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Compassion fatigue - The price nurses pay for caring

A Felicia Chitra

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Abstract

Compassion Fatigue is the natural consequence of caring intensely for traumatized people experienced by the nurses which seems to be the price paid by the nurses for caring. This term being first used in 1992 is now becoming more popular urging nurses to recognize their risk of developing compassion fatigue and to plan out ways to fight it at the earliest to safeguard their interest and to continue to function as compassionate nurses.

Key Words

Compassion fatigue, burnout, post-traumatic stress disorder (PTSD).

Introduction

Nursing means caring. Like a mother cares for her child, the nurse is expected to care for her patients. This is what we nurses have been learning and are being taught in our nursing classes. As we are expected to remember to be caring, compassionate and dedicated towards patient care through out our nursing career we are equally forced to remember the price we pay for caring our patients intensively. The compassionate and dedicated nurses in the process of caring for patient become overwhelmed and express not only a feeling of sympathy but also a strong wish to allay the suffering of their patients. This is when the problem starts and they pay the cost for caring. This article calls the attention of all those who are caring to remind them of practicing Nursing – the caring profession without getting themselves hurt by the compassion shown by them in the guise of Compassion Fatigue.

History

Joinson² was first to use the term “Compassion Fatigue” in 1992 to talk about the burnout of nurses dealing with hospital emergencies. Later was defined as equal to secondary traumatic stress disorder and nearly equal to post-traumatic stress disorder and further the term was used as user - friendly for PTSD by Figley⁵.

Definition

Compassion Fatigue is a state of emotional, physical and mental exhaustion as a result of caring intensively for a patient with a progressive illness. It is a form of burnout.

Compassion Fatigue is the natural effect of caring intensely for another, that is, not necessarily a problem, but a natural consequence of caring for traumatized people. (Figley1995)¹.

Etiology

- Prolonged exposure to other’s trauma and suffering.
- Occurs in situations when individuals cannot be rescued or saved from harm.
- Personal triggers like over involvement, unrealistic self-expectations, and personal commitments.

Persons at Risk

It affects those working in care-giving professions like

- Nurses
- Physicians
- Mental Health Workers
- Clergymen

It can also affect persons who continuously work for others in some form or other like

- Any person at home taking care of elderly parents.
- Journalists
- Lawyers
- Even general public when over exposed to the images of disasters through media. It can create a resistance among people to do charity work.

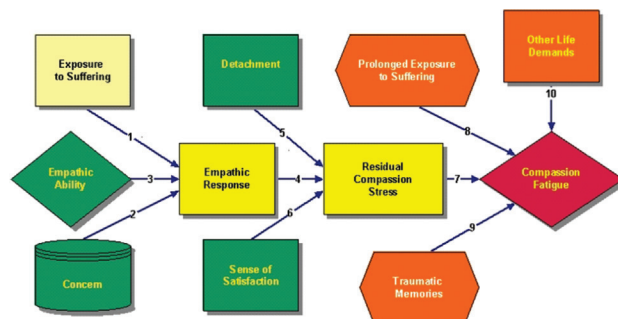
Compassion Fatigue Process

Taken from giftfromwithin.org⁷

How to recognize CF?

Compassion Fatigue is the experience of and the exhaustion felt by the nurses which can be categorized as³

- Cognitive – rigidity, lowered concentration, decreased self-esteem.
- Emotional – powerlessness, anxiety, guilty, hopelessness, depression, grief, anger, cynism about self, others, work and world, apathy, hostility, decreased capacity for pleasure and social contacts.



The Compassion Fatigue Process (Figley, 2001)

- Behavioral – increased irritability, moodiness, accident proneness.
- Spiritual – questioning the meaning of life, anger at God, loss of purpose, discontinuance of religious practice, development of spiritual apathy.
- Personal Relations - withdrawal, mistrust, isolation from others, blaming.
- Physical- sweating, breathing difficulties, dizziness, frequent headaches, nervousness, tremors, teeth/jaw clenching, GI complaints, exhaustion, sleep disturbances, hypertension.
- Work Performance – low morale, low motivation, absenteeism, chronic lateness

CF is not a one day affair rather it develops over a period of time. It is a process taking weeks, at times years to float up. Ones ability to care for others becomes eroded through over use of one's skills of compassion.

How to fight CF?

The most important need to combat CF is to acknowledge that we may be experiencing it. Next is to refocusing on oneself. Start working on the Coping strategies⁴.

Physical Renewal

- Plenty of rest.
- Exercise and exertion outside of work.
- Nutrition and Diet.
- Relaxation and Vacation.
- Cutting out drugs and alcohol addiction.

Emotional Renewal

- Talking with a friend.
- Laughing and chatting.
- Visiting friends and relatives.
- Going on tours and trips with children and family.
- Going for long walks.
- Having hot baths and massage.
- Listen to music.

Cognitive Renewal

- Learn to say NO and set boundaries.
- Recognize your limitations and accept them.
- Read and abreast yourself about new diseases and treatment.
- Writing to journals and magazines.

All this will wake up cognitive centers in the brain.

Spiritual Renewal

- Going to retreats and spiritual discourses.
- Praying individually and in groups.
- Indulging in spiritual rituals.

Renewal in Work Performance

- Getting transferred to other Units or departments.
- Change of work or job.
- Taking a break for short while or long.

In short, become sensitive to your needs before becoming sensitive to the needs of the one whom you are caring for to render an untiring service.

Prevention

'Prevention is better than cure' is the mantra not only for the patients but for the nurses as well. It would be much easier to stop the process of compassion fatigue from occurring rather than repairing or treating after occurring.

The first key to prevention is knowledge or the awareness about CF. Next thing is to consciously and continually practice good emotional health maintenance and fundamental self-care skills. At times you need to forcefully put yourself into situations in which you see the positives in life (e.g.) going out for a field trip or an excursion with your child or family members or friends. You also need to have a portion in your life in which you need to take rather than give. These strategies though does not cent percent prevent, but can postpone and aid in early recognition of Compassion Fatigue.

Discussion and Conclusion

Compassion Fatigue though has been studied primarily in the non-nursing groups, recently more is being studied in the nursing groups too. Studies have revealed that nurses are at high risk for CF and is being suggested that nurses need to be given opportunities to identify, talk about their stressful experiences, to make plans as individuals to cope with it⁶ and to get together to talk and support each other. This is where we really require discussing and debating on. Can these opportunities be given to the nurses or is it being given to them in the present scenario of Health Industry with acute shortage of nurses? This seems to be a challenging task in busy hospitals and clinics where nurses are over worked and find no time to even gobble their food. But, compassionate and dedicated nurses are great assets and are rich resources for today's healthcare system and it is very much essential to support and care for them.

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Effectiveness of Structured Teaching Programme about Cancer Cervix on the Knowledge and Attitude of Married Women

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Abstract

Introduction

Cervical cancer is most common gynecologic cancer in women. Lack of access to screening and health services, and lack of awareness of the risk factors of cervical cancer has increased the prevalence of the disease. Much progress needs to be made in the prevention and control of cervical cancer.¹

Objective

This study was aimed to find the effectiveness of STP on cancer cervix among married women residing in urban and rural area.

Method

Quasi-experimental research design with one group pretest-posttest was used. The study was conducted by using multistage sampling. The data was collected through a Structured Interview schedule using demographic proforma, structured knowledge questionnaire and attitude scale.

Results

Majority of married women 84% in urban area, 76% in rural had moderate knowledge. The pretest attitude score for all the married women 100% in urban, 92% in rural was favorable. The study showed that there was significant improvement between pretest and posttest knowledge, attitude score. There was significant association between knowledge on cancer cervix, attitude in urban, rural and selected demographic variables. The study concluded that STP is more effective in urban than rural area in improving the knowledge.

Key words

Knowledge; attitude; effectiveness; structured teaching programme (STP)

Introduction

Globally the burden of new cancer cases in 2000 was estimated to be around 10 million with more than half of these cases originating from the developing world population. Although estimates vary it is expected that by the year 2020 there will be almost 20 million new cases. Painfully, it is not only in the number of new cases that will increase, the proportion of new cases from the developing world will also rise to around 70%.¹

Cervical cancer, in women, is the second most common cancer worldwide, next to breast cancer. In India, cervical cancer is

the most common woman related cancer, followed by breast cancer. Every year cervical cancer is diagnosed in about 500,000 women globally and is responsible for more than 280,000 deaths annually.²

Material and Methods

The objectives of the study are to:

1. Determine the knowledge of the urban and rural married women on cancer cervix.
2. Determine the attitude of the urban and rural married women on cancer cervix
3. Find the effectiveness of structured teaching programme on cancer cervix among urban and rural married women.
4. Associate the knowledge and attitude of urban and rural area with the selected demographic variables.

Subjects and Methods

Evaluative approach was used in this study. The research design was quasi experimental study with one group pretest and posttest design.

Variables

In this study, independent variable was structured teaching programme on cancer cervix for married women residing in urban and rural area. The dependent variable is knowledge and attitude as measured by knowledge score and attitude scale. Extraneous variable is age, residence, education, occupation, marital status, age at marriage, number of children, source of information.

Research Setting

The present study is conducted in urban and rural area of Udupi district. The setting of present study is Parkala Municipal area (urban area) and Kodibettu village (rural area) at Udupi District.

Population comprised of married women residing in Udupi District aged between 35-60 years. The sample size comprised of 25 urban and 25 rural married women from Udupi District who met the inclusion criteria which were included in the study. Multi stage sampling technique was adapted while selecting the subjects to meet the study objectives.

Sampling Criteria

Inclusion criteria for sampling

1. The married women of age group 35-60 years.
2. The women willing to participate in the study.

3. The married women who can understand Kannada

Exclusion criteria for sampling

1. The women below the age group of 35 years.
2. Illiterate women
3. Married women who have been clinically diagnosed with a cancer cervix.
4. Married women who had previous exposure to some form of trained education on cancer cervix.

The tools used for the data collection were:

Tool 1: Demographic Proforma of married women

Tool 2: Structured knowledge questionnaire on cancer cervix

Tool 3: Attitude scale on cancer cervix

Tool 4: Structured teaching programme on cancer cervix

Findings

Majority of married women 17(68%) belong to the age group of 35-47 years and only 8(32%) belong to 48-60 years in urban area, majority of women 8(72%) belongs to the age group of 35-47 years, and only 7(38%) belongs to the age group of 48-60 years in rural area.

Majority of them 10(40%) had education upto high school level and none of them were postgraduate in urban area. In rural area, majority of rural married women 9(36%) had primary and intermediate education and there were no married women with graduation and postgraduation.

Table 1: Frequency distribution of married women based on occupation in urban and rural area n=50

Occupation	Urban		Rural	
	N	%	N	%
Unemployed	10	40%	1	4%
Unskilled worker	5	20%	14	56%
Semi-Skilled worker	8	32%	8	32%
Skilled worker	2	8%	2	8%
Semi-Professional group	0	0%	0	0%
Professionals	0	0%	0	0%
Total	25	100%	25	100%

The data presented in the table 1 shows that majority of married women 10(40%) were employed, none of the women

were semiprofessional and professional workers in urban area. In rural area, majority of the married women 14(56%) of them were skilled and none of them belonged to semiprofessional and professional occupation.

Married women 11(44%) had monthly family income of Rs 4001-6000 and only 4 (16%) had monthly family income less than Rs 2000 in urban area. In rural area, majority 16(64%) had monthly income ranging from Rs 2001-4000.

Eighty eight percent of women were married and only 1 (4%) was a widow in urban area. In rural area, eighty four percent were married and only 1 (4%) was a divorcee.

The majority of the married women 16 (64%) were married between the age of 18-21 years, and none of women were married below 17 years of age or above 26 years of age in urban area. Majority of the women 12 (48%) were married between the age of 18-21 years and none above 26 years in rural area.

Majority of urban married women 10(40%) had 2 children, while only 2(8%) of them did not have any child in urban area. Thirteen (52%) of the married women has 2 children and only 1(4%) did not have any child.

The majority of the women 7 (28%) received the information about cancer cervix from newspaper, and only 1 (4%) women received information from magazine in urban area. Majority of the married women 10 (40%) married women received the information from newspaper and none of married women received the information from mass media and magazine.

Maximum score-20

The data presented in table 2 shows that in the pretest majority of married women 21(84%) ranged between 7-13 in urban area and majority of subjects 19 (76%) in rural area. There seem to be moderate level of knowledge in both rural and urban area.

The data presented in table 3 shows that in the pretest all married women attitude scores 25(100%) ranged between 51-100 in urban and majority of married women 23 (92%) in rural area. This reveals that there is a favorable level of attitude in both urban and rural area regarding cancer cervix among married women. majority of married women 21(84%) ranged between 7-13 in urban area and majority of subjects 19 (76%) in rural area. There seem to be moderate level of knowledge in both rural and urban area.

Table 2: Frequency and percentage distribution of married women's pretest knowledge scores on cancer cervix n=50

Knowledge of married women	Range of score	Urban area		Rural area	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good knowledge	14-20	3	12%	3	12%
Moderate knowledge	7-13	21	84%	19	76%
Poor knowledge	0-6	1	4%	3	12%

Table 3: Frequency and Percentage distribution of married women's pretest attitude scores on cancer cervix in urban and rural area n=50

Overall attitude of women	Range of score	Urban area		Rural area	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Favorable attitude	51-100	25	100%	23	92%
Unfavorable attitude	1-50	0	0%	2	8%

Table 4: Frequency and percentage distribution of married women's posttest knowledge scores on cancer cervix in urban and rural area n=50

Knowledge of married women	Range of score	Urban area		Rural area	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good knowledge	14-20	20	80%	13	52%
Moderate knowledge	7-13	5	20%	12	48%
Poor knowledge	0-6	0	0%	0	0%

Table 5: Frequency and percentage distribution of married women's posttest attitude on cancer cervix n=50

Attitude of married women	Range of score	Urban area		Rural area	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Favorable attitude	51-100	25	100%	25	100%
Unfavorable attitude	1-50	0	0%	0	0%

Maximum score-20

The data presented in table 4 shows that in the posttest knowledge score, majority of married women 20(80%) ranged between 14-20 in urban area and majority of subjects 13 (52%) in rural area. There seems to be moderate level of knowledge in both urban and rural area.

The data presented in table 5 shows that in the post test attitude score all subjects 25(100%) ranged between 51-100 in urban and rural area. There seems to be a favorable level of attitude in both rural and urban area.

The data represented in table 6 illustrates that the mean post-test knowledge scores in urban area is higher (15.88) than mean pre-test knowledge scores (10.48) of married women and the mean posttest knowledge scores in rural area is higher (13.48) than the mean pretest knowledge score (10.44) of married women. The computed 't' value 9.269 ($p < 0.001$) showed that there is highly significant difference between the pre-test and post-test mean knowledge scores(3.04) in urban area and the computed 't' value 8.176 ($p < 0.001$) showed that there is highly significant difference between the pre-test and post-test mean knowledge scores(2.6) in rural area. This indicates that the structured teaching programme

is effective in increasing the knowledge on cancer cervix among married women residing in urban and rural area.

The data represented in table 7 illustrates that the mean post-test attitude scores in urban area is higher (79.4) than mean pre-test attitude scores (92.84) of married women and the mean posttest attitude scores in rural area is higher (63.96) than the mean pretest knowledge score (76.64) of married women. The computed 't' value 10.569 ($p < 0.001$) showed that there is highly significant difference between the pre-test and post-test mean attitude scores(13.44) in urban area and the computed 't' value 7.781 ($p < 0.001$) showed that there is highly significant difference between the pre-test and post-test mean attitude scores(12.68) in rural area. This indicates that the structured teaching programme is effective in improving the attitude on cancer cervix among married women residing in urban and rural area.

