodemographic Data of Tutors**

Variables	Frequency	Percentage	Mean
TUTORS			
Age			36.49
Gender			
Female	47	74.6	

**Cont... Table 1. Sociodemographic Data of Tutors**

Male	16	25.4	
Qualifications			
Postgraduate degree	5	7.9	
Bachelor/Equivalent	8	12.7	
Post-basic Nursing	37	58.7	
RN/RM	12	19.0	
OTHERS	1	1.6	
STUDENTS			
Age			19.2
Gender			
Male	241	31	
Female	511	69	
Level of Study			
Second year	217	28.9	
Third year	279	37.1	
Last set of NMCN Examination	256	34	

### Teaching Methods

As in Table 2, the most frequently used method of instruction was lecture method (98.4%). Other most adopted teaching instructions were clinical demonstration (80.9) and discussion (76.2%).

**Table 2: Teaching Methods**

Methods	Frequency	Percent
Lecture	62	98.40
Discussion	48	76.20
Demonstration	51	80.90
Simulation	28	44.40
Role play	23	36.50

**Cont... Table 2: Teaching Methods**

Computer based learning	21	33.30
Lineup method	16	25.40
Case study	13	20.60
Buzz method	15	23.80
Debates	10	15.90
Concept mapping	8	12.70

### Academic performance of students

In both levels, only a few had A grade in some courses. For the final year examination (first attempt), Table 3 shows that 73% had Pass grade in Paper I and 90.9% in Paper II; in the NMCN professional examination, Table 3 also indicates that 96% of students had pass grade in paper I and 97.2% in Paper II.

**Table 3: Academic Performance in School Final Examination and NMCN Professional Examination**

Grade	School Final Exam				NMCN Professional exam			
	Paper I		Paper II		Paper I		Paper II	
	F	%	F	%	F	%	F	%
PASS	184	73	229	90.9	242	96	245	97.2
FAIL	68	27	23	9.1	10	4	7	2.8
Total	252	100	252	100	252	82.1	252	100

### Clinical performance of students

The findings (in Table 4.1) concerning clinical performance indicated that larger proportions of the students (64.1%) and (44.1%) had C-grade in the 2nd and 3rd year clinical performance rating respectively.

For the final examinations, Table 4.2 revealed that most of the candidates (89% and 99.6%) had Pass grade in the clinical performance rating for the school final examination and NMCN professional examination respectively.



**Table 4: Clinical Performance**

Grade	2nd Year		3rd Year	
	Frequency	Percent	Frequency	Percent
A	0	0	1	0.4
B	0	0	39	14
C	139	64.1	123	44.1
D	38	17.5	56	20.1
F	40	18.4	60	21.4
Total	217	100	279	100

**Table5: Clinical Performance in School Final Examination and NMCN Professional Examination**

Grade	School Final Exam		NMCN Professional exam	
	Frequency	Percent	Frequency	Percent
PASS	247	98	251	99.6
FAIL	5	2	1	0.4
Total	252	100	252	100

#### **Relationship between academic and clinical performances of students**

From the Table 5, correlation analysis revealed a strong positive correlation ( $r=0.68003143$ ) between student's academic performance and their clinical

performance in the 2<sup>nd</sup> year of training while, a moderate positive correlation was found in the 3<sup>rd</sup> year ( $r=0.571842$ ). Thus, academic performance is likely to increase clinical performance of students in the both levels of training.

**Table 6: Correlation between overall academic Performances and clinical performance among students**

Year 2 Students	Academic performance	Clinical Performance		
Academic performance	1			
Clinical Performance	0.68003143*	1		

**Cont... Table 6: Correlation between overall academic Performances and clinical performance among students****Final year Students**

	Academic Performance	Clinical Performance		
Academic performance	1			
Clinical Performance	0.571842*	1		

\*Correlation is significant at 0.05 level.

**Students' preference for teaching methods**

Findings suggest that most students preferred lecture teaching method because of its ability to ensure curriculum coverage as stated by FDG 8 and FGD 10:

“In this our school we are more satisfied with the lecture than other teaching methods in our subjects. The lecturers that used lecture method do covers their topic and subjects or courses more than others using different method. So the coverage is good” (FGD 8).

“Sincerely speaking the lecture method we are very satisfied with it. is giving us the opportunity to understand the lecture, ask questions, observes the area the lecturer is paying emphasis and can sometimes predict where the teacher can ask questions. We are very satisfied with it” (FGD 10).

In the area of clinical teaching, majority of the students preferred lecture-demonstration method as the best suitable teaching techniques for teaching clinical skills in the schools and clinical areas. FGD 5 and FGD 17 shared their experiences:

“We preferred lecture in the class before going to the lab for demonstration and then the clinical area. The teacher will do it and asked the class members to do it and if there are mistakes he will repeat it” (FGD

17).

“I like the lectures and demonstration together; you will received lecture and start demonstration immediately. If you forget the theory you can remember the demonstration. The two system is the best. I preferred it than any other method” FGD 5).

**Discussion**

Lectures, demonstration, and discussion were the most frequently used methods of instruction in the schools. The next most popular teaching technique were demonstration and discussion. The present study is in line with Nicole<sup>14</sup>who found that traditional lectureand group activity were the teaching methods used in nursing college.

The average academic performance of students in second and third year was credit (C). However, most of the students in the final year examination obtain a ‘Pass’ score. Most of the students in second and third year obtained a C-grade in the clinical examination. The clinical performance rating of the students in both the school final exam and NMCN professional examination was “Pass” grade. There was a significant positive correlation between the academic performance of students and their clinical performance. The present findings were supported by previous studies.<sup>15,16</sup> The findings may suggest that increase in academic performance may result in

increased clinical performance.

For academic teaching, students prefer lecture method. However, the respondents opted for a combination of lecture and demonstration for clinical teaching. The students were satisfied with lecture teaching. This may not be surprising because lecture method (blended with e-learning) is the most common teaching method used in Nigeria as indicated by the tutors. This supports Sadeghi, Sedaghat and Ahmadi<sup>17</sup> who reported that the blended method is effective in increasing the students' learning rate.

This study found lecture-demonstration method of clinical teaching a novelty because previous study<sup>18</sup> reported students' satisfaction with demonstration method only as against the current study. A model demonstration of a simulation scenario can be used to develop clinical judgment and possibly self-confidence of nursing students.

### Conclusion

Lecture, demonstration and discussion methods were the most predominantly used method of teaching in schools of Nursing. The majority of the students passed their examinations with "C" grade which is average/pass. Academic performance is likely to increase clinical performance of students in the both levels of training. Finally, most students were satisfied with lecture teaching method because of its ability to ensure curriculum coverage. The study implies that tutors should use students' Centred Learning methods in the administration of their lessons. The NMCN should tailor the General Nursing curriculum around students' Centred learning methods that actively involve students in their academic and clinical training.

### References

1. Aremu AO, Sokan BO. A Multi-causal Evaluation of Academic Performance of Nigerian Learners: Department of Guidance and Counselling, 2003, University of Ibadan, Ibadan.
2. Muola JM. A study of the relationship between academic achievement motivation and home environment among standard eight pupils, *Educational Research and Reviews*, 2010; 5(5).
3. Kalaivani A. Role of E-Learning in the Quality Improvement of Higher Education. *IOSR Journal of Humanities and Social Science*, 2014; 19(11): 15-17.
4. Dimkpa DI, Buloubomere I. Student Nurses Perception of Poor Academic Performance in Bayelsa State, Nigeria. *Global Journal of Human Social Science Linguistics & Education*, 2013; 13(14). Retrieved from: [https://globaljournals.org/GJHSS\\_Volume13/1-Student-Nurses-Perception-of-Poor-Academic.pdf](https://globaljournals.org/GJHSS_Volume13/1-Student-Nurses-Perception-of-Poor-Academic.pdf)
5. Adunola O. "The Impact of Teachers' Teaching Methods on the Academic Performance of Primary School Pupils in Ijebu-Ode Local cut Area of Ogun State," Ego Booster Books, 2011, Ogun State, Nigeria.
6. Omisakin FD. Ideal Clinical Roles of Nurse Lecturers in Nigeria: A Review of the Literature. *Health Science Journal*, 2016; 10(1).
7. Eghbalibabadi A, Ashouri E. Comparison of the effects of two teaching methods on the nursing students' performance in measurement of blood pressure. *Iranian Journal of Nursing and Midwifery Research*, 2014; 19(4):381-4.
8. Gupta P. Study on the effect of teaching method on the academic achievement of school going children of Semiurban Area, Schools of Lucknow city. *International Journal of Health Sciences*, 2017; 3(2), 447-453.
9. Tilley DS. 'Competency in nursing: a concept analysis. *Journal of Continuing Education in Nursing*, 2008; 39 (2), 58-64

10. Buhat-Mendoza DG, Jame NB, Mendoza CT, Tianela E, Fabella I. Correlation of the academic and clinical performance of Libyan nursing students. *Journal of Nursing Education and Practice*, 2014; 4(11).
11. Farooq MS, ChandhryAH, Shafiq M. 'Factors affecting student's quality of academic performance. *Journal of Quality and Technology,Management*, 2011;7:1-14.
12. O'Briena A, McNeila K, Dawson A. The student experience of clinical supervision across health disciplines Perspectives and remedies to enhance clinical placement. *Nurse Education in Practice*, 2019; 34: 48–55.
13. Al Sebaee HAA, Abd El Aziz EM, Mohamed N. Relationship between Nursing Students' Clinical Placement Satisfaction, Academic Self-Efficacy and Achievement. *IOSR Journal of Nursing and health Science*, 2017; 6: 101-112.
14. Nicole LF. The effect of teaching methods used as experienced and perceived by student nurses at a nursing college in the Western Cape Province. Thesis presented in the Faculty of Health Sciences at Stellenbosch University, 2011. Unpublished.
15. Vendrely AM. An Investigation of the Relationships among Academic Performance, Clinical Performance, Critical Thinking, and Success on the Physical Therapy Licensure Examination. *Journal of Allied Health*, 2007; 36 (2):108-103.
16. McClelland E, Yang JC Glick OJ. A statewide study of academic variables affecting performance of baccalaureate nursing graduates on licensure examination. *Journal of Professional Nursing*, 2004; 8(6):342-350.
17. Sadeghi R, Sedaghat MM, Ahmadi FS. Comparison of the effect of lecture and blended teaching methods on students' learning and satisfaction. *Journal of Advances in Medical Education & Professionalism*, 2014; 2(4): 146.
18. Weaver A. The effect of a model demonstration during debriefing on students' clinical judgment, self-confidence, and satisfaction during a simulated learning experience. *Clinical Simulation in Nursing*, 2015; 11(1): 2.

# Intravenous Infiltration and Extravasations: Knowledge among Nurses in Pediatric Hospitals in Khartoum, Sudan

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## Abstract

**Introduction:** Infiltration and extravasation are complications of intravenous administration therapies involving unintended leakage of solution into the surrounding tissue. Consequences range from local irritation to amputation. The aim of the study is to study nurses' knowledge about intravenous infiltration and extravasation.

**Method:** Descriptive cross-sectional, hospital-based study. A study was conducted at four pediatric hospitals in Khartoum state. 165 nurses were included using simple random sampling of different working experiences. Data were collected by face-to-face interview questionnaire.

**Results:** Of participants 25.5% defined intravenous infiltration correctly, most participants 76.4% had a poor level of knowledge about identification of infiltration, only 1.8% of participants knew the term extravasation, and most nurses 78.2% had a poor level of knowledge that antibiotics causing extravasation. There was statistically significant with qualification P-value < 0.001

**Conclusion:** The study concluded that nurses had a poor level of knowledge on intravenous infiltration and extravasation. The study recommended education, guideline, and standards for intravenous therapy should be adopted to ensure the best practices.

**Keywords:** *Intravenous infiltration, extravasation, knowledge, nurses, Sudan.*

## Introduction

Intravenous infiltration and extravasation are the most common intravenous therapy complications. Infiltration is the leakage of a non vesicant solution into

the surrounding tissue and extravasation is inadvertent leakage of a vesicant solution into surrounding tissue [1]-[3]. Vesicant refers to any medication or fluid with the potential for causing blisters, severe tissue injury or necrosis [2]. Lack of the knowledge in these vesicants might increase the risk of extravasations [4]. The nurse should routinely assess all vascular access sites for signs and symptoms of infiltration and extravasation based on patient population, type of therapy, type of device, and risk factors [5]. The nurse should determine possible causes of infiltration and extravasation, which include mechanical, pharmacologic, obstructive, and

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inflammatory factors. It is important for the nurse to be able to recognize the early signs and symptoms of infiltration and extravasation [6]. Extravasation can be caused by physiochemical factors, including pH and osmolarity of some drugs, mechanical factors, occurring either during initial cannula insertion, children may be more susceptible to peripheral intravenous infiltration and extravasation because of developmental and physiological factors, such as communication skills, activity level, and fragile vein [7]. The Infusion Nurses Society (INS) developed an infiltration scale that measured edema in inches and graded numerically from zero to four [3]. A grading scale is recommended for assessing and determining the extent, standardizing the description of the infiltration, documenting the severity of the problem, and evaluating the degree and prevalence of infiltration [8].

It is important to assess the ability of nurses to create positive change in the knowledge and practice [9]-[11]. Number of research regarding intravenous infiltration and extravasation among children from Sudan are limited. It is estimated that 78% of pediatric peripheral intravenous (PIV) lines become infiltrated and 11% of neonatal intensive care unit patients have IV extravasations [3]. The outcome from an infiltrate event can range from edema in an extremity to full-thickness skin loss, muscle, or tendon necrosis, and in some cases, even amputation, these problems not only increased prolonged hospitalization and increased medical costs but also resulted in permanent damage and limitations of physical functions in pediatric patients [12]. This study aimed to assess nurses' knowledge regarding intravenous infiltration and extravasation.

The nursing role is an application of proper techniques which can be used to avoid many cases of complications, such as selecting appropriate intravenous site, checking the catheter before,

during, and after administration of vesicants, avoiding unnecessary coverage of the insertion site, to recognize the early signs and symptoms of infiltration and extravasation, through systematic hourly intravenous site assessments, these various measures help to prevent or limit further damage to the vein and surrounding tissues. It is necessary that the nurses have the knowledge, skills and technical skills that are acquired through training programs and through educational actions [13]-[15].

### **Methodology**

A Descriptive cross-sectional, hospital based-study was conducted at the main pediatric governmental hospitals in Khartoum state (Ahmed Gasim pediatric hospital, Mohammed Elamin Hamid pediatric hospital, Gafaar Ibnouf pediatric referral hospital and ALbluck pediatric hospital) 165 nurses enrolled in the study by using a simple random sampling technique, regard less of qualifications and years of experiences, the sample size was calculated based on total population. Variables under study were, recognition of infiltration and extravasation, pharmacological factors contributing to the risk for extravasation, noncytotoxic medication associated with extravasation and the consequence of IV infiltration and extravasation. Data was gathered through face-to-face interviews questionnaire which composed of two sections: demographic data and knowledge of nurses based on Infusion Therapy Standards of Practice. Knowledge scored according to Likert scale three points, from one to three, 3 being good, 2 for fair and 1 for poor for each question has an answer with more than or equal to three values. Data was analyzed by a computerized program (SPSS) version 20 and presented in the form of simple frequency table and cross table to explore the relationship between variables. P value = 0.05 was considered statistically significant. Ethical approval was obtained from ethical committees and



administrative authorities of hospitals.

## Results

**Table 1. Shows participants demographic characteristics (n=165)**

Demographic	Frequency	Percentage
<b>Age groups</b>		
20-30 years	11	6.70%
31-40 years	92	55.80%
41-50 years	39	23.60%
> 50 years	23	13.90%
<b>Nurses qualifications</b>		
Ordinary nurse	57	34.50%
Diploma	71	43.00%
Bachelor	31	18.80%
Master	6	3.60%
<b>Gender</b>		
Male	30	18.20%
Female	135	81.80%
<b>Years of Experience</b>		
1-5 years	11	6.70%
6-10 years	31	18.80%
11-15 years	86	52.10%
> 15 years	37	22.40%
Total	165	100%

**Table (2): nurses' level of knowledge regarding IV infiltration and extravasation (n=165)**

Variables	knowledge level					
	Poor		Fair		Good	
	N	%	N	%	N	%
Correct definition of IV infiltration	100	60.6	23	13.9	42	25.5
Signs of IV infiltration	126	76.4	17	10.3	22	13.3
Correct definition of extravasation	3	1.8	8	4.8	154	93.3
Signs of extravasation	149	90.3	9	5.5	7	4.2
Pharmacological factors risk for extravasation	153	92.7	10	6.1	2	1.2
Antibiotics associated with extravasation	129	78.2	30	18.2	6	3.6
Electrolyte solutions associated with extravasation	137	83.0	18	10.9	10	6.1
Consequence of IV infiltration and extravasation	150	90.9	11	6.7	4	2.4

**Table 3. The association between qualification and knowledge about definition of extravasation (n=165)**

Qualification		Level of knowledge			Total
		Good	Fair	Poor	
Ordinary nurse	Number	0	0	57	57
	%	0%	0%	100%	100%
Diploma	Number	0	1	70	71
	%	0%	1.4	98.6	100%
BSC	Number	1	3	27	31
	%	3.3%	9.7%	87%	100%
M.Sc.	Number	2	4	0	6
	%	33.4%	66.6%	0%	100%
Total	Number	3	8	154	165
	%	1.8%	4.9%	93.3%	100%

Significant P value 0.001

## Discussion

The study revealed that, quarter (43%) of the nurses carrying a Diploma degree in nursing and only 3.6% had master's degree, probably this because most of MSC holders work at the higher education ministry as lecturers or emigrated. Only (9%) of nurses received a training course about intravenous therapy and its complications, although they have an important role in maintaining IV therapy using their knowledge-about infiltration signs and extravasation, this not similar to study with Lavery he reported that it is important to educate and train nurses associated with IV therapy which is necessary skills for nurses to anticipate problems and take actions to prevent adverse events occurring [16]. Most nurses (76.4%) did not know the signs of infiltration, this disagrees with the study done by Dougherty [12]. Regarding the definition of extravasation only (1.8%) of nurses defined extravasation correctly, most of the nurses (93.3%) did not know the term extravasation this disagree to study by Sisan 54% of nurses knew the correct definition for extravasation and infiltration [17]. The nurses failed to define the term extravasation; this finding may be related to lack of education. (4.2%) of nurses only had a good level about the information that redness followed by blistering and necrosis signs of extravasation. In Sudan many of children with black skin color, which is difficult to recognize extravasation early, this is supported by Treadwell that children and neonates with darker skin are more likely to suffer from extravasation [18]. Moreover (83.0%) nurses had a poor level of knowledge about electrolytes associated with extravasation. Doellman reported that Calcium Chloride leads to ischemia [19]. There was an inconsistency of nurses' knowledge regarding non cytotoxic medications associated with extravasation ,their good level of knowledge about antibiotics causing extravasation was (3.6%), this finding due to lack of in service workshops and

training courses , in addition poor level of knowledge (90.9%) of the nurses about consequences of infiltration and extravasation this not in context to study done by Park reported that the injury associated with extravasation in worst situations may require amputation, so the nurse must be vigilant for early signs of infiltration and extravasation [20].The current study showed differences in level of knowledge to nurses qualification p-value < 0.001.

## Conclusion

The study revealed that IV infiltration and extravasation knowledge among nurses at pediatric hospitals in Khartoum State was poor, and poor knowledge is significantly associated with the qualification of nurses. The study recommends that education, guidelines, and standards for intravenous therapy should be adopted to ensure the best practice.

**Conflicts of Interest:** The authors declare that there are no conflicts of interest

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**Ethical Clearance:** Ethical approval was obtained from ethical committees and administrative authorities of hospitals.

## References

1. Dychter SS, Gold DA, Carson D, et al. Intravenous therapy: a review of complications and economic considerations of peripheral access. *Journal of Infusion Nursing* 2012; 35: 84–91.
2. Hadaway L. Infiltration and extravasation. *AJN The American Journal of Nursing* 2007; 107: 64–72.
3. Doellman D, Hadaway L, Bowe-Geddes LA, et al. Infiltration and extravasation: update on prevention and management. *Journal of Infusion*

- Nursing* 2009; 32: 203–211.
4. Thomas J. Standard practice and evolving trends in pediatric intravenous access. *Air medical journal* 2007; 26: 8–11.
  5. Infusions I. Site Care and Maintenance.
  6. Lyons MG, Kasker J. Outcomes of a continuing education course on intravenous catheter insertion for experienced registered nurses. *The Journal of Continuing Education in Nursing* 2012; 43: 177–181.
  7. Alexander M. Infusion Standards: A Document Without Borders. *Journal of Infusion Nursing* 2016; 39: 181–182.
  8. Abdelaziz R Ben, Hafsi H, Hajji H, et al. Full title: peripheral venous catheter complications in children: predisposing factors in a multicenter prospective cohort study. *BMC pediatrics* 2017; 17: 1–11.
  9. Majid S, Foo S, Luyt B, et al. Adopting evidence-based practice in clinical decision making: nurses' perceptions, knowledge, and barriers. *Journal of the Medical Library Association: JMLA* 2011; 99: 229.
  10. Malik G, McKenna L, Plummer V. Perceived knowledge, skills, attitude and contextual factors affecting evidence-based practice among nurse educators, clinical coaches and nurse specialists. *International journal of nursing practice* 2015; 21: 46–57.
  11. Ibrahim MM, Fadlalmola HA. Effects of Nurse ' s Work Environment and Practice on Patient ' s Safety. 2020; 15: 345–354.
  12. Dougherty L. IV therapy: recognizing the differences between infiltration and extravasation. *British Journal of Nursing* 2008; 17: 896–901.
  13. Tofani BF, Rineair SA, Gosdin CH, et al. Quality improvement project to reduce infiltration and extravasation events in a pediatric hospital. *Journal of pediatric nursing* 2012; 27: 682–689.
  14. Clifton-Koeppel R. Wound care after peripheral intravenous extravasation: What is the evidence? *Newborn and Infant Nursing Reviews* 2006; 6: 202–211.
  15. Verity R, Wiseman T, Ream E, et al. Exploring the work of nurses who administer chemotherapy. *European Journal of Oncology Nursing* 2008; 12: 244–252.
  16. Lavery I. Infection control in IV therapy: a review of the chain of infection. *British journal of nursing* 2010; 19: S6–S14.
  17. McCullen KL, Pieper B. A retrospective chart review of risk factors for extravasation among neonates receiving peripheral intravascular fluids. *Journal of Wound Ostomy & Continence Nursing* 2006; 33: 133–139.
  18. Sauerland C, Engelking C, Wickham R, et al. Vesicant extravasation part I: mechanisms, pathogenesis, and nursing care to reduce risk. In: *Oncology nursing forum*. 2006.
  19. Beaulieu MJ. Hyaluronidase for extravasation management. *Neonatal network* 2012; 31: 413–419.
  20. Park SM, Jeong IS, Kim KL, et al. The effect of intravenous infiltration management program for hospitalized children. *Journal of pediatric nursing* 2016; 31: 172–178.

# Relationship between Parenting Style and Mental Health among the Female Adolescents in Tabuk City, KSA

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## Abstract

Parents are the most powerful instruments in promoting good mental health. This study examined the relationship between parenting style and the mental health of female adolescents in Tabuk, KSA. The study employed a correlational methodology, using Convenience Sampling of 100 participants. Standardized questionnaires of Depression, Anxiety, and Stress Scale and Measure of Parental Style were distributed. Data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 21.0. Majority of the respondents belong to 20 years of age (26%), were first- year students (34 %), from a nuclear family (77%) with five to six siblings (27%) and in the income bracket 15,000-25,000 SAR (25%). Parents were over controlling (maternal [73%] and paternal [65%]). There was a high rate of mental health problems among female adolescents, represented by anxiety (25%), stress (20%) and depression (18%).

**Keywords:** Parenting Style, Mental Health, Adolescents, Saudi student nurses

## Introduction

Allied healthcare professionals like nurses, medical technologists and physical therapists are dispensers of care, compassion and service. Keeping healthy, both mental and physical, is essential to ensure that they perform work at their very best. They are role models, therefore possessing a sound mind can have a powerful effect on those around them and allow them to express themselves and their teachings creatively and intelligently<sup>1</sup>.

As early as childhood, the seed of good mental health is rooted. In fostering good mental health in the

lives of their children, parents are the most important catalysts. Parents' upbringing and child-rearing styles are the critical factors in changing and stabilizing the behavioral problems of children; similarly, the foundation of self-esteem is laid early in life<sup>2</sup>.

Adolescence is one of the critical stages that a person goes through because several changes may enhance personal refinement either positively or negatively. Adolescents refine their sense of self, and if they accomplish this, they can stay true to themselves and what they believe. The vital event in this stage is forming a social relationship<sup>3</sup>. Children's behavioral issues are said to be mainly caused by the parental nurturing style. It was reported that some adolescents suffer from various health issues caused by insensible, pretentious behavior and unbearable words by parents<sup>4</sup>. The bond a parent shares with their children is deep, important and meaningful.

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Baumrind identified three different parenting styles namely: Authoritative parenting, uninvolved parenting, and Indifferent parenting. He further expanded the model using permissive parenting and neglectful parenting<sup>5</sup>. Neglectful parenting is associated with children involved in drug or alcohol abuse and delinquency as well as has impulsive behavior including suicide<sup>6</sup>.

Mental health is a state of complete well-being in physical, mental and social aspects and not only the absence of illness or infirmity<sup>7</sup>. Adolescents with improved mental well-being are mentally happier and exhibit more socially positive habits<sup>7</sup>.

Depression is a pervasive and severe medical condition that triggers feelings of sadness and/or lack of interest in activities<sup>8</sup>. Anxiety is characterized by feelings of stress, anxiety and physical changes. Physical signs such as sweating, shaking, dizziness or a quick pulse can also be present<sup>9</sup>.

Rapid changes happen in the human life of adolescence and parents play important role<sup>10</sup>.

### **Related Studies**

Saudi Arabia (SA) has a population exceeding 27 million, and 20% of its population are adolescents aged 10–19 years with an average monthly income for Saudi families, amounted to SAR 14, 820 SAR<sup>11</sup>. The mental health challenges impose an immense burden on the largest generation of young people in history affecting 10-20 % of adolescents suffering from mental problems with 80% cases of depression<sup>7</sup>.

In one research, there was a significant relationship between parenting styles and depressive symptom<sup>12</sup>, authoritarian parenting and mental health<sup>13</sup> and maternal parenting style dimensions and mental health using the Measure of Parental style (MOPS) and the Depression, Anxiety, and Stress

Scale (DASS)<sup>14</sup>. Authoritarian parenting is a critical factor that affects gifted children's well-being and their mental health<sup>15</sup>. In China, paternal emotional warmth could decrease adolescents' social anxiety, whereas maternal overprotection could increase it<sup>16</sup>.

On the contrary, social anxiety negatively correlated with the permissive style of parenting<sup>17</sup>. In Norway, support, monitoring and neglect have no significant difference between 253 adolescents 12–18 years of age in their perception of parenting styles<sup>18</sup>. In Saudi Arabia, the average prevalence of mental illness was 15.5% in 2009<sup>19</sup>. The role of parents' behavior in maintaining the mental health of their children is important. The relationship between these two elements is a very important aspect because of the impact it has on the child's behavior, personality and actions, so we find that this is a valid reason for researchers' interest in this aspect. The present study addressed the significant gap in the current health literature by conducting an analysis of data from female adolescents enrolled in one university in the Kingdom of Saudi Arabia. Based on the Baumrind's parenting style model, the researchers hypothesized that there is a relationship between the perceived parenting style of the adolescents' parents and their mental health<sup>20</sup>.

## **Methodology**

### **Research Design**

This is a cross-sectional descriptive correlation study design which aimed at describing the perceived parenting styles as well as the female adolescents' mental health. Correlation design is used to determine if there is a relationship between the parenting styles and the mental health of the adolescents.

### **Respondents and Sampling**

Convenience sampling is one of the nonprobability sampling methods employed when there is a group of people easy to contact or reach. The respondents were



100 adolescent female students from Saudi Arabia, including first-, second-, third- and fourth-year nursing, medical laboratory technology and physical therapy students.

### **Instruments**

#### **DASS**

Two standardized questionnaires were used in data gathering. First, the DASS, a 21-item self-report instrument developed to measure three concepts (depression, anxiety and tension/stress)<sup>21</sup>. The depression scale assesses dysphoria, hopelessness, and devaluation of life, self-deprecation, and a lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to chronic nonspecific arousal level. Scores for the mentioned concepts are calculated by summing the scores for the relevant items. The recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows. Table 1 show the scores of the DASS-21, which will need to be multiplied by 2 to calculate the final score.

#### **MOPS**

The second questionnaire is the MOPS, a 15-item instrument with three subscales (parental indifference, abuse and over control). This instrument was developed to address some shortcomings in the Parental Bonding Instrument<sup>22</sup>. It is a self-administered tool used to measure styles of perceived parenting to obtain a total score for each category by adding up the scores of responses to items in each of the three categories.

#### **Procedure**

Administrative clearance to conduct the study was secured from the university's Ethics Committee.

Questionnaires were distributed to the 100 female adolescent students. The researchers made sure they were present on the appointment day of the floating of the questionnaires to the respondents of the study for easy access on any clarifications or queries that may be raised. The data collectors gave a brief introduction to the respondents by explaining the aims and purpose of the study, and written consent was obtained from all the respondents.

### **Statistical Analysis**

Data gathered from the respondents were coded, tallied and analyzed using the Statistical Package for the Social Sciences (version 21.0). Frequencies and percentages were used to analyze the demographic profile data of the respondents and parenting styles. The Pearson correlation coefficient was used to measure the strength of the linear association between the two variables: the parenting style and the mental health of the participants.

### **Results**

Among the 100 respondents, 53 (53%) were nursing students, 35 (35%) were medical laboratory students, and 12 (12%) were physical therapy students. Most of the students were female nursing students because they represent the largest number of female students. The biggest population came from 26 years old (26%) first-year students (34%). Majority of the students came of families that earn 15,000–20,000 SAR (25%)—which is close to the average monthly income for Saudi families (14,820 SAR)<sup>11</sup>. Common among respondents have 5–6 siblings or 27% coming from 77% nuclear family as shown in (Table 2).

The perceived parenting style used by the mothers of the respondents varied. Predominantly, there are 72% students with over controlling mothers, and 65% over controlling fathers (Table 3).

This study revealed a high prevalence of mental health issues among the respondents. It is alarming to note 20% were experiencing stress; 26%, anxiety; and 18%, depression. There was no correlation observed between the maternal parenting style and the mental health of female adolescents. Taking a p-value < .05 as significant, with stress, the p-value was .246343;

anxiety, the p-value was .243509; and depression, with a p-value of .120, making them insignificant. On the other hand, with the paternal parenting style, there was no correlation with female adolescents, considering stress (P = .111). A significant positive correlation was observed with anxiety (P = .015) and depression (P = .035).

**Table 1.***Scoring Mental Health by DASS Questionnaire*

	depression	anxiety	stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Sever	21-27	15-19	26-33
Extremely severe	28+	20+	34+

**Table 2***Demographic Profile of the Respondents*

	Number	Percentage
<i>Course</i>		
Nursing	53	53
Medical Laboratory	35	35
Physical Therapy	12	12
Total	100	100
<i>Age</i>		
18	22	22
19	18	18
20	26	26
21	24	24
22	10	10
Total	100	100
<i>Year level</i>		
First year		
Preparatory	34	34
Second year	23	23
Third year	14	14

Fourth year	29	29
Total	100	100
<hr/>		
<i>Socio-economic</i>		
< 5000 SAR	17	17
5000-10,000 SAR	24	24
10,001-15,000 SAR	20	20
15,000-20,000SAR	25	25
20,000-25,000SAR	8	8
25,000SAR&>	6	6
Total	100	100
<hr/>		
<i>Number of Siblings</i>		
0	1	1
1-2	7	7
3-4	22	22
5-6	27	27
7-8	22	22
9-10	12	12
10 &>	9	9
Total	100	100
<hr/>		
<i>Types of Family</i>		
Nuclear family	77	77
Divorced family	5	5
Single parent	6	6
Extended family	4	4
Step families	2	2
Immigrant family	2	2
Grand parent	2	2

Single state	1	1
Beanpole	1	1
Cohabiting	0	0
Communal family	0	0
Total	100	100

**Table 3**  
*Parenting Style*

<i>Maternal Parenting Style</i>		Number	Percentage
	No Indifference	24	24
	Abusive	4	4
	Over control	72	72
	Total	100	100
<i>Paternal Parenting Style</i>			
	No Indifference	33	32
	Abusive	2	2
	Over control	65	65
	Total	<b>100</b>	<b>100</b>

## Discussion

In this study, the researchers examined how perceived parenting style and mental health are correlated with a population of female adolescents. Majority of the students are 20 years old who have a remarkable ability to regulate their self-esteem<sup>9</sup> and if they are not thriving, may develop mental illness<sup>21</sup>. The current study revealed a comparable result where high school participants from 18 to 19 have a high rate of mental health problems related to the parenting styles<sup>13</sup> like in another study in Abha, KSA where 17 years old revealed high rate of mental health problems too<sup>19</sup>. This study has bridged the gap by including medical students as participants, compared to most of the searched related studies, which involved only

preschools, elementary schools and high schools<sup>19</sup>. In one study, it revealed that parents with lower socioeconomic status did not have enough time and energy to meet their children's attachment needs, resulting in emotional neglect<sup>24</sup> and use of discipline and harsh parenting with the family earnings of 5,000–10,000 SAR range<sup>15</sup>.

Saudi families are traditionally patrilineal and patrilocal. The whole extended family has historically lived together as a tribe or clan. However, due to rapid urbanization over the last few decades, the nuclear family arrangement has become more traditional. Arab families are known for having a large number of children, ranging from 5–10<sup>19</sup> compared to a 73% composition of 5–10 family members or siblings

yielding a positive relationship with mental health<sup>23</sup>.

The Arab society is mostly patriarchal. The father is considered the head of households. Men have the most control and are responsible for the primary income of the family and its security and safety. Females are responsible for the domestic space and are expected to look after their husbands. Today, sharing financial control of the household is typical for both men and women. Many Saudi families now also have domestic employees depending on the family's financial capacity and size<sup>23</sup>.

Both Saudi parents in this study are over controlling. Over controlling parents are rigid and has strict set of guidelines they expect the child to<sup>6,24</sup>. Adolescents under stress and suffering from anxiety and depression have these mental health problems associated with over controlling parents. They usually show signs that include changes in behavior and conduct, like overreacting, emotional vulnerability, difficulty in relating with peers, changes in the way they think about themselves, low self-esteem, negative thoughts, and so forth. This finding is incongruent where emotional warmth and overprotection were significantly more often perceived from mothers than from fathers<sup>15</sup>.

The high prevalence of stress, anxiety and depression in this study is depressing and is attributed to the paternal parenting style, which was responsible for about 15.5% of mental health problems<sup>19</sup>; social anxiety among children<sup>26,27,28</sup>, authoritarian (over control) and more depressive behavior<sup>26</sup>, depression and anxiety<sup>16</sup>. Family functioning can also influence children's social anxiety<sup>29, 30</sup>. Overprotection and unnecessary interference were more likely to raise the social anxiety of children<sup>31,32</sup>.

On the other hand, the current findings negate existing research that indicates mothers' overprotection increases children's social anxiety<sup>32</sup>

and maternal overprotection is related to general anxiety<sup>4, 33</sup> and social anxiety; the indifference parenting style is related with stress; and the abusive parenting style with stress, anxiety and depression, leaving abuse and stress with the paternal parenting style<sup>4</sup>. The emotional warmth of fathers can minimize the social anxiety of teenagers, while maternal overprotection can increase it<sup>16</sup>. The results of this study support that mothers play a significant role in adolescents' mental health in the KSA, but fathers have a more substantial influence in the development of mental health problems<sup>27, 34</sup> where mothers play a significant role and fathers play a moderately more critical role. Significantly, in Arab countries, where the father is the critical provider of family income in general, the fathers expend more time and energy coping with work mobility and uncertainty, leaving them with little time and opportunity to engage with their children or demonstrate their appreciation and emotional warmth through authoritative styles of parenting. In a traditional family, Arab fathers also have a higher status, are considered to be the head of the family and are to be revered and obeyed by all family members.

## Conclusion

In conclusion, the female adolescents of one university in KSA, reported a high rate of mental health problems, and the majority of the maternal and paternal parenting styles experienced were over controlling. A significant relationship was seen only between the father's parenting style and the mental health (depression and anxiety) of the participants.

Parenting style is a crucial foundation toward good and positive mental health. Mental health represents one of the major health issues affecting adolescents, yet the provision of mental services is weak at present<sup>19</sup>. Students from allied health sciences need to have better knowledge and a deep awareness of their

mental health so they can be efficient and effective in rendering care through concentration, communication, time management and critical thinking to make the correct judgment. The allied healthcare educators need to be knowledgeable about assessing students with mental health problems so as to determine those with problems at an early stage and offer solutions or treatments to deal with such problems. Parents need to be aware and be educated about ways of healthy parenting and mental health problems in children. Healthy parenting practices include listening to children; having conversations with them about the details of their day, solving the problems they face; providing positive motivation; and being good role models. General practitioners and other primary care providers need to educate the community about the importance of parenting styles that should be built on respect; love and logical punishment when children make mistakes to help parents better engage the youth, to recognize mental health problems and to deliver simple treatments, including supportive counseling and behavior therapy. Finally, future researchers need to conduct further research to broaden the scope on what works best for society and different cultures. These studies may identify the parenting style that yields the best result for mental health.