The data presented in Table 8 shows that chi-square value computed between knowledge on cancer cervix and the selected demographic variables such as age ($\chi^2=0.17$, $p < 0.05$), income ($\chi^2=0.68$, $p < 0.05$), marital status ($\chi^2=0.16$, $p < 0.05$), age at marriage (0.76, $p < 0.05$), no. of children ($\chi^2=1.65$, $p < 0.05$) and source of information (0.041, $p < 0.05$)

Table 6: Distribution of effectiveness of structured teaching programme on knowledge scores of married women on cancer cervix in urban and rural area n=50

Area	Aspects of Knowledge	Mean	Difference of mean	SD	df	Paired 't' value
Urban	Pre-test	10.48	3.04	3.029	24	9.261*
	Post-test	15.88		1.536		
Rural	Pre-test	10.44	2.6	3.305	24	8.176*
	Post-test	13.48		2.960		

* $p < 0.001$ level of significance

Table 7: Distribution of effectiveness of planned teaching programme on attitude regarding cancer cervix n=50

Area	Knowledge assessment	Mean	Difference of mean	SD	df	Paired 't' value
Urban	Pre-test	79.4	13.44	7.171	24	10.569*
	Post-test	92.84		4.269		
Rural	Pre-test	63.96	12.68	7.667	24	7.781*
	Post test	76.64		6.277		

* $p < 0.001$ level of significance

Table 8: Chi square values showing association between pretest knowledge score of married women on cancer cervix in urban area and rural area with selected demographic variables n=50

Sl.No	Demographic variables	Below median Frequency		Above median Frequency		χ^2		df	Significance	
		Urban	Rural	Urban	Rural	Urban	Rural		Urban	Rural
1	Age in years							1	NS	NS
	1.1 35-47	10	9	7	9	0.17	0.10			
	1.2 48-60	4	3	4	4					
2	Income (Rupees in month)							1	NS	NS
	2.1 ≤ 4000	3	9	4	10	0.68	0.01			
	2.2 ≥ 4001	11	3	7	3					
3	Marital status							1	NS	NS
	3.1 Married	12	9	10	12	0.16	1.39			
	3.2 Other	2	3	1	1					
4	Marital age							1	NS	NS
	4.1 ≤ 21 years	10	8	6	7	0.76	0.43			
	4.2 ≥ 22 years	4	4	5	6					
5	No. of children							1	NS	NS
	5.1 ≤ 2	2	1	4	5	1.65	3.11			
	5.2 ≥ 3	12	11	7	8					
6	Source of information							1	NS	S
	6.1 No	3	9	2	0	0.04	9.42			
	6.2 yes	11	14	9	2					

(Level significance: $p=0.05$ level) NS: Not Significant, S*: Significant
 $\chi^2_{(1)} = 3.84, p < 0.05$

Table 9: Chi square values showing association between pretest attitude score of married women on cancer cervix in urban and rural area with selected demographic variables n=50

Sl. No	Demographic variables	Below median Frequency		Above median Frequency		χ^2		df	Significance	
		Urban	Rural	Urban	Rural	Urban	Rural		Urban	Rural
1	Age in years							1	NS	S*
	1.1 35-47	8	4	9	14	0.52	12.4			
	1.2 48-60	5	7	3	0					
2	Income							1	NS	NS
	2.1 ≤ 4000	5	8	2	11	1.47	0.12			
	2.2 ≥ 4001	8	3	10	3					
3	Marital status							1	NS	NS
	3.1 Married	12	10	10	11	0.48	0.69			
	3.2 Other	1	1	2	3					
4	Marital age							1	NS	NS
	4.1 ≤ 21 years	10	6	6	9	1.96	0.24			
	4.2 ≥ 22 years	3	5	6	5					
5	No. of children							1	S*	NS
	5.1 ≤ 2	1	1	5	5	3.94	2.39			
	5.2 ≥ 3	12	10	7	9					
6	Source of information							1	S*	NS
	6.1 No	5	4	2	5	5.77	0.01			
	6.2 yes	8	7	9	9					

(Level of significance: $p=0.05$ level) NS: Not Significant, S*: Significant
 $\chi^2_{(1)} = 3.84, p < 0.05$

had no significant association. The above stated results reveals that the knowledge of married women on cancer cervix in urban area is independent.

The data presented in Table 8 shows that chi-square value computed between knowledge on cancer cervix and the selected demographic variables such as age ($\chi^2 = 0.10, p < 0.05$), income ($\chi^2 = 0.013, p < 0.05$), marital status ($\chi^2 = 1.391, p < 0.05$), age at marriage ($0.43, p < 0.05$), no. of children ($\chi^2 = 3.11, p < 0.05$) had no significant association

except for source of information ($\chi^2 = 9.42, p < 0.05$). The above stated results reveal that knowledge of on cancer cervix in rural area is dependent on source of information.

The data presented in Table 9 shows that chi-square value computed between knowledge on cancer cervix and the selected demographic variables such as age ($0.52, < 0.05$), income ($\chi^2 = 1.47, p < 0.05$), marital status ($\chi^2 = 0.48, p < 0.05$),

age at marriage ($\chi^2 = 1.963$, $p < 0.05$) had no significant association and except for no. of children ($\chi^2 = 3.94$, $p < 0.05$) and source of information ($\chi^2 = 5.77$, $p < 0.05$). The above stated results reveal that attitude of married women on cancer cervix in urban area are dependent on number of children and source of information.

The data presented in Table 9 shows that chi-square value computed between knowledge on cancer cervix and the selected demographic variables such as income ($\chi^2 0.12$, $P < 0.05$), marital status ($\chi^2 0.69$, $p < 0.05$), age at marriage ($\chi^2 = 0.24$, $p < 0.05$), no. of children ($\chi^2 2.39$, $p < 0.05$), source of information ($\chi^2 0.01$, $p < 0.05$) had no association and except for age ($\chi^2 = 12.4$, $p < 0.05$). The above stated results reveal that knowledge of urban area on cancer cervix is dependent on age.

Conclusion

Lack of knowledge constrains utilization of screening services offered at the health care centers and hospitals. Consequently, respondents support educating women as a way to tackling issues on cervical cancer. It is recommended that an integrated

reproductive health program that addresses comprehensively women's health concerns be put in place.

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Interest of conflict

Nil

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Effectiveness of Picture Book on Children's Worries about Surgery

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Abstract

Pictures and other visual aids are particularly effective in explaining surgery to pre-school and school aged children. The purpose of the study was to find the effectiveness of a picture book in reducing the worries of children between five to twelve years of age before going for surgery. A quasi experimental pre-test and post-test control group design was used in 60 samples. Statistical analysis of data revealed that the picture book related to surgery was effective in reducing the worries of children, about surgery (t value = -2.318 and p value < 0.05)

Key Words

Picture book, Worries, Surgery, Child worries questionnaire

Background and Need

The anticipation of surgery and its experience is a known stressor for both children and families. There are several events that can create anxiety in children and their parents. The strange hospital environment, unfamiliar health personnel and equipment, the investigations and procedures can create fear in children. The unfamiliar cold environment of the operating theatre makes surgery a potentially unpleasant and uncomfortable experience². Pictures and other visual aids are particularly effective in explaining surgery to pre-school and school-aged children³.

Preparing a child for surgery is one of the most important things a parent can do when their child needs a surgical procedure. When preparing for surgery, general information is of great help, in addition to information that is specific to the age of the child.⁴ In India preoperative preparations for children, to reduce the preoperative anxiety are seldom done. No research has been conducted, in India, among children to assess their worries related to surgery. The children are usually explained along with their parents, only when it is needed. So they don't have a complete idea of what is going to happen once he or she gets admitted in the hospital. There are no structured preparation programs in the wards, to prepare the children before going for surgery.

Purpose of the Study

The purpose of the study was to determine the worries of children using a Child worries questionnaire related to surgery and also to find the effectiveness of a picture book in reducing the worries of children between five to twelve years of age before going for surgery. These findings will help in standardizing the use of picture book in the wards there by reducing the worries of children related to surgery and help them in easy and early recovery.

Objectives of the Study

Objectives of the study were to:

1. Determine the worries of children using a child worries questionnaire related to surgery
2. Determine the effectiveness of picture book on the worries related to surgery among children between five to twelve years of age.
3. Find the association between the pretest scores of child worries and the selected variables such as age of the child, education of the child, gender, number of days of hospital stay, diagnosis of the child, type of surgery and educational status of mothers of children undergoing surgery.

Hypotheses

The hypotheses will be tested at 0.05 level of significance.

- H₁-There will be significant difference in the pretest and posttest worries of children related to surgery in the experimental and control group.
- H₂-There will be significant association between the pretest score of child worries and the selected variables such as age of the child, education of the child, gender, number of days of hospital stay, diagnosis of the child, type of surgery and educational status of mothers of children undergoing surgery.

Methods and Procedure

Design and sample: The study was conducted between January to March 2010. In this study the samples selected were 60 children between the age of five to twelve years who were posted for surgery in different wards such as Pediatric Medicine Pediatric Surgery, Urology, ENT, Orthopedics and other special wards of a tertiary hospital in Karnataka State. A quasi experimental pretest post test control group design was used and the sampling technique used was convenient sampling.

Tools used: Tools used were a background proforma and Child worries questionnaire related to Surgery.

Background proforma: This was developed to acquire the information regarding the child who is posted for surgery. This included the details like age and education of the child, gender, number of days of hospitalization, any history of previous surgery, diagnosis, type of surgery, education and occupation of the mother, education and occupation of the father, and the monthly income.

Child worries questionnaire related to surgery: The Child worries questionnaire is a rating scale with 23 items developed by the faculty of University of Murcia, Spain, to assess the children's worries about surgery. Worries were rated from 0 (not at all worried) to 4 (extremely worried). 5

In the present study, after validation, Child worries questionnaire related to surgery, contained 16 items which helped in identifying the child's worries before going for surgery. The items covered various aspects like worries about hospitalization, worries about medical procedures and worries about illness. In this rating scale, each item has got a score of 0 (not at all worried), 1 (mildly worried), 2 (moderately worried) and 3 (severely worried). The maximum possible score was 48. The scores were interpreted as, mild worry (0-16), moderate worry (17-32) and severe worry (33-48).

The tools as well as the picture book were translated to Kannada and Malayalam and retranslated back to English, with the help of language experts. The translated tool and the English tool was checked by five people to see that the translated tool was similar to English tool and found that it was clear and easy to understand.

To determine the clarity of all items, to assess the understandability of the picture book and to determine the time required for completion of the questionnaire, the pretesting was conducted in the month of December 2009 among five children who got admitted for surgery. The average time taken to complete the questionnaire was 10 minutes. There was no difficulty in understanding any of the items, so all items were retained.

Ethical permissions: To conduct the research study, ethical committee clearance was obtained from the Institutional ethics committee of the tertiary hospital in Karnataka. Administrative permission from the Medical Superintendent and HOD's of various departments of the tertiary hospital, such as Pediatric Surgery, Pediatric Medicine, Urology, ENT and Orthopedics were taken. A subject information sheet and informed consent were prepared. Informed consent from the

Table 1: Sample characteristics of the children undergoing surgery. n=60 (30+30)

Sample characteristics	Control group		Experimental group	
	(f)	(%)	(f)	(%)
Age (in years)				
a) 5-9	15	50	20	66.7
b) 10-12	15	50	10	33.3
Gender				
a) Male	25	83.3	21	70
b) Female	5	16.7	9	30
Education of the child				
a) Lower primary	17	56.7	20	66.7
b) Higher primary	13	43.3	10	33.3
Hospital stay (duration in days)				
a) 1 day	18	60	23	76.7
b) 2-3 days	12	40	7	23.3
History of previous surgery				
a) Yes	1	3.3	2	6.7
b) No	29	96.7	28	93.3
Diagnosis				
a) GI and genitourinary system	12	40	9	30
b) Musculoskeletal, ENT, and c) lymphatic system	18	60	21	70
Type of surgery				
a) Major	7	23.3	5	16.7
b) Minor	23	76.7	25	83.3
Education of mother				
a) Primary education	13	43.3	6	20
b) Secondary education	17	56.7	24	80
Occupation of mother				
a) Unemployed	29	96.7	25	83.3
b) Employed	1	3.3	5	16.7
Education of father				
a) Upto SSLC	19	63.3	21	70
b) PUC and graduation	11	36.7	9	30
Occupation of father				
a) Employed	30	100	30	100
b) Unemployed	0	0	0	0
Income				
a) Above 10000	0	0	3	10
b) 4000-10000	29	96.7	25	83.3
c) Below 4000	1	3.3	2	6.7

Table 2: Frequency and percentage distribution of pretest and posttest worry scores in the experimental and control group. n=60 (30 +30)

Interpretation of worry	Control group				Experimental group			
	Pretest		Posttest		Pretest		Posttest	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
Mild worry (0-16)	13	43.3	10	33.3	15	50	20	66.7
Moderate worry (17-32)	17	56.7	20	66.7	15	50	10	33.3

parents of children posted for surgery as well as the assent of the children undergoing surgery was taken.

Intervention: In this study picture book related to surgery was given for the children in the experimental group, after the pretest. It is a book that contains the pictures and information regarding hospitalization and surgery which is organized under the general areas like pre operative preparation of the child, shifting the child to the operation theatre, the operation room and the events in the post operative period, till the child gets discharged.

Pilot study: The pilot study was conducted on 10 children posted for surgery. There were five children each in control and experimental group. Questionnaire was given to the children and pretest was done, the day before surgery, and on the day of surgery, post test was conducted. Picture book was given only to the children in the experimental group, after the pretest. The study was found to be feasible.

Data collection: The data collection extended from the month of January 2010 to March 2010. The samples were selected based on the inclusion criteria and they were assigned to control and experimental group on a convenient basis. The day before surgery when children get admitted to the ward, the consent was taken and demographic proforma was filled by the researcher. Then the child worries questionnaire related to surgery was administered to the children to assess their worries. The questionnaire in different languages such as Kannada and Malayalam were administered to the children depending on their language. After the pretest picture book was given only to the children in the experimental group. Next day, that is, on the day of surgery the post test was done, by administering the same questionnaire for the children, before they go for surgery.

Results

In the study most of the children in the experimental group

[20(66.7%)] and in control group [15(50%)] were in the age group of 5-9 years. The number of males were more both in experimental group [21 (70%)] and in control group [25 (83.3%)].

Background characteristics

The data in the table 2 shows that majority (56.7%) of children in the control and 50% of children in the experimental group had moderate worry related to surgery during the pretest. During the posttest it was found that 66.7% had moderate worry in the control group whereas 66.7 % of children had mild worries in the experimental group. Children from both groups didn't have severe worries.

Effectiveness of picture book on worries related to surgery.

First the data was checked for the normality. In the present study since the data was following normality, independent t test was used and is presented in table 3.

The data in table 3 shows the effectiveness of picture book on worries related to surgery. The t-value obtained was 2.318 and the corresponding p-value was 0.024, since this value was less than 0.05, it was found significant and the null hypothesis was rejected and it is interpreted that children in the experimental group had reduction in worries when compared to the control group. Thus it is concluded that picture book is helpful in reducing the worries related to surgery, among children going for surgery.

Association between pretest worries and selected variables

The association of the pretest worry score with different selected variables was done using Mann Whitney U test. The p-values obtained were more than 0.05 level of significance. Thus the null hypothesis was accepted stating no significant association between the pretest worry scores and selected variables. Thus it is interpreted that worries of children before going for surgery was independent of the variables under study.

Table 3: Mean, Standard deviation of the experimental and control group, Confidence interval and p-value. n=60(30+30)

Groups	Mean	Standard Deviation	95% Confidence interval	df	t-value (p-value)	Significance
Experimental						
• Pretest	15.87	7.15	(-4.65,-0.34)	58	2.318 (0.024)	Significant
• Post test	14.77	6.08				
Control						
• Pre test	17.77	6.37				
• Post test	19.17	5.38				

Conclusion

Children undergoing elective surgery require preparation in order to increase their understanding, promote effective coping and reduce the negative effects of hospitalisation. Parents need to be included in this process in order to alleviate their anxiety and assist them to effectively support their child. The picture book used in this study was found to be effective in reducing the preoperative worries of children between five to twelve years of age. The children in the experimental group who received the picture book had reduction in their worries as compared to the control group. Thus it can be used in hospital wards to alleviate the preoperative worries and distress in children.

Discussion

The findings of the study show that the children going for surgery have mild to moderate level of worries related to surgery. The picture book used in this study was found to be effective in reducing the preoperative worries of children between five to twelve years of age. This result is supported by a randomized clinical trial conducted in Austria, in which the researchers evaluated the effects of surgery preparation using a children's book on pre and postoperative anxiety and distress in two to ten years old children undergoing tonsillectomy and/or adenoidectomy and their mothers. The sample under study consisted of 160 mother/child dyads in the experimental group and 240 controls. Parents of the experimental group were given the preparation book during the preoperative visit at the hospital, while control subjects did not receive the book. The results demonstrated that preparation book can provide educational and anxiety reducing benefits. Mothers and children who received the book exhibited less self reported state anxiety prior to the operation compared to mothers who did not.⁵

1. Based on the present study, the following recommendations were made:
2. A similar study can be conducted on a large sample which may yield more reliable findings.
3. A comparative study can be done using different preparation programs for children before going for surgery.
4. A comparative study between the mother and child anxiety in the preoperative period can be done.
5. A study can be conducted to find the effectiveness of picture book in the postoperative recovery of the children.
6. A qualitative study could be done to assess the lived experience of older children regarding the surgical experiences.