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### References

1. American Nurses Association. Mind, Body & Spirit: How Nurses stay healthy through stress. Stevenson University. [Internet]. 2017 [cited 11 August 2021]. Available from: <https://www.stevenson.edu/online/about-us/news/how-nurses-stay-healthy-through-stress>.
2. Singh S. Parenting Style in Relation to Children's Mental Health and Self-Esteem: A Review of Literature. *Indian Journal of Health and Wellbeing* 8 (2017): 1522-1527. Available from: <http://www.i-scholar.in/index.php/ijhw/article/view/165379>.
3. Orenstein GA, Lewis L. Erikson's Stages of Psychosocial Development. [Updated 2020 Nov 22]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK556096/>
4. Jahan A, Suri S. Parenting Style in Relation to Mental Health among Female Adolescents. *AbnormBehav Psychol.* 2016; 2: 125. doi: 10.4172/2472-0496.1000125. Available from: <https://www.hilarispublisher.com/open-access/parenting-style-in-relation-to-mental-health-among-female-adolescents-2472-0496-1000125.pdf>
5. Baumrind D. Current patterns of parental authority. [Richmond, Va.]: American Psychological Assn.; 1971
6. Maccoby EE and Martin JA. Socialization in the context of the family: Parent-child interaction. In P Mussen and EM Hetherington, editors, *Handbook of Child Psychology*, volume IV: Socialization, personality, and social development. 1983; chapter 1, pages 1-101. New York: Wiley, 4th edition
7. World Health Organization. Mental Health: Strengthening our response. [Internet]. 2018 [cited March 20, 2020]. Available from: <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>.
8. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 2013; (5th Ed.). Washington, DC
9. Kazdin A. *Encyclopedia of Psychology*. Washington, D.C: American Psychological Association, Oxford



- [Oxford shire]; New York: Oxford University Press.2000
10. McNeely C & Blanchard J. *The Teen Years Explained: A Guide to Healthy Adolescent Development*. Center for Adolescent Health, Johns Hopkins Bloomberg School of Public health, Baltimore, USA. 2009. ISBN 978-0-615-30246-1. Available from: [https://www.jhsph.edu/research/centers-and-institutes/center-for-adolescent-health/\\_docs/TTYE-Guide.pdf](https://www.jhsph.edu/research/centers-and-institutes/center-for-adolescent-health/_docs/TTYE-Guide.pdf)
  11. Saudi families' average monthly income reaches SAR 14,800 in 2018 [Internet]. ArgaamPlus. 2019 [cited 11 August 2021]. Available from: <https://www.argaam.com/en/article/articledetail/id/607900>
  12. Laboviti B. Perceived Parenting Styles and their Impact on Depressive Symptoms in Adolescent 15-18 Years Old. **Journal of Educational and Social Research**, [S.l.], v. 5, n. 1, p. 171, Jan. 2015. ISSN 2240-0524. Available at: <https://www.mcser.org/journal/index.php/jesr/article/view/5609>.
  13. Ghanbarpour F, Ahmadvand MA. Investigating the relationship between perceived parenting styles and mental health of high school girls. *J Adv Pharm Edu Res* 2019; 9(S2):122-125. [Internet]. 2011 [cited 11 August 2021]. Available from: <https://japer.in/storage/models/article/HvqNWIRTvZ95cuupI4nhxu792ixJpXQjckba66tN452lSgO35gvKbp9oIVFy/investigating-the-relationship-between-perceived-parenting-styles-and-mental-health-of-high-school.pdf>
  14. Jahan A, Suri S. Parenting Style in Relation to Mental Health among Female Adolescents. *AbnormBehav Psychol*.2016; 2: 125. doi: 10.4172/2472-0496.1000125. Available from: [https://www.hilarispublisher.com/open-access/parenting-style-in-relation-to-mental-health-](https://www.hilarispublisher.com/open-access/parenting-style-in-relation-to-mental-health-among-female-adolescents-2472-0496-1000125.pdf)
  15. Yazdani S & Daryei G. Parenting styles and psychosocial adjustment of gifted and normal adolescents. *Pacific Science Review B: Humanities and Social Sciences*. 2016; Volume 2, Issue 3, Pages 100-105. Available from: <https://doi.org/10.1016/j.psrb.2016.09.019> / <https://www.sciencedirect.com/science/article/pii/S2405883116300351>
  16. Xu J, Ni S, Ran M and Zhang C. The Relationship between Parenting Styles and Adolescents' Social Anxiety in Migrant Families: A Study in Guangdong, China. *Front. Psychol*. 2017; 8:626. doi: 10.3389/fpsyg.2017.00626. Available from: <https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00626/full>
  17. Mishra P and Kiran UV. Parenting style and social anxiety among adolescents. *Internat. J. Appl. Home Sci*. 2018; 5 (1): 117-123. Retrieved from: <http://scientificresearchjournal.com/wp->
  18. Johnsen A., Bjørknes R, Iversen AC, & Sandbæk M. School competence among adolescents in low-income families: Does parenting style matter? *Journal of Child and Family Studies*. 2018; 27(7), 2285–2294. <https://doi.org/10.1007/s10826-018-1051-2> Available from: <https://psycnet.apa.org/record/2018-11581-001>; [https://link.springer.com/article/10.1007/s10826-018-1051-2?utm\\_source=xmol&utm\\_medium=affiliate&utm\\_content=meta&utm\\_campaign=DDCN\\_1\\_GL01\\_metadata](https://link.springer.com/article/10.1007/s10826-018-1051-2?utm_source=xmol&utm_medium=affiliate&utm_content=meta&utm_campaign=DDCN_1_GL01_metadata)
  19. Mahfouz AA, Al-Gelban KS, Al Amri H, Khan MY, Abdelmoneim I, Daffalla AA, Shaban H, Mohammed AA. Adolescents' mental health in Abha city, southwestern Saudi Arabia. *Int J Psychiatry Med*. 2009; 39(2):169-77. doi: 10.2190/PM.39.2.e. PMID: 19860075.
  20. Baumrind, D. "The Influence of Parenting Style

- on Adolescent Competence and Substance Use.” *The Journal of Early Adolescence* 11: 56 - 95. [Internet].1991 [cited 11 August 2021]. Available from: <https://www.semanticscholar.org/paper/The-Influence-of-Parenting-Style-on-Adolescent-and-Baumrind/9552c0890230f5f2191e06e7457ef05ca7fc5d56>
21. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav Res Ther.* 1995 Mar;33(3):335-43
  22. Parker G, Roussos J, Hadzi-Pavlovic D, Mitchell P, Wilhelm K, Austin MP. The development of a refined measure of dysfunctional parenting and assessment of its relevance in patients with affective disorders. *Psychol Med.* 1997 Sep;27(5):1193-203. doi: 10.1017/s003329179700545x. PMID: 9300523.
  23. Al Lily A. The Bro Code of Saudi Culture: Describing the Saudi from Head to Toe [Internet]. 2018 [cited 11 August 2021]. Available from: <https://www.kobo.com/us/en/ebook/the-bro-code-of-saudi-culture>
  24. Rivers J, Mulis AK, Fortner LI, & Mullis RL. Relationship between Parenting Style and Academic Performance of Adolescent. *Journal of Family Social Work.* 2012; 15(3), 202-216, DOI: 10.1080/10522158.2012.666644
  25. Jamir T & Longkumer I. Parenting Style among Naga Fathers: Association with Social and Emotional Adjustments of Adolescents: *Indian Journal of Community Psychology.* 2017; Vol 13 (2), 397-402
  26. Joshi A, Ferris JC, Otto AL, Regan PC. Parenting styles and academic achievement in college students. *Psychol Rep.* 2003 Dec;93(3 Pt 1):823-8. doi: 10.2466/pr0.2003.93.3.823. PMID: 14723450. Available from: <https://pubmed.ncbi.nlm.nih.gov/14723450/>
  27. Bögels S, Phares V. Fathers’ role in the etiology, prevention and treatment of child anxiety: a review and new model. *Clin Psychol Rev.* 2008 Apr;28(4):539-58. doi: 10.1016/j.cpr.2007.07.011. Epub 2007 Jul 27. PMID: 17854963. [Internet]. 2011 [cited 11 August 2021]. Available from: [https://pubmed.ncbi.nlm.nih.gov/17854963](https://pubmed.ncbi.nlm.nih.gov/17854963/) /<https://acamh.onlinelibrary.wiley.com/doi/10.1111/j.1469-7610.2010.02345.x>
  28. Degnan KA, Almas AN, Fox NA. Temperament and the environment in the etiology of childhood anxiety. *J Child Psychol Psychiatry.* 2010 Apr;51(4):497-517. doi: 10.1111/j.1469-7610.2010.02228.x. Epub 2010 Feb 11. PMID: 20158575; PMCID: PMC2884043. [Internet]. 2011 [cited 11 August 2021]. Available from: <https://pubmed.ncbi.nlm.nih.gov/20158575/>
  29. Bögels S, Stevens J, Majdandžić M. Parenting and social anxiety: fathers’ versus mothers’ influence on their children’s anxiety in ambiguous social situations. *Child Psychol. Psychiatry* 52, 599-606. [Internet]. 2011 [cited 11 August 2021]. Available from: <https://acamh.onlinelibrary.wiley.com/doi/10.1111/j.1469-7610.2010.02345.x>
  30. Ma S, Wang J. Parenting factors and social anxiety: mediating role of self-acceptance. *China J. Health Psychol.* 2015; 23:899-901.
  31. Zhang QY, Li SQ. A path analysis of parenting style impacting on children’s peer relationships. *Chin. J. Clin. Psychol.* 2011; 19:240-243.
  32. Verhoeven M, Bögels SM, van der Bruggen CC. Unique Roles of Mothering and Fathering in Child Anxiety; Moderation by Child’s Age and Gender. *J Child Fam Stud.* 2012 Apr; 21(2):331-343. doi: 10.1007/s10826-011-9483-y. Epub

- 2011 Apr 20. PMID: 22448108; PMCID: PMC3304056. [org/10.1080/07317100903099274](https://doi.org/10.1080/07317100903099274)
33. Rorka KE and Morriss TL. Influence of parenting factors on childhood social anxiety: direct observation of parental warmth and control. *Child Fam. Behav. Ther.* 2009; 31, 220-235. Retrieved from: <https://doi.org/10.1080/10615801003596951>
34. Majdandžić M, de Vente W, and Bögels S. Rearing histories of individuals with and without social anxiety who become first time parents. *Anxiety Stress Coping.* 2010; 23, 243-258. Retrieved from: <https://doi.org/10.1080/10615801003596951>

# Knowledge, Attitude, and Practice Regarding COVID-19 among Community Health Nurses

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## Abstract

**Background:** Corona Virus Disease 2019 also known as COVID-19 is a rapidly expanding pandemic caused by a novel human Corona Virus (SARS-COV-2). This is posing a threat at global level and needs an urgent intervention and control measures. The community health nurses are front line warriors in providing primary health care. The knowledge and attitude greatly influences the behaviour pattern of people, therefore this descriptive cross-sectional study assessed the Knowledge, Attitude, and Practice regarding COVID-19 among Community Health Nurses at College of Nursing, Christian Medical College, Vellore, India.

**Methods:** Using total enumeration sampling method, a structured self-administered questionnaire was given to all the Community Health Nurses and data were obtained. The questionnaire assesses the demographic and personal profile of participants, Knowledge, Attitude, and Practice regarding COVID-19, which is developed by the investigator using the WHO module on “Emerging respiratory viruses, including COVID-19, methods for detection, prevention, response and control” and CDC – Corona Virus Disease 2019 modules.

**Conclusion:** This study reveals that 10.8% among the community health nurses had adequate knowledge regarding COVID-19, 44.2% had favourable attitude towards COVID-19 and 98.3% had adequate practices related to prevention of COVID-19. There was a significant correlation found between Knowledge and Practice ( $p= 0.002$ ), Attitude and Practice ( $p= 0.001$ ) of the Community Health Nurses which was statistically significant. There were significant association found between the demographic variables such as qualification ( $p=0.020$ ) and the level of knowledge, education ( $p=0.015$ ) and knowledge and years of experience of the community health nurses ( $p=0.009$ ) and their attitude.

**Key words:** Corona Virus Disease, COVID-19, Community Health Nurses, awareness.

## Introduction

COVID-19 is transmitted from person-to-person through inhalation of aerosols from an infected

individual. Old age and patients with pre-existing illnesses (like hypertension, cardiac disease, lung disease, cancer, or diabetes) have been identified as potential risk factors for severe disease and mortality. To this date, there is no antiviral curative treatment that has been recommended for COVID-19.

More information about its distribution, transmission, pathophysiology, treatment, and prevention are being studied. World Health

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Organization (WHO) recommends prevention of human-to-human transmission by protecting close contacts and health care workers from being infected and stopping infections from animal sources.<sup>[1]</sup> Primary preventive measures include regular hand washing, social distancing, and respiratory hygiene (covering mouth and nose while coughing or sneezing).<sup>[2]</sup> Healthcare workers (HCWs) are at the frontline of COVID-19 pandemic response and are exposed to dangers like pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout and stigma, and physical violence.<sup>[3]</sup> A poor understanding of the disease among HCWs can result in delayed identification and treatment leading to rapid spread of infections. Over 100 health workers have lost their lives to COVID-19, a tragedy to the world and a barrier to fight against the disease.<sup>[4]</sup> Guidelines for healthcare workers and online refresher courses have been developed by WHO, CDC, and various governmental organizations in various countries to boost the knowledge and prevention strategies.<sup>[5]</sup> A study with majorly Asian Health Care Workers and medical students revealed that they had insufficient knowledge about COVID-19 but had a positive attitude toward prevention of COVID-19 transmission.<sup>[6]</sup>

The community health nurses are the frontline health care providers in combating the global pandemic, who need to be equipped with adequate knowledge to protect and promote the health of the public. A learning needs assessment would enable the investigator to provide an education session to empower the nurses in providing care to the community. As there is social stigma attached to this disease, it is essential that a nurse needs to carry a positive attitude in caring for the patients and family with COVID-19. Hence a study on knowledge, attitude and practice regarding COVID-19 among community health nurses would give way for planning future continuing education programme and further related

studies.

### **Objectives**

1. To assess the Knowledge, Attitude, and Practice of Community Health Nurses regarding COVID – 19.
2. To find the relationship between the Knowledge, Attitude and Practice of Community Health Nurses regarding COVID – 19.
3. To find the association between the Knowledge, Attitude and Practice of Community Health Nurses regarding COVID-19 and their demographic variables.

### **Methods**

#### **Design and sampling**

A descriptive cross- sectional study was carried out to assess the knowledge, attitude and practice regarding COVID-19 among Community Health Nurses at College of Nursing, Christian Medical College, Vellore, India. Using total enumeration sampling method, a structured self-administered questionnaire was given to all the community health nurses and data were obtained.

#### **Instruments**

The questionnaire assesses the demographic and personal profile of the participants' knowledge, attitude and practice regarding COVID-19, which was developed by the investigator using the WHO module on "Emerging respiratory viruses, including COVID-19, methods for detection, prevention, response and control" and CDC – corona virus disease 2019 modules. The validity and reliability was established by doing a pilot study for 10% the participants. The content validity index of the questionnaire was 0.90.

The demographic profile includes their age, religion, marital status, qualification, designation and years of experience; personal variables includes the

details of their workplace and exposure to the resources about COVID-19. The knowledge represents the understanding of the staff regarding COVID-19 which will be measured by a questionnaire on characteristics of the disease, symptoms, incubation time, route of transmission, investigation, treatment, home, hospital and community quarantine, care patient at home and hospital, prevention and control of the disease. The attitude represents the feelings and belief of the staff regarding COVID-19 which is measured using a 5 point likert scale. The practice refers to the behaviour of the staff regarding prevention and control of COVID-19 which is measured by a 5 point likert scale.

Knowledge of the staff regarding COVID-19 was assessed using a questionnaire which includes 22 questions. The correct answers were awarded 1 point and the incorrect points were awarded 0 point. The overall knowledge score ranged from 0 to 22 which were converted to percentages. Individuals scoring <50% were categorized as having inadequate knowledge, 51-75% as having moderate knowledge and above 76% as adequate knowledge regarding COVID-19.

Attitude of the staff was assessed using 5 point likert scale with 12 statements. The total attitude scale ranged from 0 to 60, which was converted to percentages. A score of <50% was classified as unfavourable, 51-75% as moderately favourable, and more than 76% as highly favourable attitude towards COVID-19 respectively.

Practice regarding COVID-19 was assessed using 12 questions with a 5 point likert scale with total

scores ranging from 0 – 60, which was converted to percentages. A score of <50% was classified as inadequate, 51-75% as moderately adequate and above 76% as adequate practice towards COVID-19 respectively.

### **Data collection and analysis**

Permission was obtained from research committee of College of Nursing and the Head of the Department. The study was conducted during June 2020 among the Community Health Nurses in College of Nursing, Christian Medical College, Vellore, after obtaining a written informed consent.

The data collected were entered and analyzed using SPSS 25.0. All study variables were summarized using descriptive statistics and inferential statistics. The Chi-square test was used to compare categorical data. Pearsons correlation coefficient was used to find the relationship between the knowledge, attitude and practice of the community health nurses towards COVID-19. The Chi-square test was used to determine the association between demographic variables and Knowledge, Attitude and Practices of the community health nurses regarding COVID-19.

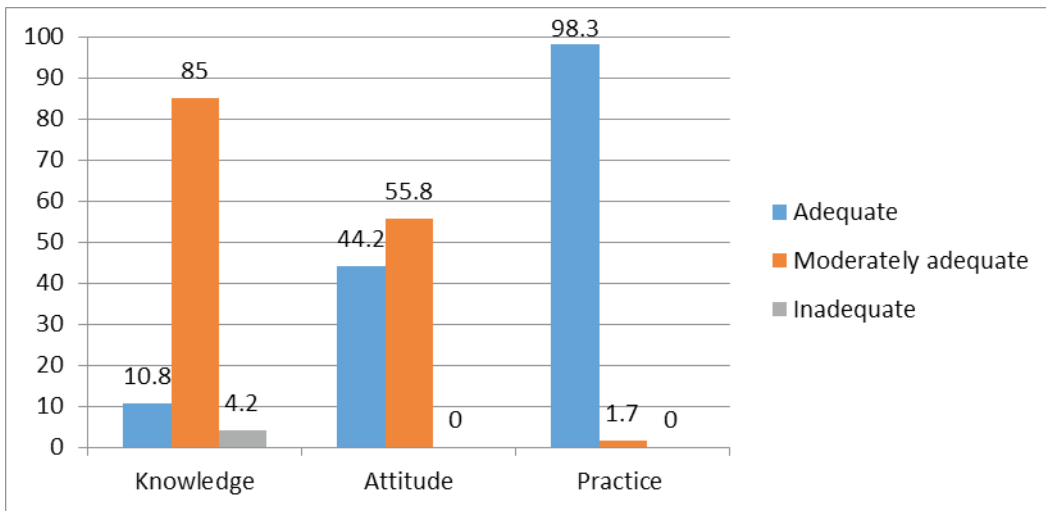
### **Results and Discussion**

In this study, majority of the community health nurses are than 25 years of age (78.4%), most of them are unmarried (79.2%), majority of them are staff nurses (92.5%) with less than one year of experience (56.7%) and 5.83% of them recovered from COVID-19 [Table 1].



**Table 1: Description of the demographic variables of community health nurses**

Demographic variables	n (%)
Age in years <25 26-45 >46	94(78.4) 19(15.8) 7(05.8)
Gender Male Female	2 (01.7) 118 (98.3)
Religion Christian Hindu Muslim	91 (75.8) 28 (23.3) 1 (0.8)
Marital status Married Unmarried	25 (20.8) 95 (79.2)
Qualification BSc GNM PBBSc	77 (64.2) 36 (30.0) 7 (5.8)
Designation Staff Tutor	111 (92.5) 9 (7.5)
Years of experience <1 2-5 6-25 >25	68 (56.7) 38 (31.7) 7 (5.8) 7 (5.8)
Exposure to education Yes No	61 (50.8) 59 (49.2)
Affected with Covid-19 Yes No	7 (5.83) 113 (94.17)
Quarantined Yes No	36 (30.0) 84 (70.0)



**Figure 1: Level of knowledge, attitude and practice regarding COVID-19 among community health nurses**

Knowledge and awareness of mode of disease transmission, basic hygiene principles and measures in public health crisis are vitally important for developing effective control measures. This study reveals that among the community health nurses 10.8% had adequate knowledge, 44.2% had favourable attitude and 98.3% had adequate practices related to prevention of COVID-19. A similar population based

study was conducted in Iran among 8591 people to evaluate the knowledge, attitude and practice of Iranians at the time of COVID-19 pandemic, which reveals that 60.8% of them had adequate knowledge. Regarding attitude and practice towards COVID-19, an overall score of 90% and 89% were achieved among the given population. [7]

**Table 2: Correlation between knowledge, attitude and practice of the community health nurses regarding COVID-19.**

Variables	r value	p value
Knowledge and attitude	.029	.199
Knowledge and practice	.805	.002*
Attitude and practice	.868	.001*

\* Correlation is significant at the 0.05 level

Table 2 shows that was a significant relationship between knowledge and practice (p=.002) and attitude and practice (p=.001) of the community health nurses regarding COVID-19. A study with majorly Asian Health Care Workers and medical students revealed that they had insufficient knowledge about COVID-19

but had a positive attitude toward prevention of COVID-19 transmission. [6]

**Association between demographic variables and the knowledge, attitude and practice of community health nurse towards COVID-19**

There was a significant association found between qualification ( $p = 0.020$ ) and the level of knowledge of community health nurses. A significant association was found between exposure to in-service-education ( $p = 0.015$ ) and knowledge of the community health nurses regarding COVID-19. There was also a significant association found between years of the community health nurses ( $p = 0.009$ ) and their attitude. Similarly a study was conducted among Chinese residents on knowledge, attitude and practice towards COVID-19 during the rapid of the outbreak, which reveals that most Chinese residents of a relatively high socioeconomic status, in particular women, are knowledgeable about COVID-19, hold optimistic attitudes and have appropriate practices towards COVID-19. Health education programs aimed at improving COVID-19 knowledge are helpful for Chinese residents to hold optimistic attitudes and maintain appropriate practices. [8]

### Conclusion

World Health Organization and Centre for Disease Control provides a tool kit of interventions that countries can select and calibrate based on their local context. National and local authorities must, balance interventions to address the direct health impact of COVID-19 with strategies to limit short-term and long-term consequences on health and socioeconomic wellbeing. However it is the fundamental responsibility of the primary health care services in combating against this deadly pandemic. This also poses the community health care workers a great challenge to be prepared for any kind of unprecedented threat to the people around the world.

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**Ethical Clearance:** The study was approved by

the College of Nursing Research Committee, CMC, Vellore.

### References

1. World Health Organisation. Coronavirus Disease (COVID-19) Advice for the Public. (2020). Available online at: [www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public) (Last accessed April 01, 2020).
2. World Health Organisation. Coronavirus Disease (COVID-19) Outbreak: Rights, Roles and Responsibilities of Health Workers, Including Key Considerations for Occupational Safety and Health. (2020). Available online at: [www.who.int/publications-detail/coronavirus-disease-\(covid-19\)-outbreak-rights-roles-and-responsibilities-of-health-workers-including-key-considerations-for-occupational-safety-and-health](http://www.who.int/publications-detail/coronavirus-disease-(covid-19)-outbreak-rights-roles-and-responsibilities-of-health-workers-including-key-considerations-for-occupational-safety-and-health) (Last accessed April 05, 2020).
3. World Health Organisation. Coronavirus disease 2019 (COVID-19) Situation Report - 90. Geneva: WHO. (2020). Available online at: [www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports) (Last accessed April 20, 2020).
4. MedScape. In Memoriam: Healthcare Workers Who Have Died of COVID-19. (2020). Available online at: [www.medscape.com/viewarticle/927976](http://www.medscape.com/viewarticle/927976) (Last accessed April 06, 2020).
5. World Health Organisation. Emerging Respiratory Viruses, Including COVID-19: Methods for Detection, Prevention, Response and Control. (2020). Available online at: [www.openwho.org/courses/introduction-to-ncov](http://www.openwho.org/courses/introduction-to-ncov) (Last accessed March 18, 2020).
6. Bhagavathula AS, Aldhaleei WA, Rahmani J, Mahabadi MA, Bandari DK. Novel coronavirus (COVID-19) knowledge and perceptions: a survey on healthcare workers. medRxiv.

- [Preprint]. (2020). doi: 10.2196/19160). (Last accessed on April 10, 2020)
7. Erfani A, Shahriarirad R, Ranjbar K, Mirahmadizadeh A & Moghadami M. Knowledge, Attitude and Practice toward the Novel Coronavirus (COVID-19) Outbreak: A Population-Based Survey in Iran. [Preprint]. Bull World Health Organ. E-pub: 30 March 2020. doi: <http://dx.doi.org/10.2471/BLT.20.256651> (Last accessed on September 12, 2020)
  8. Bao-Liang Zhong, Wei Luo, Hai-Mei Li, Qian-Qian Zhang, Xiao-Ge Liu, Wen-Tian Li, Yi Li. 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. *International Journal of Biological Sciences* 2020; 16(10): 1745-1752. doi: 10.7150/ijbs.45221 (Last accessed on September 12, 2020)

# Application of Henderson Theory on Nursing Care for Bullous Pemphigus Patients at Khartoum Dermatology Hospital, Sudan

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## Abstract

**Background:** Bullous Pemphigus (BP) is a group of life-threatening autoimmune bullous diseases characterized by flaccid blisters and erosions of the mucous membranes and skin. Autonomy and Independence theory adopted by Virginia Henderson to care for people affected by bullous pemphigus diseases help nurses during their job to assist those patients. **Main body:** The aim of this study was to assess the effect of application of Henderson theory on nursing care for bullous pemphigus patients.

**Patients and methods:** quasi experimental pretest- posttest design carried out on 31 nurses working in Khartoum dermatology and venereology hospital.

**Results:** Virtually 63% of nurses didn't have perfect knowledge regarding nursing care for pemphigus diseased patients based on the concept of Henderson theory following application program, nurses knowledge rose to 80.73%. The percentage revealed statistically significant improvement on nurses knowledge (P-value < 0.001). The practical activities of the nurses showed significant improvement on physiological concepts assessments from 49.06% to 77.7%. Emotional and mental concepts from 14.00% to 68.8, social and spiritual concepts from 22.00% to 71.1%, (P-value < 0.001).

**Conclusion:** Utilization of Henderson theory into clinical practice induced significant change on knowledge and practice among nurses in respect to nursing care for pemphigus diseased patients.

**Recommendations:** Utilizations of theory and theory-based evidence to structure their practice, it improves the quality of care and safe time.

Organization of regular educational program which gives a chance to reassess proper application of nursing theories concepts in clinical practice.

**Keywords:** Henderson theory, bullous pemphigus, nursing care, Dermatology, Sudan.

## Introduction

Nursing theory is an organized systematic articulation of a set of statements related to questions in the discipline of nursing. It is a set of concepts, definitions, relationships and assumptions or

propositions derived from nursing model or from other discipline and project purposive ,systematic view of phenomena by designing specific inter-relationships among concepts for describing , explaining , predicting and prescribing <sup>[1],[2]</sup>.

Recently the relationship between theory and research has received more attention. It seems that in the past 10 to 15 years more research studies have been published that are more or less conceptualized studies within nursing theories [3]. However, it is not always clear how the theory has been used. To this end, papers published in six nursing journals between 1986 and 1990 has been studied [1],[3]. The use of nursing theories in nursing research studies increased from 13% to 21%, but the use of nursing theories has not become more frequent [4]. The application of nursing theories into clinical practice varies from context to context. But addressing the need of patient is crucial in providing quality care, across the globe. There is hardly any local literature regarding theory application into practice in our setting [1].

Pemphigus encompasses a group of life-threatening autoimmune bullous diseases characterized by flaccid blisters and erosions of the mucous membranes and skin. The severity of the disease is based on its progressive course which is accompanied by an increased body catabolism with loss of body fluids and proteins and secondary bacterial and viral infections which may lead to sepsis and cardiac failure. Before the advent of systemic corticosteroids, the prognosis of pemphigus was almost fatal within two years after making the diagnosis [5].

Previous study of bullous pemphigus has reported incidences between 0.2 and 3 per 100 000 people per year, these ratios are higher in older age groups and some studies report association with sex. In the United Kingdom, a regional study estimated an incidence of 1.4 per 100 000 person years [6]. Wide variation in mortality is reported, with one year mortality varying between 6% in the United State and 41% in France [6].

Previous reports from Khartoum Dermatology hospital in Sudan reflect that the incidence of pemphigus patient's admission in 2013 equal 36.2%

and the mortality rate equal 5%, in 2014 the admission rate was 31% and mortality rate 3% (hospital records).

The experience of caring for people affected by bullous pemphigus diseases over twelve years has revealed the importance of skilled nursing care for the prevention of aggravations promoting the welfare/comfort and lifetime maintenance of those affected. The complexity of the picture presented by the patients hospitalized with the pathology cited is due to the pain involved, the severe prognosis, the disfiguring character of the extensive injuries, and their impact on the social and emotional spheres [5],[7].

Therefore, the Need and Independence theory adopted by Virginia Henderson utilization to care for people affected by bullous pemphigus diseases help nurse during her job to assist those patients to be able to care for themselves when they leave the healthcare facility. This will help ensure that the patient has fewer setbacks during transition into self-care be smoother since a nurse will be help and supervise patients until the go home ,Henderson theory is one that can be easily used every day ,and it will be the patients who benefit from it [8].

## **Material and Methods**

### *Study design and participants*

The study design was Quantitative Quasi experimental pretest –posttest design to assess the effect of application of Henderson theory on nursing care for bullous pemphigus patients. A total coverage (n=31) of nurses working in Khartoum Dermatology and venereology hospital was included in this study.

### *Tools of the study*

Tow tools were utilized to gather data for the study these tools are, *A-Structured questionnaire*; through close ended questioner covered nurse's knowledge regarding care for patients with bullous



pemphigus diseases-based on utilizations of the concept of physiological, psychological, sociological, and spiritual components of Henderson theory (17 Questions). The questionnaire was checked with model answer and given one point if the answer is correct and zero point if the answer is incorrect. These points were summated up for knowledge score, from 80%-100% indicate high knowledge, 60%-79% medium knowledge, 50%-59% indicate very low knowledge, and < 50 indicate poor knowledge. *Observational check list*; cover nurses practices regarding physiological, psychological, sociological, and spiritual caring for the patient with Vesicle Bullous pemphigus diseases. It consists of (23 items) regarding fourteen (Breathing normally, Eat and drink adequately, Elimination of body wastes, Movement and Posturing, Sleep and Rest, select suitable clothes dress and Un dress, Maintain body temperature,

The check list was divided into three categories that the nurse achieved in nursing care for pemphigus diseased patients; those categories were checked to assess their effect on nurses performances regarding application of Henderson theory concepts. If the concept was always done the score was 1 if concept was sometimes done gave score 2 and score 3 if not done.

## Data Analysis

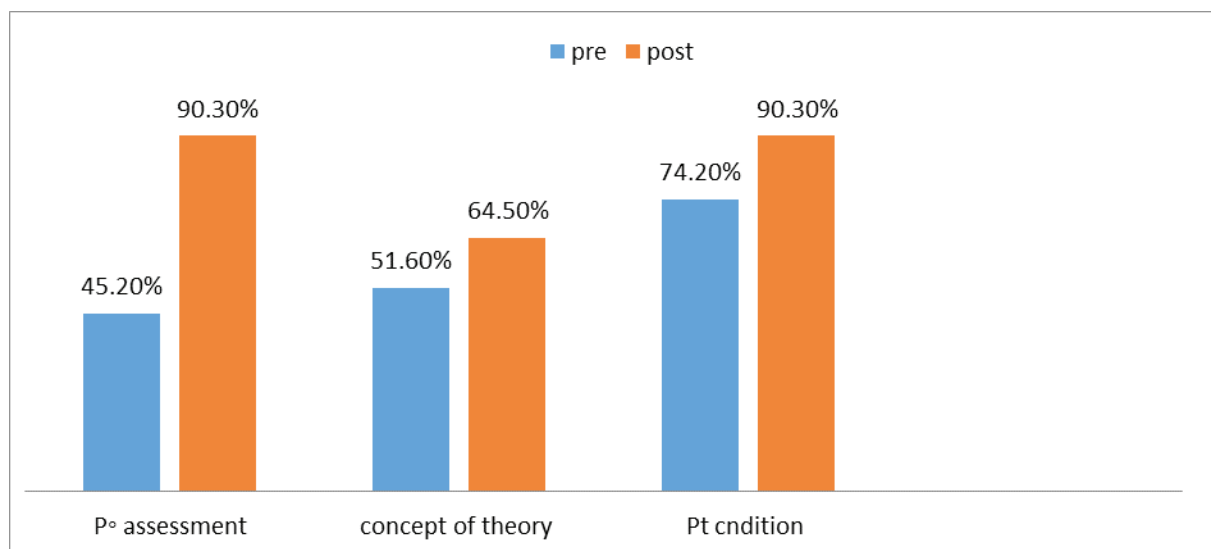
Data were analyzed using SPSS software version 20.0. Descriptive statistics in the form of frequencies and percentages are used for qualitative variables and McNamar test was used to test the difference in proportion of correct responses before and after the program. P-values <0.05 was considered statistically significant.

## Results

The present study aimed to assess the possibility to application of Autonomy and Independence nursing theory on patients with Vesicle bullous pemphigus diseases in Khartoum dermatology and venereology hospital, total of 31nurses were included in the study.

Table 1 illustrates that 71% of study participants were female. Most of study participants age more than 45 years 71%. Majority of study participants qualifications were diploma 71%. Majority of study participants experience was more than 5 years 84%.

Figure 1 represented nurses knowledge regarding application of nursing processes, 45.2% of nurses answers based on primary assessment pre intervention and 90.3% post intervention. Regarding concept of nursing theory most of nurses moderate knowledge 51.6% pre intervention and 64.5% post intervention. Majority of nurses had good knowledge about assessment of patient condition pre intervention 74.2% and 90.3% post intervention.



**Figure 1: Nurses knowledge regarding application of nursing processes**

Regarding nurses practice in application of autonomy and independence theory concepts for vesicle bullous pemphigus diseased patients pre and post interventions all items (23) significantly changed post intervention except advice patient to keep his/her body clean as shown in table 2.

Gender distribution among participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Male	9	29.0	29.0	29.0
	Female	22	71.0	71.0	100.0
	Total	31	100.0	100.0	
Age distribution among participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
	35- 44	9	29.0	29.0	29.0
	> 44	22	71.0	71.0	100.0
	Total	31	100.0	100.0	
Level of education among participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
	Diploma	22	71.0	71.0	71.0
	Bachelor	7	22.6	22.6	93.5
	Master	1	3.2	3.2	96.8
	Doctorate	1	3.2	3.2	100.0
	Total	31	100.0	100.0	
Level of experiences among participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
	< 1 Year	1	3.2	3.2	3.2
	1 - 5 Years	4	12.9	12.9	16.1
	More than 5 Years	26	83.9	83.9	100.0
	Total	31	100.0	100.0	

**Table (2): Nurses practice regarding application of Autonomy and Independence theory concepts for vesicle bullous pemphigus diseased patients pre and post interventions (n= 31)**

N	Items	Always done		Sometimes done		Not done		P value
		Pre	Post	Pre	Post	Pre	Post	
1	Explain procedure	31 (100)	31(100%)	non	non	non	non	.000* *
2	Assess respiratory rate	11(35.5)	23(74.2)	20(64.5)	8(25.8)	non	non	.000* *
3	Assess breathing pattern	18(58.1)	25(80.6)	13(41.9)	6(19.4)	non	non	.006* *
4	Assist patient if he/she had respiratory problem	23(74.2)	28(90.3)	8(25.8)	3(9.7)	non	non	.001* *
5	Assess temperature	16(51.6)	19(61.3)	15(48.4)	12(38.7)	non	non	.083*
6	Assess bowel elimination pattern	10(32.3)	19(61.3)	15(48.4)	12(38.7)	6(19.4)	non	.000* *
7	Assist patient if he/she had elimination problem	11(35.5)	22(71.0)	12(38.7)	6(19.4)	8(25.8)	3(9.7)	.000* *
8	Assess fluid intake and out put	13(41.9)	23(74.2)	10(32.3)	5(16.1)	8(25.8)	3(9.7)	.014* *
9	Assess nutritional status	11(35.5)	24(77.4)	15(48.4)	6(19.4)	5(16.1)	1(3.2)	.001* *
10	Assess patient to select suitable clothing	15(48.4)	25(80.6)	12(38.7)	5(16.1)	4(12.9)	1(3.2)	.000* *
11	Advice patient to keep his/her body clean	24(77.4)	26(83.9)	4(12.9)	5(16.1)	3(9.7)	Non	.540
12	Advice patient to avoid dangers	20(64.5)	26(83.9)	6(19.4)	5(16.1)	5(16.1)	Non	.014* *
13	Assist patient to communicate with others	7(22.6)	21(67.7)	16(51.6)	10(32.3)	8(25.8)	Non	.000* *
14	Assess spiritual status feeling	8(25.8)	17(54.8)	5(16.1)	6(19.4)	18(58.1)	8(25.8)	.001* *
15	Assist patient to change negative feeling to positive feeling	12(38.7)	23(74.2)	9(29.0)	8(19.4)	10(32.3)	2(6.5)	.000* *
16	Assist patient to cope with his condition	8(25.8)	23(74.2)	4(12.9)	6(19.4)	19(61.3)	7(22.6)	.000* *
17	Assist patient to work in such away	1(3.2)	18(58.1)	10(32.3)	6(19.4)	20(64.5)	7(22.6)	.000* *
18	Use teaching strategy	7(22.6)	21(67.7)	7(22.6)	5(16.1)	17(54.8)	5(16.1)	.000* *
19	Rehears patient response to number of interactions	5(16.1)	24(77.4)	26(83.9)	7(22.6)	Non	Non	.000* *
20	Assist patient to interact and adaptation	5(16.1)	21(67.7)	12(38.7)	7(22.6)	14(45.2)	3(9.7)	.000* *
21	Empower patient knowledge regarding health status	6(19.4)	21(64.5)	4(12.9)	5(16.1)	21(67.7)	5(16.1)	.000* *
22	Assess patient to improve intersection	5(16.1)	24(77.4)	26(83.9)	7(22.6)	Non	1(3.2)	.000*
23	Assist patient to provide volume clarification	2(6.5)	20(64.5)	5(16.1)	10(32.3)	24(77.4)	1(3.2)	.000*

## **Discussion**

Bollus pemphigus diseases are autoimmune diseases associated with chronic relapsing course which requires close monitoring of clinical symptoms of potential side effect of immunosuppressive treatments thus Autonomy and Independence theory adopted by Virginia Henderson to care for people affected by pemphigus diseases help nurses during their job to assist those patients to be able to care for themselves when they leave the healthcare facilities.

The purpose of the study was to assess the effectiveness of application of Autonomy and Independence on nursing care for bullous pemphigus diseases.

The outcomes of the study revealed that females are more than males. The greater sample size is 71% females and only 29% were male. However, there was no significant difference between female and male in quality of knowledge. This result mean female has more attitude for nursing occupation than male. Contrary to what was found in a study of Fottler et.al which find that sex male and female viewed as irrelevant consideration in term of nursing care [9].

Most of nurses, subject of study, have diploma degree 71%, about 26% have bachelor's degree (upgrading BSc) and 3% are holders of master's degree. The experiences of study groups were more than 5 years (84%) this results indicate that there is no nursing rotation program between dermatology hospital and other specialty departments in other hospitals.

This result indicates that the diploma is the dominant degree in this sample, which may reduce the opportunity to measure the efficiency of other academic degrees. Diploma isn't fulfilling the clinical demands of a large number of nurses [10].

In current study nurses had poor knowledge about skin layer pre intervention and there significantly improve in nurses knowledge after intervention because there is no teaching program for those nurses to improve their knowledge on dermatology section. This result is consistent with the study of Fadlalmola et al [11].

Bollus Pemphigus diseases are uncommon, severe, and potentially fatal autoimmune blistering disorders affecting the skin and mucous membranes. Nurses play important role in treatment intervention for affected patients by proper administration of instructed medications, proper dressing, and psychological reassurance. Hence nurses knowledge about bollous pemphigus diseases pre intervention were good knowledge regarding pemphigus valgauries pre and post intervention 93.5%- 96.8% because pemphigus valguries had high incidence and majority of patients affected by it [12],[13].

Henderson viewed the nursing process as an application of the logical approach to the solution of the problem. The nursing theory process comprises of six elements; Assessment, Nursing Diagnose, Outcome, Planning, Implementation and Evaluation [14].

A nurse uses a systematic and dynamic way to collect and analyze data about a client; the first step in delivering nursing care. Assessment includes not only physiological data, but also psychological, socio cultural, spiritual, economic, and life-style factors as well. Nurses knowledge regarding physiological assessments for ability of patient to do daily living activity pre and post intervention were excellence due to prolong experience period. Theirs significant change in nurses knowledge regarding primary assessment post interventions. This result is consistent with the study of Sager et al [15].

Regarding concept of nursing theory most of nurses moderate knowledge 51.6% pre intervention and increase post intervention 90.3% P value = .012 this result revealed that nurses practice was improve after use of theory concepts in nursing care [14].

Nurses knowledge about their role towards pemphigus' patients and their families coping based on psychological concept of Autonomy theory were 71.0% pre intervention and there is significant change post intervention 96.8 P value = .023. Nurses who lack particular information outside of his/her field of specialty, putting them in ethical and moral binds as they tries to meet the demands set [7].

One of the most contentious and enduring problems in nursing is the poor clinical observation and least integration of theoretical concepts into clinical practice. Nurses knowledge about regular training for the application of nursing theory. Nurses opinions regarding care quality were 80.6% pre intervention and 93.5% post intervention P value = .023 this result revealed that nurses understand the important of nursing theory application in quality care [16].

Regarding physiological concepts nurses practice were moderate pre interventions 54.6% and increase post interventions 78.2%. Regarding emotional and psychological concepts nurses practice were poor pre intervention (23.04%) and increase post interventions 69.1%. Regarding spiritual and moral concepts nurses performance were (16.1%) pre intervention and satisfactory post interventions (65.6% this result reflected that nurses performance were increase after application of autonomy nursing theory [17],[18].

### Conclusion

Utilization of nursing theory into clinical practice by making use of nursing theory process in a broader aspect. The need theory is relevant to clinical setting

and can serve as framework to recognize caring needs, deliver, and evaluate holistic nursing care. In addition, it was relevant to our settings as well and can help experienced nurses to collect reliable and valid data about the health status of clients, which sequentially enhance the quality of nursing care provided to the patients.

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### References

1. George JB. *Nursing theories: The Base for professional nursing practice, 6/e*. Pearson Education India, 2011.
2. McKenna H. Applying theories in practice. In *Nursing theories and models*. USA and Canada.
3. Alligood MR. *Nursing theorists and their work-e-book*. Elsevier Health Sciences, 2017.
4. Nicely B, DeLario GT. Virginia Henderson's principles and practice of nursing applied to organ donation after brain death. *Progress in Transplantation* 2011; 21: 72–77.
5. Guillen S, Khachemoune A. Pemphigus vulgaris: a short review for the practitioner. *Dermatology nursing*; 19.
6. Joly P, Litrowski N. Pemphigus group (vulgaris,

- vegetans, foliaceus, herpetiformis, brasiliensis). *Clinics in dermatology* 2011; 29: 432–436.
7. da Silva Brandão E, dos Santos I. Evidences related to the care of people with pemphigus vulgaris: a challenge to nursing. *Online Brazilian Journal of Nursing* 2013; 12: 162–177.
  8. Buchillet D. *Bibliografia crítica da saúde indígena no Brasil (1844-2006)*. Editorial Abya Yala, 2007.
  9. Fottler MD. Attitudes of female nurses toward the male nurse: A study of occupational segregation. *Journal of Health and Social Behavior* 1976; 98–110.
  10. Glackin M, Glackin MM. Investigation into experiences of older students undertaking a Pre-registration Diploma in Nursing. *Nurse Education Today* 1998; 18: 576–582.
  11. Fadlalmola HA, Elkareem EMA. Impact of an educational program on knowledge and quality of life among hemodialysis patients in Khartoum state. *International Journal of Africa Nursing Sciences* 2020; 12: 100205.
  12. Bastuji-Garin S, Souissi R, Blum L, et al. Comparative epidemiology of pemphigus in Tunisia and France: unusual incidence of pemphigus foliaceus in young Tunisian women. *Journal of investigative dermatology* 1995; 104: 302–305.
  13. Spidey J, Nye AM. Bullous pemphigoid: corticosteroid treatment and adverse effects in long-term care patients. *The Consultant Pharmacist®* 2013; 28: 455–462.
  14. Ahtisham Y, Jacoline S. Integrating Nursing Theory and Process into Practice; Virginia's Henderson Need Theory. *International Journal of Caring Sciences*; 8.
  15. Sager MA, Dunham NC, Schwantes A, et al. Measurement of activities of daily living in hospitalized elderly: A comparison of self-report and performance-based methods. *Journal of the American Geriatrics Society* 1992; 40: 457–462.
  16. Magobe NBD, Beukes S, Müller A. Reasons for students' poor clinical competencies in the primary health care: clinical nursing, diagnosis treatment and care programme. *Health SA Gesondheid (Online)* 2010; 15: 1–6.
  17. Ruddy M. Models and theories of nursing. *Retrieved from: <http://library.stitch.edu>*.
  18. McEwen M. Future issues in nursing theory. *THEORETICAL BASIS* 2007; 497.



# Health Workers Compliance Towards Infection Prevention and Control in Indonesia

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## Abstract

**Background:** Hospital acquired infections (HAI) are main safety problems for health care providers and patients.

**Objectives:** To identify factors related to the compliance of health workers in implementing infection prevention and control in the district general hospital.

**Study Method:** This study is quantitative research using a correlational design with a cross sectional approach study. All included people in this study are all health workers who provide direct healthcare services to patients and work in the district general hospital, which amounts to a total of 148 people, consisting of 93 nurses, 41 midwives and 14 doctors, the sample is the entire population of health workers working in the district general hospital.

**Result:** There is no significant relationship between age and gender with compliance by health workers in implementing infection prevention and control ( $p > 0,05$ ), there is a significant relationship between education, employee status, training, years of experience, training, knowledge, attitude, and reward with compliance by health workers in implementing prevention and control on infections in the ward, emergency room, ICU, NICU and delivery room at the district general hospital in 2021 ( $p \leq 0,05$ ).

**Conclusion:** The most dominant factors that influence compliance by health workers in implementing infection prevention and control are reward variables.

**Keywords:** *Health workers; Indonesia; Infection control*

## Background

Hospital acquired infections (HAI) are main safety problems for health care providers and patients. Considering the level of morbidity, mortality, increase in the length of treatment days and costs, an effort has to be made in order to make hospitals safe by taking

measures to prevent the infections. The prevalence of HAI in developed countries variate between 3,5% to 12%. The prevalence of HAI in European countries are an average of 7,1%. In Europe it is estimated that 4.131.000 patients suffer from around 4.544.100 episodes of HAI each year. The estimated incidence rate of HAI in the US is 4,5% in 2019, or equal to 9,3 infections per 1.000 patient/days and as much as 1,7 million patients that were affected. *The proportion of patients that are infected in the ICU is as big as 51% and most of them happen in hospitals. Around 30%*

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*of patients in the ICU experience at least one episode of HAI. The longer the patient stays at the ICU, the higher their risk of contracting an infection. The high frequency of infection is associated with the use of invasive devices, more specifically central channel, urinary catheter and ventilators<sup>1</sup>.*

Further states that the prevalence of HAI in low and middle income countries in 2019 range between 5,7% and 19,1%. The proportion of HAI patients in the ICU range between 4,4%.to 88,9% with the total frequency reaching 42,7 episodes per 1000 patients per day. This number is almost three times higher than in high-income countries. In addition, in some developing countries, the frequency of infections that are associated with the use of central channels and ventilators as well as other invasive devices can reach 19 times higher than what was reported from German and the US<sup>2</sup>.

The incidence rate of HAI or nosocomial infection in public hospitals (district general hospital) in 2019 recorded cases of phlebitis as much as 1,97%. While other types of infections were not recorded. In 2020 due to the Covid-19 pandemic there were limitations for treatment days so that the amount of infections could not be measured. Based on the data from 2020, there are currently 140 health workers that work in the district general hospital who provide health services directly towards patients, with the health workers consisting of 85 nurses, 41 midwives, 14 doctors. From the 140 health workers, only five people (2,3%) have ever gotten training about infection prevention and control .

Health workers play an important role in prevention and control of infection transmissions through the implementation of standard precautions and environmental maintenance of health workers. All health workers, in all roles and settings, are able to show leadership in infection prevention and

control using knowledge, skills, and judgement to initiate appropriate and prompt infection control procedures. WHO has clarified several roles of health workers for infection control. A control committee needs to be formed to develop training programs for health workers, supervising the implementation of techniques for infection prevention<sup>3</sup>.

Many infections caught from the hospital can be prevented through adherence to evidence-based infection prevention strategies. Compliance by health workers towards standard precautions, including hand hygiene, adherence to aseptic technique and use of protective equipment (including gloves, dresses, masks, eye protection and face shields) can play a key role in prevention of transmission of infections between patients and health workers <sup>4</sup>.

Other issues related to the implementation of infection prevention and control in the hospital by health workers was also found in a research that was done by Chipfuwa, Manwere, and Shayamano (2014), i.e. lack of knowledge is one of the barriers for the practice of infection prevention and control, due to only 28% health workers that have sufficient knowledge about infection control principles. The use of infection control guidelines by health workers resulted in bad results due to 42% of health workers not using the infection control guidelines at all, either because they did not know (24%) or the guideline was not available (18%). The training on infection control did not host well due to 68% of health workers not attending any training about infection prevention and control that contributed towards bad practice of infection prevention and control. Other factors that hindered the practice of infection control was due to the lack of time.

Meanwhile, research related to factors related to health worker compliance in infection prevention and control has never been implemented in the district

general hospital. Based on the previous research that has been described above, it can be concluded that factors associated with compliance by health workers in infection prevention and control includes the characteristics (age, gender, education, employee status, years of experience and training, knowledge, attitude and reward) for health workers. Therefore, this research wants to know about the analysis of factors associated with the compliance of health workers in the implementation of infection prevention and control in the district general hospital.

### Methods

This research is a quantitative research using correlational design, with approach to cross sectional study to know the determinants of compliance in infection prevention and control in the district general

hospital. All included people in this research are 148 health workers and paramedics, all the people will be sampled. The research media will be in the form of a questionnaire using google form <https://bit.ly/3xhynXH> and will be accompanied by an explanation, informed consent and charging guide. The data analysis that was carried out includes descriptive analysis and inferential analysis.

## Results

### Univariate Analysis

#### Respondents Characteristics

The results of the research towards the characteristics of age, gender, education, years of experience, and health worker training in the district general hospital in 2021 are in the following table 4.1:

**TABLE 1: The Distribution of Characteristics of Age, Gender, Education, Years of Experience and Health Care Worker Training in The Ward, EU, ICU, NICU and Delivery Room in The District General Hospital Year 2021.**

Characteristic	Category	Amount	
		f	%
Age	Early Adulthood	96	64,9
	Mid Adulthood	46	31,1
	Late Adulthood	6	4,1
Gender	Men	42	28,4
	Women	106	71,6
Education	S2	1	0,7
	S1	25	16,9
	DIV (Diploma)	22	14,9
	DIII (Diploma)	100	67,6
Employee Status	PNS (Permanent)	42	28,4
	NON PNS (Contract)	106	71,6
Years of Experience	Long	85	57,4
	Not Long	63	42,6

From the table 1 above, it is known that the age of most respondents that are used as subjects are Early Adults 64,9%. Women as much as 71,6%. DII education level as much as 67,6%. Non-PNS status as much as 71,6% and 57,4% have been working for a long time.

**1. Training, Knowledge, Attitude, Rewards and Compliance by Health Workers About Infection Prevention and Control**

The results of the research towards knowledge in the District General Hospital in 2021 are in the following table 2:

**TABLE 2: The Distribution of the Frequency of Training, Knowledge, Attitude, Reward and Compliance by Health Workers About Infection Prevention and Control.**

Variable	Category	Amount	
		F	%
Training	Available	100	67,6
	Not Available	48	32,4
Knowledge	High	101	68,2
	Low	47	31,8
Attitude	Good	100	67,6
	Not Good	48	32,4
Reward	Available	91	61,5
	Not Available	57	38,5
Compliance	Comply	105	70,9
	Not Comply	43	29,1

Source : Primary data, 2021

From Table 2 above, it is known that the knowledge of the respondents with the category high is 68,2%. Based on the respondents' attitude, it is known that most of the respondents have a good attitude, that is as big as 67,6%. Furthermore, based on the reward variable, it is known that most of the respondents said that there was a reward, namely 61,5%. Based on the compliance variable, it known that most health workers are obedient in implementing infection prevention and control in the District General Hospital, which is 70,9%.

**Bivariate Analysis**

Bivariate analysis uses the chi-square test to

test the relationship between the variables of age, gender, education, years of experience and the training of healthcare workers with the knowledge of the compliance of health workers in implementing infection prevention and control in the District General Hospital year 2021, with a confidence level of 0,05 being:

**1. The Relationship of Characteristics of Age, Gender, Years of Experience and Compliance by Health Workers in the Implementation of Infection Prevention and Control in the District General Hospital.**

**TABLE 3: The Relationship with Age, Gender, Education, Years of Experience with Compliance by Healthcare Workers in the Implementation of Infection Prevention and Control in The District General Hospital.**

variable	Category	Compliance				Total		P value	OR
		Compliant		Not Compliant		f	%		
		f	%	f	%				
Age	Early Adulthood	67	69,8	29	30,2	96	100	0,077	0,598
	Mid Adulthood	38	82,6	14	30,4	52	100		
Gender	Men	25	59,5	17	40,5	42	100	0,054	0,478
	Women	80	75,5	26	24,5	106	100		
Education	Bachelor/PG	23	92,0	2	8,0	25	100	0,014	5,750
	Diploma	82	66,7	41	33,3	123	100		
Employee Status	PNS	38	90,5	4	9,5	42	100	0,001	5,530
	NON PNS	67	63,2	39	36,8	106	100		
Years of Experience	Long	67	78,8	18	21,2	85	100	0,023	2,449
	Not Long	38	60,3	25	39,7	63	100		

Source : Primary data, 2021

The analysis showed that late-adulthood proportion that complied with infection prevention and control was 83.3% higher compared to the proportion that did not comply, which is 16.7%. From the table it is shown that the result of the chi-square test is  $p=0,077$ , which statistically is meaningless ( $p>0,05$ ), it can be concluded that there is significant relationship between age and compliance by health workers in implementing infection prevention and control. The analysis showed that the women category in gender proportion did comply with infection prevention and control was 75,5% bigger than the proportion that did not comply which was 24,5%. From the table it

is shown the result of the chi-square test is  $p=0,054$ , which statistically is not meaningful ( $p>0,05$ ), it can be concluded that there is no significant relationship between gender and compliance by health workers in implementing infection prevention and control.

The analysis showed that the bachelor/post graduate category in the education proportion that did comply by the implementation of infection prevention and control was 92,0% bigger than the proportion that did not comply which was 37,0%. From the table it is shown the result of the chi-square test is  $p=0,014$ , so statistically it is meaningful ( $p<0,05$ ), it can be concluded that there is a significant relationship

between education and compliance of health workers in implementing infection prevention and control.

The analysis showed that the category non-PNS in employee status that complied in the implementation of infection prevention and control was 63,2% bigger than the proportion that did not comply which was 36,8%. From the table it is shown the result of the chi-square test is  $p=0,001$ , which is statistically meaningful ( $p<0,05$ ), it can be concluded that there is a significant relationship between employee status and compliance of health workers in implementing infection prevention and control.

The analysis showed that the category long in the years of experience proportion that did comply

with the implementation of infection prevention and control was 78,8% bigger than the proportion that did not comply which was 21,2%. From the table it is shown that the result of the chi-square test is  $p=0,023$ , which statistically is meaningful ( $p<0,05$ ), it can be concluded that there is a significant relationship between years of experience with compliance by health workers in the implementation of infection prevention and control.

**2. The Relationship of Training, Attitude and Reward with Health Worker’s Compliance with the Implementation of Infection Prevention and Control**

Full chi-square test results can be seen in this table below:

**TABLE 4: The Relationship of Training, Attitude and Reward with Health Worker’s Compliance with the Implementation of Infection Control and Prevention.**

Knowledge	Compliance		Total	p value	OR
	Comply	Not Comply			
High	80 (79,2%)	21 (20,8%)	101 (100%)	0,002	3,352
Low	25 (53,2%)	22 (46,8%)	47 (100%)		
Training	Comply	Not Comply	Total	P value	OR
There is	80 (80,0%)	21 (20,8%)	101 (100%)	0,023	3,680
There is not	25 (52,1%)	22 (46,8%)	47 (100%)		
Attitude	Comply	Not Comply	Total	P value	OR
Good	80 (80,0%)	20 (20,0%)	100 (100%)	0,001	3,680
Not Good	25 (52,1%)	23 (47,9%)	48 (100%)		
Total	105 (100%)	43 (29,1%)	148 (100%)		
Reward	Comply	Not Comply	Total	P value	OR
There is	82 (90,1%)	9 (9,9%)	91 (100%)	0,000	13,469
There is not	23 (40,4%)	34 (59,6%)	57 (100%)		
Total	105 (70,9%)	43 (29,1%)	148 (100%)		

Source : Primary data, 2021



The analysis showed that the category high in the knowledge proportion that did comply with the implementation of infection prevention and control was 79,2% bigger than the proportion that did not comply which was 20,8%. From the table it is shown that the result of the chi-square test is  $p=0,002$ , which statistically speaking is meaningful ( $p<0,05$ ), it can be concluded that there is a significant relationship between knowledge and compliance of health workers in the implementation of infection prevention and control.

The analysis showed that the category ‘there is’ in the training proportion that did comply with the implementation of infection prevention and control was 80,0% bigger than the proportion that did not comply which was 20,0%. From the table it is shown that the result of the chi-square test is  $p=0,023$ , which is statistically meaningful ( $p<0,05$ ), it can be concluded that there is a significant relationship between training and compliance by health workers in the implementation of infection prevention and control.

The analysis showed that the category ‘good’ in the attitude proportion that did comply with the implementation of infection prevention and control was 89,0% bigger than the proportion that did not comply which was 20,0%. From the table it is shown that the result of the chi-square test is  $p=0,001$ , which is statistically meaningful ( $p<0,05$ ), it can

be concluded that there is a significant relationship between attitude and compliance by health workers in the implementation of infection prevention and control.

The analysis showed that the category ‘there is’ in the reward proportion that did comply with the implementation of infection prevention and control is higher than the proportion that did not comply, it can be concluded that there is a significant relationship between reward and compliance by healthcare workers in implementing infection prevention and control.

### Multivariate Analysis

Multivariate Analysis was meant to observe and learn the relationship between a few independent variables with one dependent variable, where it will be known which variable is the most dominant which has a relationship with the compliance of health workers in the implementation of infection prevention and control, the test that was used is the logistic regression test with the backward stepwise (conditional) method. Multivariate Analysis with the logistic regression test is carried out as a follow-up from the bivariate test by including all variables that were statistically significant ( $p<0,05$ ) and variables that have the value of  $p<0,25$  as a selection limit to include variables that are substantially considered important. Variables that meet the requirements to be tested multivariately are:

**TABLE 5: Variables That Meet the Requirement**

No	Variable	P value
1	Education	0,014
2	Employee Status	0,001
3	Years of Experience	0,023
4	Training	0,023
5	Knowledge	0,002
6	Attitude	0,001
7	Reward	0,000

The final model of logistic regression analysis is as follows:

**TABLE 6: The Final Model of Logistic Regression Analysis Determinants of Health Worker Compliance in Implementing Prevention and Control in the District General Hospital.**

No	Variable	Odds Ratio	CI 95%	P value
1	Reward	12,66	7,10-22,2	0,000
2	Employee Status	10,36	1,20-22,15	0,001

Source : Primary data, 2021

In this analysis, the relationship between independent variables and dependent variables with value  $-2 \log$  likelihood was as big as 0,000, cox & Snell R Square which was as big as 0,615 with the value of the overall percentage being 87,8%. From the value of the overall percentage, the ability of this study to predict the compliance of health workers in implementing infection prevention and control is as big as 87,8%, and the other 12,2% is caused by other factors. Based on the result of the multivariate test, it is known that the most influencing factor in the compliance of health workers in implementing infection prevention and control is the reward factor with the value OR as big as 12,66, meaning that existing officers who receive rewards is 12 times more likely to be more compliant compared to other existing officers that did not receive a reward.

### Discussion

1. The relationship of characteristics with the compliance of health workers in implementing infection prevention and control.

The results of the study have shown that there is no significant relationship between age and compliance by health workers in the implementation of infection prevention and control. The result of the analysis obtained shows that the proportion of gender in the category female respondents that did comply

in the implementation of infection prevention and control was bigger than the proportion that did not comply. The result of the chi-square test shows that there was no significant relationship between gender and compliance by health workers in implementing infection prevention and control.

The result of the analysis that has been obtained states that the proportion of education shows there is a significant relationship between education and compliance by health workers in implementing infection prevention and control. The analysis showed that the category non-civil servant in employee status that did comply with the implementation of infection prevention and control was bigger than the proportion that did not comply. It can be concluded that there is a significant relationship between employee status and compliance by health workers in implementing infection prevention and control.

The analysis showed that the category 'long' in the years of experience proportion that did comply with the implementation of infection prevention and control was higher than the proportion that did not comply, the analysis showed that the category 'there is' in the training proportion that did comply with the implementation of infection prevention and control was bigger than the proportion that did not comply. It can be concluded that there is a significant relationship

between employee status, training, and compliance by health workers in the implementation of infection prevention and control.

Several studies have found that age showed no relationship and is negatively related to performance. Regardless the workers' age, everyone showed that they comply with infection prevention procedures both for self-protection or when contact with patients. In addition, gender factor also showed similar pattern as age although some studies show that age does have a relationship with performance. This is because older workers increasingly have more specifications, experience, consideration, work ethic, and even stronger commitment. For certain tasks and until the certain age limit, there is a belief that the older the person is, the more their performance goes down. Because of this, nurses who are in late adulthood are generally not being placed in technical positions.

The results of the analysis states that there is a significant relationship between education, employee status, years of experience and participation in training with the compliance of health workers in the implementation of infection prevention and control. Education and training affects the performance of a nurse. Education and training is one of the most important parts in the development of staff and education and the 10 trainings that nurses participate in are expected to improve their abilities as a nurse, both in knowledge, skills, and attitude.

**2.** The relationship of knowledge with the compliance of health workers in the implementation of infection prevention and control.

The analysis showed that the category high in the knowledge proportion that did comply with the implementation of infection prevention and control was bigger than the proportion that did not comply. It can be concluded that there is a significant relationship between knowledge and compliance towards the

implementation of infection prevention and control. The higher the knowledge of the person, the more compliant the person will be in carrying out the effort due to the deeper understanding of the consequences, not following protocol will result in negative results towards the patient or their own self in order to apply all SOP well, high education ensures the will to take advantage of knowledge, performance and competence, while competence will take form from knowledge, skills, attitude, and experience to perform a job or role effectively. Meanwhile knowledge that an individual has is not only obtained from experience but the level of education they have.

Compliance of health workers in implementing infection prevention and control is related with knowledge as in Agung. In the research it was stated that almost all respondents had good knowledge about standard precautions. However, in practice the health workers were not consistent in closing used syringes that have been used correctly. This is also according to research where the relationship between nurses' knowledge and efforts to implement patient safety was obtained in the inpatient room. The respondents' knowledge began getting better along with the Covid-19 pandemic where one of the forms of transmission was due to direct contact and the influence of the patient's environment<sup>5</sup>.

**3.** The relationship of attitude with the compliance of health workers in implementing infection prevention and control.

The analysis showed that the category of 'good' in the attitude proportion that did comply in the implementation of infection prevention and control was higher than the proportion that did not comply. It can be concluded that there is a significant relationship between attitude and compliance by health workers in the implementation of infection prevention and control. Related researches argue that attitude is an action or

deed done in everyday life towards their environment. A positive attitude from a nurse will make the nurse more compliant in keeping the patient's safety, even if there is a nurse with a negative attitude they can still keep their patient's safety without risk<sup>6</sup>

There are core values that all nurses have, naming: human dignity, integrity, autonomy, altruism, and social justice, where those values are needed for nurses in order to integrate caring behavior towards their patients and towards all the members of the healthcare team. Even with the same set of values and behaviors, we cannot underestimate the nurses' attitude towards other people, their patients and their colleagues<sup>7</sup>. All of the respondents have given good behaviors and will support the compliance for the safety of their patients as, stated, that there is a relationship with the nurse's attitude with the implementation of the patient's safety<sup>8</sup>. The result of this study are in line with the research conducted where based on the values of Standardized Coefficients Beta, nurse's attitudes were more dominant as much as 0,309, which means that there is a positive relationship with knowledge and nurse's attitudes with the prevention of nosocomial infection<sup>9</sup>.

**4.** The relationship of reward with the compliance of health workers in implementing infection prevention and control.

The analysis showed that the category 'there is' in the reward proportion that did comply in implementing infection prevention and control which was higher than the proportion that did not comply. It can be concluded that there is a significant relationship between reward with the compliance of health workers in the implementation of infection prevention and control.

The reward system is the mechanism that makes this happen. They can cover rewards in other forms such as approval, promotion, reassignment and non-

monetary bonuses, for example holidays or a simple thank you. Based on the result of the data collection, it is known that the most answered statement with the answer 'never' is statement number 19 which states that hospitals provide educational assistance. Meanwhile the most answered statement with the answer 'often' is statement number 7, where the respondent does the work according to the standard design that has been set.

Rewards that are given will influence compliance with the prevention of transmitted diseases towards patients and their own selves. Although there are rewards in other forms such as praise or working honorarium for employees with contract status. It will still encourage compliance. The results of observations in the field states that the District General Hospital give rewards to employees in the form of providing opportunities for employees to take part in good training held within the hospital itself or availing them to be able to take part in out-of-hospital, even out-of-city training, giving the chance for employees to continue to pursue further education and give rewards every time they make training activities in the form of rewards.

### **Research Limitations**

Limitations in conducting this research was that limitation itself in distributing questionnaires to respondents. The distribution of the questionnaire was carried out through google form, though within collecting data there were many obstacles, for example related to the network, the lack of ability of the respondents to fill out answers in digital questionnaires and also other shortcomings or limitations such as smartphone ownership, because there were respondents who still did not use a smartphone.

## Conclusion

Award is the dominant factor that affects compliance, it is expected that hospital management can provide regular rewards to health workers in the form of appreciation for the performance of health workers or officers. Routine socialization needs to be carried out for all visitors and staff, both medical and non-medical which will increase the knowledge about disease prevention procedures in hospitals. For mutual progress, there should be appropriate rewards in the form of allowances that will continue to motivate employees in the compliance of health workers in carrying out infection prevention and control in Aceh, Indonesia.

**Ethical Clearance:** The study obtained ethical clearance from the Health Ethical Committee at the ZainoelAbidin General Hospital Banda Aceh, Indonesia.

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## References

1. Andersen BM. Hospital Infections: Surveillance. In *Prevention and Control of Infections in Hospitals*. Springer. 2019;
2. WHO. Wabah Penyakit Campak Terus Meningkat di Seluruh Dunia. Jakarta: World Health Organization; 2019.
3. WHO. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva; 2016.
4. Chipfuwa, T., Manwere, A. & S. Barriers to infection prevention and control (IPC) practice among nurses at Bindura Provincial Hospital. Zimbabwe; 2014.
5. Darliana. Hubungan Pengetahuan Perawat Dengan Upaya Penerapan Patient Safety Di Ruang Rawat Inap Rumah Sakit Umum Daerah dr. Zainoel Abidin Banda Aceh. *Idea Nurs J*. 2016;
6. Ananda Ainun Djariah , Sumiaty EA. Hubungan Pengetahuan, Sikap, Dan Motivasi Kerja Perawat Dengan Pelaksanaan Keselamatan Pasien Di Ruang Rawat Inap Rsud Kota Makassar. *Wind Public Heal Journal*, Vol 1 No 4. 2020;
7. Naji Alqahtani, Kyeung M Oh, Panagiota Kitsantas MR. Nurses' evidence-based practice knowledge, attitudes and implementation: A cross-sectional study. *Natonal Lybrary Med*. 2020;
8. Listianawati R. Hubungan Pengetahuan Perawat Tentang Keselamatan Pasien (Patient Safety) Dengan Sikap Perawat Terhadap Pemberian Obat Di Ruang Rawat Inap Kelas III RSUD Dr. Loekmono Hadi Kudus. *Pros Hefa*. 2018;
9. Sugeng. Hubungan Pengetahuan dan Sikap Perawat Dengan Pencegahan Infeksi Nosokomial di Ruang RAwat Inap Rumah Sakit Paru dr. Ario Wirawan Salatiga Jawa Tengah. *J Keperawatan*. 2018;



# Effectiveness of Relaxation Technique on Level of Anxiety before Upper Gastrointestinal Endoscopy (UGE)

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## Abstract

**Introduction** - Most of us have experienced anxiety at one point in life, whether it is waiting in a queue for Viva or before the performance, everyone has experienced butterflies in the stomach. Two types of anxiety broadly categorize anxiety into Trait and state anxiety forms. The general tendency of a person to be anxious is known as Trait Anxiety, whereas State Anxiety refers to the anxiety experienced at one moment due to a stressful situation. The present study was aimed to determine the effectiveness of relaxation techniques on the level of anxiety of clients undergoing Gastrointestinal Endoscopy procedures.

**Materials and Methods:** The present study consisted of patients divided into a control group and an experimental group. All of the participants filled State-Trait Anxiety Inventory (STAI). The experimental group was given a relaxation technique and then both groups were asked to complete STAI. The collected data were analyzed through frequency, percentage, Chi-square, Yates correction and Fisher exact test.

**Results:** Before the intervention was carried out, there was no significant difference between the two groups in terms of the rate of state and trait anxiety ( $p < 0.05$ ). After the intervention, the rate of state and trait anxiety decreased significantly ( $p < 0.05$ ) in the experimental group. Conclusion: In patients subjected to endoscopy, psychological preparation was effective in reducing their anxiety and thus this can be considered as an efficient method in decreasing anxiety

**Keywords** - Relaxation Technique, Upper Gastrointestinal Endoscopy (UGE), Anxiety

## Introduction

Mental well-being is the aptitude to cope up with humankind to bring satisfaction and peace. Four magnitudes of health have an imminent role to achieve

the goal of a completely healthy environment. Physical strength, patience, mental balance, social and spiritual wellbeing and overall energy is required to toil towards the aim<sup>1</sup>. Illness is a highly individual state in which the person's physical, demonstrative, logical, communal developmental, or spiritual functioning is thought to be diminished<sup>2</sup>. Out of many such emotional behavior characteristics, one is anxiety that varies from person to person. Anxiety can be identified by excessive worry, feeling nervousness, unexplained uneasiness.

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Anxiety is an emotion without a specific object. It has psychological accompaniment such as excessive sweating tremors Rapid heartbeat dilated pupil and dry mouth<sup>3</sup>. Stress and anxiety are used vice versa mostly, however, these two are not the same. Anxiety is a normal reaction to a stressful situation and can be favorable in few situations. It helps one to deal with the anxious situation at the workplace<sup>4</sup>. When anxiety is in its extreme stages, it is difficult for an individual to perform any task with concentration<sup>5</sup>.

Anxiety can be commonly found among school-going children. Individuals get fearful and anxious in hospital settings, normally due to knowledge deficit and invasive procedures such as angiography, ultrasound, endoscopy colonoscopy, CT scan and MRI, etc.<sup>6</sup> The general tendency of a person to be anxious is known as Trait Anxiety, whereas State Anxiety refers to the anxiety experience at one moment due to a stressful situation.

During any invasive procedure, the level of anxiety may go from mild to severe forms and may disturb the procedure causing a delay in diagnosis of disease<sup>7</sup>. The fact that the side effects of endoscopy are low but sampling is only possible when endoscopy is done. Upper gastric Endoscopy is one of the most fearful and anxiety-provoking experiences and studies suggest that 8 % withdraw from the procedure due to fear and non-cooperation. Efforts to eliminate anxiety must be taken to ease the patient to some extent<sup>8</sup>.

The mind-body technique can be used to treat anxiety and panic disorder chronic pain coronary artery disease depression headache difficulty sleeping and loss of urinary control. Meditation includes physical relaxation mental calmness and favorable emotional states such as loving-kindness. Tai chi and Qigong help in lowering blood pressure<sup>9</sup>.

Since endoscopies can evoke anxiety, feelings of vulnerability, embarrassment and discomfort,

several methods are being used to reduce patient pre-procedural worries, including psychological intervention using relaxation and coping techniques, relaxation music and even sedation<sup>10</sup>. A pre-endoscopy patient education increases compliance decreasing both the need for repeated examination and the attendant costs.

## Material and Methods

The Present Study adopted a pre-test post-test control group design. The study was conducted in S.R Mid City hospital, Haridwar. Subjects were divided into experimental (n2) and control groups (n1) by systematic randomized technique. The sample size was calculated using the Cochran formula based on a previous study. Total 61 samples were divided into (n1 = 30) (n2 = 31) Subjects were selected who met the inclusion criteria and gave written consent to be part of the study. Tools used to collect the data were sociodemographic variables and STAI (State trait Anxiety Inventory). Reliability of tools was established with Pearson coefficient correlation and it was found to  $r = 0.8$ . The researcher had gone for the one-month training program of yoga and meditation to learn relaxation techniques. Non-invasive 61 points relaxation technique was used before the endoscopy procedure among the experimental group. The sample in the Control group received normal instruction about the upper gastrointestinal endoscopic. Formal written administrative permission was obtained from concerned authorities prior.

## Analysis and Interpretation

After the data was collected through demographic profiles from two groups, descriptive statistics were employed to examine the effect of the intervention on the level of anxiety through T-test and Chi-square tests, Yates, and Fisher's exact test.

**Table -1 Comparing Pre and post State & Trait Anxiety Levels among both groups**

State Anxiety	Groups	Mild (21-40)	Moderate (41-60)	Severe (61-80)
Pre-Test Scores	Control	6%	20%	74%
	Experimental	-	36%	64%
Post Test Scores	Control	14%	84%	2%
	Experimental	49%	51%	-

**Table -2 Comparing Pre-Post State & Trait Anxiety Levels among both groups**

POST - STATE ANXIETY	Mean±SD	Meandifference	't' value
Post-Test Control Group	50.1 ± 7.8	5.8	2.48*
Post-Test Experimental Group	44.3 ± 9.9		
POST TRAIT ANXIETY			
Post- Test Control Group	52.1 ± 7.6	9.89.8	4.18*4.18**
Post-Test Experimental Group	42.8 ± 9.5		

\*t'59 = 1.67 at the level of P < 0.05 Significant\*

**Table -3 Associating Pre-State Anxiety Levels among experimental groups**

S.N	Pre-Endoscopy State Anxiety	Moderate	Severe	Calculated value
1	Education Qualification			7.33#*
	Primary/ secondary	5	19	
	Graduation/ Post Graduation	6	1	
2	Previous- Exposure			4.30#*
	No	5	16	
	Yes	7	3	

# - Yates, \$- fisher's Exact, chi- @ df1 = 3.84 at P < 0.05

**Table -4 Associating Pre-Trait Anxiety Levels among experimental groups**

S.N	Pre-Endoscopy Trait Anxiety	Moderate	Severe	Calculated value
1.	Education Qualification			
	Primary/ secondary	8	15	4.66#*
	Graduation/ Post Graduation	7	1	

# -Yates, \$- fisher’s Exact, chi- @ df1 = 3.84 at P < 0.05

**Results**

The study consisted of 61 patients; 32 women and 29 men who were equally divided into control and experimental groups (p>0.05)

There was no significant difference between the two groups in terms of demographic factors (p>0.05).

According to the results of the study, only State anxiety before intervention had a significant association with previous exposure among the experimental group and educational qualification had a significant association with Trait anxiety also among the Experimental group. [Table - 2, 3]

The intervention had a significant effect on post-intervention State and Trait anxiety at p>0.05. [Table - 1]

The results of the study also indicated that level of anxiety had no association with age, gender, area of living (p>0.05)

**Discussion**

The study intended to evaluate the effectiveness of relaxation techniques on anxiety levelsof patients undergoing gastrointestinal endoscopy. The Relaxation technique was given to the client before endoscopy and on statistical evaluation was found to be effective in reducing the anxiety level. This finding is in line with other studies conducted on patients

before endoscopy. Similar findings were also reported in some other studies which investigated the effects of various noninvasive methods like deep breathing, meditation, yoga, relaxing music and other relaxation techniques which calms the mind and nervous system. Similar studies were done to see the efficacy of various interventions on the level of anxiety by various authors.

The result of this research study was supported by Salwa. A. Mohammed performed a study to determine the effectiveness of teaching to decrease the level of anxiety. There was significant improvement at all levels of post anxiety after intervention at a P<0.05 level of significance. It showed that patients experienced less pain, breathing difficulties who were given prior information<sup>11</sup>.Sadeghimoghaddam S. et.al. In his study showed that relaxation and prayer therapy is effective in promoting hope and reducing anxiety in patients with coronary artery disease<sup>12</sup>.Smitha T. et.al. Evaluated the benefit of STP (Structured Teaching Program) on the level of knowledge and anxiety where it was proved statistically that interventions do lessen the anxiety levels<sup>13</sup>.

Another study was performed by Sasmita D et.al. On the awareness and pre-procedural anxiety levels. Study findings showed that awareness was increase so the anxiety was relieved<sup>14</sup>. EL Hassan H et.al. Showed that music led to a significant reduction in the post-

treatment STAI scores<sup>15</sup>. Behrouzian F. conducted a study where the effect of the interventions was more noticeable on the state anxiety<sup>16</sup>. Yusuf and Kuzdere, concluded that all types of music had an effect on reducing patients' preoperative anxiety, and listening to Classical Turkish Music was particularly the most effective one<sup>17</sup>. Padam et.al. Listening to Vedic chants and Indian classical instrumental music has beneficial effects on alleviating anxiety levels induced by the apprehension of invasive procedures and can be of therapeutic use<sup>18</sup>.

### Limitation

Individuals with major psychological problems were not included in the study. The effect of cognitive, information and behavioral interventions was not separately examined. The intervention period was short.

### Conclusion

The result of this study showed that relaxation interventions before endoscopy can decrease patients' anxiety. Endoscopy or any other procedure where an individual has to stay alone may increase anxiety levels and can become a hindrance in diagnostic procedures. Thus, it is recommended to provide the endoscopic department with trained endoscopists and nurses or make sure that a psychologist attends the medical team.

**Conflict of Interest :** Nil

**Source of Funding :** Self

**Ethical Clearance :** Ethical clearance was taken from the ethical committee of Shri Swami Bhumanand College of Nursing. The written permissions were taken from the Endoscopy centers of Haridwar before the data collection. Written informed consent was taken prior to the pre procedural assessment.