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Risk Status of Stroke among Adults and the Effectiveness of an Awareness Program on Primary Prevention of Stroke

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Abstract

Background

Stroke is emerging as a major public health problem. Identifying risk factor and providing education on primary prevention will help to reduce the burden of stroke in the community.

Objective

To identify the risk status of stroke among adults and to find association between the risk status of adults and selected variables such as age, gender, education, occupation and source of information.

Material and Methods

Descriptive study conducted in Kaviyur village of Pathanamthitta District, Kerala. A total of 410 adults (45 years and above), were given a self administered stroke risk assessment questionnaire followed by Blood pressure, height and weight measurement.

Results

Around 52.7% were more than 55 years and 58.8% were females. Half of the samples (51.5%) were having SSLC up to Pre University level and found that among the samples 45.4% were house wives. It was noted that majority of the participants 73.9% were getting health information from television. The major risk factors of stroke Hypertension (38%), Smoking (17.1%), High cholesterol (25.1%), and Diabetes (24.4%) and lack of exercise (53.7%) were identified among 410 samples.

Conclusion

People were often unable to identify their health condition as risk factor of stroke. Risk perception through mass education on primary prevention of stroke will help to control of modifiable risk factors.

Key Words

Risk status, adults, stroke.

Introduction

Stroke is one of the main Non-Communicable Disease of public health importance. It is a global problem of enormous proportion. Stroke is a preventable and treatable catastrophe, ranking third globally. Worldwide stroke, which accounts for

5.7 million deaths each year, ranks third to Ischemic Heart Disease as a cause of death, which results in serious disability, sparing no age or sex and increases the affordability to deal with consequences.¹ Out of 35 million deaths attributable to Chronic Non-Communicable Diseases that occurred in 2005, stroke is responsible for 5.7 million (16.6%) deaths, and 87% occurred in low income and middle income countries². Driven by increasing size and ageing of population, and escalating prevalence of risk factors such as hypertension, tobacco use, unhealthy diet, physical inactivity, and obesity, stroke is becoming a major cause of premature deaths and disability in developing countries. This prompted the World Health Organization (WHO) to launch the Global Stroke Initiative which aimed to generate population based data on burden of stroke and to use such data to evolve strategies for prevention and management³.

Stroke is a major disabling health problem in developing countries like India. Stroke burden in India has been rising in the last few decades. The average annual incidence rate of stroke in India currently is 145 per 100,000 population which is higher than the Western nations.⁴ In India, with more than one billion inhabitants, undergoing remarkable economic and demographic changes in recent years has resulted in transition from poverty related infections and nutritional deficiency diseases towards lifestyle-related Cardiovascular and Cerebrovascular diseases. Given the anticipate increase in burden of stroke in coming years and limited availability of organized stroke care services to the majority of people in India, it would be logical to place greater emphasis on population based stroke prevention strategies.⁵

The study was thus conducted with the following objectives:

To identify the Risk Status of stroke among adults.

To find association between the risk status of adults and selected variables such as age, gender, education, occupation and source of information.

Hypotheses

H₁: There will be significant association between risk status and selected variables like age, gender, education, occupation and source of information.

Material and Methods

This study was conducted in two phases at Kaviyur village having a population of 17,882, in Pathanamthitta District of Kerala state. The subjects for the study were adults above the age of 45 years. The research tools such as Demographic Proforma, knowledge questionnaire were developed using literature support and Stroke Risk assessment Questionnaire was adapted from Hope Heart Institute, New York. An arbitrary

scoring of risk status of stroke; 1-2 low risk, 3-6 moderate risk and 7-11 high risk was used in this study. After checking content validity of tools by experts, translated in regional language, Malayalam and pilot tested on 60 samples after getting administrative permission from concerned Panchayat. The study was found feasible.

In first phase, after getting an informed consent, a total of 410 samples who could read and write Malayalam were given self administered questionnaire followed by blood pressure, height and weight measurement by the researcher. During the second phase, samples identified having more than three risk factors were called for an awareness program.(data not included in this publication) Data collected was tabulated and analyzed by descriptive and inferential statistics using SPSS.

Results

Sample characteristics: Data presented in Table 1 shows that out of 410 samples, almost half of (47.3%) samples belonged to age of 45-54 years and the rest (52.7%) above 55 years. Majority (58.8%) were females, more than half (51.5%) were educated up to SSLC and Pre University level, and (45.4 %) were house wives. Among the samples, (73.9%) were getting

Table 1: Frequency and percentage distribution of sample characteristics (n=410)

Sample characteristics	(f)	(%)
Age (in years)		
45-54	194	47.3
55-64	99	24.1
65-74	59	14.4
75-84	50	12.2
>85	08	2.0
Gender		
Male	169	41.2
Female	241	58.8
Education		
Primary	77	18.8
Upper primary	33	8.0
PUC	211	51.5
Degree	73	17.8
Professional	16	3.9
Occupation		
Coolie worker	57	13.9
Farmer	40	9.8
House wife	186	45.4
Teacher	25	6.0
Skilled worker	45	11.0
Others	57	13.9
Source of information		
Television	303	73.9
Newspaper	73	17.8
Magazines	114	27.8
Friends	207	50.5
Family	107	26.1
How often sources are used		
Never	02	0.5
Occasionally	342	83.4
Once a week	44	10.7
Twice a week	16	3.9
Daily	06	1.5

health information from television and the majority (83.4 %) were only occasionally accessing the source of information.

Description of Stroke Risk score

The Stroke Risk status among adults was found to be more than half (56%) in moderate to high risk score (having three or more risk factors) using the Stroke Risk Assessment Questionnaire.

Description of major and minor risk factors of stroke

The major risk factors of stroke, Hypertension (38%), Cholesterol (25.1%), and Diabetes (24.4%), Smoking (17.1%) were identified among 410 samples. More than half (53.7%) exercise less than 3 times / week, (25.6%) obese as per Body Mass Index (Asian Standard : over weight (23-24.9 BMI), obese 1 (25 – 29.9 BMI), obese 2 (above 30 BMI), (14.6%) have a family history of stroke or heart disease as shown in Table 2. Hence, this indicates the urgent need for education on life style modification as primary prevention of stroke.

Association of risk status with selected variables

Chi- square computed between risk status and selected variables showed significant association; age ($\chi^2_{(4)} = 27.462$, $p = 0.001$), education ($\chi^2_{(4)} = 17.619$, $p = 0.001$), occupation ($\chi^2_{(5)} = 7.840$, $p = 0.036$) and access to source of information through television ($\chi^2_{(1)} = 3.926$, $p = 0.048$), magazines ($\chi^2_{(1)} = 6.077$, $p = 0.014$) and friends ($\chi^2_{(1)} = 6.064$, $p = 0.014$). So the research hypothesis was accepted.

Discussion

The study findings are supported by research studies and are briefly discussed here. Almost more than half of the samples were identified in moderate to high risk category of stroke. Various studies have brought out similar findings. Pandian J D et.al. report about the risk factors identified by subjects included hypertension, 425 (45.1%); stress, 385 (40.9%); diabetes, 101 (10.7%); high cholesterol, 63 (6.7%); heredity, 36 (3.8); obesity, 30 (3.2%); heart disease, 19 (2%); lack of exercise, 21 (2.2%); smoking, 11 (1.2%); and black magic, 5 (0.5%). A majority of subjects had heard about stroke through friends, 302 (32.1%), and relatives, 376 (39.9%), the rest heard through television, 85 (9%); radio, 10 (1.1%); and the newspaper, 60 (6.4%).⁶

Badiuzzaman M D, et al reported that among patients, hypertension was found in 58.62% followed by smoking

Table 2: Frequency and Percentage of major and minor risk factors of Stroke (n =410)

Major risk factors	Percentage (%)
Hypertension	38
Cholesterol	25.1
Diabetes	24.4
Smoking	17.1
Lack of exercise	53.7
Overweight	25.6
Using saturated fat	22.0
Family history of stroke/ heart disease	14.6

(53.79%), lipid disorder (48.01%), heart diseases (25.75%), diabetes mellitus (20.01%), and previous history of stroke (10.61%). 40% patients were on irregular use of antihypertensive drug and it was 17.5% in case of anti diabetic drugs. Major groups (42.44%) of patients had two modifiable risk factors. These findings stressed on the implementation of screening program in community to identify risk factors and educate people about primary prevention. This same need was identified by the researcher and awareness program was given for the samples.⁷

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Prevalence of Vision Loss and Related Risk Factors among the Individuals of 45 Years and above in a Selected Village of Udupi District in Karnataka

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Summary

A descriptive study was conducted to determine the extent of vision loss among the individuals of 45 years and above and to identify the individuals who were at risk for developing vision loss and its complications in a village of Udupi district, Karnataka, among 100 subjects. Overall prevalence of vision loss was 2%. 4 male had the high risk for vision loss and 78 and 18 subjects had moderate and low risk respectively. With regard to occupation 3 subjects among the high risk group were in the group of gate keeper, watchman, coolie, domestic servant and mason and all of them belonged to Hindu religion and the income was between Rs.2500 to 4999 and majority were non vegetarians. 22 subjects had hypertension, 12 subjects had diabetes mellitus, 30 subjects had cataract, 93 subjects had long sight/short sight, 40 subjects had watering of the eye, 39 subjects had eye injury, 9 subjects were constantly exposed to sunlight, 38 subjects viewed lunar/solar eclipse, 33 subjects had injury to the head, 22 subjects had rheumatoid arthritis, 33 subjects had family history of diabetes, 35 subjects had family history of hypertension, 26 subjects had family history of blindness, 25 subjects had family history of eye disorders. Habit of alcohol consumption was present in 42 subjects, 33 subjects had habit of smoking, 67 subjects had habit of taking snuff and 78 subjects had habit of chewing tobacco. And 55 subjects were taking medications for different illness. It is established that there is an association between vision loss and age and there is also a significant relationship between risk status and visual impairment.

Keywords

Vision loss, prevalence, risk factors.

Introduction

Blindness is not only a personal tragedy; but also an economic nightmare. It affects an individual, family and community. The gift of sight is a boon denied to an estimated 45 million individuals worldwide, for whom there is no light at the end of the tunnel; in addition to another 189 million people worldwide are visually disabled. Every five seconds one individual in the world goes blind. Blindness not only reduces economic and social status but may also result in premature death. Despite the best of efforts during the last fifty years, the burden of blindness in the world is increasing because of a relative lack of eye services, population growth and aging. If additional resources are not only urgently tapped and efforts made to control this scourge of mankind, the global burden of blindness can double by the year 2020. Avoidable blindness is resulting either from conditions that could have been prevented or controlled, or which can be successfully treated or operated. Fortunately, 80% of the global blindness

is avoidable. Prevalence of blindness varies between countries from 0.2% or less in developed countries to more than 1% in sub-Saharan countries. About 32% of worlds blind are aged 45-59 years but the large majority about 58% is over 60 years old. Blindness is one of the most significant social problems in India it is estimated that 13 million people in India are blind. Every year we add 2 million blinds in the total pool of blindness, which is the incidence rate of blindness in India. Among these blinds $\frac{3}{4}$ of them live in rural areas needing restoration of their vision. Blindness also has an adverse effect on the productivity of the country. Although there are few national surveys conducted on prevalence of blindness the figure may not remains same over a period of time and the findings may not reflect the prevalence of a small community for example villages, due or large variations in sex composition of the population, available resources for eye services and possible risk factors. The National survey on blindness 2001-02 conducted in the country recognized the main causes responsible for visual impairment and blindness. The principle cause of blindness in India today is cataract, responsible for 62.6% of all cases cataract occurs more frequently with advancing age. Senile cataract occurs a decade earlier in India relative to Europe and America. Uncorrected refractive errors are responsible for about 17.7% of blindness; overall prevalence of glaucoma was about 5.8%; posterior segment pathology accounts for about 4.7% cases. In a camp based study, glaucoma prevalence was found to be about 3.07% with a slight female preponderance (males 2.9% and female 3.19%). Primary open angle glaucoma was more common about 1.7% than primary angle closure glaucoma 0.73%. In the other group, injuries as a cause of blindness accounts for 1.2%. There is evidence that injuries are on the increase due to increase in cottage industry (example carpentry, blacksmith, stone crushing, chiseling and hammering and chopping wood) and rapid industrialization in the country. The other uses in the group include congenital disorder, uveitis, retina detachment, tumors, diabetes, hypertension, diseases of nervous system, leprosy etc.

Objectives

- To determine the prevalence of vision loss.
- To identify the people who are at risk for vision loss using a risk assessment tool.
- To determine the association between vision loss and selected variables i.e. age, gender, education, occupation, religion, income, and food habits.
- Determine the relationship between risk status and visual impairment.

The study assumed that:

- People will willingly participate in the study
- People of all age groups are at risk for vision loss

- People of both sex are at risk of vision loss
- There are risk factors associated with vision loss
- Some of the risk factors of vision loss can be prevented.

Delimitation of the study

The study is delimited to the individuals who are above 45 years of age and present at the time of survey at their homes.

Methodology

Study design: Descriptive Survey.

Population and Setting: all individuals above 45 years living in Hirebettu village.

Sample: 100 persons above 45 years

Sampling Technique: Non- probability convenient sampling Technique.

Tools:

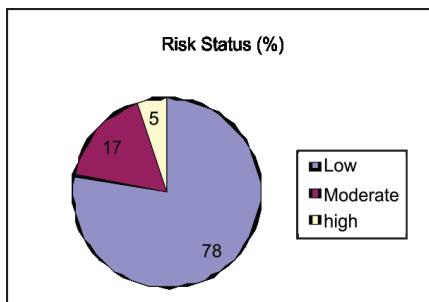
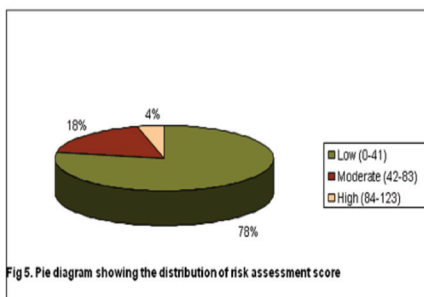
- Demographic proforma to collect the background information.
- Risk factor assessment questionnaire to find out contributing factors which predispose to develop of vision loss.
- Visual acuity chart.

Analysis

Descriptive and Inferential statistics

Results

- The study revealed that prevalence of vision loss in Heribettu village of Udupi District is 2%.
- Out of 100 subjects, 4% fell in high risk category and 78% fell in low risk category.
- It was found majority (78%) were at low risk of visual impairment 17% were in moderate risk of visual impairment and 5% are in high risk of visual impairment



(According to the Snellen chart)

- Association between Vision Loss and Selected Demographic Variables
- Majority of the sample belonged to the age group of 45 to 54 years and majority(62%) of the sample were females. Data on religion showed that majority i.e., 99 of 100 subjects belonged to Hindu religion, and 32% were educated up to lower primary. Data on occupation showed the most of them were working as gate keeper, watchman, coolie, domestic servant or mason and 50% of them had the income between Rs 2500- Rs.4999. Majority of the subjects were non vegetarians.
- Related to risk factors 22 subjects had hypertension, 12 subjects had diabetes mellitus, 30 subjects had cataract, 93 subjects had long sight/short sight, 40 subjects had watering of the eye, 39 subjects had eye injury, 89 subjects were constantly exposed to sunlight, 38 subjects viewed lunar/solar eclipse, 33 subjects had injury to the head, 22 subjects had rheumatoid arthritis, 33 subjects had family history of diabetes, 35 subjects had family history of hypertension, 26 subjects had family history of blindness, 25 subjects had family history of eye disorders. In relation to personal habits 42 subjects had habit of alcohol consumption, 33 subjects had habit of smoking, 67 subjects had habit of taking snuff, 78 subjects had habit of taking tobacco and 55 subjects were taking medication for different illness.
- There was a significant association between age and vision loss ($X^2 19.471, P-0.03 < 0.05$)
- The study revealed that there was a positive correlation between risk status and visual impairment ($r - 0.592$) ($p - 0.001 < 0.05$).

Discussion

The findings of the present study are discussed based on the objectives, statistical findings and similar.

The findings of the present study indicated that the prevalence of vision loss among 45 years and above in Hirebettu village is 2% and vision loss is associated with age. These findings support the findings of the survey conducted by Udupi District Blindness Control Society where the prevalence was 2%.

In a study conducted by Shashyalatha in 1993 in Udupi taluk, the prevalence of overall blindness was 18.5 %.(VA<6/60) and 3.75 % (VA<3/60) among people aged 40 years and above.

A study conducted by Chandrashekar (2003) in Karkala taluk, the prevalence of vision loss was 6.62%.

These study show higher prevalence of vision blindness compared to the present study.

Madan Mohan et al indo (US case Control study Group) conducted a hospital based case control study of 1441 patients of senile cataract and 549 controls. They found that low education, decreased cloud cover in place of residence, diets low in selected nutrients, high BP; lower antioxidant index increased the risk of cataract.

Implications

The findings of this study have implications in various areas of nursing i.e. nursing practice, nursing education, nursing administration and nursing research.

The nursing curriculum should consist of the importance of

providing health information to the community regarding preventive health strategies of various diseases. Nursing students must be made aware of their role in health promotion and disease prevention in the present and future era, which may help in achieving the goal of Health for All. The students learning experience should emphasize on teaching various groups on preventive health practices.

Nursing Research

As non-communicable diseases are gaining importance as these are leading to increased morbidity and mortality, there is a need for early detection and prevention of these diseases. Research studies should focus on behavior modification of individuals. Research studies should be done on practicing newer methods of health teaching, focusing on interest, quality and cost effectiveness.

Limitations

- As sampling was convenient the generalizability is limited to present samples only.
- The study was conducted in only one village
- Non-probability convenient sampling was used to select the samples.

Recommendations

- Findings of the study could be shared with the rural people and the risk factors are highlighted.
- An action programme should be drafted to educate the rural people about the healthy style practices.
- Develop health education materials on vision loss and prevention of it.
- Periodic health check ups for rural peoples should be arranged.

Conclusion

Avoidable blindness is resulting either from conditions that could have been prevented or controlled or which can be successfully treated.

Acknowledgement

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Empowering Mothers of Under Five Children on Prevention of Helminthic Infestation

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Abstract

Healthy and sturdy babies are likely to evolve as physically and mentally strong adults. Education of general public is an integral part of prevention-oriented approach to health and disease problem. Education can help to improve knowledge, attitude and practice. Most of world's major health problems are preventable through changes in human behavior at low cost. Helminthic infestations contribute significantly to global burden of diseases in children. Health education remains the most affordable and effective strategy for controlling helminthic infestation. The purpose of this study was to determine the extent to which an education programme was effective in improving mothers' knowledge on prevention of helminthic infestations in their children.

An evaluative study using a pre-experimental one group pretest-posttest design was conducted among 60 mothers of underfive children in rural areas of Udupi district, Karnataka. Data was collected by self reported valid, pre-tested and reliable structured knowledge questionnaire using purposive sampling. Following baseline assessment, an educational programme on prevention of helminthic infestations was administered to the mothers of underfive children. One week following the programme the mothers were reassessed. Significant improvement in the knowledge was found ($t = 20.35, p < 0.05$). The programme was an effective learning strategy as opined by the mothers 60 (100%).

Key Words

Empowering, Educational Programme, Knowledge, Helminthic infestations, Mothers of Under-five children.

Background and Need for the study

Helminthic infestations contribute significantly to global burden of diseases in children. In India, under-five children constitute about 13% of the total population¹. Children with helminthic infestation are at a higher risk of being sick and more than 200 million children are infected with, the highest rate occurring in children of preschool or early school age. *Ascaris* occur globally and is the most prevalent human helminthiasis in the world². Intestinal parasitism is a priority health problem in India because of unhygienic practices, poor sanitation, poor awareness, illiteracy, misconception, poverty, improper treatment and variety of allied factors. The disease causes anemia, poor productivity and increased susceptibility to other infections and hence it is important to prevent the occurrence³.

The prevalence of helminthic infestation in South East Asia was found to be higher in male than in female children and in children of age group 2-3 years (42.16%) and 3-4 years

(41.93%) in rural and urban areas respectively, low socio-economic group with illiterate or just literate mothers⁴.

The overall prevalence of intestinal parasites in Udupi taluk, Karnataka was found to be 52.6%, of which the prevalence of *ascaris lumbricoides* was 43.8%, *trichuris trichura* 13.4%, *necator americanus* 1.0%, *enterobius vermicularis* 0.3% and *entamoeba histolytica* 2.1%⁵. Another study among children between two to six years of age ($n=101$) showed the prevalence of round worm infestation as 47.52%, roundworm and whipworm 6.93% and tapeworm 0.99% respectively⁶.

A randomized controlled trial conducted in the coastal area of Udupi Taluk, Karnataka showed that the overall prevalence rate was 62.2% and the most prevalent parasite was *ascaris lumbricoides* 53.7%⁷. Improvement in mother's level of education can decrease the prevalence of intestinal helminthiasis among children⁸. The public health importance of intestinal parasitic infection continues because of their high prevalence, global distribution and their effects on both nutritional and the immune status of populations, particularly those living in tropical and sub-tropical areas⁹. Recurrence rate is high in areas of poor sanitation, poor personal hygiene and improper treatment. Hence its management needs priority¹⁰.

Health education remains the most affordable and effective strategy for controlling helminthic infestation¹¹. Educational programmes encourage mothers for prompt referral and treatment of children and to improve health promotion behavior. Education as a method of primary prevention is more effective in the interruption of transmission cycle of helminthic infestation, improves knowledge and lead to behavior modification¹⁰.

Conceptual Framework

The WHO SEARO Systems Model for the development of a self learning materials /modules programme for the continuing education of health workers was adapted as framework. Input refers to the learners /target group i.e., mothers of under-five children and their demographic characteristics, level of competence, learning needs and interests. Process focuses on the steps in the preparation, development, administration and evaluation of the educational programme. The areas covered in the educational programme were; meaning, mode of transmission, causes, types, life cycle, clinical features, diagnostic measures and general measures of treatment, consequences and prevention of helminthic infestation, home management and control measures. In order to make the educational programme effective, different tasks such as lecture, discussion, use of audiovisual aids such as flip chart, charts, real objects were also incorporated during teaching. Output refers to the evaluation of the performance after the training period and was determined by significant gain in knowledge by comparing the mean pretest and posttest scores.

Evaluation of the acceptability of educational programme was also done.

Methods

An evaluative approach with pre-experimental one group pre-test posttest design was used. Purposive sampling technique was adopted for the selection of the sample. Mothers having children under five years of age, during the data collection period and who were willing to participate in the study were included. A total of 60 mothers from Hirabettu village, Udupi district were recruited for the study.

The data collection instruments were developed, validated, and pre-tested. The reliability of the structured knowledge questionnaire ($r=0.80$) was established. Demographic characteristics and the socio economic status of the family was assessed using modified Srivastava Socio Economic Status Scale. The structured knowledge questionnaire consisting of 42 items on areas covered in the educational programme and an opinionnaire was used to determine acceptability of the awareness programme.

Data was collected after obtaining formal administrative permission. Informed consent was obtained from each participant. On day one, pre-test was administered using the demographic proforma and structured knowledge questionnaire. On the same day an educational programme was implemented as an intervention to the mothers. On the day eight, posttest was conducted for the same mothers by administering the structured knowledge questionnaire and an opinionnaire. The data was analyzed by using SPSS 10.0 software package.

Results

Sample Characteristics

A total of 60 mothers were included in the study. Most of the mothers of under-five children i.e.30 (50%) belonged to the age group of 25 to 30 years. Majority of mothers i.e. 53 (88.33%) had only one child below the age of five years. Majority of the mothers 37 (61.7%) belonged to low socio economic status and 30 (50%) had low exposure to mass media. Out of 60 mothers, 23 (38.33%) had high school education, 23 (38.33%) had middle school education, 7 (11.67%) had intermediate education, 4 (6.67%) were graduates and 3 (5%) had primary school education.

Effectiveness of educational programme

During the pretest, 3 (5%) mothers had good knowledge, 30 (50%) had an average knowledge and 27 (45%) had poor knowledge whereas in the posttest, majority of mothers 44 (73.3%) had a good knowledge and 16 (26.7 %) had

average knowledge. There seemed to be a marked increase in the knowledge score followed by the implementation of the educational programme on prevention of helminthic infestation.

Table 1 shows that mean posttest knowledge score (31.22 ± 5.21) is apparently higher than the mean pre-test knowledge score (16.65 ± 7.17). Median posttest knowledge score (32) is also higher than the median pre-test knowledge score (15.5) implying mothers gained adequate knowledge on prevention of helminthic infestation after the administration of the educational programme. Paired t test computed ($t = 20.35, p < 0.05$) showed significant gain in knowledge, of mothers on prevention of helminthic infestation. Hence the educational programme was an effective method in increasing the knowledge of mothers.

In both the pretest and posttest polygons presented in Fig 1, the mean and median lie close to each other. In the pretest polygon the scores are positively skewed and in the posttest polygon the scores are negatively skewed indicating a higher score range during post-test compared to pre-test.

Table 2 shows that the post-test mean scores in all the nine areas were apparently higher than the pretest mean score. Hence the educational programme was effective in enhancing the knowledge of mothers on prevention of helminthic infestation.

Association between pretest knowledge scores and selected Variables

Chi-square test computed between pretest knowledge scores and selected variables in table 3 shows that the pretest knowledge scores of mothers were independent of their socioeconomic status, exposure to mass media and was dependent on the education of the mother.

Acceptability of the educational programme

All the mothers 60 (100%) strongly agreed that the educational programme if followed regularly would help to prevent helminthic infestation in their children. Majority 58(96.66%) of mothers strongly agreed that the educational programme was an effective learning strategy to gain knowledge.

Discussion

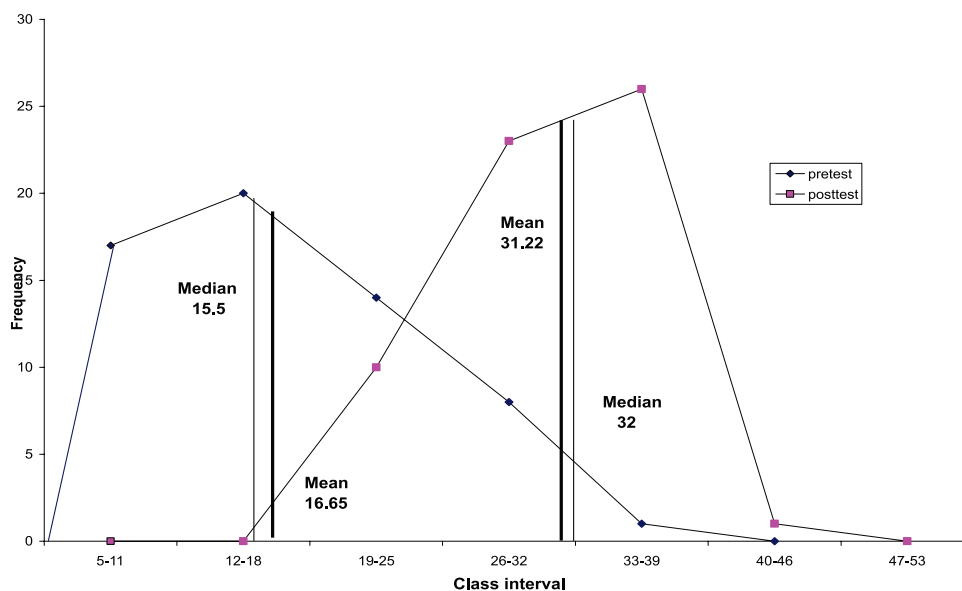
"An ounce of prevention is better than a pound of cure", is a well known saying and is true. Most of the health problems are preventable or controllable, if it is anticipated or recognized and treated early. The present study showed significant gain in knowledge of the mothers ($t = 20.35, p < 0.05$) through the educational programme. The findings of the present study are consistent with the findings of a study conducted in Kerala which showed that mean posttest knowledge scores of experimental group (43.18) was significantly higher than the

Table 1: Mean, mean difference, standard deviation difference, standard error of mean difference and t value of pretest and posttest knowledge scores of mothers. (n=60)

Knowledge Scores	Mean	Mean difference	Standard deviation	SDD	Standard Error of mean	SE _{MD}	t value
Pretest	16.65		7.17		0.93		
		14.57		5.55		0.72	20.35
Posttest	31.22		5.21		0.67		

$t(59) = 2.0, p < 0.05$

Fig. 1: Frequency polygon showing pretest and post test knowledge scores of mothers of under five children



mean posttest knowledge scores (33.39) of the control group, ($t = 2.96, p < 0.05$)¹².

The present study found an association between knowledge of the mothers and their education status. These findings are in concurrence with following study findings. A study conducted among Nepali children showed an association between helminthic infestation rates among children and the education status of their mothers. The helminthic infestation rate decreased with increase in educational status of mothers¹³. A cross-sectional survey conducted in Nigeria showed that improvement in mother's level of education brought about statistically significant decrease in prevalence of intestinal helminthiasis⁸.

Health education programmes with effective teaching strategies motivate mothers to learn and incorporate healthy practices in their everyday life, thus promoting the health of their under-five children by placing their children's health in

their hands.

Early detection of helminthic infestation in children can be enhanced by community oriented educational programmes. In this context the health professionals have a major role in creating and enhancing the mother's awareness on helminthic infestation and its method of early detection, which is cost effective and the simple.

Conclusion

In view of the above results, it is essential that health professionals must take the initiative in conducting team research using various innovative teaching strategies in order to bring about the desired change in the knowledge and practice and to promote the health of the community.

Table 2: Areas-wise mean percentage of pre-test and posttest knowledge scores and standard deviation.

n= 60

Sl No	Areas of Knowledge	Maximum Possible Scores	Pre-test		Posttest	
			Obtained mean	SD±	Obtained mean	SD±
1	Meaning, Mode of Transmission, Types	4	2.1	1.32	3.3	0.74
2	Round worm infestation	5	1.3	1.11	3.35	1.27
3	Pin worm infestation	5	1.7	1.26	3.25	1.16
4	Hook worm infestation	3	1.05	1.04	2.08	0.87
5	Whip worm infestation	3	0.95	0.90	2.03	0.84
6	Tape worm infestation	4	1.28	0.95	2.86	0.91
7	Consequences	2	0.65	0.70	1.3	0.70
8	Prevention	11	5.28	2.87	8.88	1.72
9	Home management & Control measures	5	2.23	1.36	4.15	1.07

Table 3: Chi-square values computed between the pretest knowledge scores of mothers of under five children with selected variables. n = 60

Sl No	Variables	≥ Median	< Median	χ^2	df	Level of significance
1	Socio economic status					
1.1	Low	15	22			
1.2	Middle & High	15	8	3.455	2	NS
2	Exposure to mass media					
2.1	Low	11	19			
2.2	Moderate	17	9	4.661	2	NS
2.3	High	2	2			
3	Education level of mother					
3.1	Above high school	9	2			
3.4	High school	11	12	*6.259	2	S
3.5	Below high school	10	16			

df₍₁₎ = 3.84, df₍₂₎ = 5.991, (p < 0.05)

Median = 15.5 NS = Not significant, S = Significant

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Nursing; A Profession of Paradoxes?

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Abstract

Nursing is the backbone of healthcare system in any country. With the growing demand for Indian nurses in other countries, the demand for the profession has gone up tremendously in India. This has resulted in a mushrooming of private nursing colleges and institutes. But the increase in demand abroad has not necessarily translated into an improvement in the working conditions of nurses working in India. Nurses who are working in the foreign countries are also facing a series of issues ranging from linguistic challenges to discrimination. India is now witnessing immense changes in the health sector. This review is an attempt to look at the range of issues that our nurses face today.

Key Words

Nursing, education, working conditions, migration.

Conflict of Interest

None

Introduction

Nursing is the largest single occupational category in Indian health system. It is a unique profession which requires a blend of different skills be they technical, interpersonal or communication skills. It is also one profession which demands compassion, kindness, care, patience and presence of mind. Nursing service and education have improved and diversified tremendously since independence in India. The role of nursing professionals in the country is not just limited to institutional care. They are involved in the peripheral health centres like primary health centres, subcentres and resource starved Government hospitals as they are in the world class tertiary care private and corporate sector hospitals in the country¹.

But regardless of the services rendered, nursing, traditionally considered as a woman oriented profession, has been largely ignored in the doctor centric health care system in the country. In spite of their contributions to the health sector, when it comes to policy decisions and administrative management of the health sector (Government as well as private) nurses are sidelined. This is to such an extent that doctors are often invited to head the professional nursing bodies in the country².