### References

1. Nursing: HEALTH PROMOTION AND WELLNESS [Internet]. [Cited 2019 Aug 12]. Available from: <https://rajnursing.blogspot.com/2019/01/health-promotion-and-wellness.html>
2. About CARTA | Center for Academic Research and Training in Anthropogeny (CARTA) [Internet]. [Cited 2019 Aug 23]. Available from: <https://carta.anthropogeny.org/about/carta>
3. Anxiety noun - Definition, pictures, pronunciation and usage notes | Oxford Advanced American Dictionary at OxfordLearnersDictionaries.com [Internet]. [Cited 2018 April 22]. Available from: [https://www.oxfordlearnersdictionaries.com/definition/american\\_english/anxiety](https://www.oxfordlearnersdictionaries.com/definition/american_english/anxiety)
4. Generalized Anxiety Disorder (GAD) | Anxiety and Depression Association of America, ADAA [Internet]. [Cited 2019 Aug 13]. Available from: <https://adaa.org/understanding-anxiety/generalized-anxiety-disorder-gad>
5. Pain, anxiety, and depression - Harvard Health [Internet]. [Cited 2019 May 12]. Available from: <https://www.health.harvard.edu/mind-and-mood/pain-anxiety-and-depression>
6. Stephens - 2017 - Medical Yoga Therapy.pdf [Internet]. [Cited 2018 Aug 3]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5332914/pdf/children-04-00012.pdf>
7. Prevalence of depression, anxiety and associated factors among school going adolescents in Bangladesh: Findings from a cross-sectional study [Internet]. [Cited 2019 Jan 18]. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247898>
8. Shekari and Salehi - 2016 - Review of the Impact of Nursing Care before Endosc.pdf [Internet]. [Cited 2021 Aug 26]. Available from: <https://>

www.ijmrhs.com/medical-research/review-of-the-impact-of-nursing-care-before-endoscopy-on-anxiety-and-stress-and-depression-and-pain-of-the-elderly-patie.pdf

9. Prevalence of depression, anxiety and associated factors among school going adolescents in Bangladesh: Findings from a cross-sectional study [Internet]. [Cited 2018 Sept 26]. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247898>
10. Sadeghimoghaddam S, Alavi M, Mehrabi T, Bankpoor-fard A. The effect of two methods of relaxation and prayer therapy on anxiety and hope in patients with coronary artery disease: A quasi-experimental study. *Iranian J Nursing Midwifery Res.* 2019;24(2):102.
11. 02\_31115lsj130916\_9\_17.pdf [Internet]. [Cited 2019 Oct 26]. Available from: [http://www.lifesciencesite.com/lsj/life130916/02\\_311151sj130916\\_9\\_17.pdf](http://www.lifesciencesite.com/lsj/life130916/02_311151sj130916_9_17.pdf)
12. Effectiveness of Structured Teaching Programme on Knowledge and Anxiety of Patients Undergoing Endoscopy at a Gastroenterology Centre of a Tertiary Care Hospital [Internet]. [Cited 2021 Aug 26]. Available from: [https://www.ijsr.net/get\\_abstract.php?paper\\_id=SUB155447](https://www.ijsr.net/get_abstract.php?paper_id=SUB155447)
13. The Effectiveness of Video Assisted Teaching on Awareness, Anxiety and Satisfaction of Patients Undergoing Upper Gastro Intestinal Endoscopy [cited 2021 Aug 26]. Available from: [file:///C:/Users/win10/Downloads/17\\_IJANM\\_2\\_4\\_20141.pdf](file:///C:/Users/win10/Downloads/17_IJANM_2_4_20141.pdf)
14. PRIME PubMed|the effects of music intervention on anxiety in the patient waiting for cardiac catheterization [Internet]. [Cited 2021 Aug 26]. Available from: [https://www.unboundmedicine.com/medline/citation/11866419/The\\_effects\\_of\\_music\\_intervention\\_on\\_anxiety\\_in\\_the\\_patient\\_waiting\\_for\\_cardiac\\_catheterization\\_](https://www.unboundmedicine.com/medline/citation/11866419/The_effects_of_music_intervention_on_anxiety_in_the_patient_waiting_for_cardiac_catheterization_)
15. Behrouzian - 2017 - The Effect of Psychological Preparation on the Lev.pdf [Internet]. [Cited 2019 Jan 15]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5583850/pdf/jcdr-11-VC01.pdf>
16. The Effect of Perioperative Music Listening on Patient Satisfaction, Anxiety, and Depression: A Quasi experimental Study [Internet]. [Cited 2019 OCT 26]. Available from: <https://www.hindawi.com/journals/arp/2020/3761398/>
17. Effect of listening to Vedic chants and Indian classical instrumental music on patients undergoing upper gastrointestinal endoscopy: A randomized control trial [Internet]. [Cited 2018 Feb 13]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5547864/>

# Clinical Competence in Nursing – an Essential Virtue

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## Abstract

**Background:** Clinical competence in Nursing is an essential virtue of Nursing in order to provide safe and Quality Nursing Care. The study aimed to examine the Perceived Clinical competence of Final year B.Sc.Nursing Students

**Methods:** The study was descriptive in approach, performed among 110 B.Sc.Nursing students in selected colleges of Nursing at Chennai. Simple random sampling technique was used to select the study participants. The tool had demographic variables and a 3 point Likert scale to assess the perceived clinical competence. The data were analyzed using descriptive and inferential statistics. Findings revealed that most of them perceived (92.7 %) overall high competence and (7.3%) moderate competence. The findings in specific areas revealed that in Emergency, 77.3 % perceived high and 20% moderate competence. In perioperative nursing (81.8%) perceived high competence and 14.5 % moderate competence. In the areas of Administration of Injection, communication and interpersonal skills, 89.1%, 63.6 % of students perceived high competence respectively. There was no statistically significant association between perceived clinical Competence and Demographic Variables.

**Conclusion:** Final year nursing students had reasonably good level of perceived Clinical competence. Planned training and development programs in addition to the regular clinical experience will enhance the Clinical Competence and Confidence of Nursing students.

**Key words:** Administration of Injection, B.Sc.Nursing Students, Clinical competence, Communication Skills, Emergency, Perioperative Nursing.

## Introduction

*“If you want to be successful, don’t seek success - seek competence, empowerment; do nothing short of the best that you can do.” -Albert Einstein*

Nurses are the largest health care providers, play a major role in promotion, maintenance and restoration of the health of patients. Clinical competence in Nursing is a mix of skills, knowledge, attitude, and abilities are an essential virtue of Nursing in order to provide safe and Quality Nursing Care.

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In a research on Competence in nursing is a dynamic process rather than the sum of individual competencies. Further, a review of the concept of competence identified the following approaches towards the concept of competence (a) knowledge regarding tasks and skills, (b) a generic focus on problem-solving and critical thinking and (c) a



holistic approach that brings together knowledge, skills, attitudes, and judgments<sup>1</sup>.

Today's healthcare systems face difficulties with nursing shortages (ICN, 2017). In order to overcome the shortage of staffing manpower, novice Nurses are expected to function independently as quickly as possible. Studies have reported that new graduate nurses lack adequate levels of competence that are needed in the real world of clinical nursing practice to meet the ever-increasing demands in today's complicated healthcare environment.

In a research on self assessed clinical competence and need for further training among newly graduated Registered Nurses revealed components "professional development" and "critical thinking" were rated lowest in clinical competence and "direct clinical practice" rated highest in need for further training<sup>2</sup>. Assessment of the perceived Clinical competence among Nursing students and inculcating the need to be competent is the need of the hour.

#### **Statement of the Problem:**

A Descriptive study to assess the perceived Clinical Competence among Undergraduate Nursing Students in selected Nursing Colleges, Chennai.

#### **Objectives:**

- To assess the clinical competence among undergraduate nursing students in Selected Nursing Colleges.
- To associate level of clinical competence with the selected demographic variables.

#### **Hypothesis:**

**RH<sub>1</sub>:** There will be a significant association between the levels of clinical competence with the selected demographic variables.

## **Materials and Methods**

### **Design and Study Setting**

Cross-sectional descriptive design was used to assess the perceived clinical competence of undergraduate nursing students in selected nursing colleges Chennai. The study was conducted in 5 Nursing Colleges, Chennai.

### **Sampling Criteria**

Final Year B.Sc.Nursing students who had undergone any additional skill development or internship programs

### **Sampling and Sample Size**

Simple Random Sampling (Lottery method) was used. Sample size included 110, 22 students from each College.

### **Data collection methods and instrument**

#### **Tool consisted of two parts**

**Part I** – Demographic Variables included Hospital exposure during the course, Part time job, Sex, Father's education, mother's education, living area, marital status.

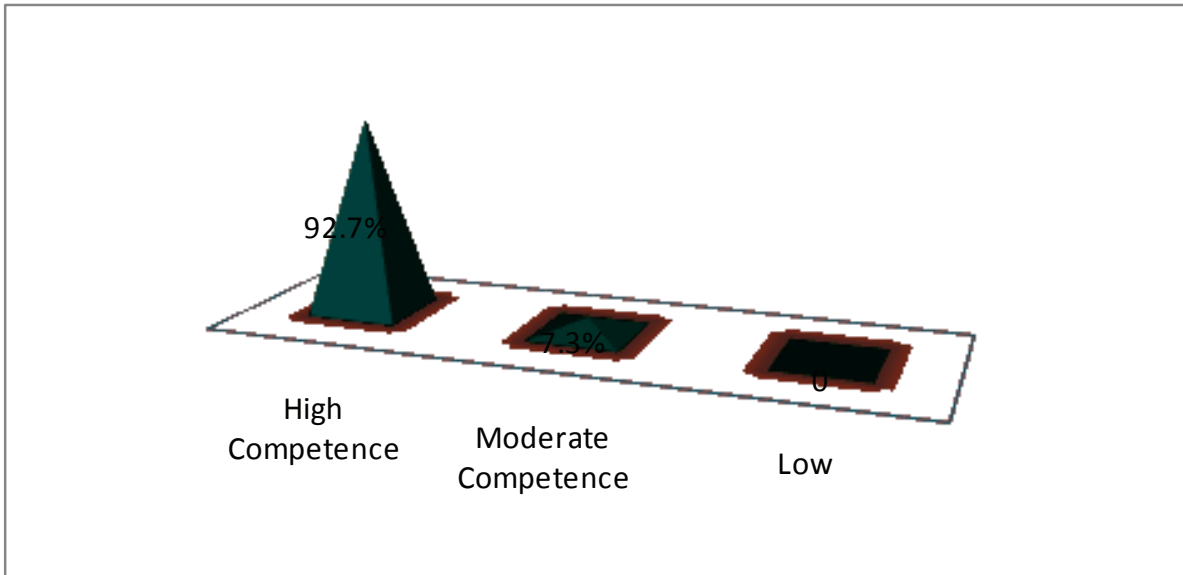
**Part II** – 3 point Likert scale, to assess the perceived clinical competence of undergraduate nursing students. It had total 50 essential competency items, prepared by the investigator based on the prescribed curriculum for the baccalaureate nursing program in India, which was divided into 4 sections i.e. (i) emergency nursing skills (15 items), Perioperative nursing (16 items), Administration of injection (15 items), Communication and interpersonal skills (5 items) and an open ended Question – Any suggestions to improve the Clinical Competence. Each listed essential competencies was measured on 3 point Likert scale i.e.1- low competence, 2- moderate competence 3- high competence. Each participant

was handed over the questionnaire in classroom under the supervision of research investigator and they were asked to first fill socio demographic data, and the Likert's scale. Participants took about 25-35 min to fill the questionnaire. Data was collected during February 2021.

Total score was interpreted as follows

- High Competence - 101-150
- Moderate Competence - 51-100
- Low Competence - 1-50

1. Level of Perceived Clinical competence



**Fig -1 Frequency and Percentage distribution of overall Perceived Clinical competence among undergraduate nursing students (n=110)**

**Statistical analysis**

Descriptive Statistics and chi-square was used to analyze the data.

**Results and Discussion**

Analysis of the Socio demographic variables revealed that Majority of participants were females (86.4 %) and most of them (95.5 %) were unmarried. Majority participants father's and mother's education was up to 10<sup>th</sup> standard (89.1 %). All had Clinical Exposure both in Government and Private Hospitals.

**Table -1 Frequency and Percentage distribution of perceived clinical competence in specific areas among undergraduate nursing students (n=110)**

S.No	Level of Clinical Competence	No	%
1	<b>Emergency Nursing</b>		
	High competence	85	77.3
	Moderate competence	22	20
	Low competence	3	2.7
2	<b>Perioperative Nursing</b>		
	High competence	90	81.8
	Moderate competence	16	14.5
	Low competence	4	3.6
3	<b>Administering the injection</b>		
	High competence	98	89.1
	Moderate competence	12	10.9
4	<b>Communication and interpersonal skills</b>		
	High competence	70	63.6
	Moderate competence	38	34.5
	Low competence	2	1.8

Over all clinical competence was high (92.7 %) (Fig 1).The findings in specific areas revealed that in Emergency, 77.3 % perceived high and 20% moderate competence. In perioperative nursing (81.8%) perceived high competence, 14.5 %moderate competence. In the areas of Administration of Injection, communication and interpersonal skills, 89.1%, 63.6 % students perceived high competence respectively. (Table 1).

In addition to the above findings it was observed that students perceived lower to moderate level of competence in areas like handing peak flow meter,

infusion pump, Gas cylinders, chest tube drainage system, costing and legal procedures in operation theatre. Students suggested few ideas to improve the clinical competence which included additional training and skill development programmes in advanced procedures, instruments identification and emergency procedures.

These findings are consistent with a descriptive study which revealed the mean competencies score for basic nursing skills was reasonably high. However, it was significantly low for the advanced nursing skills and selected basic nursing tasks such as perioperative

care, elimination-related interventions, and handling of medical equipment (recording electrocardiogram and using defibrillator)<sup>3</sup>. The reasons for perceiving moderate clinical competence in areas of the emergency department, perioperative nursing, administering the injection, communication, and

interpersonal skills could be due to less exposure to advanced nursing skills, lack of handling of medical equipment.

## 2. Association of Perceived clinical competence with Demographic Variables

**Table- 2 Association of Perceived clinical competence among undergraduate nursing students with selected demographic variables. (n=110)**

Demographic variables	Moderate		High		Chi-square value
	No	%	No	%	
Hospital exposure during the course					$\chi^2=0.079$ d.f=1 p=0.778 N.S
A. Government	0	0	0	0	
B. Private	0	0	0	0	
C. Both	8	7.3	102	92.7	
Part Time Job					$\chi^2=0.323$ d.f=2 p=0.850 N.S
A. Home Care	0	0	2	0.1	
B. Hospital	0	0	2	0.1	
C. Nil	8	7.5	98	92.5	
Sex					$\chi^2=1.362$ d.f=2 p=0.506 N.S
A. Male	0	0	13	0.1	
B. Female	8	8.4	87	91.6	
C. Transgender	0	0	0	0	
Father Education					$\chi^2=1.469$ d.f=1 p=0.226 N.S
A.10th	8	8.5	86	91.5	
B. Graduate	0	0	16	0.1	
C. Post Graduate	0	0	0	0	
Mother Education					$\chi^2=1.056$ d.f=2 p=0.590 N.S
A.10th	8	8.2	90	91.8	
B. Graduate	0	0	11	0.1	
C. Post Graduate	0	0	0	0	
Living Area					$\chi^2=4.552$ d.f=2 p=0.103 N.S
A. Rural	2	5.9	32	94.2	
B. Urban	2	3.8	51	96.2	
C. Semi Urban	4	17.4	19	82.6	
Marital Status					$\chi^2=0.411$ d.f=2 p=0.814 N.S
A. Married	0	0	4	0.1	
B. Unmarried	8	7.6	97	92.4	

Demographic variables had not shown a statistically significant association with the level of clinical competence among the undergraduate nursing students. (Table 2)

Contradictory findings were reported in a study which revealed graduating nurses with younger age and longer duration of clinical placement had higher mean competency scores in basic as well as advanced nursing skills ( $P < 0.05$ ). Whereas, nurses studying at private nursing institutes had lower mean competency scores for advanced nursing skills ( $P = 0.001$ )<sup>3</sup> and another study which revealed Social support, type of institution, year of study, attending theory classes, and clinical environment were associated with perceived clinical competence<sup>4</sup>.

This difference could be due to the type of institution where they had their clinical exposure and all the study participants are from similar socio demographic background.

H<sub>1</sub> stated that there will be a significant association between the levels of clinical competence with the selected demographic variables. Hence RH<sub>1</sub> is not accepted

### **Conclusion**

Final year nursing students had a reasonably good level of perceived clinical competence. It is important to ensure that the nursing institutes have sufficient facilities and facilities for adequate clinical observation and learning experience in basic and advanced nursing skills and knowledge, which will

enhance Quality of the Nursing care provided by the Students as Future Nurses.

**Source of Support** : Nil

**Conflicts of interest** : The authors have no conflict of interest to declare.

**Ethical considerations:** Ethical clearance was obtained from Institutional Ethics Committee.

Informed Consent was obtained. Confidentiality was maintained throughout the study.

### **References**

1. Yanhua C, Watson R. A review of clinical competence assessment in nursing. *Nurse Education Today*. 2011; 31(8):832–6.
2. Willman A, Bjuresäter K, Nilsson J. Newly graduated nurses clinical competencies and need for further training in acute care hospitals. *Journal of Clinical Nursing*. 2020; 29(13-14):2209–20.
3. Sharma S, Arora D, Belsiyal X. Self-reported clinical practice readiness of nurses graduating from India: A cross-sectional survey in Uttarakhand. *Journal of Education and Health Promotion*. 2020; 9(1):125.
4. Biftu BB, Dachew BA, Tiruneh BT, Kelkay MM, Bayu NH. Perceived Clinical Competence among Undergraduate Nursing Students in the University of Gondar and Bahir Dar University, Northwest Ethiopia: A Cross-Sectional Institution Based Study. *Advances in Nursing*. 2016; 2016:1–7.

# Impact of Preceptorship Models for Undergraduate Nursing Students and Its Implementation: Systematic Review

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## Abstract

**Background:** A preceptorship model of clinical teaching supports nursing students during their clinical placements, as clinical placement is integral in the incorporation of theory and practice. Aim: To explore the clinical teaching and learning within a preceptorship model and make recommendations for improving clinical nursing education. Methods: Science Direct, PubMed and Google Scholar were utilized using keywords. Results: The preceptorship model is essential in professional socialisation for nursing students through role modelling and enhancing the students' sense of responsibility as well as building the students' confidence and ease their transition from being a student to a nurse. Findings showed that the preceptorship model had been linked with a positive nursing student experience and an effective approach in facilitating students' learning and acquisition of skills in clinical practice. Conclusions: This review has found positive impact of developing a preceptorship model to improve the clinical teaching practice for nursing students.

**Keywords:** "Preceptorship model", "impact", "clinical", "undergraduate" and "nursing students".

## Introduction

Preceptorship has existed in nursing education since long ago. Many supported the use of the preceptorship model as an effective approach to facilitating students' learning and acquisition of skills in clinical practice<sup>1-4</sup> and most supported using preceptorship in undergraduate nursing education<sup>5</sup>. The terms mentor and preceptor exist interchangeably; however, according to literature,

both terms are different in their meaning and setting whereby, mentors are usually a long-term relationship which is between a novice and the mentor and generates a sense of awe and respect from the novice to the mentor at an organisational level<sup>6</sup>. On the other hand, the preceptor relationship is usually brief and lasts several weeks between an experienced employee and a novice<sup>7</sup>.

Despite the presence of mentors, undergraduate nursing students still face challenges such as insufficient clinical hours, not achieving learning needs<sup>8</sup>, not having a good clinical experience<sup>9</sup>, inadequate faculty supervisions and lack of qualified staff<sup>10</sup> as found in various literature which would all lead the students to be incompetent and not confident when they become registered nurses.

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Clinical placements are central to facilitating the integration of theory and practice, which the faculty cannot meet independently. Ultimately, the clinical placement is where undergraduates are exposed to the reality of nursing<sup>11</sup> and where they are readied and prepared for practice<sup>12</sup>. The need for implementing a nursing preceptorship program, especially concerning nursing educators, has been supported by many<sup>13-14</sup>. For instance, it was found that while nurse educators were expected to accompany student nurses, a shortage of staff limits them to lectures in the classroom, resulting in minimal student accompaniment, whereas this shortage also makes it difficult for a nurse educator to spend enough time with each student<sup>14</sup>. Another study found that the ratio of students to nurse educators was too high to allow for effective student supervision in

clinical practice, signaling the need for preceptorship<sup>13</sup>. Therefore, this literature review acts as a baseline to fill in the gap between the existing preceptorship models and evaluate their pros and benefits for it to be implemented.

### Methods

Using the research question “*Would undergraduate nursing students benefit more with the existence of preceptorship during their clinical practice?*”, a literature search was performed using the following databases Science Direct, PubMed and Google Scholar. Keywords such as “nursing students”, “preceptorship”, “impacts”, “effects”, “nurse” and “clinical” were used. The following inclusion criteria were applied.

**Table 1: Inclusion and exclusion criteria for literature selection**

Inclusion
Studies that look at the following are included in the review:
· Preceptorship
· Involves Nursing students
· Takes place within clinical practice
· Published in English

This search review was conducted per the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A total of 52 paper are included in this review.

### Results and Discussion

Three themes were formed namely i. *Enhanced ability to incorporate theory into practice*, ii. *Increased self-confidence* and iii. *Increased satisfaction and retention of students*. The key concepts within these themes centralise the advantages of implementing the preceptorship model in the clinical context.

*Enhanced ability to incorporate theory into practice*

Students and preceptors needed to build a trusting relationship by spending time together within a relationship of mutual interest and respect where the student’s confidence was fostered, so that teaching and learning could occur. Some inhibiting factors on students’ clinical learning have been noted in other studies, such as being ignored, being spoken to in a condescending or judgmental way<sup>15-16</sup>. Stalmeijer et al.<sup>17</sup> had reported that when students worked alongside their preceptor regularly, the continuous

relationship appropriate guidance and a more accurate in-depth assessment occurred. Thus, it is better when preceptors had the time to teach and the knowledge and skill to articulate their practice as students would be able to construct their knowledge through the interactive dialogue that occurred<sup>18</sup>. Regarding the teaching approach whereby preceptors would explain or ‘talk through’ their practice was regarded to be important by both the preceptors and students<sup>18</sup>.

Following that, the preceptors would ask the students the key actions they were going to implement or had already implemented, which students found helpful to their learning. Some preceptors would adjust their guidance and teaching strategies according to the students’ level of performance and understanding, which have been mentioned previously in other studies investigating practice education<sup>17, 19</sup>. With these continuous assessments on the student’s learning throughout their time in placement, effective teaching was linked as the students would become more competent<sup>18</sup>. Additionally, some preceptors would challenge the students’ ability to solve problems. The usefulness of critical questioning in developing students’ clinical reasoning skills in the context of clinical practice is supported in the findings of other studies<sup>20, 21</sup>. According to McSharry & Lathlean<sup>18</sup> preceptors and students believed that this kind of questioning helped students verbalise and refine their knowledge. It encouraged them to identify procedural knowledge, scientific knowledge, and rationale for care by applying it to the presenting patient’s context.

#### *Increased self-confidence*

Self-confidence is defined as a sense of security that is soundly based on the nurses’ awareness of their capability<sup>22</sup>. Therefore, nursing preceptorship has implications for students developing their competency skills and confidence in clinical settings. Haggerty et al<sup>23</sup> identified four factors that supported

effective preceptorships as students developed their competence and confidence. The four factors included (a). participants’ access to their preceptors, (b). the importance of the preceptor/new graduate relationship, (c). preceptor preparation for their role and (d). the overall culture of support<sup>23</sup>. This indicates that the preceptors are in a unique position to assist students to develop competency skills.

To successfully cope with increased responsibility, all newly qualified nurses must have confidence in themselves and their abilities. This increase in responsibility and accountability is a significant cause of stress when first qualified<sup>24</sup>. A systemic review of the literature also found that newly qualified nurses feel unprepared for practice, lacking confidence in their abilities, and insufficient time during their clinical skills training<sup>24</sup>. This is especially true in Brunei’s context as undergraduate student nurses are constantly dealing with insufficient clinical days and hours, which would lead them to feel incompetent later when they become newly qualified nurses.

Preceptorship has been shown to help students build confidence and ease their transition from being a student to a nurse. Students may feel more confident in performing nursing procedures under their preceptor’s supervision. Preceptorship was particularly beneficial to students in that it could help build the student’s confidence and self-esteem<sup>25</sup>, increase the level of independent functioning and for attaining competency and confidence and aid in the application of theory to clinical practice and critical thinking<sup>26</sup>. Students who participated in a preceptorship program appeared more confident in their ability to manage care for a patient. For instance, students felt a sense of inclusion in the unit and became more actively involved in communicating with other healthcare team<sup>27</sup>. The literature review indicates that nursing students who had positive preceptorship experiences have effectively promoted the critical thinking ability in the

practice setting<sup>28</sup>, could assume more responsibility, prioritise more acutely ill patients, and perform a greater number of skills than students in a non-preceptorship course.

#### *Increased satisfaction and retention of students*

Previous research investigating satisfaction with nursing education found that over one-third of final year students were dissatisfied with their preparation for nursing work<sup>29</sup>. Students also raised concerns regarding the adequacy of the clinical component of the Bachelor of Nursing course in terms of both the number of clinical hours and the level of support and supervision provided during the clinical placement. Some respondents referred explicitly to the impact of negative experiences during clinical placement on their career intentions<sup>29</sup>. It was found that work preparation satisfaction to be a significant predictor of job satisfaction but found that the effect on the expectation of leaving the job was only through work environment satisfaction which includes clinical support, resources and staffing<sup>30-31</sup>. It is also consistent with several studies identifying work environment factors as necessary to the stress and dissatisfaction experienced by new graduate nurses<sup>32-34</sup>.

McSharry and Lathlean<sup>18</sup> found that insufficient time to teach, highly dependent on students' ability to participate in and contribute to practice with minimal guidance, had negatively impacted students' learning. Subsequently, these nurses could potentially affect nurses' job satisfaction<sup>35</sup>. Similarly, the inability to handle intense working environments has resulted in new graduate nurse turnover rates of 35-65% within the first year of employment<sup>36</sup>. Consequently, failure to support and prepare these new nurses for their working roles may affect their ability to deliver the level of clinical nursing care required<sup>37</sup>.

To overcome this issue, preceptorship has been widely recommended as the solution. The clinical

preceptor role is perceived as an essential supportive framework for undergraduate nursing students to facilitate skills development, reflection, and reduce emotional burnout<sup>38</sup>. It is also highlighted that preceptorship programmes can reduce the transitional stress related to becoming a qualified nursing practitioner<sup>39</sup>. Therefore, teaching and educating nursing students in the clinical setting is significant to produce competent practitioners and enhance retention rates<sup>40</sup>. The hospital preceptorship programme is a long-term strategy to improve recruitment and retention in providing a supportive and safe working environment that would make an enjoyable workplace and enable growth and development both as an individual and professionally<sup>41</sup>. Appreciation of and benefits from the support of preceptors have been shown in earlier studies<sup>42-43</sup>. The results from Löfmark et al.<sup>44</sup> showed a high level of satisfaction for the support from preceptors, and the association between preceptor supervision and meeting the learning outcomes was high. This was also agreed by Lamont et al.<sup>9</sup> where the findings also suggest that nursing students on placement at a teaching hospital have a positive learning experience and predominantly report having their expectations met.

#### **Recommendation and Conclusion**

This study found that the existence of the preceptorship model has many benefits in the development of a nursing student both individually and professionally. Preceptorship is vitally crucial in nursing education as it assists nursing students to incorporate theory into practice, integrates students into the practice setting within the organisation, allows the student to apply learning and internalise the role and values of the profession within a nurturing and supportive relationship, and assists in recruiting nursing students into the profession. Some of the benefits of preceptorship included *1. The ability to incorporate theory into practice, 2. Increased*

*self-confidence and 3. Increased satisfaction and retention of students.* Findings illuminate the need of implementing a preceptorship model for undergraduate nursing students as there has been profound evidence that implies positive experience and learning for nursing students. This suggests a need for extensive educational preparation and further educational and organisational support to implement the preceptorship model in the clinical setting. The concept of preceptorship within the clinical practice was an appropriate framework for effective clinical teaching and learning. A formal collaboration between faculty and the healthcare agencies could be one of the strategies in implementing the preceptorship model to support nursing students in the clinical setting. Therefore, it is recommended that the Team Preceptorship Model (TPM) form the basis of preceptorship and be incorporated within the nursing education.

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### References

1. Deegan J, Burton T, Rebeiro G. Clinical assessment and the benefit of the doubt: what is the doubt?. *Aust J Adv Nurs*. 2012. 30(1): 42-48. Available from: <https://www.ajan.com.au/archive/Vol30/Issue1/Deegan.pdf>
2. Kim KH, Lee AY, Eudey L, Dea MW. Improving Clinical Competence and Confidence of Senior Nursing Students through Clinical Preceptorship. *Int J Nurs*. 2014. 1(2):183-209. Available from: <https://doi.org/10.15640/ijn.v1n2a14>
3. Smith C, Swain A, Penprase B. Congruence of perceived effective clinical teaching characteristics between students and preceptors of nurse anesthesia programs. *AANA J*. 2011. 79(4): 62-68. Available from: <https://pubmed.ncbi.nlm.nih.gov/22403969/>
4. Sundler AJ, Björk M, Bisholt B, Ohlsson U, Engström AK, Gustafsson M. Student nurses' experiences of the clinical learning environment in relation to the organisation of supervision: A questionnaire survey. *Nurse Educ Today*. 2014. 34(4): 661-666. Available from: <https://doi.org/10.1016/j.nedt.2013.06.023>
5. Udulis KA. Preceptorship in undergraduate nursing education: an integrative review. *The Journal of Nursing Education*. 2008. 47(1): 20-29. Available from: <https://pubmed.ncbi.nlm.nih.gov/18232611/DOI:https://doi.org/10.3928/01484834-20080101-09>
6. Madison J, Watson K, Knight BA. Mentors and preceptors in the nursing profession. *Contemp Nurse*. 1994. 3(3): 121-126. Available from: <https://doi.org/10.5172/conu.3.3.121>
7. Firtko A, Stewart R, Knox N. Understanding mentoring and preceptorship: clarifying the quagmire. *Contemp Nurse*. 2005. 19(1-2): 32-40. Available from: <https://doi.org/10.5172/conu.19.1-2.32>
8. Sedgwick M, Harris S. A Critique of the Undergraduate Nursing Preceptorship Model. *Nurs Res Pract*. 2012. 1-6. Available from: <https://doi.org/10.1155/2012/248356>
9. Lamont S, Brunero S, Woods KP. Satisfaction with clinical placement - The perspective of nursing students from multiple universities. *Collegian*. 2015. 22(1): 125-133. Available from: <https://doi.org/10.1016/j.colegn.2013.12.005>
10. Teferra AA, Mengistu D. Knowledge and attitude towards nursing clinical preceptorship among Ethiopian nurse educators: An institution-based cross-sectional study. *Int J Afr Nurs Sci*. 2017. 7(May): 82-88. Available from: <https://>

- doi.org/10.1016/j.ijans.2017.10.001
11. Henderson A, Cooke M, Creedy DK, Walker R. Nursing students' perceptions of learning in practice environments: A review. *Nurse Educ Today*. 2012. 32(3): 299–302. Available from: <https://doi.org/10.1016/j.nedt.2011.03.010>
  12. Zilembo M, Monterosso L. Nursing students' perceptions of desirable leadership qualities in nurse preceptors: A descriptive survey. *Contemp Nurse*. 2008. 27(2), 194–206. Available from: <https://doi.org/10.5172/conu.2008.27.2.194>
  13. Kemper NJ. Win-win strategies help relieve preceptor burden. *Nurs Manag*. 2007. 38(2):10. Available from: <https://doi.org/10.1097/00006247-200702000-00004>
  14. Monareng LV, Jooste K, Dube A. Preceptors' and preceptees' views on student nurses' clinical accompaniment in Botswana. *Afr J Nurs Midwifery*. 2009. 11(2): 115–129. Available from: [https://uir.unisa.ac.za/bitstream/handle/10500/9706/ajnm\\_v11\\_n2\\_a10.pdf?sequence=1&isAllowed=y](https://uir.unisa.ac.za/bitstream/handle/10500/9706/ajnm_v11_n2_a10.pdf?sequence=1&isAllowed=y)
  15. Chesser-Smyth PA, Long T. Understanding the influences on self-confidence among first-year undergraduate nursing students in Ireland. *J Adv Nurs*. 2013. 69(1): 145–157. Available from: <https://doi.org/10.1111/j.1365-2648.2012.06001.x>
  16. Levett-Jones T, Lathlean J, Higgins I, McMillan M. Staff - Student relationships and their impact on nursing students' belongingness and learning. *J Adv Nurs*. 2009. 29: 342–349. Available from: <https://doi.org/10.1111/j.1365-2648.2008.04865.x>
  17. Stalmeijer RE, Dolmans DHJM, Wolfhagen IHAP, Scherpbier AJJA. Cognitive apprenticeship in clinical practice: Can it stimulate learning in the opinion of students?. *Adv in Health Sci Educ*. 2009. 14(4): 535–546. Available from: <https://doi.org/10.1007/s10459-008-9136-0>
  18. McSharry E, Lathlean J. Clinical teaching and learning within a preceptorship model in an acute care hospital in Ireland; a qualitative study. *Nurse Educ Today*. 2017. 51: 73–80. Available from: <https://doi.org/10.1016/j.nedt.2017.01.007>
  19. Spouse J. *Professional Learning in Nursing*. Oxford: Blackwell Science; 2003.
  20. Benner P. Using the Dreyfus model of skill acquisition to describe and interpret skill acquisition and clinical judgment in nursing practice and education. *Bull Sci Technol Soc*. 2004. 24(3): 188–199. Available from: <https://doi.org/10.1177/0270467604265061>
  21. Forneris SG, Peden-Mcalpine C. Creating context for critical thinking in practice: The role of the preceptor. *J Adv Nurs*. 2009. 65(8): 1715–1724. Available from: <https://doi.org/10.1111/j.1365-2648.2009.05031.x>
  22. Lathlean L, Corner J. *Becoming a Staff Nurse: A Guide to the Role of the Newly Qualified Nurse*. London: Prentice-Hall Direct; 2013.
  23. Haggerty C, Holloway K, Wilson D. How to grow our own: An evaluation of preceptorship in New Zealand graduate nurse programmes. *Contemp Nurse*. 2013. 43(2): 162–171. Available from: <https://doi.org/10.5172/conu.2013.43.2.162>
  24. O'Kane CE. Newly qualified nurses experiences in the intensive care unit. *Nurs Crit Care*. 2012. 17(1): 44–51. Available from: <https://doi.org/10.1111/j.1478-5153.2011.00473.x>
  25. Wieland DM, Altmiller GM, Dorr MT, Wolf ZR. Clinical transition of baccalaureate nursing students during preceptored, pregraduation practicums. *Nurs Educ Perspect*. 2007. 28(6): 315–321. Available from: [https://doi.org/10.1043/1094-2831\(2007\)028\[0315:CTOB](https://doi.org/10.1043/1094-2831(2007)028[0315:CTOB)



NS]2.0.CO;2

26. Mantzorou M. Preceptorship in Nursing Education: Is It a Viable Alternative Method for Clinical Teaching? *ICUS Nurs Web J.* 2004. 19(4). Available from: <http://www.learningdomain.com/MEdHOME/SPECIALISATIONS/Clinical.prece%0Aptorship.pdf>
27. Flynn JP, Stack MC. *The role of the preceptor: A guide for nurse educators, clinicians and managers.* 2nd ed. New York: Springer publishing company; 2013.
28. Myrick F, Luhanga F, Billay D, Foley V, Yonge O. Putting the Evidence into Preceptor Preparation. *Nurs Res Pract.* 2012. (Article ID 948593). Available from: <https://doi.org/10.1155/2012/948593>
29. Milton-Wildy K, Kenny P, Parmenter G, Hall J. Educational preparation for clinical nursing: The satisfaction of students and new graduates from two Australian universities. *Nurs Educ Today.* 2014. 34: 648–654. Available from: <https://doi.org/10.1016/j.nedt.2013.07.004>
30. Kenny P, Reeve R, Hall J. Satisfaction with nursing education, job satisfaction, and work intentions of new graduate nurses. *Nurse Educ Today.* 2016. 36: 230–235. Available from: <https://doi.org/10.1016/j.nedt.2015.10.023>
31. Laschinger HKS. Job and career satisfaction and turnover intentions of newly graduated nurses. *J Nurs Manag.* 2012. 20: 472–484. Available from: <https://doi.org/10.1111/j.1365-2834.2011.01293.x>
32. D'Ambra AM, Andrews DR. Incivility, retention and new graduate nurses: An integrated review of the literature. *J Nurs Manag.* 2014. 22: 735–742. Available from: <https://doi.org/10.1111/jonm.12060>
33. Flinkman M, Salanterä S. Early career experiences and perceptions - a qualitative exploration of the turnover of young registered nurses and intention to leave the nursing profession in Finland. *J Nurs Manag.* 2015. 23(8): 1050 – 1057. Available from: <https://doi.org/10.1111/jonm.12251>
34. Parker V, Giles M, Lantry G, McMillan M. New graduate nurses' experiences in their first year of practice. *Nurse Educ Today.* 2014. 34: 150–156. Available from: <https://doi.org/10.1016/j.nedt.2012.07.003>
35. Giallonardo LM, Wong CA, Iwasiw CL. Authentic leadership of preceptors: Predictor of new graduate nurses' work engagement and job satisfaction. *J Nurs Manag.* 2010. 18(8): 993–1003. Available from: <https://doi.org/10.1111/j.1365-2834.2010.01126.x>
36. Beecroft PC, Dorey F, Wenten M. Turnover intention in new graduate nurses: A multivariate analysis. *J Adv Nurs.* 2008. 62:41–52. Available from: <https://doi.org/10.1111/j.1365-2648.2007.04570.x>
37. Leigh JA, Douglas CH, Lee K, Douglas MR. A case study of a preceptorship programme in an acute NHS Trust - Using the European Foundation for Quality Management tool to support clinical practice development. *J Nurs Manag.* 2005. 13(6): 508–518. Available from: <https://doi.org/10.1111/j.1365-2934.2005.00570.x>
38. Brunero S, Lamont S. The process, logistics and challenges of implementing clinical supervision in a generalist tertiary referral hospital. *Scand J Caring Sci.* 2012. 26: 186–193. Available from: <https://doi.org/10.1111/j.1471-6712.2011.00913.x>
39. Monaghan T. A critical analysis of the literature and theoretical perspectives on theory-practice gap amongst newly qualified nurses within the United Kingdom. *Nurse Educ Today.* 2015. 35(8): e1–e7. Available from: <https://doi.org/10.1016/j.nedt.2015.07.003>



nedt.2015.03.006

40. Bukhari E. Nature of Preceptorship and Its Impact on Clinical. The University of Manchester; 2011.
41. Happell B. A model of preceptorship in nursing: Reflecting the complex functions of the role. *Nurs Educ Perspect.* 2009. 30(6): 372–376. Available from: <https://doi.org/10.1043/1536-5026-30.6.372>
42. Billay D, Myrick F. Preceptorship: An integrative review of the literature. *Nurse Educ Pract.* 2008. 8(4): 258–266. Available from: <https://doi.org/10.1016/j.nepr.2007.09.005>
43. Papp I, Markkanen M, Von Bonsdorff M. Clinical environment as a learning environment: Student nurses' perceptions concerning clinical learning experiences. *Nurse Educ Today.* 2003. 23(4): 262–268. Available from: [https://doi.org/10.1016/S0260-6917\(02\)00185-5](https://doi.org/10.1016/S0260-6917(02)00185-5)
44. Löfmark A, Thorkildsen K, Råholm MB, Natvig GK. Nursing students' satisfaction with supervision from preceptors and teachers during clinical practice. *Nurse Educ Pract.* 2012. 12(3): 164–169. Available from: <https://doi.org/10.1016/j.nepr.2011.12.005>

# Comparing Effectiveness of Online and in-class Learning in a Nursing Course During COVID-19

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## Abstract

**Objectives:** Online learning has been applied to replace normal classroom of universities around the globe due to the COVID 19 pandemic. The purpose of this study was to compare the effectiveness of online and in-class learning in a nursing lecture course, and to survey the students' and instructors' satisfaction regarding online learning.

**Methods:** The comparative study was used. The sample consisted of 277 students enrolled in the course between 2019 and 2021, and 6 instructors who taught both courses. Of the students, 141 were in-class students while 136 were online students. The effectiveness was measured using learning achievement score. The online learning satisfaction of students and instructors were collected at the end of the semester. Data were analyzed using independent t-tests and descriptive statistics.

**Results:** There is no significant difference in learning achievement between online and in-class learning ( $p > .05$ ). However, the mean course evaluation score of the two groups were found to differ with statistical significance ( $p < .05$ ). Students' satisfaction level was lower than that of instructors. Students were nevertheless highly satisfied with 'provided instructional material' of the course design.

**Conclusion:** The findings suggest that well-designed online course can provide the online learners with the same efficacy of normal classroom students.

**Keywords:** Effectiveness of learning, online learning, in-class learning, learning achievement, course evaluation, course satisfaction, COVID 19

## Introduction

In the midst of COVID-19, many universities around the globe have increased concentration on the safety of students, faculty members, personnel, and other concerned individuals. A new standard has been set; most universities now offer every lecture course through online learning.

Online learning is being accepted as the optimal learning method to assure high quality interaction when in-person education is unavailable. Online learning model studies have increased in frequency both domestically and internationally. Studies have found many models to be effective; these could facilitate efficient learning. Crawford-Ferre and Wiest<sup>1</sup> concluded that effective and successful online learning required the following three factors: course design, interaction among course participants, and instructor preparation and support. First, the course design should include synchronous learning— instantaneous, *real-time* interactions, using technology like video chat—as well as asynchronous learning—

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using recordings, textbook material, and homework; Second, there must be “*interaction among course participants*”, due to collaboration among students does have learning benefits. Instructors should concern in the system and online classroom which should be easily accessible. They should also facilitate a student-centered environment with respect and emotional integrity and help students to develop positive and productive relationships with one another. Lastly, *instructor preparation and support*, the teacher should be trained in strategically and appropriately utilizing the technology. Technical support should also be readily available to instructors.