Nursing work force in India

Some facts and figures about the nursing workforce in India.

Total number of hospitals in India is estimated to be around 38,000 with a total bed capacity of around 915,000³.

Density of nursing professionals is around 13/10,000⁴.

The estimated number of nursing professionals as on 31st March 2008 is around sixteen lakhs, which includes 550958 Auxiliary nurse midwives, 993256 registered nurse and midwives and 51498 lady health visitors⁵.

¹Despite the large number of nurses, India has a shortage of nursing professionals. The dearth of nursing care professionals in the country is reflected in the following figures.

- The hospital nurse patient ratio is around 1:100 as against the prescribed norms of 1:6 in general wards, 1:4 in special wards and 1:1 in critical care.
- ANMs working in the field provide care at the ratio 1:15,000-20,000 against the 1:5000 (plain areas) and 1:3000 (hilly areas) norms.
- Nursing schools have a teacher student ratio of 1:25-30 when the prescribed ratio is 1:10.
- There is a shortfall of 18,021 nurse midwife/ staff nurse, 79,322 male health workers and 21,066 female health workers in the Government subcentres/ PHCs/ CHCs across the country as on March 2008⁶. This is after taking into consideration just the peripheral centres in the country and the figure is likely to be much higher if the tertiary care centres and private health care institutions are also included in the list.
- As per the 2001 census there is a shortage of 20 % in the density of all health workers in India when compared to the WHO norm of 2.5 workers per 1000 population. There is geographic as well as rural urban disparity in the distribution of health workers².
- The nurse physician ratio is 1.3:1 when compared to the WHO recommended 2:1 and 3:1.³

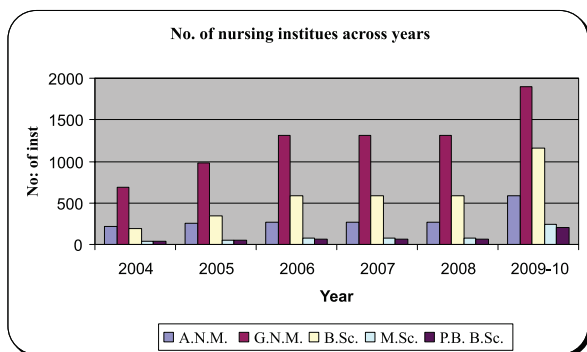
In spite of these figures which indicate immense opportunities for nursing professionals in the country, it is a known fact that more and more nurses are seeking jobs outside the country. One of the major reasons cited for this migration is unemployment. It is an irony that nurses are unemployed in a nation which itself is experiencing an acute shortage of nursing personnel.

Nursing education in India

Nursing education has grown tremendously from merely two nursing colleges in 1947 to the present day where there are thousands of nursing colleges and institutes and is regulated by the Indian Nursing Council (INC).

No. of nursing educational institutions recognized by Indian nursing council⁵

It is doubtful whether this increase in quantity is also accompanied by an increase in quality. Experts in the field suggest that nursing education in the country is facing a crisis with both Government and private institutions struggling to overcome their challenges^{2,6,7}.



Source: Nursing Council of India

With the aim of improving the education sector, Government has initiated some steps. The Indian nursing council has put forward certain minimum requirements for the nursing education sector aiming at maintaining the quality of nursing education. The council has put forth norms to restrict the number of students and to maintain an optimal student patient ratio. They have also initiated steps to check the exodus of teaching faculty from the Government to private institutions in the middle of an academic year^{8,9}. Government has earmarked an amount of Rs 3.19 billion in the 11th five year plan for strengthening the nursing education. Plans are in place to start new ANM and GNM schools in the districts that lack any nursing training institutes and to establish four regional colleges of excellence to improve the quality of nursing education^{10,11}.

Poor working conditions

There is a need for increased professionalism and recognition of the nursing sector. The challenges faced by nurses at working place are many.

Stress at work place

A study among nursing professionals in India estimated that 74% of the study subjects suffered from significant stress at work place¹². Studies in India and abroad have identified many factors which are associated with the stress.^{13,14,15} Huge work load and overtime hours leads to burnout of nurses. It has also been identified that worry about not being attentive enough about their children, the burden of hospital as well as household work coupled with difficulties in getting leaves constitute a major stress factor for Indian nurses. Nurses are often vulnerable to the wrath of patients and their relatives and 62% of nurses in a study reported verbal abuse from patients or their bystanders¹⁴.

Lack of professional respect and recognition from authorities and doctors is another challenge that nurses face. The nursing profession is almost entirely considered a women's job and subordinate to the doctors' profession. Lack of promotional opportunities at par with those of doctors is causing discontentment among nurses especially in the Government sector. A study done by Central Health Intelligence Department says that very few nurses get promoted thrice in their entire career. Continuing nursing education is not yet perceived as an important capacity building process and lack of trainings to update to the new theories and technological advancement results in work place dissatisfaction. Conditions are considered

to be much worse in the private sector where there is a threat to job security and less payment when compared to the public sector.

Occupational hazards in the form of exposure to needle stick injuries, hazardous chemicals and radiations, erratic working hours and high levels of stress have become part of job description for Indian nurses.

Migration of nurses

The global shortage of nursing professionals has fuelled the migration of Indian nurses. Excellent technical and medical knowledge, language skills, genuine and compassionate service are some of the positives attributed to Indian nurses^{16,17}. In the 1990s, India's ranking in terms of the number of registered nurse applicants aspiring for the US licensure was sixth, which made a quantum leap to the second position in 2004, next only to the Philippines. The CGFNS has been opening up more examination centers in India and in UK, work permits are issued on a faster basis to nurses. Commercial recruiters facilitate training for registration, qualifying examinations and provide assistance in placement, visa procurement and foreign registration. The State Manpower Export Corporations also facilitate the international migration of Indian nurses and Indian Nursing council recognised nurses do not require an emigration check^{3,18}. India has an agreement making India an ethical recruitment site for National Health Services, UK⁷. Studies suggest that there are many personal, financial, professional and social reasons behind the decision to migrate¹⁹. The major push factors have been identified as the extremely low wages nurses are being paid, low social status, lack of career advancement and recognition, poor working conditions, unemployment among the recently graduated nurses and the influence of friends and relatives in the same profession serving abroad^{30,31}.

Not only economical reasons, but also an urge for professional advancement also serves as a motivation for migration. Professional autonomy, increased recognition, access to higher education and better technology in developed countries and better quality of life also influence the migration.

It is not always a smooth sailing for migrating nurses²⁰. In UK foreign nurses have to undergo a period of initial adaptation of 3 to 6 months, during which they are paid as health care assistants. Nurses take time to adjust to the regional accent and word usages fundamental in communication with patients and other staff and are often under stress due to communication issues. Foreign nurses also need to refocus their skills and it has been reported that many overseas nurses are prevented from using their technical skills in UK²¹. They also feel undervalued in the new system and often start at a very junior position inspite of their experience from their home countries. They are often given inflexible working conditions and work more full time than their native counterparts. Workplace racism is another issue especially in Western countries²². A higher percentage of Internationally Registered Nurses (36%) reported being bullied or harassed compared to UK nurses (22%) and expressed less confidence on the management to support them during any such incident^{23,24,25}.

The migrating nurses also has to adapt to the foreign culture. Extensive paper work and high cost of living restrict them from bringing their families to the foreign country. Some

recruiting agencies also exploit nurses by providing incomplete or misleading information about their fees, accommodation, working hours and shifts, salary and work assignment. There could also be forced unpaid orientation period, retention of travel documents, forced renegotiation of contract, hidden or unclear penalty clauses, unspecified termination clause etc. These issues can be tackled by improving the understanding among nurses regarding the pros and cons of migration, a thorough check on the agency and the hospital involved. Opening of consultancy cells assisting nurses in migration and regulation of the recruiting agencies are some of the steps which will ensure betterment of Indian nurses³. An active involvement of the international, national and regional nursing associations will also help to improve the transparency.

India has a huge shortage of nurses when compared to those nations who are recruiting Indian nurses²⁶. Nurse population ratio in India is 45 in comparison with 830, 870 and 890 per 100,000 in Australia, Britain and Canada respectively²⁷. Migration also drains the Indian hospitals of the immense experience of many senior nurses²⁸. Instead of blaming the nurses for migrating for better options steps should be initiated to analyse, understand and rectify the deeper woes of the Indian health system and human resource planning. Offering good professional development reflected as career advancement and monetary and non monetary incentives are crucial for retaining the workforce²³. An important concern is the dearth of data regarding the actual number of nursing professionals graduating every year, the number of nurses migrating abroad and the remittances made by those nurses.

Conclusion

India has the advantage of a large pool of human resources and educational infrastructure in nursing to boost it's ailing public health sector. Ministry of health and family welfare in a move to improve the situation of nurses has proposed to start a separate cadre for nurses for their selection, training, placement and career progression. This envisage appointing nursing professionals in different key positions with administrative and financial responsibilities and powers²⁹. The education sector is also getting regulated with the Government proposing to set up a National Council for Human Resources in Health to provide a framework for the regulation of human resources in health. The council will integrate the function of the existing health oriented councils including Nursing Council and will have a separate department within to administer to the nursing cadre. It will prescribe nursing education standards, reorient the nursing curriculum and maintain a national register giving accurate information about nurses within and outside India^{2,30}.

To sum up, it is clear that in the given context, economics is not the only reason for nurses seeking employment abroad. Factors like social recognition and professional development are equally or perhaps more important. Only when those issues are also addressed can we hope to retain our nurses.

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Nursing Professionals Attitude Towards Biostatistics and its Implications to Teaching

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Abstract

Attitudes towards statistics are important because they may influence the learning process. In particular, students' attitude and beliefs about statistics can affect the extent to which students will develop useful statistical thinking skills, whether they will apply what they have learned outside of the classroom, and whether or not students will choose to enroll in further statistics courses. Attitudes toward statistics scale (Wise, 1985) was used collect data on attitude towards statistics of students and teachers of nursing profession. Scale scores were compared between age groups, between students and teachers, and between those who had statistics as part of their curriculum and those did not have. Findings of the comparison and implications for teaching were discussed.

Key Words

Attitude, Biostatistics, health care personnel.

Introduction

Statistics have a set of applications in every fields of study as it is the science of data collection, analysis and presentation. Difficulty in understanding statistics is one of the most frequently reported barriers to health care professionals applying research results in their practice. Yet the amount of nursing research published each year continues to grow, as does the expectation that nurses will undertake practice based on this evidence. Critical care nurses and other health personnel need not be a statisticians, but they do need to develop a working

knowledge of statistics so as to improve their evidence based practice. For those undertaking a research project, statistical literacy is required to interact with other researchers and statisticians, so as to best design and undertake the project. In most of the Indian Universities, an induction programme on Biostatistics and Research methodology is mandatory, for a Ph.D registration. The intention as to lay a strong foundation on the research methodology applied and also the analysis pertinent to their doctoral projects. For Nursing programmes in India, research is a subject taught in the class room in the undergraduate as well as post graduate programme and hence the nurse is aware of the methodology and also its analysis. In other health programmes, research and statistics is introduced only in post graduate level. Although statistics is taught in the classroom, yet students may not be able to apply extensively in the research process in advance research studies.

Hence the investigators' objective was to assess and compare the attitude toward statistics among nursing professionals and discuss its implications to teaching.

Research Methodology

The attitudes toward statistics of undergraduate students of nursing (n=45), post graduate students of nursing (n=45) and teachers of selected nursing colleges (n=31), were measured using the instrument: the Attitudes toward Statistics scale –ATS- (Wise, 1985). The ATS consist of 29 Likert-type scale items, each with five response possibilities. It consists of two subscales: attitudes toward the Field of statistics (20 items) and attitudes toward the statistics Course (9 items). Field subscale measures the student's attitudes toward the usefulness of statistics in their field of study. The Course subscale is intended to measure the student's attitudes toward their statistics course. Mean scores on the scales were compared between groups, performing independent sample t test or one way ANOVA.

Result

Two sample t test was applied to compare the mean 'field

Table 1: Age group-wise descriptive statistics (n=121)

	Age group	N	Mean	SD	t-value	P-value
Field	21 and below	37	43.68	9.52	5.09	<0.001
	Above 21 years	84	51.76	7.33		
Course	21 and below	37	18.08	6.10	1.27	0.21
	Above 21 years	84	19.62	6.20		

Table 2: Profession-wise Descriptive Statistics and Mean Comparison (n=121)

	Profession	N	Mean	SD	Comparison	Mean Diff.	95% CI
Field score	Under graduates(UG)	45	47.80	7.12	UG - PG	-3.89	-8.26 to 0.48
	Postgraduates(PG)	45	51.69	8.84	UG -Teachers	-0.17	-5.00 to 4.67
	Teachers	31	47.97	10.52	PG -Teachers	3.72	-1.11 to 8.56
Course score	Under graduates (UG)	45	19.16	6.13	UG - PG	0.24	-2.88 to 3.37
	Postgraduates(PG)	45	18.91	5.72	UG -Teachers	-0.33	-3.78 to 3.13
	Teachers	31	19.48	7.07	PG -Teachers	-0.57	-4.03 to 2.88

Table 3: Summary Statistics (n=121)

	Statistics is part of my curriculum	N	Mean	SD
Field score	Yes	71	51.63	8.25
	No	50	45.96	8.69
Course score	Yes	71	19.83	6.20
	No	50	18.18	6.10

Summary of Findings

Higher age group (Age above 21 years) scored significantly higher on field scale (mean score diff. 8.09, $P < 0.001$). No significant difference in course scale score was observed between the two age groups. No significant difference in the mean 'field scale score' as well as 'course scale score' of undergraduates, post-graduate students and teachers of college of nursing was observed. Those who had statistics as

Table 4: Attitude towards statistics and research project data analysis

Field scale score						
Project work	N	Mean	SD	Comparison	Mean Diff.	95% CI
A) No project	55	47.55	9.44	B - A	3.66	-1.43 to 8.76
B) Project data analysis done by self	24	51.21	7.60	C - A	2.93	-1.34 to 7.2
C) Project data Analysis done by others	42	50.48	8.48	B - C	0.73	- 4.60 to 6.06
Course scale score						
A) No project	55	18.49	6.78	B - A	1.8	- 1.8 to 5.4
B) Project data analysis done by self	24	20.29	6.22	C - A	0.87	-2.15 to 3.88
C) Project data analysis done by others	42	19.36	5.32	B - C	0.93	-2.83 to 4.70

scale score' as well as 'course scale score' of the two age of the groups. Higher age group (Age above 21 years) scored significantly higher on field scale. The difference in mean field score was 8.09 (SE=1.59, 95% confidence interval 4.94 to 11.23, $t_{119df} = 5.09$, $P < 0.001$). No significant difference in course scale score was observed between the two age groups (SE=1.22, 95% CI: - 0.88 to 3.95, $t_{119df} = 1.54$, $P = 0.21$)

Data presented in table 2 shows descriptive statistics and mean score comparison. The one-way anova was performed to compare the mean 'field scale score' as well as 'course scale score' of undergraduates, post-graduates and teachers of college of nursing. No significant difference in field scale score was observed ($F_{2,118} = 2.71$, $P = 0.071$). The difference in course scale score was also insignificant ($F_{2,118} = 0.077$, $P = 0.93$).

Two sample t test was applied to compare the mean 'field scale score' as well as 'course scale score' of those who had statistics as part of their curriculum and those who did not have. Those who had statistics as part of their curriculum scored significantly higher on field scale. The difference in mean field score was 5.67 (SE=1.56, 95% confidence interval 2.59 to 8.76, $t_{119df} = 3.64$, $P < 0.001$). No significant difference in course scale score was observed between the two groups (SE=1.14, 95% CI: - 0.60 to 3.9, $t_{119df} = 1.45$, $P = 0.15$) (Table 3).

The one-way anova was performed to compare the mean 'field scale score' as well as 'course scale score' of those who have done project data analysis and those who have not done. No significant difference in field scale score was observed ($F_{2,118} = 2.04$, $P = 0.134$). The difference in course scale score was also insignificant ($F_{2,118} = 0.741$, $P = 0.48$). Table 4 shows descriptive statistics and mean score comparison.

part of their curriculum scored significantly higher on field scale. The difference in mean field score was 5.67, $P < 0.001$. No significant difference in course scale score was observed between the two groups. Field scale score was higher for those who have done project compared to those who did not, even though the difference was not significant.