In reviewing the literature done on student’s achievement from online learning compared to that of normal learning, it was found that the learners had higher academic achievement when learning in a normal classroom.<sup>2,3,4</sup> However, there were some studies found no statistical difference between the two groups.<sup>5,6</sup>

However, the occurrence of the COVID 19 pandemic forced teachers to adjust their style of instruction. This adjustment induced setting up various learning activities and creating new methods of evaluation. Students will also need to adjust their learning and studying methods to fit the new model. Consequently, the researcher has realized the importance of studying the effectiveness of online learning lecture courses amidst the COVID 19 situation in order to develop a more effective online instruction model.

**Aim of the study:** To compare the effectiveness of online and in-class learning in a nursing lecture course during COVID 19 including the specific objectives as follows:

1) to compare learning achievement scores between online and in-class students,

2) to compare course evaluation scores between online and in-class students,

3) to survey the students’ and instructors’ satisfaction regarding online learning.

Research questions:

1. Were there significant differences in learning achievement between online and in-class students?

2. Were there significant differences in course evaluation between online and in-class students?

3. How satisfied were students and instructors in online learning?

Materials and Methods

**Design and setting:** This comparative research design was conducted at the Faculty of Nursing of a university in northern Thailand.

**Sample:** The sample consisted of 277 students enrolled in an Adult Nursing course between 2019 and 2021, and 6 instructors who taught both courses. Of the 277 total students, 141 were in-class students (2019-2020) while 136 were online students (2020-2021).

The in-class students were taught two hours per week on campus. Learning activities included lectures, case study discussions, question & answer sessions, and flipped classes. Instructors provided teaching materials, videos and other multimedia to students through the *KC-Moodle* portal before class. The learning achievement was evaluated from class participation, quiz completion, quiz scores, and exam scores. The online class covered the same content as the in-person class but was done fully online. The lectures were taught via Zoom and when the class were over, the zoom recording files were delivered to students via the *KC-Moodle*.

### Research Instruments:

1. A learning achievement assessment form which was developed by the course committee using the framework of the Thai higher education standards. This form consisted of three categories: 1) Morality and ethics—which was evaluated from class participation and quiz completion; accounting for 5% of the overall achievement score, 2) Knowledge – this evaluated the ability of students to memorize and understand content. This category represented 57% of the overall achievement score, and 3) Intellectual skills – evaluated students' ability to apply the knowledge gained during the course. Intellectual skills accounted for 38% of the overall achievement score. Knowledge and intellectual skills were evaluated from quiz scores, and exam scores.

2. A student course evaluation form created by the university. This form was used to evaluate student perception towards course instruction. It consists of seven items. The items were rated on a 5-point Likert scale from 1 (very bad) to 5 (very good).

3. An online learning satisfaction assessment form. This form was created by the researcher to assess the learners' and teachers' satisfaction. It consisted of ten items classified into three groups: learning management model, usage of the university's provided internet network, and benefits of online instruction. The items were rated on a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Score for each item was calculated using the mean. Mean score 1-1.49 represents satisfaction in lowest level, 1.50-2.49 represents satisfaction in low level, 2.50-3.49 represents satisfaction in moderate level, 3.50-4.49 represents satisfaction in high level, and 4.50-5.00 represents satisfaction in highest level. Content validity was verified by three experts and a CVI of 1.00. In this study, the reliability was tested with 10 pilot students and instructors. These were

found to be  $\alpha = 0.91$  and  $0.93$ , respectively.

### Data Collection:

The end of the first semester of academic year 2019 and 2020, the learning achievement scores of sample students were obtained from the course committee. The student course evaluation was obtained from the Education Service of the University (ESU). The course committee and the ESU released the scores to the researcher.

The online learning satisfaction forms were administered to voluntary students enrolled in online class and voluntary instructors who taught in online class. Both instructors and students were asked to complete the form and sent back to the research assistant.

### Data Analysis:

The statistic package was used for statistical analysis and the significant level set at  $\alpha = 0.05$ . An independent t-test was used to compare the mean score of the learning achievement and the mean score of the course evaluation among online and in-class students. Descriptive statistics were used to analyze the responses to the learners' and teachers' satisfaction with online learning.

## Results

When comparing the mean learning achievement score, the data showed that students of both groups varied with no statistical significance ( $p > .05$ ). Those who learned online had a mean learning achievement score of 74.39 with a SD of 7.31. The group of in-class learners had a mean learning achievement score of 73.83 and SD of 5.80. The mean course evaluation score of the two groups were found to differ with statistical significance ( $p < .05$ ). Online learners had a lower course evaluation score, on average, than in-person learners ( $\bar{X} = 4.34$ ,  $SD = .05$  and  $\bar{X} = 4.51$ ,  $SD = .06$ , respectively) (Table 1).

**Table 1 Comparing learning achievement score and course evaluation score of online students and in-class students.**

Variable	Online students (n = 136)		In-class students (n = 141)		T	p-value
	X̄	SD	X̄	SD		
Learning achievement score	74.39	7.31	73.83	5.80	-.699	.485
Course evaluation score	4.34	0.05	4.51	0.06	3.803	.019*

\* p&lt;.05

Concerning online course student satisfaction, 122 responses out of 136 were received from students (89.71%), comprised of 111 (90.99%) female and 11 (9.01%) male students. The study found that the overall mean satisfaction score for online learning was at a moderate level ( $\bar{X} = 3.19$ ,  $SD=0.33$ ). Satisfaction with the course design was at a moderate level ( $\bar{X} = 3.28$ ,  $SD=0.22$ ) while satisfaction with

provided instructional material was at a high level ( $\bar{X} = 3.55$ ,  $SD=0.87$ ). Satisfaction with the usage of the university's provided internet network, and the benefits of online instruction were at a moderate level ( $\bar{X} = 2.76$ ,  $SD=0.69$  and  $\bar{X} = 3.23$ ,  $SD=0.20$ , respectively). Satisfaction with the system stability during use was at the lowest level compared to other items ( $\bar{X} = 2.27$ ,  $SD=0.89$ ) (Table 2).

**Table 2 Mean, standard deviation, and level of online course students' satisfaction (n=122)**

Items	X̄	SD	Level
1. Course Design			
1.1 Zoom Lectures	2.86	0.75	moderate
1.2 Instructional Video Clips	3.23	0.91	moderate
1.3 Online Learning Activities (Q&A, flipped class, case study)	3.26	0.78	moderate
1.4 Method of Evaluating Learning Outcomes	3.40	0.87	moderate
1.5 Provided Instructional Material	3.55	0.87	high
Total	3.28	0.22	moderate
2. Usage of the University's Provided Internet Network			
2.1 User-friendly	3.25	1.03	moderate
2.2 System Stability During Use	2.27	0.89	low
Total	2.76	0.69	moderate
3. Benefits of Online Instruction			
3.1 Increased Responsibility with Lecture Attendance and quiz Completion	3.46	0.82	moderate
3.2 Increased Participation in Online Learning Activities	3.14	0.84	moderate
3.3 Increased Knowledge and Understanding of Course Contents	3.10	0.92	moderate
Total	3.23	0.20	moderate
Overall Satisfaction	3.19	0.33	moderate

Concerning online course satisfaction of instructors, six responses were received from instructors (100%). The overall mean satisfaction score for online learning was at a high level ( $\bar{X}$  =4.15, SD=0.29). Satisfaction with the course design, and the usage of the university's provided internet network were at a high level ( $\bar{X}$  =4.10, SD=0.22 and  $\bar{X}$  =3.84,

SD=0.23, respectively) while satisfaction with the benefits of online instruction were at the highest level ( $\bar{X}$  =4.50, SD=0.17). Creating instructional material and acquired ability to create online courses which enhance learners' participation yielded the highest level of satisfaction ( $\bar{X}$  =4.56, SD=0.52 and  $\bar{X}$  =4.67, SD=0.52, respectively) (Table 3).

**Table 3 Mean, standard deviation, and level of online course instructors' satisfaction (n=6)**

Issues	$\bar{X}$	SD	Level
1. Course Design	4.17	0.41	high
1.1 Zoom Lectures	4.00	0.63	high
1.2 Instructional Video Clips	4.11	0.59	high
1.3 Online Learning Activities (Q&A, flipped class, case study)	3.92	0.52	high
1.4 Method of Evaluating Learning Outcomes	4.56	0.52	highest
1.5 Creating Instructional Material	4.10	0.22	high
Total	4.10	0.22	high
2. Usage of the University's Provided Internet Network	4.00	0.63	high
2.1 User-friendly	3.67	0.52	high
2.2 System Stability During Use	3.84	0.23	high
Total	3.84	0.23	high
3. Benefits of online instruction	4.50	0.55	high
3.1 Increase Knowledge and Skills on Using Online Media	4.67	0.52	highest
3.2 Acquired Ability to Create Online Courses Which Enhance Learners' Participation	4.33	0.82	high
3.3 Acquired Ability to Design Online Learning Achievement Evaluation	4.50	0.17	highest
Total	4.50	0.17	highest
<b>Overall Satisfaction</b>	4.15	0.29	high



## Discussion

From the research question 1, there was no statistically significant difference in learning achievement between online and in-class students ( $p > .05$ ).

This online learning course have been set during COVID 19 pandemic for responding the University's policy to keep social distancing. The instructor group have tried to design the course to overcome the weakness of traditional distance education lacking in student-teacher interaction as well as student-student interaction. This seems to support the theory that learning is indeed a social process. A lack of social presence would negatively affect the students' learning achievement.<sup>7,8</sup> With existing technological advances, it is easy to engage online students in various learning activities with a similar experience to in-class students those who interact more often with their peers and instructor(s) during online discussions will engage more in the course material and achieve higher learning achievement scores.

In this study, the lectures were taught via Zoom, which is a synchronous communication platform, and could replace the face-to-face classroom instruction normally carried out.<sup>9</sup> Once the lecture finished, the instructor would manually the zoom recording file to the KC-Moodle portal as well as various learning materials which provided before class. These would enable learners to maximize their interaction with provided materials. This is congruent to the conceptual framework of long-distance education proposed by Moore<sup>10</sup> who believed that the success of long-distance education could occur if the teacher had arranged opportunity for the learners to interact with various instructional media. Moore came up with three types of interactions: student-content interaction, student-teacher interaction, and student-student interaction. This conceptual framework had

been verified by a set of studies and could support the conclusion that if there existed an online education system that provided opportunity for learners who have high level of an interaction in just one type (S-C, S-T, or S-S), the learning could be achieved according to the course objectives.<sup>1,11,12</sup>

Research question 2, the results of the study revealed there was statistically significant difference in course evaluation between online and in-class students ( $p < .05$ ).

This should be discussed that the online learning was chosen as a possible solution to the COVID 19 situation. This forced students to quickly acclimate to a completely new learning model (online). Many of these students had no experience with online learning or internet self-sufficiency. These students were more likely to be dissatisfied with online instruction and rate the course in a low level.<sup>13,14</sup> Another possible reason may be the dissatisfaction with the instability of the internet system. This study also found that online students mean satisfaction score was moderate. The list item: "System Stability During Use" had the low satisfaction score of the list. These findings are congruent to the study by Tungpantong<sup>15</sup> who found that the system quality, as well as the given information had impact on the operation and satisfaction of the system users. This causes students evaluated online course lower than in-class course.

Research question 3, how satisfied were students and instructors in online learning? The students were *moderately* satisfied with online learning in general, whilst instructors were *highly* satisfied. These results are congruent to those of Elshami et al.<sup>16</sup> who studied satisfaction of students and teachers with online learning. They found that only 41.3% of students were satisfied while 74.3% of instructors were satisfied. One factor that contributed to the satisfaction disparity was the sudden shift in framework—from

in-person to online. Students and instructors were especially dissatisfied with three main components of this sudden shift: inadequate preparation time, stressful pandemic conditions, and a lack of prior online learning experience.<sup>17</sup> In the present study, students were dissatisfied with the internet stability during use. This finding agrees with the study of Wingo, Peters, Ivankova, and Gurley<sup>18</sup> which reported that technology-related factors might impact student satisfaction with online learning, including the level of technical support they can rely on and the user-friendliness of the technological infrastructure of courses.

The current study reported that instructors were highly satisfied with online learning; especially with the acquired ability to create online courses which enhance learners' participation as well as creating instructional material. This satisfaction could be due to the support and advice from the TLIC set by the University to support and encourage instructors to design their courses. All this support could help reduce instructors' stress and increase their satisfaction with online teaching. Online learning has been widely regarded as the best mechanism to develop *information and communication technological skills*—for both the students and teachers.<sup>19</sup> Teachers agreed that online instruction would facilitate enhanced learning.

This study also revealed that students and teachers were least satisfied with 'system stability during use' of the 'University's Provided Internet Network'. This finding is congruent to that of many studies which similarly pointed out that the employment of synchronous and asynchronous learning in online instruction could increase the learner's satisfaction. Nonetheless, occurrence of technical difficulties could reduce satisfaction levels.<sup>4,13,17</sup>

### Conclusion

The research has shown that online learning

course designed to enable learners to access learning media via modern technology could enable learners to learn with the same efficacy of a normal classroom. To assure the effectiveness of online learning, the administration must keep the systems up-to date as well as maintain a stable internet connection. This assurance will allow instructors to develop and maintain a productive online course. Even when the pandemic is over, the university might still offer the course since it was so successful during the pandemic times.

### Implications for nursing education:

1. Concerned individuals should apply this online learning model designed for this course to other lecture courses to assure the desirable learning outcomes for the learners. This could yield higher satisfaction rates and learning achievement scores than normal classroom lectures.

2. Potential instructors should set up an orientation plan for students who are registered to take the online course. This should ensure students' understanding of all necessary procedures and systems. Students should be able to easily access all learning media for the course.

### Recommendations for further research:

1. The researcher should study course designs using different systems—not just zoom. Examples could include VROOM, Google Meet, Microsoft Teams, and Facebook Messenger.

2. The concerned individuals should study the effectiveness of online learning in other course types, not just lectures. Examples could include practicum courses, discussion courses, and lab courses.

**Conflict of Interest:** The authors declare no conflict of interest to report.

**Ethical Considerations:** This research was approved by the Institute Research Board of the Faculty of Nursing, (No.2563-122), Chiang Mai University, Thailand. Participants were informed that participation in this study was voluntary, they could withdraw at any time without identifying a reason and without any consequences. The researcher collected research data without any identification of the participants. The findings would be presented anonymously without disclosure of any specific information. Written informed consent of participants had to be given prior to participation.

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### References

1. Crawford-Ferre HG, Wiest LR. Effective online instruction in higher education. *Q. Rev. Distance Educ.* 2012,13(1):11-14.
2. Bindulem T. Effect of online teaching on learning achievement of the vocational certificate level 1. 10<sup>th</sup> Hatyai National and International Conference;2019 Jul 12-13; Hatyai University, Songkla, Thailand. Hatyai: International Proceedings Division; c2019. p. 1148-1157.
3. Faimuenwai R, Rodsreeda P. Learning achievement and students' satisfaction toward instruction via google classroom in the BNS 102 course (culture and health). *RSU National Research Conference*;2017 April 18; Rangsit University, Bangkok, Thailand. Bangkok: International Proceedings Division; c2017. p.1323-1332.
4. Artsub S, Kunkum S, Sitipoomongkol A. Effectiveness of moodle e-learning for kinesiology students. *JPR2R.* 2015.August; 2:81-89.
5. Holmes CM, Reid C. A comparison study of on-campus and online learning outcomes for a research methods course. *J Couns Prep Sup.* 2017, 9(2):1-24.
6. Banlue S. The suitable model of online learning and teaching for Ubon Ratchathani Rajabhat University. *J Roi Et Rajab U.* 2020,11(2):250-260.
7. Kornilova TV, Kornilov S, Chumakova M A. Subjective evaluations of intelligence and academic self-concept predict academic achievement: evidence from a selective student population. *Learn Individ Differ.* 2009, 19(4):596-608.
8. Yamada M. The role of social presence in learner-centered communicative language learning using synchronous computer-mediated communication: Experimental study. *Comput Educ.* 2009, 52(4):820-833.
9. Teaching and Learning Innovation Center [TLIC]. Guidelines and tools for online learning management [Internet]. Chiang Mai: Chiang Mai University;2020 [updated 2020 April 8; cited 2021 April 14]. Available from <https://tlic.cmu.ac.th/goonline/4007-2/>
10. Moore MG. Three types of interaction. *Am J Distance Educ.* 1989, 3(2):1-6.
11. Anderson T. Getting the mix right again: An updated and theoretical rationale for interaction. *Int Rev Res Open Dis.* 2003, 4(2):9-14.
12. Turley C, Graham C. Interaction, student satisfaction, and teacher time investment in online high school courses. *J Online Learn. Res.* 2019, 5(2):169-198.
13. Lim DH, Morris ML. Learner and Instructional Factors Influencing Learning Outcomes within a Blended Learning Environment. *J Educ Techno Soc.* 2009,12(4):282-293.
14. Tan S, Chuah F, Ting H. Factors affecting university students' satisfaction on online

- learning system. TARC International Conference on Learning & Teaching 2016. TAR UC, Kuala Lumpur, Malaysia, October 17-18, 2016.
15. Tungpantong C. Factors affecting learning achievement on online supplement learning. OAR [Internet].2017[cited 2020 Jan.29]. Available from <http://cuir.chula.ac.th/.../123456789/59699/1/5882349726.pdf>
  16. Elshami W, Taha MH, Abuzaid M, Saravanan C, Kawas SA, Abdalla ME. Satisfaction with online learning in the new normal: Perspective of students and faculty at medical and health sciences colleges. *Med Educ Online*. 2021, 26(1):1-10.
  17. Saravanan C, Mahmoud I, Elshami W, et al. Knowledge, anxiety, fear, and psychological distress about COVID-19 among university students in the United Arab Emirates. *Front Psychiatry*. 2020 Oct; 11:582189.
  18. Wingo NP, Peters GB, Ivankova NV, et al. Benefits and challenges of teaching nursing online: exploring perspectives of different stakeholders. *J Nurs Educ*. 2016;55(8):433-440.
  19. Hassan A, Abiddin NZ, Yew SK. The philosophy of learning and listening in traditional classroom and online learning approaches. *High Educ Stud*. 2014,4(2):19-28.

# Factors influencing Patient's Quality of Life (QoL) Undergoing Cancer Treatment- a Descriptive Exploratory study

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## Abstract

**Background & Objectives:** Cancer is the major health problem in developed and developing countries. With the advent of treatment like chemotherapy and radiotherapy, survival rates of many cancers have increased, but patient may experience side effects from the disease itself or from treatment which can eventually hinder patient's quality of life. The present study was planned to assess the quality of life among cancer patient undergoing cancer treatment in selected hospitals of Gangtok, East Sikkim. **Methods:** Investigator adopted the descriptive exploratory research design, where 100 cancer patients, within the age group of 18 years or above, either hospitalized or attending day care services and undergoing chemotherapy were selected through purposive sampling technique. The data was collected through english version of European Organization for Research and Treatment of Cancer (EORTC C-30) for which validity and reliability was established. **Results:** Majority (42%) of the cancer patients were in the age group of  $\geq 59$  years and 89% had received chemotherapy, ranging from 0 to 3 cycles (39%). Majority diagnosed with carcinoma of the gastro intestinal tract (45%) followed by reproductive tract (30%). The cancer patients undergoing cancer treatment had average quality of life. General health/quality of life was significantly different depending on age, place of habitat, therapy history, type of chemotherapy received ( $p < 0.05$ ), functional quality of life with type of family, type of chemotherapy ( $p < 0.05$ ), symptom-related quality of life with marital status, educational status, type of family and diagnosis of site ( $p < 0.05$ ) and financial difficulty with sex of the cancer patients ( $p < 0.05$ ). **Conclusions:** This study shows cancer patient had average quality of life. Thus is necessary to identify factors influencing quality of life among cancer patients to increase the effects of intervention to reduce helplessness and explaining power to improve health promotion behavior.

**Key words:** Cancer, Chemotherapy (CT), Quality of life (QoL), cancer treatment, Neoplasms, Drug therapy

## Introduction

Globally a new trend has been identified between the shifting of communicable to non-communicable diseases. The non-communicable diseases are increasingly recognized as a major cause of morbidity and mortality which is accounts for about 60% of deaths worldwide.<sup>1</sup> Cancer has become one of the ten leading causes of death in India.

In India it was predicted that the total cancer burden irrespective of the sites will increase from 7 lakh new cases per year to 14 lakh by 2026. National Institute of Cancer Prevention and Research under Ministry of Health and Family Welfare, Government of India, estimated that the number of people living with the cancer is around 2.5 million in India and every year more than 7 Lakh new cancer patients registered with current cancer-related deaths is 5, 56,400.<sup>2,3</sup>



North Eastern States of India, located in the Himalayan Mountains out of eight states, Sikkim states is the one with a very small population of 6,10,577 (2011 census) which is also considered as the India's least populous state and with an area of 7096 sq. km. it is the second smallest state after Goa.<sup>4</sup> The Population Based Cancer Registry (PBCR) was established in Sikkim in July 2003 under the National Cancer Registry Programme (NCRP) of Indian Council of Medical Research (ICMR) at Gangtok. The registry covers the entire state of Sikkim. The state of Sikkim does not have any cancer treatment facility but follow-ups are done on most of the patients diagnosed with cancer by keeping in touch with the cancer hospitals located in Kolkata, New Delhi, Mumbai and Siliguri.<sup>5</sup>

Many management options for cancer are available including chemotherapy and other methods.<sup>11</sup> The cancer treatment leads to side effects which generally depend on the type of therapy being offered. Most side effects cease after treatment. Although uncommon, some treatments may produce long-term effects which change the Quality of life.<sup>6</sup> Nayak M G, George A et al. conducted a study to assess the quality of life by interview technique using structured and validated interviewed schedule among 768 cancer patients selected through convenient sampling technique and the results show that out of 768 cancer patients, 82% of them had low quality of life which was influenced by their symptoms.<sup>7</sup>

Quality of Life is an important parameter in assessment of each patient's sense of physical, emotional and psychosocial wellbeing. A number of factors influence the Quality of Life. Quality of life also changes significantly over time and with treatment and acts as a surrogate marker of the patient's global health status.<sup>8</sup>

A cross-sectional study conducted by Heydarnejad MS, Hassanpour Dehkordi A, Solati Dehkordi K<sup>9</sup> 200 cancer patients with solid tumors to assess the quality of life at the different chemotherapy cycles. The data was collected through European Organization for Research and Treatment of Cancer Quality of life Questionnaire to measure quality of life and the results showed a significant difference between the level of quality of life in patients with  $\leq 2$  chemotherapy cycles or with 3- 5 cycles.<sup>10</sup>

The potential problem faced by the long term cancer survivors are in the areas of emotional support, social, health habits, spiritual, philosophical view of life and change in body image is a concern. Many studies show good or adequate overall quality of life in these patients. However, among long-term survivors, psychosocial issues and physical symptoms such as pain and lymphedema, particularly the adverse effects of systemic adjuvant therapy (chemotherapy) on quality of life still persist.<sup>11,12</sup>

The real goal for cancer therapy is not only to cure the cancer but to increase the survival rate and to minimize the potential symptoms and enhance the quality of life. In other words, if the quality of life is better than it directly increases the patients' adaptation and high desire for the continuing of the therapy. Higher quality of life leads patients to complete therapy with the lowest harm, control experienced symptoms and overcome these symptoms.<sup>13</sup>

## Materials and Methods

The present study was planned with the aim to determine the quality of life of cancer patients with different Cancer treatment. Non experimental survey approach with Descriptive exploratory research design was used to assess the difference in quality of life domain of cancer patient undergoing different cancer treatment and determine association between characteristics of cancer treatment with socio-



demographic variables cancer patient. The study was conducted in Hospital of Sikkim in 2018. Purposive sampling technique was used to select both male and female cancer patients within the age group of 18 years or above, diagnosed as cancer without differentiating the cancer type, either hospitalized or attending the day care services and undergoing cancer treatment during the period of data collection. Cancer patient who were mentally incompetent patients and not adherent to the treatments were excluded from the study.

The data was collected through structured interview technique. One predesigned structured tool and one standardized tool was used to assess the quality of life of cancer patients undergoing cancer treatment for which validity and reliability was established. The permission was taken from the Hospital authority.

Tool I consists of two sections, Section I consists of socio-demographic variables to collect the background information in relation to Age, religion, marital status, educational status, occupational status, type of family, Source of Income, Residence, Socio Economic Status, first diagnosis of cancer, Any complementary therapy, religious and cultural rituals and Section II consists of Predesigned questionnaires to identify characteristics of cancer treatment in relation to Therapy history, Type of cancer treatment received, Chemotherapy cure cycles, Diagnosis of the site, Type of chemotherapy, Duration of disease (Time since diagnosis in months). Tool II consist of Standardized tool for assessing Quality of life of cancer patient through The European Organization for Research and Treatment of Cancer quality of life Questionnaire (EORTC QLQ-C30) was used to measure the quality of life in the cancer patients.

The tool consisted of 53 questions and had arranged into 5 domains i. Demographic data ii. Characteristics of cancer treatment, iii. Functioning

scales, iv. Patient's general conditions, patient's physical activities, social status and occupational function and symptoms Scale. Each question had an equal value and the quality of life is quantified as the sum of the scores for all domains. The classification of the scores as favorable, fairly favorable, and favorable. The higher scores on this scale represent a better quality of life. There were few questions on different symptoms like pain, loss of appetite, fatigue, insomnia, dyspnea, and financial difficulties. A low score indicates better quality of life. The questionnaire consists of two questions on global health status, with a score of 1-7, on overall health and overall quality of life. The raw scores were first calculated and then it was converted to percentage.

Reliability of the tool was tested by Intra-rater method for socio-demographic profile and characteristics of cancer treatment whereas Cronbach's Alpha test was used for attitude scale ( $r=0.83$ ). Ethical permission was taken from the Institutional Review Committee. Written consent was obtained from the cancer patient prior to the interview. The data was analysed using IBM SPSS statistics 16 windows (SPSS Inc., Chicago, USA). Various statistical analyses were performed to analyse the data. The Chi-square analysis was used to determine the degree of association. Statistical difference was considered significant as the p-value was less than 0.05 at 95% confidence level

## Results and Discussion

### Section I: Findings related to socio-demographic variables of cancer patients undergoing cancer treatment in selected hospital of Sikkim

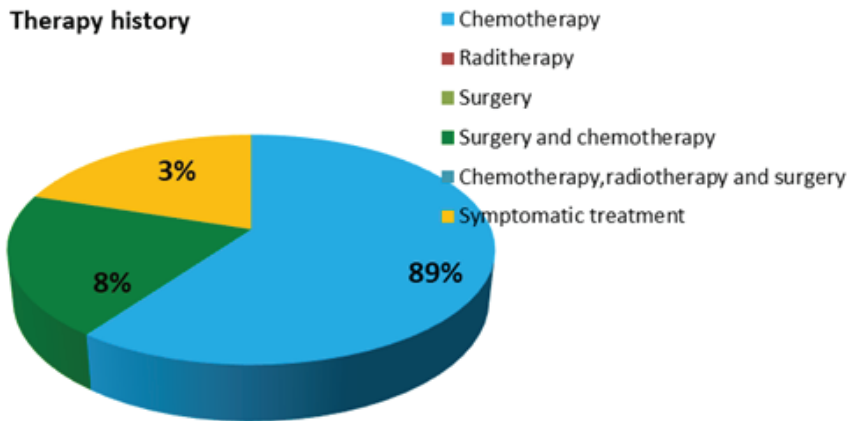
Majority of the cancer patients undergoing cancer treatment (42%) were in the age group of 59 years and above, 57% were males, 57% were by Hindu religion, 84% were married, 42% had primary school level of

education and 61% of them were unemployed, 64% belonged to the nuclear family, 39% had their monthly income below Rs. 4,999/- per month, 63% were residing in the rural area, 29% had their first diagnosis

of cancer was in the range of 31 months and above, 73% did not follow any complimentary therapy with the cancer treatment and 91% did not practice any religious and cultural rituals with the cancer treatment

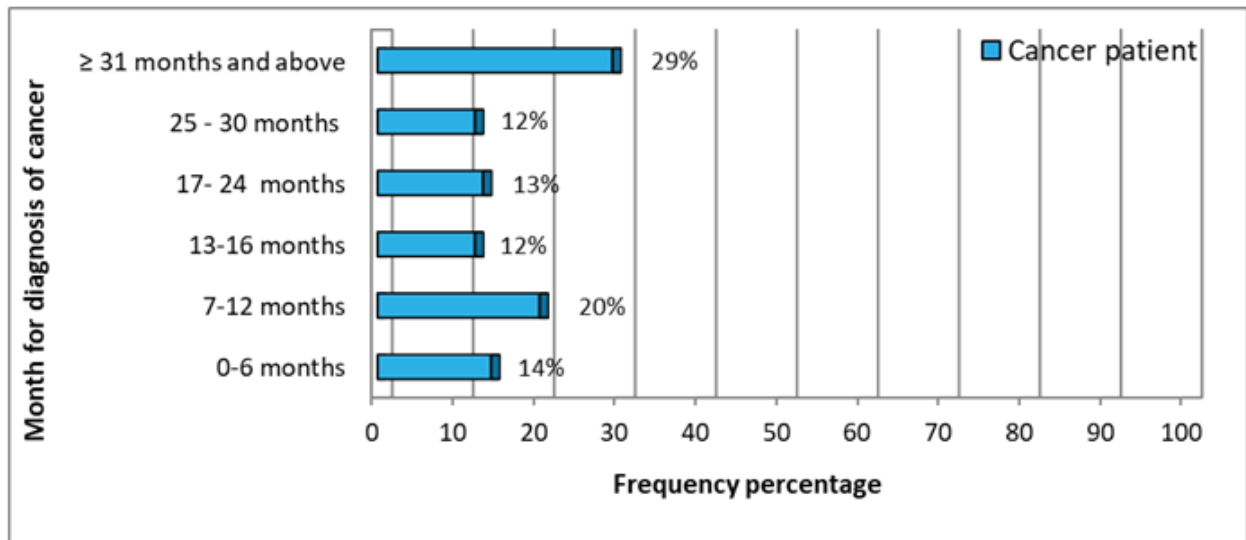
**Section 2: Findings related to characteristics of cancer treatment received by cancer patients in selected hospital of Sikkim**

**N=100**



**Fig 1. Distribution of cancer patients in terms of their therapy history**

**N=100**



**Fig 2. Distribution of cancer patients in terms of their month of diagnosis of cancer**

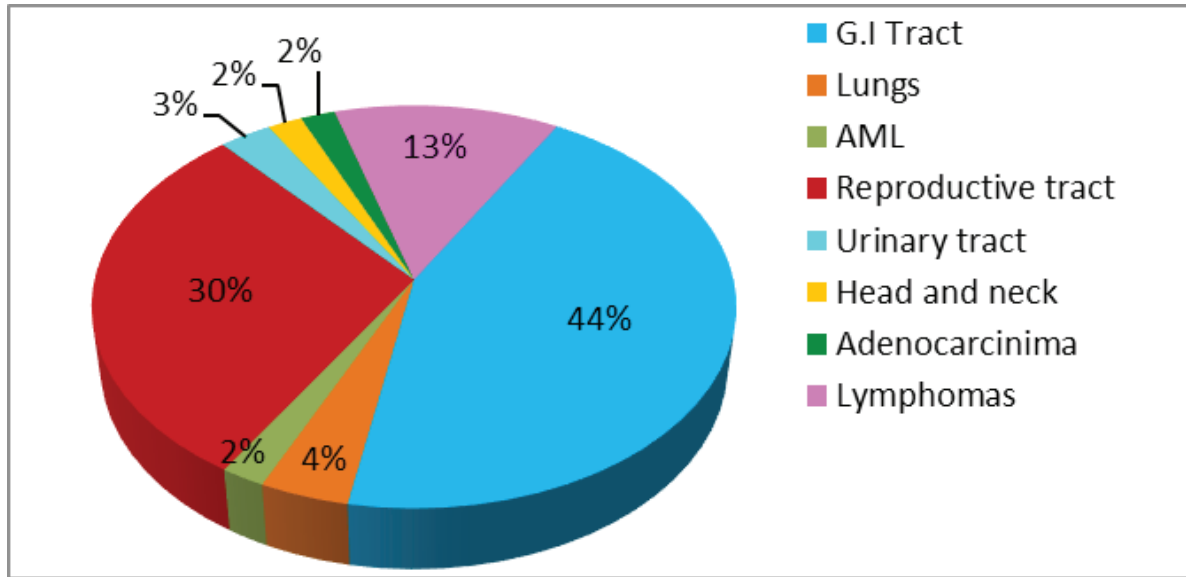


Fig 3. Distribution of cancer patients in terms of their diagnosis of cancer site

Table 1 Distribution of cancer patient patients in terms of their characteristics of cancer treatment

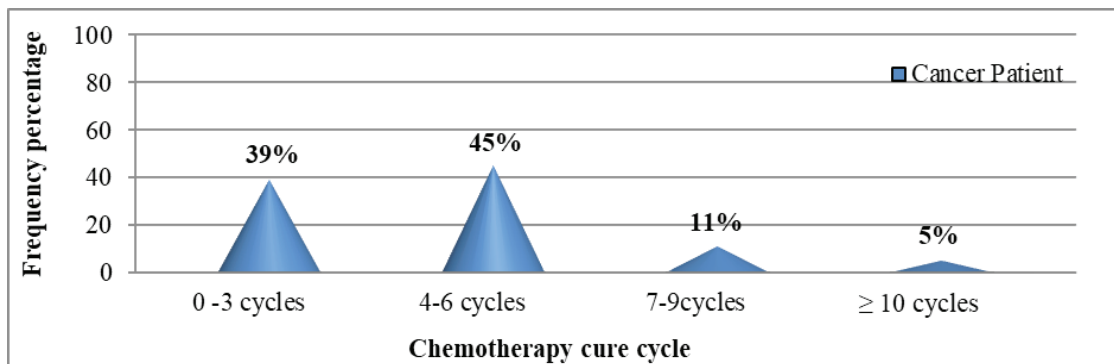
Sl.No.	Variables	(f)	(%)
1.	Complimentary therapies		
a.	Ayurveda treatment	7	7%
b.	Yoga	3	3%
c.	Unani	1	1%
d.	Sowa rigpa (tibetan medicine)	13	13%
e.	Homeopathy	3	3%
f.	No complimentary therapies	73	73%
2.	Religious and cultural rituals		
a.	Fasting	5	5%
b.	Complimentary dietary supplements ( honey, dates, olive oils) holy water	3	3%
c.	Meditation	1	1%
d.	No religious and cultural rituals	91	91%
3.	Types of chemotherapy		
a.	Antimetabolites	7	7%
b.	Alkylating agents	34	34%
c.	Antitumor	8	8%
d.	Alkaloids	16	16%

**Cont... Table 1 Distribution of cancer patient patients in terms of their characteristics of cancer treatment**

**N=100**

e.	Antidotes	2	2%
f.	Antimetabolites + anti tumor	3	3%
g.	Antimetabolites + alkylating agents + alkaloids+ antidotes	2	2%
h.	Alkylating agents + alkaloids	10	10%
i.	Antimetabolites + alkylating agents + alkaloids	3	3%
j.	Antimetabolite + alkylating agents	3	3%
k.	Antimetabolite + alkylating agents +antidotes	1	1%
l.	Alkaloids + antidotes + antimetabolites	3	3%
m.	Alkaloids + antitumor + alkylating agents	1	1%
n.	Antitumor +alkylating agents +antimetabolites	2	2%
o.	Antimetabolites + antidotes	1	1%
p.	Antitumor + alkylating agents	2	2%
q.	Alkylating agents + antidotes	2	2%

**N=100**



**Fig 4. Distribution of cancer patients in terms of receiving chemotherapy cure cycles**

**Table 2. Assessment of Mean, Mean percentage and standard deviation for overall Quality of life score of cancer patients.**

**N=100**

Domain	Mean	Mean %	Median	Standard deviation
Quality of life score	78.66	68.49%	78	16.438

The overall quality of life score shows that all the cancer patients had average quality of life due to the cancer and its treatment with the mean percentage of 68.49% as shown in table 2.

The result of the study shows that the cancer patients scored 69.28% in global health status which shows an average level of quality of life in this domain. The functional scale scores ranged with mean percentage score of 50.83% which interpreted that the cancer patients undergoing cancer treatment has average level of difficulties in performing the

daily functional activities. The symptom scale scored mean percentage of 63.73% which shows that the cancer patients have average level of symptom level during the period of cancer treatment. The financial difficulties shows 67.5% which indicates that the cancer patients undergoing cancer treatment had some level of difficulties with respect to the cost of cancer treatment.

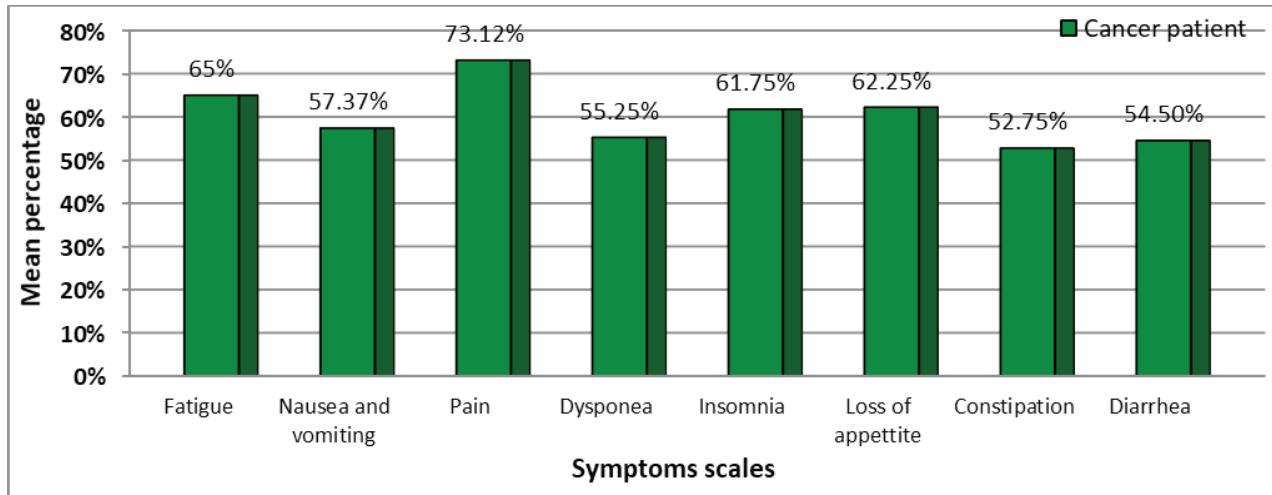
**Table 3: Domain wise overall mean assessment of quality of life by European Organization for Research and Treatment (EORTC) Questionnaire for cancer patient**

**N=100**

<b>Domain-2 Functional scales</b>	<b>Total Questions</b>	<b>Total Marks</b>	<b>Marks Obtained</b>	<b>Mean</b>	<b>Mean Percentage</b>	<b>Median</b>	<b>SD</b>
Global Health Status	2	1400	890	8.9	63.57%	7	2.098
Physical functioning	5	2000	1,177	11.77	58.85%	9.5	3.3
Role functioning	2	800	486	4.86	60.75%	3.5	2.1
Emotional functioning	4	1600	1086	10.86	67.87%	6.5	3.0
Cognitive functioning	2	800	437	4.37	54.62%	2.5	30.6

The above table shows that the Global Health Status consisted of two questions with the total marks of 1400 out of which the respondents scored 890 with the mean percent of 63.57%. In Physical functioning (PF) it consisted of total of 5 questions where the mean was found to be 11.2, mean percentage of 58.85%. The role functioning (RF) scale consisted of total of two questions in which the mean was found to be 4.86, mean percentage of 60.75%. The

emotional functioning (EF) scale consisted of totally four questions where the mean score was 10.86, mean percent of 67.87% and the cognitive functional (CF) scale consisted of total number of 2 questions where the mean score were 4.37 with the mean percentage of 54.62% thus showing the average score in all the domain of the Quality of life questionnaire.