Conclusion

This study provides further evidence for the need to adjust statistics teaching methods such that students' attitudes are more positive toward statistics. In the present study, we observed, students of higher age group, those who had statistics as part of their curriculum scored significantly higher on field scale. Compared to undergraduates, post graduates scored higher on field scale (mean diff. 3.89 units), even though this difference is not statistically significant. It indicates that students realise the usefulness of the subject at the postgraduate level. It could be because of the practical experience provided to them through project work. Introducing the subject statistics as part of the curriculum and emphasising usefulness of the subject through actual data analysis and interpretation relating to their field would help students develop better attitude towards statistics.

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Post Dural Puncture Headache - A case report

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Abstract

Postpartum women are at risk for developing a headache after they undergo caesarean section with spinal anaesthesia. These headaches are likely due to leakage of cerebrospinal fluid at the puncture site. While usually mild and self-limited, some headaches may be persistent and severe, adding to the distress of these postnatal mothers. In the past 10 years, refinements in lumbar needle size and shape as well as procedural techniques have reduced the tissue trauma that predisposes patients to headache. A number of interventions, such as bed rest, hydration, caffeine administration, and epidural blood patching, have been suggested to prevent and relieve the headaches that follow spinal anaesthesia. This article outlines a case of post dural puncture headache in a postnatal woman following caesarean delivery with spinal anaesthesia and reviews the evidence from research trials to suggest which interventions clinicians should adopt into their practice to minimize this complication of spinal anaesthesia.

Key Words

Post Dural Puncture Headache, Spinal Anaesthesia, Postpartum, Caesarean Delivery

Introduction

Post Dural Puncture Headache is a well-described complication of spinal anesthesia in caesarean delivery. General anaesthesia for Caesarean section is associated with relatively greater maternal risk than regional anaesthesia. Spinal anaesthesia has therefore become more widely practiced anaesthetic technique in Caesarean delivery. It is simple to institute, rapid in its effect and produces excellent operating conditions. It also avoids foetal as well as maternal risks of general anaesthesia, requires minimum postoperative anaesthesia care and provides adequate postoperative analgesia. Post Dural Puncture Headache (PDPH) is an iatrogenic complication of spinal anaesthesia and results from puncture of the dura mater. The signs and

symptoms of PDPH result from loss of cerebrospinal fluid, traction on the cranial contents, and reflex cerebral vasodilation.

Case Report

A 26-year-old primipara (58 kg, 156 cm) got admitted at 40 weeks of gestation for safe confinement. She was induced with cerviprime at 5.45 am. She started with labor pains at 6.30 am. Post induction trace was reactive. At 11.00 am cervix was 3 cm dilated and she was progressing with good uterine contractions. At 3 pm cervix was about 5 cm dilated

and remained the same till 5 pm, after which decision for caesarean section was taken. She underwent caesarean delivery under spinal anaesthesia with the indication of failure to progress. Her medical history and laboratory examinations were unremarkable. No signs of preeclampsia, such as edema, proteinuria, arterial hypertension, or neurologic complaints had been observed during pregnancy.

On arrival in the operation theatre, patient was positioned supine with left lateral displacement by putting a wedge under the right hip. A 3-lead ECG monitor, pulse oximeter and an automated non-invasive arterial blood pressure monitor were applied. Baseline systolic, diastolic and mean arterial pressures were noted. After an initial IV preload of lactated Ringer's solution (800 mL), a spinal block was performed with 27-gauge Quincke needle at L3-4, using a midline approach. On the first attempt, clear cerebrospinal fluid (CSF) was obtained, followed by slow injection of 12 mg 0.5% hyperbaric bupivacaine to achieve a T-4 sensory level for surgery, which proceeded uneventfully, with the patient exhibiting stable vital signs. Patient was then positioned supine with the wedge under the right hip, and oxygen was given at a rate of 5 litres/min via a facemask.

The patient delivered a healthy male baby (2.74 kg; Apgar score, 8-9). Placenta and membranes delivered in toto. The baby had two loops of tight cord around the neck. The mother's vital signs were normal in the postoperative care unit; motor and sensory block had totally worn off 3 hours after spinal anaesthesia. The patient did well until 2 days postoperatively when she developed a severe postural headache (Visual Analog Pain Scale, VAPS reading of 8/10) over the bifrontal area, particularly when in an erect position; it was relieved by supine position. The diagnosis of postdural puncture headache was made. Surprisingly, the headache worsened the following day and the patient gradually presented with neck stiffness, nausea, vomiting and dizziness. The patient complained of a severe throbbing headache (VAPS, 10/10) over the occipital area. During this throbbing headache, her arterial blood pressure was 130 mm Hg (systolic) over 75 mm Hg (diastolic). The headache improved (VAPS, 2/10) after 4 days of supportive therapy, including oral analgesics (acetaminophen, 2 g/d), aggressive intravascular hydration (lactated Ringer's solution, 3000 mL/d), and bed rest with the foot end elevated. Routine hematologic biochemical tests as well as echocardiogram, were normal. During this period of hospitalization, no episode of marked hypertension was noted; the patient's arterial blood pressure was within the range of 110-140 mm Hg (systolic) over 60-80 mm Hg (diastolic) before and throughout the development of clinical symptoms. One day later, the headache and dizziness had subsided. Five days postoperatively, the patient reported no headache, and the neurologic examination was normal. Her arterial blood pressure was within the range of 100-125 mm Hg (systolic)

over 60–80 mm Hg (diastolic) during the time. The patient was then discharged with no neurologic deficit and remained asymptomatic on the follow up visit 1 month later.

Discussion

The clinical symptoms presented in this patient, are compatible with PDPH. The patient presented with severe headache over the occipital area, neck stiffness, nausea, vomiting and dizziness. These occurred on the 2nd day after spinal anesthesia for cesarean delivery. Post Dural Puncture Headache, also called spinal headache is a characteristic headache that may occur following spinal anaesthesia. It begins within 12-24 hours and may last a week or more. It is postural, being made worse by raising the head and relieved by lying down. It is often occipital and may be associated with a stiff neck. It is frequently accompanied by nausea, vomiting, dizziness and photophobia.

The incidence of spinal headache is 0.5-1% of all the parturients undergoing caesarean section. It is seen that spinal headache is more common in teaching hospitals compared to non-teaching hospitals.¹ It is more common in the young, in females and especially in obstetric patients. The incidence of headache is related directly to the size of the needle used. A 16 gauge needle will cause headache in about 75% of patients, a 20 gauge needle in about 15% and a 25 gauge needle about 3%. It is, therefore, sensible to use the smallest needle available especially in high risk obstetric patients.²

In spinal anaesthesia, when the needle pierces the inner tube (dura) in the spine which contains the spinal cord itself, spinal fluid in which the spinal cord is surrounded leaks out from the sub-arachnoid space to epidural space. As there is no infinite supply of the spinal fluid, the pressure inside the dura drops creating an imbalance in the pressures between cerebral fluid and spinal fluid. The cushioning effect of the fluid disappears and tension is applied directly to these nerves. The degree of pressure imbalance determines the degree of the headache.

Headache is the predominant and is described as severe, and distributed over the frontal and occipital areas radiating to the neck and shoulders. The temporal, vertex and nuchal areas are reported less commonly as the site of discomfort, although neck stiffness may be present. The pain is exacerbated by head movement, and adoption of the upright posture, and relieved by lying down. An increase in severity of the headache on standing is the sign of post-dural puncture headache. Other symptoms associated with dural puncture headache include nausea, vomiting, hearing loss, tinnitus, vertigo, dizziness and paraesthesia of the scalp, and upper and lower limb pain. Visual disturbances such as diplopia or cortical blindness have been reported.

The choice of needle is important to minimize incidence of spinal headache. It is widely considered that pencil-point needles (Whiteacre or Sprotte) make a smaller hole in the dura and are associated with a lower incidence of headache than conventional cutting-edged needles (Quincke).³ A study done to investigate whether the Sprotte needle causes less leakage of CSF than the Quincke needle showed that the decrease in intradural pressure was 9.7 ± 1.8 mm H₂O with the Sprotte needle and 20.5 ± 2.7 mm H₂O with the Quincke needle ($P < 0.05$). The volume of leakage of CSF was 2.0 ± 0.3 ml with the Sprotte needle and 3.3 ± 0.3 ml with the Quincke needle

($P < 0.01$). The extradural pressure increase was 166.1 ± 8.2 mm H₂O with the Sprotte needle and 186.8 ± 13.2 mm H₂O with the Quincke needle ($P < 0.05$). Thus it was concluded that Sprotte needle produces less CSF leakage than the Quincke needle⁴.

Patients with spinal headaches prefer to remain lying flat in bed as this relieves the pain. Strict bed rest for 24-48 hours is also recommended. They should be encouraged to drink freely or, if necessary, be given intravenous fluids to maintain adequate hydration. Simple analgesics such as paracetamol, aspirin or codeine may be helpful. Caffeine containing drinks such as tea, coffee or soft drinks are often helpful. Another report describes a case of isolated postpartum seizures, in an apparently healthy woman who had suffered an accidental dural puncture during epidural analgesia for labour, and was treated with caffeine for relief of post-dural puncture headache.⁵ One cup of coffee contains about 50–100 mg of caffeine and soft drinks contain 35–50 mg. Caffeine is a central nervous system stimulant that amongst other properties produces cerebral vasoconstriction. Prolonged or severe headaches may be treated with epidural blood patch performed by aseptically injecting 15-20ml of the patient's own blood into the epidural space. This then clots and seals the hole and prevents further leakage of CSF. A retrospective audit of obstetric epidurals was performed with an aim to determine the efficacy of epidural blood patch in the management of post-dural puncture headache following dural puncture in the obstetric population, over a 5-year period, during which there were 55 recognized dural punctures. A total of 62 epidural blood patches were performed in 48 patients. Following treatment with one epidural blood patch, 33% of patients obtained complete and permanent relief, 50% partial relief and 12% no relief. Twenty-nine percent of patients required a second epidural blood patch of which 50% were completely successful, 36% were partially successful and 14% gave no relief.⁶ Thus epidural blood patch is considered as a gold standard for the management of post dural puncture headache.

Conclusion

Post-dural puncture headache is a complication that should not to be treated lightly. There is the potential for considerable morbidity, even death. In the majority of cases, the problem will resolve spontaneously. In some patients, the headache lasts for months causing serious discomfort to the post natal mother, compromising the neonate in breastfeeds. Thus it needs prompt recognition and treatment.

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Distance Learning in Nursing Education

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Abstract

Use of online technology has brought innovation in distance learning. The distance learning was initiated dates back in 1890s via use of radio and televised courses. Increased demand of distance learning is because of the advancement in technologies. Distance learning aims to provide accessibility and feasibility of acquiring education to disadvantaged group of individuals. The two common forms of communications used in distance learning include synchronous and asynchronous communications. In nursing education, distance learning is used to offer specialized courses to nurses. It is an effective strategy to provide higher education to nurses, who are working, having time constraints, having financial constraints, or having domestic issues. Besides advantages, there are certain barriers to distance learning in nursing education including feasibility of learner, faculty, and organization. Combined interdisciplinary efforts are required to impart successful distance learning program.

Key Words

Distance learning, Nursing education, Innovative technology

Introduction

Advancement and innovation in technology have brought a paradigm shift from class room based learning to distance learning. Invention of new and innovative technology is useful in bringing the education to students rather than students to education. Distance learning is considered as an effective and efficient way of imparting education. It provides an opportunity of enhancing education to everyone. Distance learning is defined as a process of education through which instructions are imparted when learner and instructor are not at the same place^{1,2,3}.

History of Distance Learning

Distance learning is not a new phenomenon; it initiated dates back around 100 years in Europe, Africa, and Asia. An external degree program was initiated by The University of Queensland as early as in 1890s. Another well known British Open University was initiated in 1971 and now around 200,000 students have been served by this well known university. In United States distance learning was initiated in the late nineteenth century. United States began distance learning initially via radio and televised courses. Canada is considered as the world leader in distance learning. Almost all states of Canada have initiated programs to bring education to people living in remote areas¹. Since then the distance learning got popularity. The advancement in distance learning took place after the invention of innovative technology.

Forms of Communication for Distance Learning

There are two forms of communication in distance learning including synchronous and asynchronous communication. Synchronous communication includes the communication among individuals at same point in time. It includes face-to-face communication, online chat, and telephonic conversation. Asynchronous is another common mean of communication in distance learning. It allows individual to leave message for other to read, hear, or watch. It includes emails, voice mails, answering machine, moodles, and blogs⁴. Either or both of these means are used to impart distance learning based on the need of the course and availability of technology.

Aims and Functions of Distance Learning

Distance learning aims to assist individuals in personal growth, professional development and training. In addition, it aims to bring change in attitude of people via making individuals more familiar with innovative technology. Distance learning provides flexibility to students by allowing them to access education at their own place. Moreover, aim of distance learning is to provide opportunity of acquiring education to disadvantaged group including house wives, working individuals or individuals residing in remote areas².

Distance learning treats every individual as an autonomous agent. It can accommodate all students regardless of their age, sex, employment status, or marital status. Distance learning includes the use of new and innovative technology along with the connectivity. This provides an opportunity to individuals who are interested in supplementary learning opportunities. Distance learning requires careful planning from student, faculty members and university/ college/ school in order to achieve desired goals².

Implication of Distance Learning in Nursing Education

Advancement in the field of education and evolving concept of distance learning has brought a change in nursing education. With the innovation in the education, it is essential to bring reform in nursing education system⁵. The increase demand of advance nursing education can be achieved by incorporating distance learning strategy in nursing education. Distance learning strategy contributes positively to nursing education and it can be enhanced via use of technology for imparting education. Distance learning allows nurses to take specialist courses in order to enhance knowledge and skills⁵. The use of distance learning in nursing education also assists in fostering evidence based nursing care.

Utilizing distance learning in nursing education is essential to provide opportunities to nurses working in remote areas,

nurses who cannot join nursing educational programs due to domestic problems, nurses who are working and cannot be relieved by organization, and nurses who believe that they cannot cope with regular full time studies². Distance learning in nursing education provides an opportunity to make courses accessible for large number of nurses. In addition, nurses can access and take the courses that are directly applicable to their areas of expertise⁶.

Issues and Barriers in Distance Learning

Distance learning has many advantages attached to it; however certain barriers and issues may hinder the effectiveness of distance learning. It may include issues with learner, teacher, and university/ college/ school. The learner taking course on distance learning may get affected if he/she is not familiar with computer skills. Access to computing facility at home is another barrier for student who wanted to take distance learning course. Individuals residing in remote areas or having limited resources may face difficulty in accessing computing facility. In addition, individual's attitude towards using computer may also serve as a barrier. Certain individuals may not have interest in learning the use of new computer software that are essential for imparting web based distance learning. Besides learner, faculty also needs to be proficient in using new technologies. Implementation of distance learning requires instructional designer, graphic artist, programming specialist, project manager, subject-matter expert, quality assurance person, curriculum planner and database specialist. Therefore, it is essential for faculty member to collaborate with other administrative personals to impart effective education via distance learning. In addition to learner and faculty, university/ college/ school may also face barriers to imply distance learning. Inadequate connectivity, hardware and software resources may hinder to impart distance learning⁷.

Facilitating Distance Learning

Promoting effective distance learning requires combined efforts of learner, faculty member, administration, and

institution. Faculty should promote active learning, keeping in view the learning needs of students. Besides technology, faculty and university should promote social and psychological environment in distance learning in order to facilitate students. Although in distance learning, learners and faculty are not present at same place or at same time, one should consider mutual respect. Lastly, faculty should build healthy student-teacher relationship in order to prevent the sense of isolation among students⁶.

Conclusion

Distance learning is a process that deals with imparting knowledge when learner and facilitator are separated by place and time. It provides flexibility and accessibility of education to individuals. Nursing education has to bring reform, by introducing the concept of distance learning. Efforts need to be made by learner, faculty member, and university to promote effective distance learning education.

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A Study on Effectiveness of Deep Breathing Exercise on Pulmonary Function Among Patients with Chronic Airflow Limitation

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Abstract

Objective

To evaluate the effect of deep breathing exercise on the pulmonary function of patients with chronic airflow limitation.

Method

The study design adopted was a true experimental design with pretest- post test control group design. Population comprised of patients with chronic airflow limitation from a selected hospital at Mangalore. 40 patients fulfilling the inclusion criteria were randomly grouped into 20 as experimental and 20 as control. The PFT parameters (FEV1 and FVC) were assessed in the control and experimental group before the intervention. Deep breathing exercise was provided to the experimental group 2 times per day for a total of 7 days. On the 7th day after the treatment, the PFT parameters under study were reassessed in the control and the experimental group and were compared.

Result

Majority of the sample 38(95.0%) were above 50 years. Out of 40, 27 (67.5%) were males and 13(32.5%) were females. 25(62.5%) of samples were industrial workers, and 7(17.5%) were Beedi rollers. Majority of the subjects 29(72.5%) were from rural area and 11 (27.5%) were from urban area. Among 40 samples majority 27(67.5%) were smokers and 13(32.5) were non smokers. Following the intervention (Deep breathing Exercise) the mean effectiveness score of FVC in the experimental group was found to be 23.80 and in control group the score was 7.70. When considering FEV1, the mean effectiveness score of experimental group was 26.80 and that of control group was found to be 6.90. ($P < 0.05$). Thus deep breathing exercise was found to be statistically significant in improving the pulmonary function of patients with chronic airflow limitation. There was no significant association between pulmonary function and selected demographic variables at 0.05 level of significance.

Conclusion

The breathing pattern of most people with COPD is shallow, rapid and inefficient; the more severe the disease, the more inefficient the breathing pattern. Practice of deep breathing exercise reduces the respiratory rate, increases alveolar ventilation and sometimes helps expel as much air as possible during expiration. The present study revealed that 7 days of deep breathing exercise for clients with chronic airflow limitation was very effective in improving pulmonary function.

Nurses are involved with COPD patients across the spectrum of care, hence better management really makes a difference to people's lives and will be a fulfilling role for many nurses as a care giver.

Key Words

Deep Breathing exercise, pulmonary function, chronic airflow limitation, COPD, Pulmonary function test.

Introduction

Life is a series of breaths. Human beings can live a long time without food, a couple of days without drinking, but life without breath is impossible. Something so essential deserves our attention. Optimal breathing provides more vitality and better quality of life. But today's industrialized world increases the risk of inhaling dangerous chemicals with each of this breath due to air pollution. Breathing in these chemicals results in serious health problems. The World Health Organization states that 2.4 million people die each year from causes directly attributable to air pollution, with 1.5 million of these deaths attributable to indoor air pollution¹. Recent evidences also suggest that chronic exposure to high levels of ambient particulate matter is associated with decreased pulmonary function and the development of chronic airflow obstruction².

A study by the University of Birmingham has also shown a strong correlation between COPD related deaths and air pollution from motor vehicles. Research conducted by NIEHS scientists has shown that long-term exposure to air pollutants increases the risk of respiratory illnesses such as allergies, asthma, chronic obstructive pulmonary disease, and lung cancer³. Worldwide more deaths per year are linked to air pollution than to automobile accidents. Direct causes of air pollution related deaths include aggravated asthma, bronchitis, emphysema, lung and heart diseases, and respiratory allergies.

Deep breathing is important from the standpoint of health. It can decrease the magnitude of respiratory diseases resulting from environmental pollutions by increasing the respiratory muscle strength. Pulmonary function better can be improved by breathing exercises. Review of available literature has indicated few studies on the effect of the respiratory exercises on respiratory muscle strength on normal individuals. Thus the investigator was interested to explore the effectiveness of deep breathing exercise as one of the strategy in patients with chronic airflow limitation and find its effectiveness on the pulmonary function parameters namely FVC and FEV1.

Objectives

1. To assess the pulmonary function of patient with chronic

airflow limitation.

2. To evaluate the effect of deep breathing exercise on the pulmonary function of patients with chronic airflow limitation.
3. To compare the pulmonary function of patient in control and experimental group after the intervention
4. To find out the association between pulmonary function and selected variables such as age, occupation, area of residence, smoking status and physical activity.

Hypotheses

All the hypotheses will be tested at 0.05 level of significance

H1- The mean post interventional scores of FEV1 and FVC of the patients practicing deep breathing exercise will be significantly higher than their mean pre-test measurement values.

H2-There will be a significant difference between the pulmonary function of patients in the experimental and control group after the intervention.

H3-There will be a significant association between the pulmonary function values with selected variables like age, occupation, area of residence, smoking status, and physical activity level.

Methodology

An experimental approach with randomized control clinical trial design was selected for this study. The study was conducted in K.S Hedge charitable hospital, Derlakatte. The population comprised of patients who were admitted in the Medical ward with the diagnosis of chronic airflow limitation. Sample consisted of 20 patients each in the experimental and control groups. The sampling was done in two phases. In the first phase hospital was selected for the intervention using convenient sampling technique. In the second phase, the patients who had chronic airflow limitation and fulfilled the inclusion criteria were selected by purposive sampling method. The selected samples were randomly allocated, 20 in experimental and 20 in control group for the intervention of deep breathing exercise using lottery method.

The data collection instruments consisted of a Demographic Performa, an Observation checklist and a device known as Schillers Spirometer for measuring the pulmonary function parameters (FEV1 and FVC). Reliability of the observation checklist and the Spirometer was obtained by inter-rater reliability and the reliability coefficient was found to be 0.95& and 0.93 respectively. Pilot study was conducted from 9/8/2010-14/8/2010 to find the feasibility of the study. The researcher underwent training on Deep breathing exercise for a period of one week under supervision and was found eligible to administer the exercise. A formal permission was obtained from the Medical officer and Head of the medicine department of the K.S Hegde medical college Deralakatte. The diagnostic cases of COPD were identified. The patients with chronic airflow limitation for the pilot study possessed the same characteristics as that of the sample for final study. The control group and experimental group were selected by using the simple random assignment. An informed consent was obtained after explanation of the study. PFT was measured in both the groups to assess the pulmonary function. After

the pretest the experimental group underwent deep breathing exercise for a period of 7 days, twice a day for 15 minutes. By using the performance checklist, the procedure was observed for 20 patients in experimental group individually for a total of 7 days by 2 observers. After the 7th day the post test was administered to both the experimental and the control group to identify the effectiveness of the deep breathing exercises.

Results and Discussion

The collected data was analyzed using descriptive and inferential statistics. Section I comprised descriptions of sample characteristics and was presented in frequency and percentage. (Table 1)

Table 1: Distribution of sample according to the demographic characteristics in terms of frequency and percentage n=40

Demographic characteristics	Frequency (f)	%
1. Age		
20-30yrs	0	0
31-40yrs	0	0
41-50 yrs	2	5
Above 50	38	95
2. Gender		
Male	27	67.5
Female	13	32.5
3. Occupation		
Beedi rolling	7	17.5
Industrial work	25	62.5
Others	8	20
4. Place of stay		
Urban area	11	27.5
Rural area	29	72.5
5. Smoking status		
Yes	27	67.5
No	13	32.5
6. No. of Beedi/Cigarettes		
1-3	0	0
4-7	0	0
8-10	0	0
More than 10	27	67.5
7. Smokers in the family		
Yes	35	87.5
No	5	12.5

Data in Table 1 shows that highest percentage 38 (95.5%) were in the age group of above 50 years. Similar findings were reported in a study conducted by Lea Schirnhofner which revealed that the prevalence of COPD was highest among the elderly.⁴

Majority of the subjects were males 27(67.5%) and 13(32.5%) subjects were females. This finding is consistent with a survey to estimate gross burden of COPD in India which also concluded the overall male: female ratio was 16:1 in the estimated total number of adult patients.⁵Distribution of the subjects according to the occupation performed, 7 (17.5%) of them were Beedi rollers, 25(62.5%) were industrial workers, and 8 (20%) were performing other kind of jobs. This finding is supported by a study conducted by Alice Melville et al who stated that individuals with a history of occupational exposures were about 50 per cent more likely to report respiratory

Table 2: Distribution of Pretest Scores of pulmonary function parameters (FVC&FEV1) in patients with chronic airflow limitation in experimental group. n=20

Staging of airflow limitation	Score range		Frequency		Percentage (%)	
	FVC	FEV1	FVC	FEV1	FVC	FEV1
Mild	70-79%	.> 80%	0	0	0	0
Moderate	40-69	30%-80%	10	17	50	85.0
Severe	<40	< 30%	10	3	50	15.0
Total	20	20	20	20	100	100

Table 3: Distribution of Pretest Scores of pulmonary function (FVC&FEV1) in patients with chronic airflow limitation in control group n=20

Staging of airflow limitation	Score range		Frequency		Percentage (%)	
	FVC	FEV1	FVC	FEV1	FVC	FEV1
Mild	70-79%	.> 80%	2	3	10	15.0%
Moderate	40-69	30%-80%	14	17	70.0	85.0%
Severe	<40	< 30%	4	0	20	0%
Total	20	20	20	20	100	100

symptoms as compared to those who had not been exposed. They also identified that people working in industrial fields suffered about a fifth more from COPD.⁶

Majority of the samples 29 (72.5%) were from rural area and few 11 (27.5%) were from urban area. The smoking status reveals that majority 27(67.5%) were smokers and 13(32.5%) were non smokers. The study results are consistent with the World Health Organization (WHO) estimation that in high-income countries, 73% of COPD mortality is related to smoking, with 40% related to smoking in nations with low and middle income populations.⁷

Among 27 (67.5%) smokers, all of them smoked more than 10 Beedi/Cigarettes per day.

Among the smokers 24 ((60%) of them had mild to moderate airflow limitation and 3 (7.5%) had severe airflow limitation. But in non smokers only 13 (32.5%) had mild to moderate airflow limitation and none had severe airflow limitation which throws light on the fact that there is association between airflow limitation and smoking in COPD patients. Among 40 samples, 35 (87.5%) samples had family members who were smokers

Section II comprised of assessment of pulmonary function parameters in patients with chronic airflow limitation and the data is represented in (Table 2 and Table 3)

Data in table 2 and 3 shows the distribution of the patient with chronic airflow limitation according to FVC&FEV1 scores.

Out of 20 samples in the experimental group assessed for FVC, half of the group 10 (50%) were having moderate airflow limitation and the other half 10(50%) were having severe airflow limitation. Out of 20 samples assessed for FEV1, 17 (85%) were having moderate chronic airflow limitation, and 3(15%) were having severe airflow limitation

Out of 20 samples in the control group assessed for FVC, 2 (10%) were having mild airflow limitation, 14(70.0%) were having moderate airflow limitation and about 4(20%) were having severe airflow limitation and considering the FEV1 score, 3 (15.0%) had mild airflow limitation, 17(85.0%) were with moderate airflow limitation and none of the samples were with severe airflow limitation. The finding of the present study is also supported by an experimental study conducted by Srivastava et al, to document the normal values of pulmonary function test in children and changes occurring in their values with various respiratory disorders. The lung function studied were FVC, FEV1, FEV1/FVC.It was found out that in children with bronchial asthma, the FEV1/FVC and PEFr were reduced in accordance with the severity of the disease⁸.

Section III dealt with the effectiveness of deep breathing exercises on pulmonary function in patients with chronic airflow limitation and is presented in (Table 4 and Table 5)

Data presented in table 4 and table 5 indicates that the mean pretest FVC score of the patient with chronic airflow limitation in the experimental group was 42.80. Whereas, after the intervention the post test mean FVC score was

Table 4: Mean pre-test and post-test pulmonary function (FVC&FEV1) scores of patients with chronic airflow limitation in the Experimental group n=20

Experimental Group	Mean pulmonary function score		Standard Deviation	
	FVC	FEV1	FVC	FEV1
Pre test scores	42.80	44.25	12.899	14.045
Post test Scores	66.60	71.05	19.195	15.209

Table 5: Mean pre-test and post-test pulmonary function (FVC&FEV1) scores of patients with chronic airflow limitation in the Control group n=20

Control Group	Mean pulmonary function score		Standard Deviation	
	FVC	FEV1	FVC	FEV1
Pre test scores	52.85	59.25	16.093	19.769
Post test Scores	60.55	66.15	15.859	20.376

increased to 66.60 and for FEV1 mean pretest score was 44.25 and after the intervention the post test mean score was increased to 71.05. On the other hand mean pretest FVC score of the patient with chronic airflow limitation in the control group was 52.85 whereas, the post test mean FVC score was increased to 60.55 and for FEV1 mean pretest score was 59.25 whereas, post test mean score was increased to 66.15. This data reveals that deep breathing was an effective intervention in improving the pulmonary function of patients with Chronic airflow limitation.

There was a significant difference between the pulmonary function (FVC and FEV1) scores of patients in the experimental (t_{cal} 7.25 & 8.21) and control group after the intervention (t_{cal} 7.20 & 6.63). Reviews of McHugh P et al, V Singh have revealed a significant improvement in these parameters after the intervention.^{9, 10}

Section IV dealt with the comparison of pulmonary function scores (FVC&FEV1) between experimental and control group and were statistically analyzed using independent sample t-test. The calculated value of pulmonary function (FVC&FEV1) scores using independent t-test, t_{cal} was 4.662 and 5.808 respectively, which was more than the table value $t_{tab}(38) = 2.021$ at 0.05 level of significance. Hence it is inferred that there is a significant difference between the pulmonary function of patients in the experimental and control group after the intervention. Similar findings are seen in the study conducted by Virendra Singh, where patients performing deep-breathing exercises were compared to a control group who performed no breathing exercises postoperatively. Compared to the control subjects, the patients in the deep-breathing group had a significantly marked elevation in FVC (to $71 \pm 12\%$, vs. $64 \pm 13\%$ of the preoperative values) and FEV1 (to $71 \pm 11\%$, vs. $65 \pm 13\%$ of the preoperative values)¹⁰

Section V dealt with the association between pulmonary function and selected demographic variables. Chi-square test was computed in order to determine the significance of association between the pulmonary function and the selected demographic variables. Statistically no significant association was seen between pulmonary function and selected demographic variables. (Age, gender, occupation,

area of residence, smoking status, physical activity). This can be attributed to the limited sample size.

Conclusion

COPD continues to cause a heavy health and economic burden all around the world. It is said that exercises prescription is not done by the nurses, which is a major misconception.

A nurse with precious knowledge on breathing exercises can teach as well as motivate the common man to practice this as a part and parcel of their daily routine in their families. This exercise therapy can be implemented in hospital setting, hospices, community setup, with cooperation of the clients and the constant motivation and commitment by the nurse will obtain better results and thus help clients in maintaining his health, limiting exacerbations of COPD, and preserve his day-to-day functional abilities and, subsequently, his quality of life. This will give a lasting benefit to the nurse practitioner both personally and professionally.

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Effectiveness of Plain Ice Cubes Versus Flavoured Ice Cubes in Preventing Oral Mucositis associated with Injection 5- Fluorouracil among Cancer Patients

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Abstract

Palliative care aims to enhance the quality of life of patients and their families who are facing a life-threatening illness. It focuses on increasing comfort through prevention and treatment of suffering. Injection 5-Fluorouracil (5-FU) is mostly administered to cancer patients suffering from colon cancer, cancer of the rectum and some other severe malignancies. Mucositis is one of the major side effects of injection 5-Fluorouracil, and it delays cancer treatment and alters daily living of the patient by then his family. The study focuses on prevention of mucositis among cancer patients receiving 5-fluorouracil using plain versus flavored ice cubes to care their pain and improve their quality of life with fewer complications. The purpose of this study was to assess the effectiveness of cryotherapy in preventing oral mucositis associated with 5-FU in cancer care. The objectives of the study were to assess the oral mucosa before and after the treatment, to identify the experiences of patients during the therapy while sucking the ice cubes and compare the effectiveness of plain ice cubes versus flavored ice cubes in preventing oral mucositis. An experimental approach with Cross-over Design was adopted to identify the difference in the effectiveness of the treatments in both the groups. The maximum (14) number (66.9%) of patients were in the age group of 34-65 years, thirteen (59.1%) were males, all 22 (100%) of them were suffering with cancer of the Gastro Intestinal tract. The majority 15 (68.2%) have received injection 5-FU with Leucovorin, Twenty (91%) were diagnosed to have cancer since 1-12 month duration, and Nineteen (86.4%) of them were operated once. The check list scores of the patients showed that there is a difference in the experiences of the patients while sucking plain ice cubes and flavored ice cubes. As a whole the results showed that the flavored ice cubes were effective in preventing mucositis and the patients were in favor of the flavored ice cubes.

Key Words

Ice Cubes- plain and flavored, Cancer care, Injection 5 -Fluorouracil, Mucositis cross-over design, Cryotherapy, patient's experiences.

Introduction

Inflammation of the mucous membranes of the gastrointestinal tract, or mucositis, can impair the quality of life and treatment of patients with cancer. Mucositis is a common and potential side effect of chemotherapy with 5- Fluorouracil (5-FU), which is used for severe malignancies. Finding from a randomized controlled trial conducted by Mahood et al (1991), revealed that oral cryotherapy (sucking of ice chips) for a period of 30 minutes around the time of 5-FU injections significantly inhibited the development of mucositis.