**Fig.5 Distribution of cancer patients in terms of their symptoms scales**

The findings shows that age, educational status and place of habitat of the cancer patient had its influence in global health status scale ( $P \leq .05$ ) whereas financial difficulty with the sex of the cancer patient ( $P \leq .05$ ). It was also found that there was a significant association between the marital status, education status and type of family with the symptom scale ( $P \leq .05$ ). It was also noted that there was significant association between the sexes of the cancer patient with the financial difficulty ( $P \leq .05$ ). The study further depicted that there was significant association in terms of type of habitat with symptom scale ( $P \leq .05$ ) of European Organization for Research and Treatment of Cancer.

Significant association was found in the therapy history, Chemotherapy cure cycles and type of chemotherapy received with the Global Health Status Scale ( $P \leq .05$ ). Whereas significant association was found with diagnosis of the site with the Symptom Scale ( $P \leq .05$ ).

#### **Discussion in relation to the quality of life among cancer patients**

The present study findings revealed that the majority of the cancer patients (48%) had good level

and 20% had excellent level of Global Health Status score. Whereas the data also depicted that 46% of the participants had moderate and 9% had severe level scores for the symptom scales comprising of the fatigue, nausea and vomiting, pain, dyspnea, insomnia, appetite loss, constipation and diarrhoea scales. In the financial difficulty scale it was found that 58% of the participants faced moderate level and 9% faced severe level of financial difficulties for the cancer treatment.

The findings were consistent with the findings of the cross sectional study conducted by **Sunderam S, et al**,<sup>14</sup> at oncology clinic of Rajendra Institute of Medical Science (RIMS) to assess the quality of life among 113 cancer patients in relation to type of treatment received and result shows 54%, had average & 21.9% had below average quality of life. In contrast to the present study findings, **Davies N**<sup>15</sup> conducted a institutional based cross-sectional research on 250 breast cancer patients to assess the quality of life through Amharic version of European organization for research and treatment of cancer questionnaires and found that participants scored low quality of life (Mean =52.5; SD = 26.0).



In the present study with respect to the Global Health Status the mean percentage was 57% (SD=3.12). This indicates that the respondents had average level of quality of life score. Similarly in the functional scale, the highest score is in emotional function scale that is 67.87% (SD=3.0). This means that the cancer patients undergoing cancer treatment were much worried about their disease condition and their treatment. Similarly in the symptom scale, the mean percentage for fatigue was 65% (SD= 2.3), for pain it was 73.12% (SD=0.2), among symptom scales, pain and fatigue is the most frequent symptoms, which indicates high level of problems.

The findings were consistent with the study conducted by **Radha A Pandey, et al**,<sup>16</sup> on quality of life of patients undergoing cancer treatment in B.P. Koirala Memorial Cancer Hospital, Bharatpur, Chitwan, Nepal, among 245 cancer patients and found that the quality of life of cancer patients is better. Regarding symptoms scale the transform mean and SD score is low that is 16.14 (SD= 13.19) which also indicates better quality of life of cancer patient or low symptomatic. Among the symptom scale loss of appetite is the most frequent symptoms, which indicates that high level of problems with loss of appetite.

In the present study it was found that Global Health Score was significantly associated with the therapy history, number of chemotherapy cure cycles received, diagnosis of the site of cancer and type of chemotherapy received by the cancer patients. These findings was consistent with the research conducted by **Singh H, Kaur K, Banipal RPS, Singh S, Bala R**<sup>17</sup> to assess the Quality of life in cancer patients undergoing chemotherapy in a tertiary care center in Malwa region of Punjab and found that the Global Health Score significantly improved among patients undergoing more than three cycles of chemotherapy as compared to one, indicating that the patient's

overall health improved.

The findings was consistent with the findings based on study conducted by **Thalyta C Mansano-Schlosser, Maria F Ceolima**<sup>14</sup>, to evaluate the quality of life in cancer patients undergoing chemotherapy among 80 samples and found that 27(34%) patients rated it was "very good" or "good", 35(44%) indicated that it was "neither good nor bad" and 18 (22%) said it was "very bad" or "poor" in the self-rated Health. Regarding quality of life, it was found that the Social and physical domains were the most affected.

The health care provider need to focus on addressing side effects of the therapy, psychosocial and economic support to minimize therapy side effects and symptoms which in turn will help improve quality of life of cancer patients. Quality of life assessments should be included in patient treatment protocols addressing the functional and symptom scales which will help in improving the QoL among cancer patients.

### **Conclusion & Recommendation**

The study concluded that type and site of cancer has a significant impact on the Quality of Life of the patients. The most commonly used treatment method in this study was chemotherapy (89%) which is more troublesome for patients due to its side effects especially in the beginning of treatment as patients take much time in getting adjusted with the treatment and its side effects. The major drawbacks of this study was the small number of patients and inability to ascertain changes over a long period of time, especially considering long term late effects due to sequel of treatment or disease relapse. Thus selection of two settings and large samples, Other research designs such as cross sectional research design , comparative study on the basis of type of cancer treatment received in terms of gender and duration of cancer diagnosis and experimental study focusing on reduction of pain and discomfort due to

cancer treatment was recommended.

**Acknowledgment:** The researcher thanks all the participants of the study for their kind cooperation.

**Ethical Clearance-** Ethical permission was sought from the Institutional Review Committee of Sikkim Manipal University. Written consent was obtained from the respondent prior to the interview.

### Declarations

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### References

1. Irizarry P, Newby A, Clapp R. Lifestyle related factors and environmental agents causing cancer an overview. Retrieved from: URL: <http://www.Doi:10.1016/j.biopha.2007.10.006>. PMID 18055160.
2. Cancer fact sheet. Retrieved from [www.ncrpindia.org](http://www.ncrpindia.org)
3. Cancer burden in India. Retrieved from [www.canceratlasindia.org](http://www.canceratlasindia.org)
4. [http://www.icmr.nic.in/ncrp/pbcr\\_2012-14/](http://www.icmr.nic.in/ncrp/pbcr_2012-14/) Retrieved from :Sikkim\_State\_Printed.pdf
5. Hofman M, Ranson L. The most common side effects of cancer drugs: University of California USA. 2002 December: Available from: URL:<http://www.cancerhelp.org.uk/about-cancer>
6. Malathi GNayak, Anice George, MS Vidyasagar, Stanley Mathew, SudhakarNayak, Baby S Nayak, YN Shashidhara, Asha Kamath. Quality of Life among Cancer Patients. Indian Journal of Palliative Care. 2017; 23(4): 445–450.
7. Basu A, Basu A. Changes in quality of life among Indian breast cancer patients during adjuvant treatment: A single centre experience. Journal of Evolution Medicine in Dental Science. 2016; 5(82):6101-6107.
8. Rajani Mohan Indian Talent Global Content. 2010 November. Retrieved from: URL: <http://www.chillibreeze.com/articles-various/cancer-in-India.asp>
9. Heydarnejad MS, Hassanpour DA, Solati DK .Factors affecting quality of life in cancer patients undergoing chemotherapy. African Health Sciences. 2011; 11(2 ):266-70.
10. Ferlay J, Steliarova FE, Lortet TJ, Rosso S, Coebergh JW, Comber H . Cancer incidence and mortality patterns in Europe: Estimates for 40 countries in 2012. European Journal of Cancer 2013; 49:1374-403.
11. Burgess C, Cornelius V, Love S, Graham J, Richards M, Ramirez A. Depression and anxiety in women with early breast cancer: Five year observational cohort study. British Medical Journal. 2005; 330:702-5.
12. World Health Organization. Research on menopause. Technical Report Series. 1981; 671:1-120.
13. Bhanja A, D’Souza DSJ, Roy C, Poddar RN .Assessment of Quality of life in oral cancer patients following pectoralis major myocutaneous flap reconstruction. International Journal of Contemporary Medical Research. May 2016; Vol 3( 5) :50.43.
14. Schlosser TCM, Ceolim MF, Quality of life of cancer patients during the chemotherapy period. Texto contexto - enferm, Florianópolis .2012;21(3):600-607.
15. Davies N. Measuring health-related quality of life in cancer patients. Nursing Standard. 2009;23(30):42-9.
16. Pandey RA, Dhungana GP, Twi JT, Byanju S, Khawas B. Quality of life of patients undergoing cancer treatment in B. P. Koirala Memorial Cancer Hospital, Bharatpur, Chitwan, Nepal. 26 March 2018
17. Aaronson NK, Ahmedzai S. The European Organization for Research and Treatment of Cancer QoL – C30: A Quality – of – Life Instrument for Use in International Clinical Trials in Oncology. Journal of the National Cancer Institute.1993; 85(5).

Type of manuscript: Research

# A Good Art of Living: Psychological Resilience among Nursing Students

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## Abstract

**Introduction:** “Webster describes resilience as “a strained body’s ability to regain its size and shape after deformation caused especially by Occlusion stress”. Resilience can be described as, “the process of adjusting well in the face of adversity, trauma, catastrophe, threats or even major sources of stress”. **Background Of The Study:** There is indeed an increasing interest in research to explore why certain nursing students can manage well, but when they all face similar issues and challenges during their course, others cannot. Current studies have found that resilience in graduate student nurses is strongly related to academic success. **Need For The Study:** A Positive teaching strategy must therefore be created to promote student resilience. This report would also put further more effort to examine the association between resilience and well-being among student nurses. **Aim:** To assess the psychological resilience among different years of nursing students at selected nursing college. **Methodology:** Descriptive cross sectional research design. The samples were selected randomly by lottery method and were advised to fill the questionnaires consisting of two sections demographic variables such as age, sex, medium of instruction, background, type of family, religion, class batch, living, bread winner of the family and marital status and regarding the psychological resilience (Modified Connor Davidson Resilience Scale) **Findings:** According to the findings of the study, among the undergraduate nursing students 80(53.3%) of students had high resilience whereas 6(4.0%) had low resilience and 64(42.7%) had moderate resilience. On comparison, the nursing students of different years showed that the level of psychological resilience is high 27(58.7%) among third year students and low resilience is assessed among 3(2.0%) final years students. The demographic variables had shown statistically no significant association with level of psychological resilience among undergraduate nursing students. A booklet on “I am a Resilient Person” was issued among the participants.

**Keywords:** Psychological Resilience, Nursing students, strategy, resilient person, Connor Davidson Resilience Scale (CD-RISC)

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## Introduction

*Resilience means you experience, you feel, you fail, you hurt, and you fall. But, you keep going.”*

— YasminMogahed

The definition of resilience comes from “resilire” in Latin and is defined as the ability to overcome/ become adapted to extremely difficult circumstances<sup>25</sup>.

Resilience is mentioned as process of development of individual characteristic<sup>12</sup>. In addition, resilience is also defined as an individual's personal survival from a disease or a loss, and the ability to survive<sup>18</sup>. A difficult event would have occurred in order to recognize that there is resilience, and the person would have adapted to this event<sup>11</sup>. Inherently, having experienced adversity, resilience refers to the positive adaptation, or the ability to build or regain mental health<sup>16</sup>. "Webster describes resilience as "a strained body's ability to regain its size and shape after deformation caused especially by Occlusion stress<sup>1</sup>". Resilience can be described as, "the process of adjusting well in the face of adversity, trauma, catastrophe, threats or even major sources of stress," and according to American Psychological Association, (2014) Resilience can have an increased positive effect that leads to increased self-esteem, enhanced life satisfaction, and effective rewinding of negative experiences<sup>22</sup>. Resilience is beneficial for recognizing health professionals who in their workplace survive and thrive. Studies have proved that resilience is a required attribute for nursing success<sup>2</sup>.

### **Background of the Study**

All student nurses are believed to be prone to phases of perceived adversity and distress. In comparison to other health majors, student nurses face higher levels of stress<sup>10</sup> (Edwards et al., 2010). Besides that, professional nursing education exposes students to living patient/clinical circumstances and many firsts, including diagnosis and deaths, numerous different experiences and contagious diseases. The experiences of the learners may be challenging because in a practice environment they apply new concepts and skills. Trying to promote student resilience will benefit them through their education and better prepare them for practice<sup>23</sup>. In nursing practice, nursing authors have explored resilience

and have used different meanings of the concept (Stephens, 2013).

### **Need for the Study**

There is indeed an increasing interest in research to explore why certain nursing students can manage well, but when they all face similar issues and challenges during their course, others cannot. Current studies at University of Northern Colorado (2020) have found that resilience in graduate student nurses is strongly related to academic success. A Positive teaching strategy must therefore be created to promote student resilience. This report would also put further more effort to examine the association between resilience and well-being among student nurses.

### **Materials and Methods**

#### **Research Setting**

The study was conducted in the Department of Faculty of Nursing, Dr. M.G.R Educational and Research Institute, Chennai.

#### **Population**

The population of the study was undergraduate nursing students studying in the Department of Faculty of Nursing, Dr. M.G.R Educational and Research Institute, Chennai.

#### **Sample**

Undergraduate Nursing Students in the Department of Faculty of Nursing, Dr. M.G.R Educational and Research Institute, Chennai.

#### **SAMPLE SIZE**

The sample size was 150.

#### **SAMPLING TECHNIQUE**

The samples were selected using simple random sampling by lottery method.

### INCLUSION CRITERIA

- Student nurses enrolled in a program leading to a Bachelor of nursing qualification.
- Nursing students who were able to read and write English.

### EXCLUSION CRITERIA

- Who were not willing to participate

### DESCRIPTION OF THE TOOL

The tool construct is used to assess the psychological resilience among nursing students. The tool constructed in this study is divided into two sections

#### **Section A:** Demographic Variables

Demographic variables such as age, sex, medium of instruction, background, type of family, religion, class batch, living, breadwinner of the family and marital status.

#### **Section B:** Connor Davidson Resilience Scale (CD - RISC)

Connor – Davidson Resilience Scale (CD-RISC) which was developed in means of assessing psychological resilience and measures of stress coping ability among nursing students consisting of 25 questions.

The Connor – Davidson Resilience Scale was developed by Kathryn M. Connor and Jonathan R.T. Davidson as a means of assessing resilience in 2003.

#### Validity of the tool

The validity of the tool was obtained from five experts. Three experts were masters in mental health nursing, one biostatistician and one psychiatrist. The tool was validated and the modifications given were taken into consideration.

#### Reliability of the tool

Reliability of the tool is a degree of consistency with instruments, measures the attribute it is designed to measure.

The authors examined the Connor Davidson – Resilience Scale (CD-RISC). A CFA analysis confirmed the construct validity of the Connor Davidson – Resilience Scale (CD-RISC) (CampbellSills& Stein, 2007). The Connor Davidson – Resilience Scale (CD-RISC) exhibited adequate internal reliability (0.85). Concurrent validity was supported by the finding that resilience (measured with CD-RISC) moderated the relationship between self-reported trauma and the expression of psychiatric symptoms.

### DATA COLLECTION PROCEDURE

The data collection period was one month from 02.02.2021 to 03.03.2021. An official permission was obtained from the concerned authorities, the Honorable Secretary, the Principal of Dr. MGR Educational and Research Institute and the Ethical Committee of the Institution before commencing the main study. The sample was selected in accordance to the sampling criteria and sampling technique. Informed consent was obtained from each sample before administering questionnaire. The tool used was Connor Davidson Resilience Scale CD-RISC consists of 25 items, which are evaluated on a five point Likert scale ranging from 0-4: not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all of the time (4). These ratings result in a number between 0-100, and higher scores indicate higher resilience (71 – 100), moderate resilience(40 – 70) and low resilience (less than 40). The purpose of the study was explained and the confidentiality was maintained. The investigator conducted the data collection using Google form link shared among the undergraduate nursing students. The samples submitted their responses within 5 days.



The samples were very cooperative.

**Result**

**DESCRIPTION OF SOCIO – DEMOGRAPHIC VARIABLES**

In the present study, majority of the samples in the demographic variables showed that maximum

67(44.7%) were in the age group of 19 – 20 years, 120(80.0%) females, 141(94.0%) had English as the medium of education, 91(60.7%) had urban background, 104(69.3%) belong to nuclear family, 119(79.3%) belong to Hindu religion, 47(31.3%) final year students, 109(72.7%) day scholars, 134(89.3%) student’s father were the breadwinner of the family and 149(99.3%) were unmarried.

**ASSESSMENT OF PSYCHOLOGICAL RESILIENCE AMONG NURSING STUDENTS**

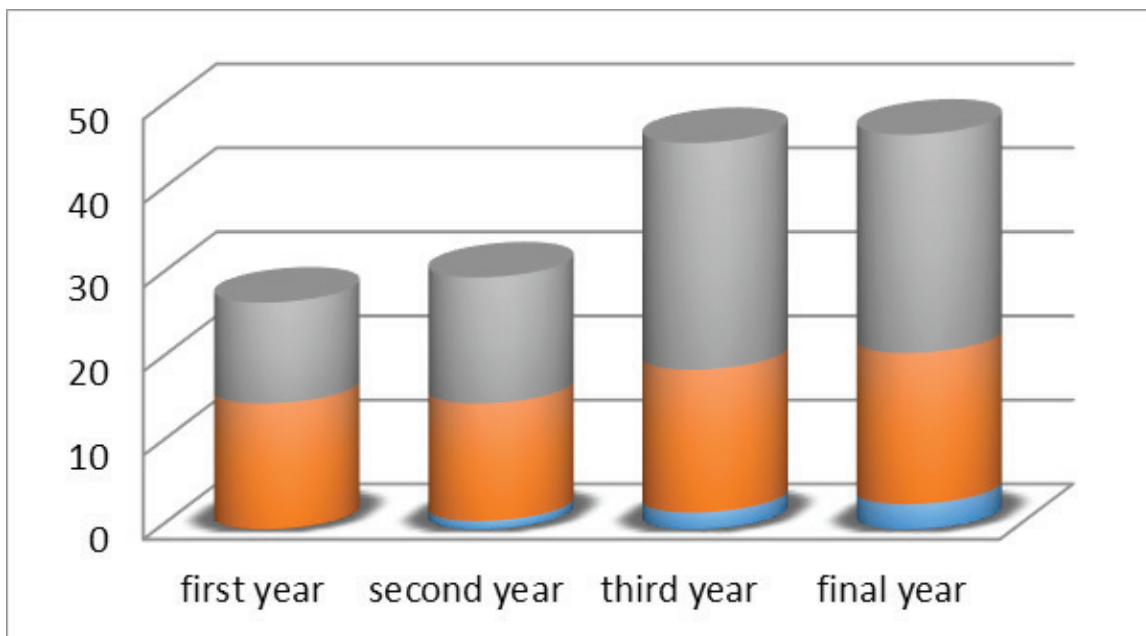
**Table1: Depicts the level of psychological resilience among nursing students**

n = 150

S.no	Resilience	Frequency	%
1	Low resilience	6	4.0
2	Moderate resilience	64	42.7
3	High resilience	80	53.3
	Total	150	100.0

The present study findings showed (table 1) that among all the samples, 80(53.3%) had high resilience 64(42.7%) had moderate resilience and only 6(4.0%) had low resilience. The present study revealed that the nursing students had the psychological resilience of mean score 71.05 with a standard deviation of 16.213.

**COMPARISON OF PSYCHOLOGICAL RESILIENCE AMONG ALL THE FOUR YEARS**



**Figure1: Level of Psychological Resilience among all the four years**



The present study findings showed that the level of psychological resilience is high 27(58.7%) among third year students were as low resilience is assessed among final years 3(2.0%). Among first year students, 12 had high resilience and 15 had moderate level of resilience. Among second years, the high resilience was assessed with 15 students and moderate resilience with 14 students. In third years, the high resilience showed for 27 students, moderate resilience for 17 students and low resilience for 2 students. In fourth year students, the high resilience was assessed between 26 students; moderate resilience between 18 students whereas low resilience was assessed between 3 students. The second objective is to compare the psychological resilience among nursing students of different years. The study finding showed that the level of psychological resilience is high 27(58.7%) among third year students were as low resilience is assessed among final years 3(2.0%).

#### **Association between Psychological Resilience with Selected Demographic Variables**

The data concluded that the association between psychological resilience with selected demographic variables, showed that the demographic variables are statistically not associated with the level of psychological resilience among nursing students.

#### **Discussion**

In the present study, among all the samples, 80(53.3%) had high resilience whereas 64(42.7%) had moderate resilience and 3(2.0%) had low resilience. The findings was supported by a cross-sectional descriptive correlational design study on “Resilience and well-being of university nursing students in Hong Kong” by Ka Ming Chaw(2018) using the 10- item Connor-Davidson Resilience Scale (CD-RISC-10) and World Health Organisation-5 Well-Being Index (WHO-5) among 678 university nursing students. There was a statistically significant

difference between the groups ( $p = .020$ ). With regard to perceived well-being and there was no significant difference between undergraduates and postgraduates ( $p = 0.131$ ). The results demonstrated that nursing students with a high level of resilience have better perceived well-being. The study finding was contradictory with the non-experimental, descriptive-correlational research study examined the relationship between resilience and nursing student academic performance study on “The Effects of Resilience on Student Academic Success in Baccalaureate Nursing” Frost(2020) in a private nursing college with 300 baccalaureate level nursing students. Based on correlational analysis, a weak positive relationship was found between academic success and resilience. Academic success also demonstrated relationships with cumulative grade point average, current nursing course level, employment status, average work hours per week, and race/ethnicity. Through this study the researcher arguments that resilience might be a factor that positively influences nursing student academic success.

The present study finding showed that the level of psychological resilience is high 27(58.7%) among third year students were as low resilience is assessed among final years 3(2.0%). Among first year students, 12(8.0%) had high resilience and 15(10%) had moderate level of resilience. Among second years, the high resilience was assessed with 15(10%) students and moderate resilience with 14(9.3%) students. In third years, the high resilience showed for 27(18%) students, moderate resilience for 17(11.3%) students and low resilience for 2(1.3%) students. In fourth year students, the high resilience was assessed between 26(17.3%) students, moderate resilience between 18(12%) students whereas low resilience was assessed between 3(2.0%) students. This study finding was supported by FatmaÖz et al., (2012) on the death anxiety and resilience levels among first to

fourth year nursing students of Nursing Department of Health Sciences Faculty, Hacettepe University. They assessed relevance between death anxiety and resilience level among nursing students who gave direct care to the dying patient. The finding showed that fourth year students had higher resilience among all other year students.

The above study findings are contradicted by Priscilla Roselyn Sam et al., (2020) conducted a study on “Do Stress and Resilience among Undergraduate Nursing Students Exist? This study assessed perceived stress and resilience levels of nursing students among 620 participants. The study results showed that 45.7% had severe stress and 55 % had low resilience. The study revealed a significant weak negative correlation ( $r = -0.236$ ,  $p = < 0.001$ ) between perceived stress and resilience. The study also suggested that cultural differences in Indian context influenced the nursing students. Hence they were more timid and lacking the needed coping strategies to encounter stress.

In the present study, The association between psychological resilience with selected demographic variables such as age, sex, medium of instruction, background, type of family, religion class batch, living, breadwinner of the family and marital status showed that these demographic variables are statistically not associated with the level of psychological resilience among undergraduate nursing students and this study finding was supported by FatmaÖz et al., (2012) on the death anxiety and resilience levels among first to fourth year nursing students of Nursing Department of Health Sciences Faculty, Hacettepe University. The study revealed that the higher resilience level was assessed among 4th year’s students than 1st students. In statistical significance ( $p < 0.05$ ), no significant relevance between death anxiety and resilience ( $p > 0.05$ ), but higher death anxiety of students having death experience than ones having not experience ( $p < 0.05$ ) were determined.

The above study findings are contradicted by ShaulKimhi et al., (2020) study on Resilience and demographic characteristics predicting distress during the COVID-19 crisis. It showed that there is a significant negative correlation between community resilience and sense of danger and distress symptoms and the significant positive correlations were found between gender, community size, economic difficulties and sense of danger. Path analysis revealed that all paths were significant except between family income and distress symptoms.

### **Nursing Implications**

The finding of the study has implications of various areas of nursing practice, nursing education, nursing administration and nursing research.

#### **Nursing practice**

- Nurses are confronted with a variety of challenging conditions as a result of their complex and demanding work schedules.
- Through exposure to demanding workplace environments, resilient nurses will learn to overcome these challenges and build stronger coping strategies to deal with stress.
- As a result, nurse’s ability to cope with their professional position is becoming a topic of conversation and concern.
- Developing resilience is essential from three perspectives: maintaining nurses’ well-being, workforce longevity, and care quality.
- The nursing students should develop the skill in facing challenges and upgrade them with developing psychological resilience in their practices.

#### **Nursing education**

- Finding of the present study have an

implication of nursing education.

- The nurse educator can train the students in developing psychological resilience.

- The nurse educator can be trained specifically for training the students to reduce psychological morbidity, such as persistent anxiety, stress, depression and other factors as the nursing students must be resilient in order to overcome adversity and prepare for their professional role when they have graduated.

#### Nursing administration

- Resilience in nursing administration is defined as the ability to make the employees to face adverse situations, remain focused, and continue to be optimistic for the future.

- Resilience is a vital characteristic for nurses in today's complex healthcare system.

- The competing priorities and challenges with which nurses are confronted may make it difficult to develop resilience characteristics.

- Therefore, it's important for nursing leaders to educate nurses about self-care and techniques to build resilience.

#### Nursing research

- The present study is an attempt to assess the psychological resilience among nursing students

- On importance of developing resilience among nursing students, a material of how to build resilience is distributed

- Further studies can be undertaken to assess the different steps of improving resilience among nursing students.

## Conclusion

Life is forced and shows its true colours. Tests, pressure, setbacks, failures and troubles can expose the condition of our resilience. So don't try to get out of anything prematurely. Let it do its work so you become mature and well developed, not deficient in any way. In all our lives, there will be times when stresses increase or we feel pain and trauma and, at times, we will struggle to cope. However, hope that we will be able to build strategies that allow us to become resilient.

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

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## References

1. Arslan G. Mediating role of the self-esteem and resilience in the association between social exclusion and life satisfaction among adolescents. *Personality and Individual Differences*. 2019;151:109514.
2. Boardman L. Building Resilience in Nursing Students: Implementing Techniques to Foster Success. *International Journal of Emergency Mental Health and Human Resilience*. 2016;18(3).
3. Bouncing Back. *Brain & Life*. 2018;14(5):4.
4. Crowe S. Difficult Social Circumstances. *Anesthesiology*. 2019;130(5):851-852.
5. Dickson M, Obeysekera M. When unusual circumstances become accepted as normal. *BMJ*. 2019;:l6990.
6. Dickson M, Obeysekera M. When unusual

- circumstances become accepted as normal. *BMJ*. 2019;:l6990.
7. Doeschl-Wilson A, Knap P, Opriessnig T, More S. Review: Livestock disease resilience: From individual to herd level. *Animal*. 2021;:100286.
  8. Educational Role of Nurses to Patients who have Experienced an Acute Cardiac Event: A Pilot Study in Albania. *International Journal of Science and Research (IJSR)*. 2016;5(1):1865-1868.
  9. Edwards D, Burnard P, Bennett K, Hebden U. A longitudinal study of stress and self-esteem in student nurses. *Nurse Education Today*. 2010;30(1):78-84.
  10. Foster K, Cuzzillo C, Furness T. Strengthening mental health nurses' resilience through a workplace resilience programme: A qualitative inquiry. *Journal of Psychiatric and Mental Health Nursing*. 2018;25(5-6):338-348.
  11. HERNÁNDEZ P, GANGSEI D, ENGSTROM D. Vicarious Resilience: A New Concept in Work With Those Who Survive Trauma. *Family Process*. 2007;46(2):229-241.
  12. Innovator resilience potential: a process perspective of individual resilience as influenced by innovation project termination. *Development and Learning in Organizations: An International Journal*. 2012;26(6).
  13. Lee Y, Kim E, Park S. Effect of Self-Esteem, Emotional Intelligence and Psychological Well-Being on Resilience in Nursing Students. *Child Health Nursing Research*. 2017;23(3):385-393.
  14. Lehmann C. House Bill Would Help Americans Build Psychological Resilience. *Psychiatric News*. 2003;38(14):6-6.
  15. Markantoni M, Steiner A, Meador J. Can community interventions change resilience? Fostering perceptions of individual and community resilience in rural places. *Community Development*. 2019;50(2):238-255.
  16. Martínez-Martí M, Ruch W. Character strengths predict resilience over and above positive affect, self-efficacy, optimism, social support, self-esteem, and life satisfaction. *The Journal of Positive Psychology*. 2016;12(2):110-119.
  17. Myszka A, Piontek J. Shape and size of the body vs. musculoskeletal stress markers. *Anthropologischer Anzeiger*. 2011;68(2):139-152.
  18. Over 60% of US adolescents have experienced a potentially traumatic event, almost 8% of whom have associated PTSD. *Evidence Based Mental Health*. 2013;17(1):27-27.
  19. Prosser S, Metzger M, Gulbransen K. Don't Just Survive, Thrive: Understanding How Acute Psychiatric Nurses Develop Resilience. *Archives of Psychiatric Nursing*. 2017;31(2):171-176.
  20. The Relationship Between Academic Success and Emotional Intelligence, Psychological Empowerment, Resilience, Spiritual Well-Being in Nursing Students. *Journal of Health, Medicine and Nursing*. 2019;.
  21. Stephens T. Nursing Student Resilience: A Concept Clarification. *Nursing Forum*. 2013;48(2):125-133.

# Internet Addiction and its Affecting Factors among Undergraduate Students: An Integrative Review

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## Abstract

**Background:** This contemporary technological era is witnessing internet addiction as an emerging global concern and burden on mental health and society. It is a multidimensional phenomenon that affects an individual physically, psychologically, and socially.

**Objective:** The objective of this review was to describe internet addiction and examine its affecting factors among undergraduate university students.

**Methods:** This integrative review was conducted to examine the affecting factors related to internet addiction among university students using PRISMA guidelines. A systematic search was conducted using Academic Search Complete (EBSCO), PubMed, MEDLINE, APA PsycArticles, CINAHL, SCOPUS, google scholar, ScienceDirect published in the English language between the year January 2011 to January 2021.

**Results:** A total of seventeen articles were retrieved and their results were synthesized. The findings revealed three common measurement tools namely Internet Addiction Test (IAT), Young's Diagnostic Questionnaire (YDQ), and Chen's Internet Addiction Scale (CIAS). Two factors were found related to internet addiction, internal factors that include demographic factors and psychological factors and external factors like external financial funding, and internet accessibility in college.

**Conclusion:** As internet addiction leads to many psychiatric comorbidities, identification of the factors contributing to this phenomenon needs more attention and careful consideration for prevention strategies.

**Keywords:** *Internet addiction, University students, Factors, Integrative review.*

## Introduction

The Internet has grown exponentially and penetrated all levels of society and serves to be an

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indispensable tool in this modern technological era. Even though technological advancements drive humankind to betterment in many ways, it does have its dark side causing repercussions. The Covid-19 pandemic situation has not only made the internet usage an inevitable surge in everyone's life but parallelly becoming a dependency. Internet addiction is defined as a psychological dependence on the internet, characterized by salience, withdrawal, tolerance, negative repercussions/conflict, craving, and mood modification<sup>1</sup>. Young (2011) mentioned



about the three aspects of internet as an addictive behaviour: The Internet can be very entertaining and one gets easily addicted due to its unidentified aspects (Anonymity), borderless connection (Convenience), and switching to more comfortable activities (Escape)<sup>2</sup>.

Internet World Stats (2017) revealed Asia to have the highest number of Internet users and global prevalence rate estimates for about 3.7% to 39.6% in youths<sup>3,4</sup>. Internet addiction has consequences that impairs an individual's physical and mental health, and loss of significant relationships<sup>5</sup>. Recent reviews have focused on the health effect of internet addiction among adolescents and on the association between depression and social media addiction<sup>6,7</sup>, but not on the overall prevalence and associated factors of internet addiction among undergraduate students.

Hence this current integrative review aims to examine the available literature for the affecting factors that are antecedents of internet addiction and its severity among university students. There is an extensive need to focus on the undergraduate student population as they are at high risk of developing internet addiction. The present review will also extend the existing literature on Internet addiction, which may help nursing professionals and provide direction for future research to remark advanced phenomenon.

### **Aim**

The aim of this integrative review was to explore the prevalence, affecting factors, and measurement tools used for assessing internet addiction among undergraduate university students.

### **Methods**

This integrative review was conducted to examine the affecting factors related to internet addiction among university students using PRISMA guidelines,

the Preferred Reporting Items for Systematic Reviews and Meta-analyses<sup>8</sup>.

### **Search strategy**

A systematic search for the research articles published in the English language between the year January 2011 to January 2021 was done using Academic Search Complete (EBSCO), PubMed, MEDLINE, APA PsycArticles, CINAHL, SCOPUS, google scholar, ScienceDirect databases with the keywords: "Internet addiction" OR "Internet addictive behaviour" in combination with "Internet addiction". "Internet addiction risk factors" OR "factors affecting Internet addiction", "Internet addiction" AND "university students" OR "undergraduate students", "Internet addiction" AND "college students", "factors", "predictors", "determinants" to find articles that reported empirical evidence based on meta-analysis, reviews of literature, case-control studies.

### **Inclusion and Exclusion criteria**

The articles retrieved through the systematic search were retained, if it was based on the following criteria (1) studies related to factors affecting internet addiction among students, (2) undergraduate students who are studying in the university or college, and (3) studies providing description about the measurement tools of internet addiction. The articles were excluded if they were published in books, dissertations, conferences, and non-scientific papers.

### **Data extraction**

The retrieved data was extracted using the extraction criteria from the standardized tool PRISMA guidelines flowchart. Initially, a total of 762 publications were identified from the search databases, duplicate publications were removed and a total of 208 publications remained for further screening. The title and abstracts of these retrieved



articles were screened. Among 132 publications, a total of 76 publications were screened for full-text review, some publications were removed due to reasons like their focus was on vocational students, no description about measurement, and irrelevant study type. Finally, 17 publications met the inclusion criteria and were eligible for quality assessment.

#### Data synthesis and Quality assessment

The data from the included studies were extracted based on study publication (author(s), year of publication, country of origin), title, design, sample size and sampling method, measurement tools,

analysis, and main findings. Each publication was rated for quality using the QualSyst tool, the “Standard Quality Assessment Criteria” for evaluating the primary research papers from a variety of fields (Kmet et al., 2004)<sup>9</sup>. The quantitative studies were evaluated based on 14 items, and qualitative study based on 10 items. The obtained total score was converted to a percentage and during the evaluation process the articles having a score < 50% were considered having low quality. On average all the seventeen articles met the criteria and had a good quality score of > 50%. The result of the quality of the qualitative paper is presented in Table 1 respectively.

**Table 1: Quality scoring of qualitative study**

S.no	Criteria	Study No.17
1.	Question / objective sufficiently described	Yes
2.	Study design evident and appropriate?	Yes
3.	Context for the study clear?	Yes
4.	Connection to a theoretical framework / wider body of knowledge?	partial
5.	Sampling strategy described, relevant and justified?	Yes
6.	Data collection methods clearly described and systematic?	yes
7.	Data analysis clearly described and systematic?	partial
8.	Use of verification procedure(s) to establish credibility?	partial
9.	Conclusions supported by the results?	yes
10.	Reflexivity of the account?	partial
	Total score	16
	Percentage score	80%

## Results

### 1. Description of the studies

Among the seventeen articles two studies were conducted in China, Nigeria, and Ethiopia, one study from Africa, India, Egypt, Malaysia, Saudi Arabia, Tanzania, Turkey, Vietnam, Yemen, and the USA. Among the included studies sixteen were quantitative, cross-sectional design was used in fourteen studies except for two studies that used a case-control design, ex-post-facto design. The sampling techniques vary across the studies, seven studies used random sampling techniques, five studies used cluster sampling, three studies used purposive sampling, and two studies used convenience sampling technique. The total number of samples in all sixteen studies ranged from 200-2500 and had both male and female participants, in which the participants in five studies were solely medical undergraduate students. Different statistical analysis was used in the studies. One Qualitative study was included in the review, it had 19 study participants with a mean age of 22.

### 2. Concept of Internet Addiction

2.1 Prevalence and severity of Internet addiction among the university students

There is variance in the prevalence of Internet addiction from low to high among different countries. Three studies found a comparatively very high prevalence rate of 80 to 85% among students<sup>10,11,12</sup>, and two studies found to have moderate and low prevalence rates<sup>13,14,15,16</sup>. The differences in prevalence rates are due to varied methodologies and measurement tools used across countries, although a higher prevalence of internet addiction was found among medical students<sup>13</sup>. Many studies found mild severity level of .4 to 29%<sup>17,13,14,18-20</sup>. High severity level ranging from 60 to 70% among students was reported in two studies<sup>12,16</sup>.

### 2.3 Measurement tools used for assessing Internet addiction

Three widely used measurement tools in the reviewed studies were found. Fourteen studies used the Internet Addiction Test (IAT) a self-rated 20-item, 5-point Likert questionnaire developed by Dr. Kimberly Young for screening and measuring internet addiction and its severity. The scale has been translated into several languages, for instance, two studies in this review used the Turkish version of internet addiction test<sup>19,20</sup>, and one study used Arabic version of Internet Addiction Test scale<sup>15</sup>. Only one study used an 8-item self-reporting Young's Diagnostic Questionnaire (YDQ) the first version of IAT for evaluating internet addiction among students<sup>22</sup>. Interestingly two studies used 26-item Chen Internet Addiction Scale (CIAS)<sup>17,19</sup>. Although the three scales differ based on the number of items, the commonality between these three measures are the components "compulsive use and social functioning", and their focus is more on the individual's behavior related to internet addiction.

### 3. Factors affecting Internet addiction

#### 3.1 Internal factors

##### 3.1.1 Demographic factors

The findings indicated age and gender to be the most significant predictor. The mean age of the participants ranged from 18 to 22.6 years and younger age was significantly associated with poor control internet usage<sup>18,21</sup> on contrary two studies reported non-significant differences between age and internet addiction<sup>12,22</sup>. Six studies reported that the male gender had a higher and significant relationship with internet addiction and used more internet for online gaming<sup>13,16,17,18,23</sup>; three studies reported parental factors like low parental educational level and low parental control significantly common among the students associated with poor control of internet

use<sup>15,18,24</sup>. However only little emphasis was given on parental literacy, and more studies focus only on the student's related factors. Two studies found first-year students having high significant association with internet addiction<sup>15, 22</sup>.

The assessment of academic performance level varied among these reviewed studies like some studies used GPA scores and some based on the grades, but the student's attendance rate hasn't been reported. For instance, two studies reported students with lower academic performance had a higher level of internet addiction score<sup>10,15</sup>, and they used the internet for non-academic purposes like social networking, watching videos, visiting the website with sexual content, and playing online games was reported as common purposes in six studies<sup>11,15,17,18, 20,25</sup>. The internet use practices varied largely among the reviewed studies based on the duration and gadgets, but there is less clarity about the frequency of internet usage, number, and types of gadgets used.

### 3.1.2 Psychological factors

Seven studies revealed mental health factors like depression to have a significant positive relationship with Internet addiction<sup>32</sup>. Mental health conditions like somatization, anxiety, depression, self-contempt, and freshman year adaptive problems were found to be causal factors and predictors of Internet addiction. Freshman faces a lot of psychological issues when they have a transition from school to university. For instance, one study found features of depression, learning maladaptation, and dissatisfaction in the freshman having a significant positive relationship with internet addiction<sup>22</sup>. Resilience, shyness, and loneliness positively predicted internet addiction<sup>26</sup>. Students with mental distress were four times more likely to develop Internet addiction<sup>11</sup>. Psychoactive substance use-related factors like the habit of khat chewing, tobacco, drugs, smoking, and alcohol

consumption were 2.3 times most likely to have Internet addiction<sup>17,11</sup>. Although alcohol drinking was reported the frequency and amount of alcohol consumption, peer pressure in association with substance use and internet addiction also needs to be further explored.

Students with internet addiction had higher mean scores on the personality traits like novelty-seeking and harm-avoidance<sup>17</sup>. Many young adults use the internet for its anonymity nature. For instance, one study reported students with higher communication skills were less likely to have internet addiction<sup>20</sup>. Interestingly, this study found males students to have fewer communication skills than females.

### 3.2 External factors

The review found two external factors contributing to internet addiction. One is external funding like students who receive study loans or other types of funding compared to those on scholarships and students with a lower family income were more likely to have internet addiction<sup>15,16</sup>. Second factor is internet accessibility in college. Two studies reported college to be the commonplace, and absence of student-friendly recreational centers in the university campus having a significant association with internet addiction<sup>24</sup>.

## Discussion

The review findings revealed a high prevalence rate of internet addiction among university students in Asian countries, this maybe attributable to using personal gadgets for internet access than common devices, and availability of cheap internet service providers. Alarmingly the overall severity level of internet addiction was more than 70% and most of the students were medical students, proper initiative must be taken to prevent this, as they are the future health care providers who handle patients with addiction

in the future. Younger age was found a significant predictor for internet addiction, but the age of first internet use and the years of internet experience also needs to be explored to identify the vulnerability to internet addiction.

The measurement tools found in this review were developed based on different concepts. For instance, the Internet addiction test (IAT) was developed based on the concepts from “pathological gambling” whereas Chen’s Internet addiction scale (CIAS) was developed based on the concepts from “substance abuse and impulse control”<sup>27</sup>. Psychological factors like substance abuse seems to be predominantly leading to internet addiction among university students. This pandemic has indirectly led to changes in drinking and smoking behaviors, also stress and the financial burden of the potential infection also could result in increased negative emotions such as depression<sup>28</sup> and loneliness leading to internet addiction.

Factors like poor communication skills and adaptation problem during their freshman year university are reported, where one study viewed internet addiction through the lens of Sullivan’s Interpersonal theory and several scholars who work on this concept are inspired by the Davis cognitive-behavioral framework and regarded as the most substantial cognitive-behavioral approach of Internet addiction<sup>29</sup>.

Internal factors contribute more to internet addictive behaviors than external factors among university students. Hence this review recommends more focus on mental health of the students by promoting mental health awareness about the adaptive internet use through lectures or informative sessions, counseling services that could develop cognizance into their maladaptive behaviors. Subsequently, initiatives should be taken at the institutional level parallelly along with the family in promoting the

mental health of the students.

## Conclusion

The evidence from the current review implies the prevalence rate to be high among undergraduate university students than other student population, in addition, findings from the existing literature have revealed that the prevalence to be high in Asian countries than the western countries, and most of the studies addressed mental health factors to be one of the predominating factors. No longitudinal studies were found in this review and there is only a little evidence-based on economic, familial, and psychosocial factors. This review by integrating the recent evidence may shed light on the widely used measurement tools used for evaluating internet addiction and may inform future nursing practice, healthcare professionals, and policy makers for formulating effective intervention strategies. Future implications should focus not only on treatment strategies but also on the primary prevention of maladaptive patterns of internet use.

## Conflict of Interest/Disclosure Statement–

There is no potential conflict of interest to disclose.

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## References

1. World Health, Organization. Public health implications of excessive use of the internet, computers, smartphones, and similar electronic devices: meeting report, Main Meeting Hall, Foundation for Promotion of Cancer Research, National Cancer Research Centre, Tokyo, Japan, 27-29 August 2014. Geneva: World Health Organization; 2015.
2. Young KS, de Abreu, CN (eds), Internet addiction: A handbook and guide to evaluation and treatment. Hoboken, NJ: John Wiley & Sons,

- Inc.; 2011.
3. Internet World Stats. World internet usage and population statistics March 31, 2017. [cited: 2018]. Available from: <http://www.internetworldstats.com/stats.htm>
  4. Levine LE, Waite BM, Bowman LL. Electronic media use and distractibility for academic reading in college youth. *Cyberpsychology & Behavior*. 2007; 10(4): 560–566.
  5. Young KS, de Abreu, CN (eds), Internet addiction: A handbook and guide to evaluation and treatment. Hoboken, NJ: John Wiley & Sons, Inc.; 2011.
  6. Lam TL. Risk Factors of Internet Addiction and the Health Effect of Internet Addiction on Adolescents: A Systematic Review of Longitudinal and Prospective Studies. *Current Psychiatry Repository*. 2014; 16: 508.
  7. Nguyen TH, Lin K-H, Rahman FF, Ou J-P, Wong W-K. Study of depression, anxiety, and social media addiction among undergraduate students. *Journal of Management Information and Decision Sciences*. 2020; 23(4): 284-303.
  8. Moher D, Liberati A, Tetzlaff J, Altman DG, Group P. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS medicine*. 2009; 6(7), e1000097-e1000097.
  9. Kmet LM, Lee R, Cook LS. Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields. Alberta Heritage Foundation for Medical Research; Edmonton, AB, Canada. 2004; 1-21.
  10. Kolaib AM, Alhazmi, AH, Kulaib, MM. Prevalence of internet addiction and its associated factors among medical students at Taib University, Saudi Arabia. *Journal of Family Medicine and Primary Care*. 2020; 9: 4797-800.
  11. Zenebe Y, Kunno K, Mekonnen M, et al. Prevalence and associated factors of internet addiction among undergraduate university students in Ethiopia: a community university-based cross-sectional study. *BMC Psychology*. 2021; 9: 1-10.
  12. Al-Qadasi FA, Al-Jaberi NA, Al-Moa'ayn EA, et al. Prevalence of Internet Addiction and Its Associated Factors among Medical Students, Yemen, *International Journal of Public Health Research*. 2018; 8 (2): 965-974.
  13. Ching SM, Awang H, Vasudevan R, Sulaiman WAW. Prevalence and factors associated with internet addiction among medical students-A cross-sectional study in Malaysia. *The Medical journal of Malaysia*. 2017; 72(1): 7-11.
  14. Lan N-TH, Kyesun, L, Dung V, et al. Internet Addiction among University Students and its Associated Factors: A Cross-Sectional Study among College Students in Hanoi, Vietnam. *Systematic Reviews in Pharmacy*. 2020; 11(10): 590-596.
  15. Abdelghani M, El-Deen, GS, et al. Determinants of Internet Addiction in a Sample of Egyptian University Students: A Survey. *International Addiction Review*. 2018; 2(1): 30-36.
  16. Manaf RA, Ragubathi MN. Internet Addiction among Undergraduate Students: Evidence from a Malaysian Public University. *International Malaysia Journal*. 2018; 17(2): 41-48.
  17. Jiang D, Zhu S, Ye M, Lin C. Cross-sectional survey of prevalence and personality characteristics of college students with internet addiction in Wenzhou, China. *Shanghai Archives of Psychiatry*. 2012; 24 (2): 99-107.

18. Chaudhari B, Menon P, Saldanha D, Tewari A, Bhattacharya L. Internet addiction and its determinants among medical students. *Indian Psychiatry Journal*. 2015; 24:158-62.
19. Bozoglan B, Demirer V, Sahin, I. Loneliness, self-esteem, and life satisfaction as predictors of Internet addiction: A cross-sectional study among Turkish university students. *Scandinavian Journal of Psychology*. 2013; 54: 313–319.
20. Comert IT, et al. Internet addiction affecting factors of university students in Turkey. *International Journal of Advanced Research*. 2017; 5(7): 1736-1742.
21. Ineme et al. Predictive Roles of Depression and Demographic Factors in Internet Addiction: A Cross-Sectional Study of Students in a Nigerian University, *International Journal of Cyber Criminology*. 2017; 11(1): 10-23.
22. Yao B, Han W, Zeng LX, Guo X. Freshman year mental health symptoms and level of adaptation as predictors of Internet addiction: A retrospective nested case-control study of male Chinese college students. *Psychiatry Research*. 2013; 210: 541–547.
23. Ventura CN, Juárez-Treviño M. Internet addiction in university medical students. *Medicina Universitaria*. 2015; 17(67): 88-93.
24. Muche H, Asrese K. Conditions exposing students of Bahir university to internet addiction, Bahir Dar, Ethiopia: A phenomenological study. *African Journal of Social Work*. 2020; 10(2): 51-60.
25. Mboya IB, Leyaro BJ, et al. Internet addiction and associated factors among medical and allied health sciences students in northern Tanzania: a cross sectional study. *BMC Psychology*. 2020; 8: 73.
26. Terwase JM, Ibaishwa, et al. Resilience, Shyness and Loneliness as Predictors of Internet Addiction among University Undergraduate Students in Benue State. *Journal of Humanities and Social Science*. 2014; 19(9): 2279-0837.
27. Young KS. Caught in the net: how to recognise the signs of Inter-net addiction and a winning strategy for recovery. New York: John Willey and Sons. 2000.
28. Clay JM, Parker MO. Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis? *Lancet Public Health*. 2020; 5-10.
29. Jun AS, Choi EB. Academic stress and Internet addiction from general strain theory framework. *Korea computers in human behaviour*. 2015; 40: 282-287.



# Knowledge on Female Foeticide among Undergraduate Students of Uttar Pradesh”

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## Abstract

The female foeticide involves the detection of sex of the unborn child in the womb of the mother and the decision to abort it if the sex of child is detected as girl. So, here an attempt has been made to assess the knowledge regarding FF among UG students at selected college of Etawah district Uttar Pradesh. In this paper we assess the knowledge regarding female foeticide among under graduate student of selected college of Etawah district. A Cross sectional study research design was utilized in the present study. Non probability purposive sampling was used to select the sample. Study tool was classified in two parts (socio demographical variable and knowledge questionnaire). Result of the study shows that in study 50% students were belong in 17-19 year age group, 45% students had medical profession, 47.5% were male and 53.4 % female student. Study shows that more than 80% students have good knowledge. The mean score and SD were 22.375 and 5.826 respectively. Study concluded that students are having good knowledge regarding female foeticide.

**Key Words:** FF – female foeticide, GP – groups, UG – Undergraduate, foeticide knowledge

## Introduction

The term “foeticide” is derived from the Latin term’s foetus and caedo and refers to the act of murdering an unborn child. Female foeticide is a procedure that entails determining the sex of the unborn child in the mother’s womb and then aborting it if the kid’s sex is determined to be female.<sup>1</sup>

It is better to light a candle than to curse the darkness”- Quaker

Women are murdered in a variety of ways across the world’s cultures. However, Indian society exhibits certain especially heinous manifestations, such as dowry killings and sati. Female foeticide is a particularly heinous kind of violence against women. After prenatal sex determination, female foetuses are selectively terminated, preventing the birth of females. Between 35 and 40 million girls and women are missing from the Indian population as a consequence of selective abortion. In certain areas of the nation, the girl-to-boy ratio has fallen to less than 800:1,000. The United Nations has voiced grave alarm.<sup>2,3</sup>

India, as a historical example of a perfect civilization, sets a high bar for woman-gender as a whole, elevating her respect. We take pride in putting these words into speech but fall short of putting them into action. Our culture need a woman; a mother for

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a son; a wife for a husband; and a girl to welcome a political leader with a garland. It is impolite and uncivilised to believe that a lady should be honoured while a girl should be condemned. If a guy need a woman in order to succeed in life, is this a case of female child failure? This is not a spiteful theory, but a demonic one! While the country honoured the spirit of women on International Women's Day, female foeticide remains the gravest of all women's problems, and girl child education also need immediate attention. Women are murdered in a variety of ways across the world's cultures. However, Indian society exhibits certain especially heinous manifestations, such as dowry killings and sati. Female foeticide is the most severe kind of violence directed against women.<sup>3,4</sup>

Female foeticide is the practise of aborting perfectly healthy female foetuses after about 12 weeks (or more) of gestation solely on the basis of their gender. If the foetuses had been males, they would have been permitted to survive. Female Foeticide has a number of consequences, including violence against women and a violation of their human rights. While the pregnant woman is often as eager to have a son as the father, she is frequently pressed to undertake such treatments. Numerous women experience psychological trauma as a consequence of being subjected to repeated abuse<sup>4</sup>. The cultural and economic considerations serve as disincentives for Indian families to allow for the birth of their female children.<sup>4,5</sup>

The Government of India passed the PNDDT (Pre Natal-Diagnostic Techniques) Act in 1994, making it a crime to disclose the foetus's sexual orientation. The time has come to emphasise other routes or alternatives that may enhance the legislation and effect the necessary societal transformation. One such option is to raise community knowledge of female foeticide, allowing people to see it as a societal issue.

<sup>5,6</sup>

Medical technology advancements have aided in the improvement of health care for millions of individuals. A simple and readily accessible test can establish the child's gender. In a culture where there is a significant prejudice against female children, there are egregious misuses of reproductive technology. The 2001 census data reveals a sobering truth, showing an imbalance in female and male birth rates. It is a well-known fact that India's sex ratio is lower than international standards, at 933 to the global average of 986.<sup>6,7</sup>

Between 1901 and 1971, India had a steady decrease in the sex ratio, from 972 to 930 women per thousand males. The sex ratio was marginally higher in 1981, but reached its lowest point in history in 1991, at censes 927. Again, the sex ratio for the entire population was 933 in 2001.<sup>6,9</sup>

### **Problem Statement**

“A study to assess the Knowledge on female foeticide among undergraduate students of Selected Colleges in Etawah district, Uttar Pradesh”

### **Objectives of the Study**

1. To assess the knowledge regarding female foeticide among under graduate student of selected college of Etawah district.
2. To associate level of knowledge on female foeticide with selected demographic variable.

### **Hypothesis**

**H1:** There will be significant difference between knowledge on female foeticide among rural and urban under graduate students.

**H2:** There will be significant difference between educated parents or uneducated parents of under graduate students.

**H<sub>3</sub>:** There will be a significant association between

knowledge scores and selected demographic variables of under graduate students.

### Research Methodology

Research methodology refers to controlled investigation related to the ways of obtaining, organizing and analyzing data.<sup>10</sup>

#### Research Design

“Research design is a plan how when at where data to be collected and analyzed”. In this study cross sectional research design was used.<sup>10</sup>

#### Population

The target population define “population is defined as the entire aggregation of cases the meets designed set of criteria”. The present study population is the under-graduate students studying in Etawah district. “Accessible population is the aggregate of cases that confirm to designated criteria also accessible as

subject for a study”<sup>10</sup> Accessible population includes undergraduate students of different discipline that includes Nursing, paramedical and science student of selected college of Etawah district.

#### Sample and sample technique

Sample was selected of undergraduate students of Etawah district graduate college including inclusive and exclusive criteria. In this study, Non probability purposive sampling technique was used to select the samples.<sup>10</sup> The sample at the study consists of 120 under graduate students.

#### Research Variables

Knowledge on female feticides.

#### Data Collection Tool and Technique

Investigator has developed a questionnaire for the study. The questionnaire has included part I, socio demographical variable, part II knowledge on female feticide.

Part	TOOL	TECHNIQUE
A	Demographical questionnaires	Questionnaires
B	Assessment of knowledge regarding female feticide	Questionnaires
C	assessment regarding female feticide	Checklist

PART –A Demographic data

PART–B Questionnaire contain 26 objective type question related knowledge assessment

PART – C checklist contain 14, yes or No type question

Pilot Study

The pilot study was conducted in karmkshetra post graduate college, Etawah from with sample size of 12 students. Prior to study, the formal permission obtained by the principal of karmkshetra PG College Etawah. During the pilot study some of the student faced problem in understanding some question which was simplified after making necessary changes with the suggestion of the guide before starting the main study.

## Result and Discussion

The data that has been collected will be analysed in this chapter. Data will be interoperated in the research finding once it has been analysed. The findings of the research will be presented in connection to the study's overall goal. The socio-demographic characteristics of the research participants are examined in the first portion of the paper. Participants' knowledge of female feticide will be assessed in the second phase of the data collection process. Students were studied in the first year, second year, third year, and fourth year of their bachelor's degree programme. Maximum 50

percent of UG students belonged to the 17–19-year age group, with a minimum 15.8 percent of students belonging to the 26–28-year age group. Students at the University of Ulster who learned about FF through the media made up 47.5 percent of the male students and 52.5 percent of the female students. The mean and standard deviation were 22.375 and 5.826 points, respectively. According to a survey performed on University of Guernsey students, 57 (47.5 percent) were male and 63 (52.5 percent) were between the ages of 17 and 28. The majority of them were Hindu, according to the report. University of Georgia students had between three and five family members in their family, with 59 (49%) students having between six and eight family members, and the remaining 11 (9.1%) students having more than eleven family members in their family. The majority of UG students were female, with 50 (41.1 percent) students having one or two females, 57 (percent) students having three or four females, 9 (7.5) students having five or six females, and 4 (3.3 percent) students having more than six females.<sup>11,12</sup>

### SECTION I: Socio-demographic Variable

**Table 1: Frequency and percentage distribution of the samples of characters of students (n=120)**

Demographical variable	Frequency	Percentage
1. Age		
17 – 19 yr.	60	50
20 – 22 yr.	19	15.8
23 – 24 yr.	22	18.3
25 – 28 yr.	19	15.8
2. GENDER		
Male	57	47.5
Female	63	52.5
3. COURSE		
Medical	55	45.8
Non-medical	65	54.1

**Cont... Table 1: Frequency and percentage distribution of the samples of characters of students (n=120)**

4.	RESIDENCE		
	Rural	69	57.5
	Urban	51	42.5
5.	TYPE OF FAMILY		
	Nuclear family	58	48.3
	Joint family	62	51.6
6.	NO. OF FAMILY MEMBER		
	3 – 5 member	59	49.1
	6 – 8 member	43	35.8
	9 – 11 member	7	5.8
	More than 11	11	9.1
7.	NUMBER OF FEMALE MEMBER IN THE FAMILY		
	1 – 2 female	50	41.1
	3 – 4 female	57	47.5
	5 – 6 female	9	7.5
	More than 6	4	3.3
8.	EDUCATION OF FATHER		
	Illiterate	2	1.6
	8th pass	13	10.8
	10th pass	27	22.5
	12th pass	28	23.3
	Graduation	34	28.3
	Post-graduation	16	13.3
9.	EDUCATION OF MOTHER		
	Illiterate	28	23.3
	8th pass	38	31.6
	10th pass	22	18.3
	12th pass	19	15.8
	Graduation	14	11.6
	Post-graduation	7	5.8
10.	SOURCE OF KNOWLEDGE ON FEMALE FOETICIDE		
	News paper	49	40.8
	Television	40	33.3
	Internet	16	13.3
	Journals	8	6.6
	Others	7	5.8

From Table 1 study demographic variables frequency and percentage distribution showing. Finding shows that:

Ø Table showing that 50% undergraduate students were belonging to

17 – 19 year, 15.8% undergraduate students were belonging to 20 –22 year, 18.3% undergraduate students were belonging to 23 – 25 year, 15.8% undergraduate students were belonging to 26 – 28 age group.

Ø There were 57(47.5%) male and 63(52.5%) female participated in this study.

Ø In this study, 55(45.8%),65(54.1%) was belonging to medical profession and non-medical respectively.

Ø In this study, 120(100%) students were participated.

Ø Most of the participant had residential area from rural 69(57.5%) and urban 51(42.5%).

Ø There are 58(48.3%) UG students had nuclear family and 62(51.6%) UG students had joint family.

Ø UG students had among family member in their family in which 59(49.1%) students had 3 – 5 family member, 43(35.8%) students: 6 – 8 family member, 7(5.8%) students: 9 – 11 family member and remaining 11(9.1%) students: more than 11 family members in their family.

Ø Most of the UG students had female member in which 50(41.1%) students had 1 – 2 females, 57(47.5%) students, 3 – 4 females, 9(7.5%) students’ 5 – 6 females and 4(3.3%) students more than 6 females in their family.

Ø Regarding student’s education of father had graduation level education status 34(28.3%), post-graduation level education level status 16(13.3%), 12<sup>th</sup> education level status 28(23.3%), 10<sup>th</sup> education level status 27(22.5%), 8<sup>th</sup> education level status 13(10.8%), and illiterate remaining 2(1.6%).

Ø Regarding student’s education of mother had graduation level education status 14(11.6%), post-graduation level education level status 7(5.8%), 12<sup>th</sup> education level status 19(15.8%), 10<sup>th</sup> education level status 22(18.3%), 8<sup>th</sup> education level status 38(31.6%), and illiterate remaining 28(23.3%).

Ø The students had got knowledge about FF, 49(40.8%) students from newspaper, 40(33.3%) students from television, 16(13.3%) students from internet, 8(6.6%) students from journals, and 7 (5.8%) students from others.

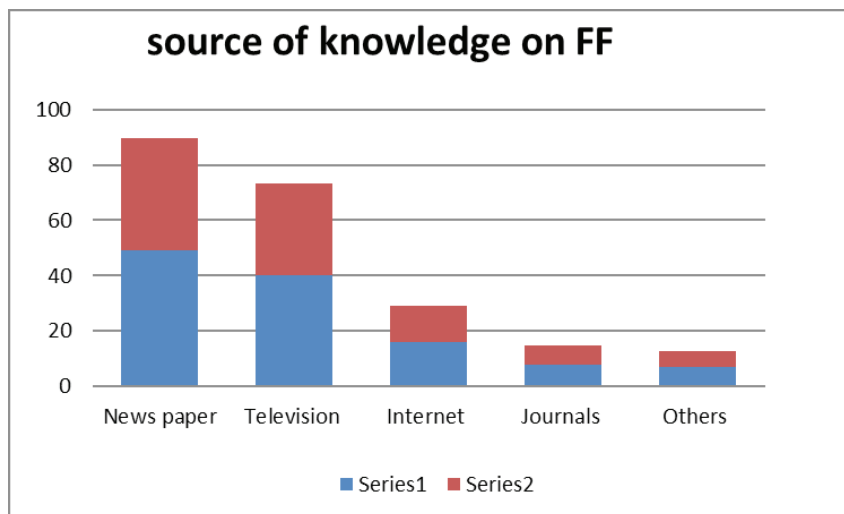


Figure 1: column diagram showing distribution percentage of source of knowledge on female foeticide



**SECTION II**

To assess the level of knowledge on female foeticide among UG students

**Table 2: Level of knowledge on female foeticide in percentage**

Level	Very Poor	poor	Good	Excellent
Knowledge	3(2.5%)	33(27.5%)	77(64.16%)	7(5.83%)

Table no.2: show that 3(2.5%) UG students had poor knowledge, 33(27.5%) UG students were belonging to average knowledge, 77(64.16%) UG were belonging to good knowledge and 7(5.83%) UG students were belonging to excellent knowledge.

**SECTION III**

**Table 3: Mean and SD of knowledge on female foeticide**

Descriptive statistics					
	N	minimum	maximum	Mean	SD
Knowledge total	40	4	40	22.375	5.826

The table no.3: show the minimum knowledge score of UG student was 4 and maximum score of UG student was 40. The mean score and SD were 22.375 and 5.826 respectively.

**Discussion**

Study finds that 57(47.5%) were male and 63 (52.5%) who were aged 17-28 whereas a study conducted in most of them were Hindu. UG students had among family member in their family in which 59(49.1%) students had 3 – 5 family member, 43(35.8%) students: 6 – 8 family member, 7(5.8%) students: 9 – 11 family member and remaining 11(9.1%) student: more than 11 family member in their family. Most of the UG students had female member in which 50(41.1%) students had 1 – 2 females, 57(47.5%) students, 3 – 4 females, 9(7.5%) students, 5 – 6 females and 4(3.3%) students more than 6 females in their family. UG students had poor

knowledge, 33(27.5%) UG students were belonging to average knowledge, 77(64.16%) UG were belonging to good knowledge and 7(5.83%) UG students were belonging to excellent knowledge.

A similar study descriptive study was conducted to assess the knowledge on female foeticide among 100 medical undergraduates who were posted to the Department of Community Medicine of Maulana Azad Medical College, New Delhi. The finding showed that 57% were males and 43% were females, 64% students agreed that female foeticide will lead to sexual & social crimes against women, 26% were in favour of stricter punishment for the doctors involved in this practice, 14 % suggested for stricter punishment for woman

seeking abortion. The findings in the study underscore the need to sensitize tomorrow's citizens about the ethics related to the inappropriate and indiscriminate use of technology.<sup>11</sup>

### Conclusion

Most of the UG students were belonging to good knowledge. The finding of the study has implication related to nursing education regarding female foeticide.

#### A. Recommendation

On the basis of finding of the study it is recommended that:

- A similar study can be conducted in same setting that is colleges of Etawah district.
- On the basis finding of this study, conducted in colleges and evaluate the knowledge of UG students regarding female foeticide.

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### References

- [1]. Joshi, Niharika and Bajwa, k. Ash Existing Intergenerational Continuity and Discontinuity in Knowledge of Rural Women towards Female Foeticide. Journal of Social Science 2012 Jan; 30 vol (2) page no: 161-164. www.rguhs.ac.in>cdc>05\_N239\_34137
- [2]. GrewalIndu and Kishore J.2004 May; A comparative study to assess the knowledge on female foeticide among rural and urban eligible couple in selected areas at Bangalore. International humanist news, page No. 12-16.
- [3]. Zaida, Zoya. Female Foeticide in India. Sikh spectrum 2006 May;24 vol (5) page No: 23-26.
- [4]. Dr. Siddharam, M. S, Dr. Venhatesh, G. M. and Dr. Thejaswini, H. L. Journal of Clinical and Diagnostic Research 2011 Nov;5vol (7) page No: 1430-1433.
- [5]. Dutta, Subhabrata. A descriptive study to assess the knowledge about decreasing sex ratio an attitude towards foeticide among pregnant women in selected rural area. The Grim picture. Social welfare 2007 volume 48No:8 page 17-1. www.rguhs.ac.in>cdc>05-N199-9681
- [6]. Vadera, B.N. Joshi, U.K. Unadakat, S.V. and Yadav, B.S. Study on knowledge, attitude and practices regarding gender preference and female foeticide among pregnant women. Indian journal of community medicine 2007;4(32): 300- 303.
- [7]. Gandhi, Ashwini Bhalearao. Shukla Kumar, Ashok. Awareness of Female Foeticide. Nursing Journal of India 2005 May;55(3): 265-67.
- [8]. Vsona wane Nilima V. Effectiveness of planned teaching programme on knowledge and attitude regarding female foeticide among college students. The nursing journal of india 2010 March;3 (7): 34-35.
- [9]. M. D. Praveen study on knowledge, attitude and practices regarding gender preference and female foeticide among pregnant women. The Nursing Journal of India 2011 March;4vol (8) page NO: 23-25.
- [10]. Suresh SK. Nursing research and statistics 2<sup>nd</sup> edition New Delhi: Elsevier;2015.102,138,117,206,211,286,288
- [11]. Nath,Anita . Sharma1,Nandini. K. Ingle. Ingle. Knowledge and Attitudes of Medical Students and Interns with Regard to Female Foeticide. Indian Journal of Community Medicine 2009; 34(2):164-165.
- [12]. Kamla Sharna. Decreasing sex ratio & pregnant women's attitude towards female foeticide. The nursing journal of India 2005; XCV1(4) :83-84.

# Nursing Students' Views Toward Fostering Hope in Healthcare Practice

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## Abstract

Nursing students experienced a range of situations during their clinical placements, particularly in confronting patients' health and illness. It is, however, not clear how hope is fostered in healthcare practice by the nursing students. This study explores Bruneian nursing students' perception of fostering hope in healthcare and how they managed their experiences. This study used a descriptive qualitative design. A total of twenty-seven students were interviewed in five focus-group discussions. Data were analysed using content analysis. Students identified three broad themes: hope offers emotional support, fostering individualised hope, and shared responsibility by the team. There was broad consensus among the students that fostering hope is an important aspect of providing emotional support to the patients. The findings indicate that nursing students are cognisant of the greater value of providing an individualised hope for each patient. Simultaneously, the students recognise the value of shared responsibility by the healthcare team to nurture hope in healthcare context. With these findings, it is recommended that students receive further support to learn and be sensitive to the language of hope, given the importance of hope in healthcare practice.

**Keywords:** *Students, nursing, hope, qualitative, Brunei, experiences, illness*

## Introduction

Discussions of hope and hopelessness are common in clinical care, especially in the context of nursing practice. Hope as a concept is presented as fundamental to life and challenging to define. It has always been important in the context of diseases, injuries, or severe occurrences that require individual adjustment. It has also been suggested that "we know

hope when we see it, and we feel it intensely when it is gone".<sup>1</sup> It is indeed difficult to explain in any case. In nursing, nurses play a critical role in recognising and nurturing optimism in the patients they care for.<sup>2</sup>

There are increasing reports that nurses are a critical source of support for vulnerable and sick people.<sup>3</sup> A nurse should be incredibly self-aware and optimistic in inspiring hope in others.<sup>4</sup> About breaking bad news, for example, much of the literature reaffirms how the delivery of such news can assist patients in their immediate and long-term coping with the news.<sup>5</sup> It takes skill, experience, and skills to provide information that helps patients assimilate and cope with what they are told.<sup>6</sup> The literature shows that nurses employ hope for intervention strategies. For example, hope has been defined in health care

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initiatives for older persons in acute and long-term care institutions as a general strategy to assisting patients in influencing one another's lives, relating to their inner selves, and developing interpersonal trust through time. All nurses in the study recognised hope as being central to older adults' lives. Their approaches to the facilitation of hope differed depending on the clinical context. For example, nurses talked to patients in intensive care environments and kept a positive attitude as successful techniques for inspiring hope. However, nurses working in long-term care facilities cited expressing love, affection, and empathy as effective hope-inspiring strategies.<sup>7</sup>The awareness and comprehension of health practitioners of a particular disease<sup>8</sup>and the potential for a cure are approaches that have established hope development during the patient care relationship.<sup>9</sup>It means that providers and patients should have good communication and keep the door open.<sup>10</sup>Patients' need to feel in control is a common goal, and it is also recognised as vital, allowing patients to regain independence after recovery.<sup>11</sup>Lightness and humour are also necessary to maintain positive and hopeful attitudes in patients.<sup>12</sup>

Although research on nurses' role in preserving or sustaining expectations to foster hope in the patients has started, it is unclear how nursing students experience putting hope into action. We know that nursing education involves situations where students engage in various clinical cases. According to published evidence, clinical placement is an intrinsic aspect of the undergraduate nursing program's preparing students for entry into the nursing profession,<sup>13</sup>as it provides undergraduate nursing students with the opportunity to learn in real-world clinical practice settings.<sup>14</sup>While these clinical placements provide rich opportunities to gain experience and develop skills, they are often the first time nursing students encounter the emotional component of nursing in practice.<sup>15</sup>For example, they may find themselves confronting death and dying.

While students are introduced to these situations in the classroom, regulating their emotions in real-world practice can be a challenge for which they are unprepared. A study found that during early clinical placements, nursing students entered the clinical environment with limited forethought or planning about managing strong or negative emotions.<sup>16</sup>It is therefore important to explore these issues further in order to inform nursing educators. The research questions addressed in the study were: What kind of interaction do nursing students encounter when they foster hope in the patients? How did they manage their experiences?

## **Methods**

### **Study design**

This descriptive qualitative study was designed using focus group interviews to examine individual and shared perspectives among the nursing students of a university in Brunei Darussalam relating to fostering hope in healthcare practice and their challenges.

### **Participants' characteristics**

Twenty-four female and three male students participated in the interview. They ranged in age from 20-43 years and consist of first-year (n=10), second-year (n=11) and fourth year (n=6) students. The researcher recruited them through the Coordinator of each Cohort. The students received study information during a scheduled recruitment lecture. Subsequently, students were invited to participate in the study and given participant information and a consent form for a single focus group interview. Recruitment for interviews continued to data saturation.<sup>17</sup>All of them reported that they had completed a health communication course in the first year of their University training and spent at least one month of clinical practice. The first and second years have clinical experiences in general wards, whereas the

final year uses general wards and specialities such as Emergency and Critical Care as elective courses.

### **Data collection**

Five focus group interviews were carried out in the faculty meeting room. The reason for choosing FGD is to encourage the participants to comment, explain, disagree, and share their views.<sup>18</sup> The researcher was the moderator and took notes during the session. The focus group discussion was also audio recorded with the permission of the students. Before dealing with the major questions, the moderator asked some opening and introductory questions to connect the group. After telling how they felt about the meaning of hope, the students expressed their opinions about the experience and challenge of fostering hope in healthcare practice. They were then asked to share ideas for recommendations to improve the communication of hope. The conversation lasted approximately 40-50 minutes and might have continued further but was shortened to keep the discussion on track.

### **Data Analysis**

Interview data obtained from the group discussion were analysed through qualitative content analysis. Qualitative content analysis is a way to classify the text from interviews into categories representing similar meanings.<sup>19</sup> Data were managed using Microsoft Word. Data were sorted into preliminary codes. It is further developed and reviewed, and categories were iteratively refined. The researcher and two volunteer participants collectively interpreted these categories' underlying meanings and formulated three main themes. Some minor changes were made upon the recommendations of the students.

### **The trustworthiness of study findings**

There are four criteria to be met to provide a qualitative investigation: credibility, transferability, dependability, and confirmability.<sup>20</sup> Firstly, credibility

is achieved through students' voluntarily participating in the study, whereby participants should have been given a chance to refuse to attend the study.<sup>21</sup> Secondly, transferability is achieved through a 'thick description',<sup>22</sup> whereby the researcher clarifies all the processes to let the reader compare the context to the others.<sup>20</sup> Thirdly, dependability is achieved when the researcher utilised the code-decode technique.<sup>23</sup> In this technique, the researcher codes the same data twice. The researcher waited for one week between each coding and adopted the findings accordingly to ensure the current study's dependability. Lastly, confirmability is achieved when the researcher shared the present study's findings with two participants and encouraged them to suggest changes if they were not content with her interpretation.

### **Ethical considerations**

The University Research Ethics Committee approved the study design. Participation was informed and voluntary, requiring written consent. The students retained the right to withdraw their participation at any time. Confidentiality was assured, and all research data were analysed anonymously.

### **Findings**

The data analysis culminated in three core themes: (1) Hope offers emotional support, (2) Fostering individualised hope, and (3) Shared responsibility by the team. The students also discussed the challenges of fostering hope subtly and sensitively.

### **Theme 1: Hope offers emotional support**

The first theme revealed the unanimous understanding of fostering hope among the nursing students. Through the interactive discussion, a common view emerged that the students were unanimous in perceiving hope as an emotional aspect of caring that has a critical value in the nurse-patient



relationship. Citing a range of examples, the students described emotional support through fostering hope as encouraging patients to communicate about how they feel:

Some patients may feel nervous or worried about the whole process of becoming a patient and the future because of the illness they have. As a nurse, I have to talk with them, maybe informally and openly, asking them how they feel. (Year 2, Female, FGD 3)

Some students attributed emotional assistance to exploring emotional concerns, but this often meant helping patients avoid ineffective emotional care. For example, it was deemed critical that positivism should be advocated in healthcare practice. They also emphasised the need to avoid negative feelings, affecting the sense of hope in the patients. As one student said, in order to prevent the patient's feeling hopeless, which was correlated with the experience of illness, it was essential to support the patient by providing a sense of hope for getting better:

I acknowledge why it is not easy for an individual to accept a diagnosis and carry on. My task is to support them by helping them not to give up. (Year 2, Female, FGD3)

While offering emotional assistance to the patient, the students found the resilience of nurses to be crucial in providing adequate patient care. In the view of students, providing emotional help is an emotional task. It implies that it will often be possible for nurses to feel an emotional strain.

As much as I want to offer the patient a sense of hope, it is also an emotional task that needs a little perseverance. (Year 2, Female, FGD3)

Most of the students unanimously feel the challenge of fostering hope in patients with different cultural backgrounds. Thus, the need for transcultural

nursing education to foster hope according to the patient's cultural needs was salient. Several students felt they lacked the knowledge and skills to engage patients who appeared to be in a low mood or lose hope in getting better. The final year students highlighted the importance of teaching methods that facilitate communication skills. It appeared that training courses emphasising how to foster hope might enhance the students' skill at interacting with people at risk for losing hope. In addition, the students generally emphasise the importance of providing an individualised hope which is meaningful to the patient during hospitalisation. This becomes the second theme.

## **Theme 2: Fostering individualised hope**

Meanwhile, the second element to fostering hope is the process of offering hope in an individualised approach to patients. This dimension explored how students viewed and expressed hope in clinical practice. Most of the students argued that giving the patient a sense of hope usually occurs through subtle interaction because of its awkwardness. Several of them argued that such 'conversation' occurs whenever there is an opportunity for it—for example, the student would ask about the patient's wellbeing during the blood pressure measurement. Most students agreed that giving individualised hope should occur in a day-to-day nursing activity and usually happens naturally. The students, however, believed that nurses spent much of their time providing physical and technical care. As a consequence, students concluded that the delivery of hope, through action or interaction, appears to be hurried, regimented, and depersonalised:

Some nurses tell patients quickly that everything will be okay and ask them not to worry about it. I do not think this helps patient's feel better. This may lead to false hope. (Year 4, Female, FGD4)



The students strongly felt that an individualised hope in the interaction between nurses and patients is particularly critical. There was also an overwhelming response that honesty and truthfulness were essential. Being honest and using simple language were cited. Paralinguistic cues such as tone of voice were valued. Unlike the response to questions about the value of fostering hope, students did not generate as much discussion, nor was the response enthusiastic. They were described as “sensitive communication” and not simply fostering hope. Students reported that nurses must be honest but sensitive in carrying hope messages.

We will know all about them by merely chatting informally with the patients, and maybe they require either mental or emotional help. As nurses, we respond by giving a sense of hope that is appropriate and personalised. (Year 1, Female, FGD 1)

Notably, students proposed that an individualised strategy would occur only if all nurses and patients had a sense of shared trust in one another.

Not everyone can always be positive. The nurse should be genuine in supporting patients. This can be done by not simply dismissing what the patient has said. (Year 1, Male, FGD1)

Several students agreed that nurses must treat the patient as an individual to gain the patient’s trust. They emphasised the importance of listening carefully and sympathetically to the individual, mainly when miscommunication is a possibility:

One must be sensitive and make no prior judgements when patients appear to be opening up about how they might feel about the disease. (Year 2, Female, FGD5)

Students elaborated the meaning of giving individualised hope, particularly in relation to being

sensitive to what is being said and how it is said. This was illustrated in examples of caring for older persons. The majority of the students reckoned that individualised hope in the patients is essential for meeting the need of patients. Several students shared their experiences with common ways of fostering hope in hospital patients, such as “Everything will be all right” or “No need to worry”. Delivering individualised hope messages to the right patient was also considered necessary. One student stated that “we cannot be saying the same thing to everyone really” should be thoroughly reflected by nurses. Overall, there was agreement that these sayings are giving false reassurance and hope to the patients. They consistently believe that fostering hope must be personalised. In addition, the students described the value and collective contributions of the healthcare team. This becomes the third theme.

### Theme 3: Shared responsibility by the team

The third theme relates to shared responsibility by healthcare professionals towards fostering hope in the healthcare practice. While the students recognised the value of hope in giving emotional support, they also identified how discouraging it might be to promote and sustain the delivery of hope without a concerted effort. The students strongly urged that healthcare professionals must use consistent messages when fostering hope in the patients. Students were adamant that they did not think that fostering hope is not the exclusive responsibility of any healthcare professionals.

Patient-centred care is important. It will be a shared action from a multidisciplinary approach through which everyone relates to the patient’s welfare. (Year 2, Female, FGD 5)

One noteworthy feature of highlighting the concept of hope in clinical practice was linked to the students’ views concerning how the conversation of

hope would begin. As one student reflected:

Offering hope is such a delicate conversation in which you have to get a greater view of everything. For example, when patients inquire about the odds of feeling better, we cannot be positive. That might mean we need medical colleagues, for example, to open a discussion like this. The rest of the team will then follow up on this discussion. (Year 2, Male, FGD 5)

However, the shared responsibility from healthcare professionals must also involve the patients. The students indicated that it is equally critical to carefully evaluate the patient's readiness to hear encouraging words from the healthcare professionals, meaning that hope delivery is adequately offered and provided. Another participant echoed:

While each of us can offer a sense of hope, patients must be prepared to accept the emotional supports themselves. (Year 1, Female, FGD 2)

By engaging other healthcare professionals within the framework of fostering hope, the students accepted that this would contribute to a cohesive strategy. The majority of the students also mentioned the critical role of nursing education. Students felt unprepared to foster patients hope in the theoretical courses, primarily based on transcultural knowledge. They anticipated that their nursing program would teach them the application of the hope concept in real clinical situations:

As students, we are inexperienced and lack transcultural knowledge; this causes fear, particularly when we needed to offer patients hope. This created confusion about unique cultural and emotional needs. We do not want to be supposed to offer an unwanted feeling of hope. There have been instances in which nurses advised nursing students to be careful and not get 'too interested' in instilling with the patient hope.

(Year 4, Female, FGD 4)

This account offers a valuable reminder of the importance of giving consistent hope messages to patients. Such consistency is central, that is, "everyone must be on the same page" when fostering hope. Thus, the responsibility of the healthcare team reflects the difficulties encountered by nursing students in creating a way of fostering hope in healthcare practice. The research thus illustrates the significance of looking for a cohesive approach by discussing certain facets of patient care in Brunei—in particular, hope in encouraging emotional support, fostering individualised hope to patients, and the responsibility of the healthcare team in fostering hope.

## **Discussion**

The first theme illustrates the importance of evaluating the emotional needs of patients. This includes discussing psychological concerns and clarifying patients' emotional elements' perceptions.<sup>24</sup> At the same time, students have described how emotional care creates anxiety among students. This shows that nursing education must facilitate sensitivity and nurture the human spirit in clinical practice.<sup>25</sup> Nurses spend more time with their patients than most health professionals, which suggests that the emotional interests of patients must also be understood as a nursing domain.<sup>26</sup> It is also essential to recognise that students described such hope as central in making the patient realise an inner power to inculcate hope during patient care. Such results concur with other studies whereby various individuals may follow specific coping strategies to, for example, remain hopeful for a better day.<sup>9</sup> Such results further reinforce the claim that hope has value because it is a source of motivation for an individual, helps them embrace the rest of their lives to the fullest, and will protect them from depression.<sup>27</sup>

Referring to the second theme, the students' narratives focused on the value of fostering individualised hope. According to them, the interaction between the nurses and the patients requires individualised hope. They express fear about giving false hope to patients, and thus for many of them, it is crucial and essential to reconcile hope and integrity in attempting to give patients hope. The students also strongly emphasised a dilemma of fostering hope, particularly when determining what to tell and how to promote confidence in the patients. Nurses may be cautious about the impact information has on a patient, and this careful attitude can lead to ineffective communication, such as providing too little or too many details.<sup>28</sup>

Meanwhile, with regard to the third theme, the students in this study called healthcare team responsibility in fostering patients hope. This study shows that fostering hope without concerted responsibility from the healthcare team may be challenging to implement and sustain. Thus, interdisciplinary inputs are seen by patients and families as a critical element for good and effective communication.<sup>29</sup>In this study, the findings also clearly indicate that students expected that the healthcare team caring for the patient should have a consistent approach when fostering hope so that everyone is "speaking the same language of hope." Inability to provide truthful and accurate information while maintaining patients' hope can lead to adopting approaches that lead healthcare professionals to avoid discussing prognosis or end-of-life issues.<sup>30</sup>Improved healthcare team communication might offer an opportunity to overcome this common but problematic approach.

### **Limitations**

The present qualitative study only presents the perspectives of several groups of nursing students

in the context and culture of Brunei. This study was conducted in a single university which is a limitation of the study. Another limitation would be that only one researcher moderates the focus group discussion, which might pose bias. Therefore, the transferability of findings should be considered with caution and criticism, and the study should be compared with similar studies conducted in other contexts. Further studies on different cultures and contexts should be conducted to help us fully understand different aspects of giving hope to patients and improve our understanding of practices and challenges in real situations.

### **Conclusion and Recommendations**

After interviewing twenty-seven students in a series of focus groups, the study shows that nursing students experience a range of situations for which they have attempted to foster hope in the healthcare practice. The students often feel that fostering hope is closely link with the delivery of emotional support. While they highlight the value of giving individualised hope to patients, the students also further reinforce shared responsibility by the healthcare team so that a cohesive approach to fostering hope can be provided. The findings also point to what the students were experiencing as they fostered hope. In essence, the study has to illuminate evidence of various aspects of nursing education for students. The findings suggested careful design of the contents used as a communication curriculum, emphasising fostering hope embedded in the clinical activities and interactions within the healthcare practice. The findings also suggest that educational support could improve students' ability to understand when and how to communicate hope in practice. Nurse educators should also be cognisant of inculcating the value of hope in health care contexts and strengthening the transcultural nursing knowledge of the students to guarantee meaningful communication of hope. With

these findings, it is also recommended that students receive further support to learn about interprofessional communication and be sensitive to the language of hope, given the importance of hope in healthcare practice.

**Conflict of Interest:** None

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### References

1. Clarke D. Faith and hope. *Australasian psychiatry: bulletin of Royal Australian and New Zealand College of Psychiatrists*. 2003; 11(2):164–8. DOI: 10.1046/j.1039-8562.2003.00550.x
2. Dunn SL. Identifying and promoting hope in patients. *Western Journal of Nursing Research*. 2016; 38(3):267–9. DOI: 10.1177/0193945915614932
3. Roberts B, Kreeger L, editors. Attending to vulnerable populations through nurse advocacy on boards and in public service. *Creative Nursing*. 2019; 25(2):82–6. DOI: 10.1891/1078-4535.25.2.82
4. da Silva JM, Henricson M. Promotion of hope in patients cared for in an intensive care unit in Indonesia. *Nordic Journal of Nursing Research*. 2013; 33(1):4–8. <https://doi.org/10.1177/010740831303300102>
5. Monden KR, Gentry L, Cox TR. Delivering bad news to patients. *Proceedings (Baylor University Medical Center)*. 2016; 29(1):101–2. DOI: 10.1080/08998280.2016.11929380
6. Herrera A, Ríos M, Manríquez JM, Rojas G. Breaking bad news in clinical practice. *Revistamedica de Chile*. 2014; 142(10):1306–15. DOI: 10.4067/S0034-98872014001000011
7. Turner de S, Stokes L. Hope promoting strategies of Registered Nurses. *Journal of Advanced Nursing*. 2006; 56(4):363–72. <https://doi.org/10.1111/j.1365-2648.2006.04017.x>
8. Babamohamadi H, Negarandeh R, Dehghan-Nayeri N. Coping strategies used by people with spinal cord injury: a qualitative study. *Spinal Cord*. 2011; 49(7):832–7. DOI: 10.1038/sc.2011.10
9. Schofield PE, Stockler MR, Zannino D, Tebbutt NC, Price TJ, Simes RJ, et al. Hope, optimism and survival in a randomised trial of chemotherapy for metastatic colorectal cancer. *Support Care Cancer*. 2016; 24(1):401–8.
10. Bumb M, Keefe J, Miller L, Overcash J. Breaking bad news: An evidence-based review of communication models for oncology nurses. *Clinical Journal of Oncology Nursing*. 2017; 21(5):573–80. DOI: 10.1188/17.CJON.573-580
11. Al-Fayyadh S. Predicting the functional independence during the recovery phase for poststroke patients. *Nursing Open*. 2019; 6(4):1346–53. <https://doi.org/10.1002/nop2.335>
12. McCreddie M, Payne S. Humour in health-care interactions: a risk worth taking: Humour in health-care interactions. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy*. 2014; 17(3):332–44. DOI: 10.1111/j.1369-7625.2011.00758.x
13. Khishigdelger L. Real life experiences of nursing students at the clinical practice. *International Journal of Nursing Education*. 2016; 8(4): 24.

14. Baraz S, Memarian R, Vanaki Z. Learning challenges of nursing students in clinical environments: A qualitative study in Iran. *Journal of Education and Health Promotion*. 2015; 4(1):52.DOI: 10.4103/2277-9531.162345
15. Thomas LJ, Revell SH. Resilience in nursing students: An integrative review. *Nurse Education Today*. 2016; 36:457–62.DOI: 10.1016/j.nedt.2015.10.016
16. McCloughen A, Levy D, Johnson A, Nguyen H, McKenzie H. Nursing students' socialisation to emotion management during early clinical placement experiences: A qualitative study. *Journal of Clinical Nursing*. 2020; 29(13–14):2508–20.<https://doi.org/10.1111/jocn.15270>
17. Fusch P, Ness L. Are we there yet? Data saturation in qualitative research. *The Qualitative Report* [Internet]. 2015; Available from: <http://dx.doi.org/10.46743/2160-3715/2015.2281>
18. Tausch AP, Menold N. Methodological aspects of focus groups in health research: Results of qualitative interviews with focus group moderators: Results of qualitative interviews with focus group moderators. *Global Qualitative Nursing Research*. 2016; 3. DOI: 10.1177/2333393616630466
19. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*. 2004; 24(2):105–12.DOI: 10.1016/j.nedt.2003.10.001
20. Guba EG. Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational communication and technology* [Internet]. 1981; 29(2). DOI: 10.1007/bf02766777.
21. Sim J, Waterfield J. Focus group methodology: some ethical challenges. *Quality and Quantity*. 2019; 53(6):3003–22. <https://doi.org/10.1007>
22. Rashid M, Hodgson CS, Luig T. Ten tips for conducting focused ethnography in medical education research. *Medical Education Online*. 2019; 24(1):1624133.DOI:10.1080/10872981.2019.1624133
23. Syed M, Nelson SC. Guidelines for establishing reliability when coding narrative data [Internet]. 2017. DOI: 10.31234/osf.io/scu9x.
24. Sibiya MN. Effective Communication in Nursing. In: *Nursing*. InTech; 2018.DOI: 10.5772/intechopen.74995
25. Chandramohan S, Bhagwan R. Spirituality and spiritual care in the context of nursing education in South Africa. *Curationis* [Internet]. 2015; 38(1). DOI: 10.4102/curationis.v38i2.1471.
26. Jiménez-Herrera MF, Llauradó-Serra M, Acebedo-Urdiales S, Bazo-Hernández L, Font-Jiménez I, Axelsson C. Emotions and feelings in critical and emergency caring situations: a qualitative study. *BMC Nurs*. 2020; 19(1):60.<https://doi.org/10.1186/s12912-020-00438-6>
27. Broadhurst K, Harrington A. A mixed-method thematic review: the importance of hope to the dying patient. *Journal of Advanced Nursing*. 2016; 72(1):18–32.DOI: 10.1111/jan.12765
28. Reinke LF, Shannon SE, Engelberg RA, Young JP, Curtis JR. Supporting hope and prognostic information: nurses' perspectives on their role when patients have life-limiting

- prognoses. *Journal of Pain and Symptom Management*. 2010; 39(6):982–92. DOI: 10.1016/j.jpainsymman.2009.11.315
29. Kreps GL. Communication and effective interprofessional health care teams. *International Archives of Nursing and Health Care* [Internet]. 2016; 2(3). DOI: 10.23937/2469-5823/1510051.
30. Buiting HM, Rurup ML, Wijsbek H, van Zuylen L, den Hartogh G. Understanding provision of chemotherapy to patients with end-stage cancer: qualitative interview study. *BMJ*. 2011; 342(1):d1933. DOI: <https://doi.org/10.1136/bmj.d1933>.



# Students' Preferences for Teaching Methods and their Performances in Schools of Nursing, Nigeria

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## Abstract

**Background:** Suboptimal academic performance by the majority of students at higher educational level has been linked with ineffective teaching methods by teachers/lecturers. The aim of this study was to assess teaching methods, academic, and clinical performances among student nurses in schools of nursing, in North-west Nigeria.

**Methods:** The study adopted a mixed approach of a cross-sectional design. The sample comprises of 95 tutors, 31 clinical instructors, 698 students, and the final year students from five selected schools. An adapted questionnaire was used for data collection. Quantitative data were analyzed using descriptive and inferential statistic with the aid of IBM SPSS Version 20. The qualitative data were summarize using thematic content analysis.

**Results:** Lectures, demonstration, and discussion were the most frequently used methods of instruction in the schools. The average academic performances of students were credit (C). The academic performance of students in the final examination and Nursing Council Exam was "Pass". Most of the students obtained a C-grade in the clinical examination. The clinical performance rating of the students in both the school and the nursing Council was "Pass" grade. There was a Significant positive correlation between the academic performance of third year students and their clinical performance (<.05). Most students were satisfied with lecture teaching method because of its ability to ensure curriculum coverage.

**Conclusions:** Clinical performance of students increased with an increased academic performance. Students preferred lectures and demonstration as methods of instruction. The tutors should trained and motivated students to use students' centred Learning methods in the administration of their lessons.

**Keywords:** *Academic, Clinical, Method, Performance, Teaching.*

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## Introduction

Discrepancies in the academic performances of nursing students have been observed, although students may be of comparable abilities, learn in the same environment and follow the same syllabus, their academic performance may still vary. Aremu

and Sokan<sup>1</sup> describes poor academic performance as a performance that is adjudged by the examiner(s) as falling below an expected standard; bright students who fail to excel due to other factors, miss the opportunity to advance in education and to get employment.<sup>2</sup>

According to Kalivani,<sup>3</sup> nursing students need both theoretical knowledge and clinical skills to handle real life situations while caring for the patients and families. Dimkpa and Buloubomere<sup>4</sup> suggested a conducive environment to encourage the students to learn academically and clinically. In addition, the instructional strategies should focus on students' abilities and preferences.<sup>5</sup> Many methods of teaching exist in nursing education; suboptimal academic performance has largely been cited to be the result of ineffective teaching methods.<sup>5</sup>

Omisakin,<sup>6</sup> described tutors' roles that invariably affect the student academic and clinical performances. Eghbalibabadi and Ashouri,<sup>7</sup> based on a comparative study suggested simulation training as an effective teaching strategy to facilitate learning and for the development of students' clinical performance. Gupta<sup>8</sup> revealed that lecture method with the use of blackboard was the most used method of teaching and the method have moderate effect on how students perform academically.

The relationship between teaching methods, academic, and clinical performances of students' nurses has become an object of inquiry for researchers.<sup>9</sup> Theoretical knowledge may enhance the clinical performance. For instance in a correlational study, students who perform well in the classroom setting performed similarly well in the clinical setting.<sup>10</sup> However academic grade does not always reflect the competence of students in clinical setting because there are variables (external and internal) that significantly affect performance of student nurses.<sup>11</sup>

This increased complexity, rapidly changing and challenging atmosphere in nursing practice.<sup>12</sup>

Previous studies revealed that effective teaching and evaluating techniques promotes students' academic and clinical performances. The Nursing and Midwifery council of Nigeria (NMCN) has been consistently conducting professional pre-licensure examination for several decades. However, little has been done empirically in Nigeria to find out the assessment of teaching methods, and their impact on academic and clinical performances of student's nurses. Additionally, while a study found a satisfactory clinical placement among students nurses in another context,<sup>13</sup> the students' satisfaction with the various teaching methods has been giving limited attention. This study was to assess the teaching methods, students' performance, the relationship between the clinical and academic performances and students satisfaction with the teaching methods.

## **Method**

### **Study Design, setting and population**

This study adopt a mixed approach of a cross-sectional (correlational) design. The study population were all the 95 tutors, 31 clinical instructors, 698 students and the final year students that sat for the NMCN' Professional Examination for General Nurses in five selected School of Nursing, Northern Nigeria. At first, a random sampling was used to select three (3) states out of the seven (7) state (cluster). In these selected states, all the five (5) were used for the study. We purposively selected 28 students from each school; 14 participants each from 2nd year and 3rd year classes respectively. Each focus group consists of seven (7) discussants. Therefore, the sample size across the five (5) schools was 140 participants/discussants. A total of 73 tutors participated in the study.

### **Instrument for data collection**

This study used a questionnaire, Focused Group Discussion Guide (FOGDIG), and Checklist for Assessment of Academic and Clinical Performance (CAP). The questionnaire was adapted from Questionnaire for the assessment of teaching methods and evaluation techniques and it has two sections. Section A has five items assessing sociodemographic characteristics; section B also has five (5) items focusing on the teaching methods used by the tutors. The focus group discussion contains 4 items to explore satisfaction with teaching methods. Finally, two different checklists were prepared each for 2nd year and 3rd year students to collect data on academic and clinical performances of students.

A pre-test was conducted in a School of Nursing in other state not participating in the main study. A Split Half reliability method from data collected (among 11 participants) shows a Cronbach's Alpha of 0.83 for the questionnaire. The Focus Group Discussion Guide (FOGDIG) was pre-tested using two FGDs groups comprising of 7 participants in each group in a different school. There was consistency in the responses recorded in the two sessions. Five (5) experts in the fields of nursing education and general education validate the content of the three instruments used in the study.

### **Data collection**

After obtaining ethical clearance and permission was sought from the heads of institutions and the respondents who agreed to participate. Two research assistants were trained for data collection. The

questionnaire was administered to tutors and the students had a Focused Group Discussions (FGDs) using FOGDIG. Four (4) FGDs were conducted in each school (two in each of the 2nd and 3rd year classes). Each session convened with a group of seven (7) discussants lasting over a period of 20-30 minutes. The FGD was recorded in an audiotape with the permission of the discussants. Finally, the previous exam records from the schools was collected and content analysed using Checklist for Assessment of Academic and Clinical Performance (CAP).

### **Data Analysis**

Data on the socio-demography was summarized using descriptive statistics (frequency, percentage, mean and standard deviation). Descriptive statistics were used to examine teaching methods and academic and clinical performances (means/standard deviation). The inferential component of the analysis was Person's correlation. The focus group discussion was analysed using thematic content analysis and the data were presented in form of themes. Each theme was presented with subthemes and participants verbatim quotations.

## **Result**

### **Sociodemographic characteristic**

The mean age of the tutors (in Table 1) was 36.4921 years, majority were males (74.6%), having BNSc/ BSc/B.Ed/HND (58.7%) as the highest qualification. The students had a mean age of 19.2 years; majority (69%) were females; and most (37.1%) were in the 3rd year of study.

**Table 1. Sociodemographic Data of Tutors**

Variables	Frequency	Percentage	Mean
TUTORS			
Age			36.49
Gender			
Female	47	74.6	
Male	16	25.4	
Qualifications			
Postgraduate degree	5	7.9	
Bachelor/Equivalent	8	12.7	
Post-basic Nursing	37	58.7	
RN/RM	12	19.0	
OTHERS	1	1.6	
STUDENTS			
Age			19.2
Gender			
Male	241	31	
Female	511	69	
Level of Study			
Second year	217	28.9	
Third year	279	37.1	
Last set of NMCN Examination	256	34	

### Teaching Methods

As in Table 2, the most frequently used method of instruction was lecture method (98.4%). Other most adopted teaching instructions were clinical demonstration (80.9) and discussion (76.2%).

**Table 2: Teaching Methods**

Methods	Frequency	Percent
Lecture	62	98.40
Discussion	48	76.20
Demonstration	51	80.90
Simulation	28	44.40
Role play	23	36.50
Computer based learning	21	33.30
Lineup method	16	25.40
Case study	13	20.60
Buzz method	15	23.80
Debates	10	15.90
Concept mapping	8	12.70

**Academic performance of students**

In both levels, only a few had A grade in some courses. For the final year examination (first attempt),

Table 3 shows that 73% had Pass grade in Paper I and 90.9% in Paper II; in the NMCN professional examination, Table 3 also Indicates that 96% of students had pass grade in paper I and 97.2% in Paper II.

**Table 3: Academic Performance in School Final Examination and NMCN Professional Examination**

Grade	School Final Exam				NMCN Professional exam			
	Paper I		Paper II		Paper I		Paper II	
	F	%	F	%	F	%	F	%
PASS	184	73	229	90.9	242	96	245	97.2
FAIL	68	27	23	9.1	10	4	7	2.8
Total	252	100	252	100	252	82.1	252	100

### Clinical performance of students

The findings (in Table 4.1) concerning clinical performance indicated that larger proportions of the students (64.1%) and (44.1%) had C-grade in the 2nd and 3rd year clinical performance rating respectively.

For the final examinations, Table 4.2 revealed that most of the candidates (89% and 99.6%) had Pass grade in the clinical performance rating for the school final examination and NMCN professional examination respectively.

**Table 4: Clinical Performance**

Grade	2nd Year		3rd Year	
	Frequency	Percent	Frequency	Percent
A	0	0	1	0.4
B	0	0	39	14
C	139	64.1	123	44.1
D	38	17.5	56	20.1
F	40	18.4	60	21.4
Total	217	100	279	100

**Table 5: Clinical Performance in School Final Examination and NMCN Professional Examination**

Grade	School Final Exam		NMCN Professional exam	
	Frequency	Percent	Frequency	Percent
PASS	247	98	251	99.6
FAIL	5	2	1	0.4
Total	252	100	252	100

Relationship between academic and clinical performances of students

From the Table 5, correlation analysis revealed a strong positive correlation ( $r=0.68003143$ ) between student's academic performance and their clinical

performance in the 2<sup>nd</sup> year of training while, a moderate positive correlation was found in the 3<sup>rd</sup> year ( $r=0.571842$ ). Thus, academic performance is likely to increase clinical performance of students in the both levels of training.



**Table 6: Correlation between overall academic Performances and clinical performance among students**

Year 2 Students	Academic performance	Clinical Performance		
Academic performance	1			
Clinical Performance	0.68003143*	1		

**Final year Students**

	Academic Performance	Clinical Performance		
Academic performance	1			
Clinical Performance	0.571842*	1		

*\*Correlation is significant at 0.05 level.*

**Students’ preference for teaching methods**

Findings suggest that most students preferred lecture teaching method because of its ability to ensure curriculum coverage as stated by FDG 8 and FGD 10:

“In this our school we are more satisfied with the lecture than other teaching methods in our subjects. The lecturers that used lecture method do covers their topic and subjects or courses more than others using different method. So the coverage is good” (FGD 8).

“Sincerely speaking the lecture method we are very satisfied with it. is giving us the opportunity to understand the lecture, ask questions, observes the area the lecturer is paying emphasis and can sometimes predict where the teacher can ask questions. We are very satisfied with it” (FGD 10).

In the area of clinical teaching, majority of the students preferred lecture-demonstration method as the best suitable teaching techniques for teaching

clinical skills in the schools and clinical areas. FGD 5 and FGD 17 shared their experiences:

“We preferred lecture in the class before going to the lab for demonstration and then the clinical area. The teacher will do it and asked the class members to do it and if there are mistakes he will repeat it” (FGD 17).

“I like the lectures and demonstration together; you will received lecture and start demonstration immediately. If you forget the theory you can remember the demonstration. The two system is the best. I preferred it than any other method” FGD 5).

**Discussion**

Lectures, demonstration, and discussion were the most frequently used methods of instruction in the schools. The next most popular teaching technique were demonstration and discussion. The present study is in line with Nicole<sup>14</sup> who found that traditional lecture and group activity were the teaching methods used in nursing college.

The average academic performance of students in second and third year was credit (C). However, most of the students in the final year examination obtain a 'Pass' score. Most of the students in second and third year obtained a C-grade in the clinical examination. The clinical performance rating of the students in both the school final exam and NMCN professional examination was "Pass" grade. There was a significant positive correlation between the academic performance of students and their clinical performance. The present findings were supported by previous studies.<sup>15,16</sup> The findings may suggest that increase in academic performance may result in increased clinical performance.

For academic teaching, students prefer lecture method. However, the respondents opted for a combination of lecture and demonstration for clinical teaching. The students were satisfied with lecture teaching. This may not be surprising because lecture method (blended with e-learning) is the most common teaching method used in Nigeria as indicated by the tutors. This supports Sadeghi, Sedaghat and Ahmadi<sup>17</sup> who reported that the blended method is effective in increasing the students' learning rate.

This study found lecture-demonstration method of clinical teaching a novelty because previous study<sup>18</sup> reported students' satisfaction with demonstration method only as against the current study. A model demonstration of a simulation scenario can be used to develop clinical judgment and possibly self-confidence of nursing students.

### Conclusion

Lecture, demonstration and discussion methods were the most predominantly used method of teaching in schools of Nursing. The majority of the students passed their examinations with "C" grade which is average/pass. Academic performance is likely to increase clinical performance of students in the both

levels of training. Finally, most students were satisfied with lecture teaching method because of its ability to ensure curriculum coverage. The study implies that tutors should use students' Centred Learning methods in the administration of their lessons. The NMCN should tailor the General Nursing curriculum around students' Centred learning methods that actively involve students in their academic and clinical training.

**Conflict of Interest:** None

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### References

1. Aremu AO, Sokan BO. A Multi-causal Evaluation of Academic Performance of Nigerian Learners: Department of Guidance and Counselling, 2003, University of Ibadan, Ibadan.
2. Muola JM. A study of the relationship between academic achievement motivation and home environment among standard eight pupils, *Educational Research and Reviews*, 2010; 5(5).
3. Kalaivani A. Role of E-Learning in the Quality Improvement of Higher Education. *IOSR Journal of Humanities and Social Science*, 2014; 19(11): 15-17.
4. Dimkpa DI, Buloubomere I. Student Nurses Perception of Poor Academic Performance in Bayelsa State, Nigeria. *Global Journal of Human Social Science Linguistics & Education*, 2013; 13(14). Retrieved from: [https://globaljournals.org/GJHSS\\_Volume13/1-Student-Nurses-Perception-of-Poor-Academic.pdf](https://globaljournals.org/GJHSS_Volume13/1-Student-Nurses-Perception-of-Poor-Academic.pdf)
5. Adunola O. "The Impact of Teachers' Teaching Methods on the Academic Performance of Primary School Pupils in Ijebu-Ode Local cut Area of Ogun State," Ego Booster Books, 2011, Ogun State, Nigeria.

6. Omisakin FD. Ideal Clinical Roles of Nurse Lecturers in Nigeria: A Review of the Literature. *Health Science Journal*, 2016; 10(1).
7. Eghbalibabadi A, Ashouri E. Comparison of the effects of two teaching methods on the nursing students' performance in measurement of blood pressure. *Iranian Journal of Nursing and Midwifery Research*, 2014; 19(4):381-4.
8. Gupta P. Study on the effect of teaching method on the academic achievement of school going children of Semiurban Area, Schools of Lucknow city. *International Journal of Health Sciences*, 2017; 3(2), 447-453.
9. Tilley DS. 'Competency in nursing: a concept analysis. *Journal of Continuing Education in Nursing*, 2008; 39 (2), 58-64
10. Buhat-Mendoza DG, Jame NB, Mendoza CT, Tiana E, Fabella I. Correlation of the academic and clinical performance of Libyan nursing students. *Journal of Nursing Education and Practice*, 2014; 4(11).
11. Farooq MS, Chandhry AH, Shafiq M. 'Factors affecting student's quality of academic performance. *Journal of Quality and Technology, Management*, 2011;7:1-14.
12. O'Brien A, McNeila K, Dawson A. The student experience of clinical supervision across health disciplines Perspectives and remedies to enhance clinical placement. *Nurse Education in Practice*, 2019; 34: 48–55.
13. Al Sebaee HAA, Abd El Aziz EM, Mohamed N. Relationship between Nursing Students' Clinical Placement Satisfaction, Academic Self-Efficacy and Achievement. *IOSR Journal of Nursing and health Science*, 2017; 6: 101-112.
14. Nicole LF. The effect of teaching methods used as experienced and perceived by student nurses at a nursing college in the Western Cape Province. Thesis presented in the Faculty of Health Sciences at Stellenbosch University, 2011. Unpublished.
15. Vendrely AM. An Investigation of the Relationships among Academic Performance, Clinical Performance, Critical Thinking, and Success on the Physical Therapy Licensure Examination. *Journal of Allied Health*, 2007; 36 (2):108-103.
16. McClelland E, Yang JC Glick OJ. A statewide study of academic variables affecting performance of baccalaureate nursing graduates on licensure examination. *Journal of Professional Nursing*, 2004; 8(6):342-350.
17. Sadeghi R, Sedaghat MM, Ahmadi FS. Comparison of the effect of lecture and blended teaching methods on students' learning and satisfaction. *Journal of Advances in Medical Education & Professionalism*, 2014; 2(4): 146.
18. Weaver A. The effect of a model demonstration during debriefing on students' clinical judgment, self-confidence, and satisfaction during a simulated learning experience. *Clinical Simulation in Nursing*, 2015; 11(1): 2.

# The Effect of Online Computer Assisted Instruction on Knowledge, Self-Efficacy, and Satisfaction of Nursing Students

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## Abstract

**Background:** Computer assisted instruction is integrated to nursing education lecture class. It is not assessed in online teaching of maternal-newborn nursing and Midwifery class.

**Purpose:** To examine the effectiveness of online computer assisted instruction of nursing care for pregnant women with diabetes on knowledge, self-efficacy, and satisfaction of nursing students.

**Methodology:** Quasi-experimental research was designed in this study. Participants were selected using systematic random sampling. Eighty nursing students were enrolled in this study. Forty students in experimental group was assigned to learn via online computer assisted instruction of nursing care for pregnant women with diabetes, where as another forty students was assigned to learn in lecture class. The pretest and posttest mean scores of students' knowledge and self-efficacy of nursing care for pregnant women with diabetes were analyzed and compared within group and between group.

**Results:** The posttest mean score of students' knowledge and self-efficacy of nursing care for pregnant women with diabetes in the experimental group was significantly higher than those in lecture class. The overall students' satisfaction with online computer assisted instruction was 82.50 percent. These findings suggested that online computer assisted instruction could enhance students' learning outcomes and satisfaction.

**Keywords:** Online teaching, computer assisted instruction, nursing education.

## Introduction

Pandemic of Covid-19 has impacts on education management worldwide. Many abruptions change the way of daily living, working, teaching and learning. Educators have to modify their teaching methods from academic face-to-face to online class. Several educational innovations emerge to support teaching

and learning demands such as online computer assisted instruction, simulation, e-learning, and blended learning<sup>1-2</sup>. Educators require to manage the well-planned instructions in order to motivate students' engagement and response to learning style varieties<sup>3</sup>. Effectiveness of these online education strategies need to be evaluated and promoted.

Philosophies and principles of online education management are published and applied in all organizations. They are integrated with prior constructivism, student-centered, problem-oriented, twenty-first century skills, and outcome-based educations<sup>4-6</sup>. Advanced in media technology and

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online applications were offered for all<sup>7</sup>. In addition, the online teaching -learning environments were modified in all classes. Everyone has to cope with these unavoidable changes and put efforts to overcome these situations.

In nursing education, many online classes have to implemented. However, teachers and students face some obstacles. Many workshops on online teaching and supporting innovation technology were provided for all teachers<sup>8-9</sup>. Students also received guidelines and trained to learn via online classes<sup>10</sup>. In the early phase of application of these online courses, lack of supporting education resources was found in nursing education<sup>11</sup>. Development of educational innovations should be promoted and evaluated. Doing classroom research can help to improve online education management and enhance learning outcomes. This study aimed to examine the effectiveness of online computer assisted instruction (CAI) of nursing care for pregnant women with diabetes on knowledge, self-efficacy, and satisfaction of nursing students.

### **Research Methodology**

Quasi-experimental research was employed in this study. The setting was Faculty of Nursing, Prince of Songkla University, Thailand. The studied population were 218 third-year nursing students who were enrolled in Maternal-Newborn Nursing and Midwifery course during the first semester of 2020 academic year. Systematic random sampling was used to recruit 80 students. Forty subjects were enrolled in experimental group assigned to learn from online CAI of nursing care for pregnant women with diabetes. On the other hand, another 40 subjects were enrolled to usual lecture class of nursing care for pregnant women with diabetes. The contents on CAI of nursing care for pregnant women with diabetes and data

collection forms were assessed by three experts. The index of item-objective congruence (IOC) was 0.88. The test-retest reliability was 0.83. The participants were asked to complete the pretest questionnaire on the week before class. Then, the participants in the experimental group were assigned to learn online using the developed CAI on nursing care for pregnant women with diabetes, whereas students in the controlled group took the usual online course. Finally, all participants were asked to complete the posttest questionnaire. Measurements of students' knowledge, self-efficacy and satisfaction with online CAI were analyzed and compared between the two groups using paired t-test and independent t-test.

### **Findings**

The sample of students participated in this study were 21-22 years of age. Fifty-five percent of students reported that they had previously used CAI in high school and some courses in the university. None of them had have experiences in using CAI via online classes. The efficiency (E1/E2) of online CAI of nursing care for pregnant women with diabetes was 80/92.

The students' knowledge posttest mean score in the experimental group ( $M$  8.50,  $SD$  1.26) was higher than those in the control group ( $M$  4.35,  $SD$  0.89) at .05 significant levels.

Students' posttest mean score of self-efficacy on nursing care for pregnant women with diabetes in the experimental group ( $M$  79.00,  $SD$  6.32) was higher than those in the control group ( $M$  37.25,  $SD$  11.54) at .05 significant levels.

The overall students' satisfaction with learning online using CAI of nursing care for pregnant women with diabetes was 82.50 percent ( $SD$  10.40) (Table 1).

**Table 1: Comparison of posttest mean scores of knowledge and self-efficacy on nursing care for pregnant women with diabetes (n=80)**

Dependent Variables	Experimental group		Control group		t	P
	mean	SD	mean	SD		
Students' knowledge of nursing care for pregnant women with diabetes	8.50	1.26	4.35	0.89	16.98	.000
Students' self-efficacy of nursing care for pregnant women with diabetes	79.0	6.32	37.25	11.54	20.06	.000

### Discussion

The students who had learned with online CAI showed higher mean scores of knowledge and self-efficacy on nursing care for pregnant women with diabetes than those participated in usual classroom. It demonstrated that the online CAI was effective to enhance student learning outcomes. Using CAI in online classes can support interactive learning process and enhance self-efficacy on application of knowledge. Prior systematic review suggests that online classes can improve students' attitude, knowledge and skills<sup>12</sup>. In addition, implementation of e-learning program illustrates improvement of caring behaviors<sup>13</sup>. Nursing students perceived that online learning in Covid-19 pandemic is positive opportunity to select and practice advanced technology of educational innovations<sup>14</sup>. Application of CAI in online course is effective and suitable to support self-directed learning and interactive learning environment<sup>15</sup>. Moreover, learning experiences in online courses can promote active-adult learner behaviors<sup>16</sup>. As a result, the students can develop self-efficacy on nursing care for pregnant women with diabetes. The overall students' satisfaction with learning online using CAI of nursing care for pregnant women with diabetes was high (82.5%).

However, nursing students face some problems and barriers during taking online course that include availability of internet access and online learning equipment, home environment, overload course works, assignments and examinations<sup>17</sup>. Some students feel stress and tension because of difficulty of the studied contents, teaching-learning technology, and development of clinical skill competencies<sup>18</sup>. Preparing and providing high speed internet and advanced technology supporting online course management would be helpful to implement online educational innovations<sup>17</sup>.

### Conclusion

Online computer assisted instruction of nursing care for pregnant women with diabetes was developed and assessed the effect on students' knowledge, self-efficacy, and satisfaction. The results showed that it was effective to enhance learning outcomes and suitable to combine in online teaching method.

**Conflict of Interest:** Nil

**Source of Support:** Faculty of Nursing, Prince of Songkla University, Hat Yai, Thailand.

**Ethical Approval:** Ethical approval was taken from Center for Social and Behavioral Sciences



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### References

1. Vichitvejpaisal P, Panjamawat T, Varasunun P, Apidechakul P, Kraiprasit K, Chainchop P. Development and assessment of an online computer assisted instruction method. *South East Asian J Med Edc* 2016; 8: 29-34.
2. Vijoen CA, Scott MR, Engel ME, Shelt M, Burch V. Is computer assisted instruction more effective than other educational methods in achieving ECG competence among medical student and residents?: Protocol for a systematic review and meta-analysis. *BMJ Open* 2017; e018811: doi: 10.1136/bmjopen2017-018811.
3. Yatniyom P, Lalun A, Playrahan S, Mungkamanee S. The effect of teaching using computer assisted instruction on gerontological nursing lesson of nurse students at Faculty of Nursing Chaiyaphum Rajabhat University. *J Royal Thai Army* 2019; 20: 411-412.
4. Ryan C, Young L, McAllister M. The impact of online learning platform about nursing education on enrolled nurse preceptor teaching capabilities: a pre-post-test evaluation. *Contemp Nurse* 2017; 53: 335-347.
5. Authement RS, Dormire SL. Introduction to the online nursing education best practices guide. *SAGE Open Nurs* 2020; 6: 1-6.
6. Langedard U, Kiani K, Nielsen SJ, Svensson P. Nursing students' experiences of a pedagogical transition from campus learning to distance learning using digital tools. *BMC Nursing* 2021; 20: 23.
7. Thangkratok P, Lhimsoonthon B, Palacheewa N, Tongtham A. Online nursing education during the Coronavirus-19 pandemic: a case study of Epidemiology course. *JTNMC* 2021; 36: 31-44.
8. Sasow P, Yuennan C, Peansungnern N. Learning and teaching online in nursing education during the Covid-19 pandemic. *J Nurs Educ* 2020; 26: 189-202.
9. Ramos-Morcillo AJ, Leal-Costa C, Moral-Garcia JE. Experiences of nursing students during the abrupt change from face-to-face to e-learning education during the first month of confinement due to Covid-19 in Spain. *Int J Environ Res* 2020; 17: 42-49.
10. Decelle G. Andragogy: an fundamental principle of online education for nursing. *J Best Pract Health Prof Divers* 2016; 9: 1263-1273.
11. Oducado RM, Estoque HV. Online learning in nursing education during the Covid-19 pandemic: stress, satisfaction, and academic performance. *J Nurs Pract* 2021; 4: 143-153.
12. Rana S., Garbuja CK, Rai G. Nursing students' perception of online learning amidst Covid-19 pandemic. *J Lumbini Med Coll* 2021; 9: 1-6.
13. Morin KH. Nursing education after Covid-19: same or different. *J Clin N* 2020; 29: 3117-3119.
14. Rouleau G, Gagnon MP, Payne-Gagnon J, Hudson E, Dubois CA, Bouix-Picasso J. Effects of e-learning in a continuing education context on nursing care: systematic review of systematic qualitative, quantitative, and mixed-studies reviews. *J Med Internet Res* 2019; 21: e15118.
15. Sharma P, Arora S. Online classes for nursing fraternity: a systematic review of the impact on attitude, knowledge, and skill. *Indian J Psy Nsg* 2021; 17: 104-111.
16. Bahrambeygi F, Shojaeizadeh D, Sadeghi R, Nasiri S, Ghazanchaei E. The effectiveness of

- an e-learning program on nurse's knowledge and behavior for caring of patients with thromboembolism: a comparative study. *J Nurs Healthcare Manage* 2018; 1: 105.
17. Opeyemi OZ, Adeyemi AA, Olajuwon TD, Oloruntosin ON, Oladeji S. Perception of nursing students towards online learning: a case study of Lautech open and distance learning centre, Ogbomoso, Oyo state, Nigeria. *Galore Int J Health Sci Res* 2019; 4: 23-30.
  18. Dutta S, Ambwani S, Lal H, Ram K, Mishra G, Kumar T., Varthya SB. The satisfaction level of undergraduate Medical and Nursing students regarding distant preclinical and clinical teaching amidst Covid-19 across India *Adv Med Educ Practice* 2021; 12: 113-122.

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