Objectives of the study were to:

1. Assess the oral mucosa before and after the administration of injection 5-FU.
2. Identify the experiences of patients during the therapy while sucking the ice cubes.
3. Compare the effectiveness of plain ice cubes and flavoured ice cubes in preventing oral mucositis.

The study attempted to examine the hypotheses, all the hypotheses were tested at 0.05 level of significance.

H₁- there will be a significant difference in the experiences of the patients receiving plain ice cubes and flavored ice cubes

H₂- there will be a significant difference in the effectiveness of plain ice cubes and flavored ice cubes in preventing oral mucositis

Mucositis being the effect which may vary with the treatment is considered as the dependent variable and the treatment cryotherapy (sucking of plain and flavored ice cube) is the independent variable. Extraneous variables were age, taste preference (whether they like sweet and milk flavor or not).

Research Methodoly

An experimental study with Cross- Over Design was adopted to assess the effectiveness of plain ice cubes versus flavored ice cubes in preventing mucositis using simple random sampling.

Inclusion criteria

1. Above 18 years of age
2. Receiving 5-Fluoruracil with or without combination
3. Willing to participate in the study
4. Receiving bolus dose of injection.

Exclusion criteria

1. Patients receiving 5-FU with diabetes mellitus.

The tools included in the study were:

Demographic proforma: The demographic variables used in the study were age, gender, type of cancer, injection 5-fluorouracil with or without combination, duration after diagnosis, how many times surgery was performed.

Check list on the experiences of patients receiving plain and flavored ice cubes was introduced using interview technique;

Visual Assessment Guide- WHO Grading- Mucosa was assessed before treatment, after the treatment on the 5th day and on the 15th day after treatment.

Visual Analogue Scale having scores from 0-10 was used to assess their comfort level after the treatment.

All the tools were validated and modified according to the expert's suggestions. Reliability was established by introducing the tool for 10 patients. Pearson's product moment correlation

was used for analysis and all the tools were reliable.

Plain ice cubes were being used during the bolus dose of injection 5-FU in oncology wards to prevent and control mucositis, so the plain ice cubes were taken as control treatment and the flavored ice cubes is the newer modality of treatment introduced, that is given to experimental group.

Preparation of plain and flavoured ice cubes: plain ice cubes were prepared with plain water frozen for 8-12hours and the ice cubes were of 3x2x2 size.

Flavoured ice cubes were prepared with milk and sugar; Nandini toned milk was used, five tea spoons of sugar was added to 500ml of milk and was frozen for 8-12hours, size of the cubes was same as the plain ice cubes and administered to the patient 5 minutes before the injection, during injection and 30 minutes after completing the injection, total time duration was 45 minutes.

A total of 22 patients were enrolled in the study. Using chit method the first patient was assigned for the groups. The control group received plain ice cubes in first cycle of 5-Fluorouracil was crossed over by flavored ice cubes for the next cycle. The ice cubes were administered for 2 consecutive cycles of 5-FU. The treatment was continued for 5 days of the cycle. Injection 5-Fluorouracil is given in 5 cycles, one cycle is of 5 days, and the gap between cycles is 21 days. Two consecutive cycles were considered for this study.

Ten patients have received the treatment for first and second cycle and 12 patients have received treatment for 2nd and 3rd cycles. Eleven patients have received plain ice cubes first and remaining 11 patients have received flavoured ice cubes first and then crossed over.

Patients who were prescribed injection 5 Fluorouracil were examined by the researcher and assessment of oral mucosa was done using visual Assessment Guide- WHO grading, which has 0 to 4 grades. Patients who were falling under '0 grade' (no mucositis) were only taken for the study. First patient had to receive plain ice cubes according to the selection and was started with plain ice cubes 5 minutes before the administration of injection 5-fluorouracil, continued during bolus dose and for 30 minutes after completing the injection.

Patient's oral mucosa was assessed after the treatment, on 5th day and 15th day. Patients were interviewed using checklist for the experiences after sucking the ice cubes and documented, visual analogue scale was introduced and asked the patient to note the comfort level in a 0-10 score scale.

Results

Both the groups have gone through both treatments and exposed to similar experiences and were able to explain their experiences as well as answered the interview. The analysis was done by using percentage, frequency and Wilcoxon's signed-rank test.

Results showed that maximum number of patients 14 (63.63%) were in between the age group of 34-65 years, majority of the them 13 (59.1%) were male, all the patients 22 (100%) were suffering with cancer of the Gastro Intestinal tract, maximum 15 (68.2 %) were receiving injection 5-FU with leucovorin, maximum 20 (90.90%) were diagnosed to have cancer since 1-12 months of duration, and 19 (86.4 %) were operated once.

The check list scores of the experience of patients showed that the median change is 2.5, that is plain ice cubes 14.50 and flavored ice cubes is 17, which is statistically significant. The findings showed that there is a difference in the experiences of the patients with plain ice cubes and flavored ice cubes, the patients had better experience while sucking the flavored ice cubes whereas they were not comfortable sucking the plain ice cubes. (Table 1)

Visual assessment guide- WHO grading scores of plain ice cubes were different from the scores of the flavored ice cubes on the 5th day as well as 15th day.

Patients were assessed on the 5th day and on 15th day after the treatment. The assessment on the 5th day showed that 10 (45.5%) patients who received plain ice cubes had mucositis and remaining 12 (54.5%) did not have mucositis and two (9.1%) patients had mucositis on 15th day after treatment. But after sucking the flavored ice cubes all patient's mucosa was healthy (grade 0) on 5th day as well as on 15th day after treatment. This showed that the flavored ice cubes were effective in preventing mucositis in cancer patients who received injection 5-FU.

Visual analogue Scale findings showed that maximum 15(68.18%) patients have scored "most comfortable", 6(27.27%) patients have scored "comfortable" level for the flavored ice cubes and maximum 12(54.54%) patients have scored "least comfortable", 4(18.18%) patients have scored "comfortable" and 2(9%) patients have scored "most comfortable" level for plain ice cubes, showed that the flavored ice cubes were more favored by the patients. (Figure 2)

Other Findings

"Four" patients have reported that Flavoured ice cubes were tasty and soften the tongue and palate while sucking them where as Plain Ice Cubes hardens the tongue and mouth.

"Three" patients have reported that Flavored Ice Cubes were easy to suck, able to swish them continuously.

Table 1: Descriptive Analysis of the Experience Checklist

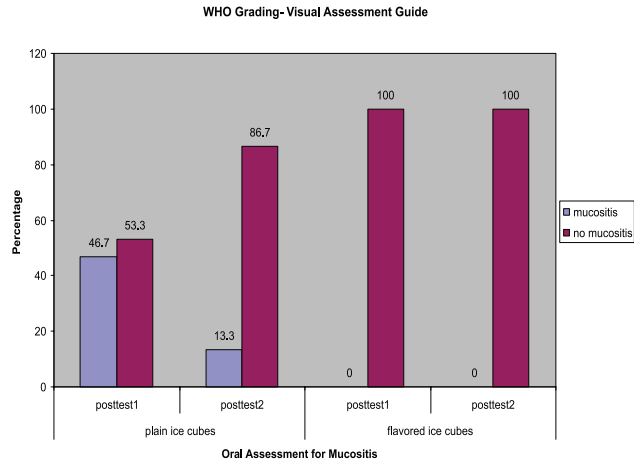
The Wilcoxon's signed Rank Test Computed for the Experiences with Plain Ice Cubes and Flavored Ice Cubes (N=22)

Treatment		Mean ranks	Sum ranks	Z
Plain ice cubes	Negative ranks	.00	.00	-4.187
	Positive ranks	11.50	253.00	
-Flavored ice cubes				

P < 0.01

	Checklist scores for plain ice cubes	Check list sores for flavoured ice cubes
Minimum	13.00	16.00
Maximum	15.00	17.00
Percentile 25	14.00	17.00
50	14.50	17.00
75	15.00	17.00

Fig. 1: Visual Assessment Guide- WHO grading- post test 1 and 2 comparison for plain ice cubes and flavoured ice cubes.



“Two” patients have reported that they were able to suck the flavoured ice cubes continuously and after the injection their appetite was good and were able to have solid food, whereas after sucking Plain Ice cubes they were finding it difficult to have solid food, and were not able to feel the taste of the food.

Most of the patient’s 20 (99.1%) preferred to have flavoured Ice Cubes for the remaining cycles after both the treatments of Plain and Flavoured ice cubes.

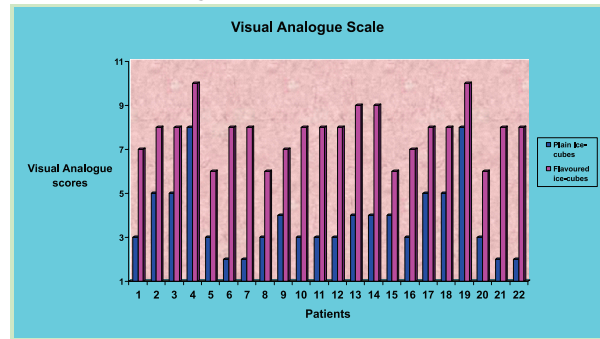
Conclusion

As a whole the results showed that the flavoured ice cubes were effective in preventing mucositis and the patients were favoring the flavoured ice cubes. The finding also showed that the patients had better experience while sucking the flavoured ice cubes where as they were not comfortable sucking the plain ice cubes.

Acknowledgement

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Fig. 2: Visual analogue scale to assess the comfort level of patient while sucking ice cubes.



Prakash former Dean, MCON, MU, Manipal, my guide Ms. Elsa Sanatombi Devi, co-guide Ms. Jyothi R. K., and all the staff nurses who were working in oncology units during the data collection period. This thesis is dedicated to Late. Wilfred Alban Rodrigues as his experiences of sucking the plain and flavoured ice cubes have motivated me to do this study.

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Disappearance or Muffling of Korotkoff's Sounds: Which is the better Reflection of Diastolic Pressure in Aortic Regurgitation?

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Introduction

In patients with advanced aortic regurgitation brachial arm Korotkoff sounds may be heard over brachial artery even when sphygmomanometer cuff has been completely deflated. Diastolic pressure obtained by auscultatory methods are therefore commonly recorded as zero – a physiological impossibility. It has been recommended that both the muffling¹ and the disappearance² of Korotkoff sounds be used as auscultatory guide for diastolic pressure.

Emphasis on disappearance of sound as the measure of diastolic pressure has been severely criticized by Robert et al³, they compared direct manometric pressure with cuff pressure in same brachial artery in 47 patients and found that muffle of sound was 3-4 cm higher than the diastolic pressure, and the disappearance of sound 7mm lower. They concluded that the muffle is a better index of diastolic pressure than the disappearance of sound.

Sidney Goldstein et al⁴ obtained the blood pressure by auscultation over brachial artery compared to direct intra-arterial measurement in the same vessel in 8 patients with aortic regurgitation & no cessation of Korotkoff sounds. Cuff pressures at the onset of arterial sounds averaged slightly lower than systolic pressure measured directly. Muffling of the sounds was readily recognized and averaged 2.1 mm of Hg higher than direct diastolic pressures and concluded that the cuff pressure at the onset of arterial sounds is reasonably accurate reflection of diastolic pressure despite persistence of sound to zero cuff pressure.

Therefore, this research study is aimed at determining the better reflection of diastolic pressure i.e. Disappearance (Phase V korotkoff sound) or muffling of sounds (Phase IV korotkoff sound) in aortic regurgitation.

Methodology

Research approach was quantitative with prospective non experimental observational design.

Objectives

1. To record the sphygmomanometric and direct arterial systolic and diastolic pressures in patients with aortic regurgitation.
2. To compare the systolic and diastolic pressures obtained by sphygmomanometer with intra-arterial pressures recorded during catheterization.
3. To correlate the systolic and diastolic pressure obtained by sphygmomanometer with intra-arterial pressure recordings.

Setting

Cardiac catheterization laboratory of All India Institute of Medical Sciences, New Delhi.

Inclusion Criteria

Patients diagnosed with severe aortic regurgitation and who were undergoing cardiac catheterization were included in the study.

Exclusion Criteria

The subject who had peripheral vascular disease, having any contraindication for cardiac catheterization, and any complication arising during cardiac catheterization were excluded from the study.

Sample & Sampling Technique

A total of 30 patients diagnosed with aortic insufficiency were selected by convenient sampling.

Data Collection Tools

For non invasive BP measurement

Standard mercury sphygmomanometer was used to take blood pressure reading in the arm.

For intra-arterial pressure measurement:

- A 6F or 7F arterial sheath.
- A 6F or 7F Judkin's right coronary artery catheter.
- A standard transducer.

Data Collection Procedure

Cuff pressure recording

- Patient was placed in supine position & extremities placed comfortably in neutral position.
- Measurements were taken after at least 5 minutes of rest. Noises etc. were avoided and constrictive clothing was removed.
- The level of mercury was adjusted at zero level.
- Left arm pressure was taken by palpating brachial artery & appropriately sized cuff was placed on subject's arm with tubings directly on brachial artery.
- Appearance of first sound was used to define the systolic blood pressure and the disappearance (Phase V) / as well as muffling (Phase IV) of the sounds was used to define the diastolic pressure.
- Blood pressure was measured three times or more until the variability in reading is less than 10mmHg.

For intra-arterial pressure measurement

- Cardiac catheterization was performed by experienced cardiologist under local anesthesia from the right groin following aseptic technique.
- Femoral artery was cannulated with 6F or 7F arterial sheath.
- An end hole catheter such as Judkin's right coronary catheter was used to record intra-arterial pressure using a standard transducer prior to performing any angiogram.
- Intra-arterial pressures (systolic, diastolic and mean) were recorded from the right axillary artery.
- Near simultaneous measurement of arm pressures with the sphygmomanometer cuff were also obtained whenever possible.

Ethical Issues

Ethical clearance was obtained from ethics committee of the

Demographic characteristics of sample

Table I: N=30

Variable	Minimum	Maximum	Mean \pm S.D
Age	16.00 yrs	66.00 yrs	37.96 \pm 12.55 yrs.
Height	149.00 cm	180.00 cm	163.2 \pm 9.4cm
Weight	30.00 Kg	76.00 Kg	55.53 \pm 10.57Kg
Upper arm circumference	26.00cm	33.00 cm	29.13 \pm 2.37cm

Physical Examination

Table II: N=30

Variable	Number	Percentage
Collapsing pulse	30	100%
Cardiomegaly	30	100%
Traube's sign	18	60 %
Widened pulse pressure		
40 – 60 mm Hg	4	13%
> 60 mm Hg	26	87%
Early diastolic murmur	30	100%

Clinical variables

Table III: N=30

Variable	Number	Percentage
Diagnosis		
RHD (Aortic Regurgitation)	30	100
Associated Lesion		
Mild AS	2	6.7
Coarctation of Aorta	1	3.3
Mild MR	4	13.3
Moderate MR	3	10.0
Severe MR	2	6.7
Mild MS	3	10.0
Severe MS	1	3.3
Severe MR, Mild MS	12	40.0
None	2	6.7

Correlation Between Cuff & Intra-arterial Diastolic Pressures

Table VIII: N = 30

Variable	'r' value	'p' value
Arm diastolic phase IV pressure & axillary artery pressure	.857**	.000
Arm diastolic phase V pressure & axillary artery Pressure	.625**	.001

Arm Diastolic Pressures

Table IX: N=30

Arm cuff phase IV diastolic pressure	Axillary artery diastolic pressure	Arm cuff phase V pressure
70	50	50
46	52	0
104	97	84
78	82	30
46	48	20
50	64	0
50	43	20
76	66	60
76	78	60
38	33	0
60	50	48
46	41	0
30	38	0
70	74	0
30	27	0
64	72	0
80	70	70
60	54	20
44	41	0
98	70	80
80	60	60
90	74	80
90	80	80
64	64	0
80	70	70
80	54	60
70	64	58
98	70	80
30	38	0
70	64	60

institution. Informed consent from all subjects was taken and confidentiality of information of subjects was maintained.

Results

- The study included 30 subjects diagnosed with severe aortic regurgitation. The demographic characteristics of group are given in Table I. The average age of the participants was 37.96 \pm 12.25 yrs, ranged between 16.00 – 66.00 years. The average height and weight of participants were 163.2 \pm 9.4 cm and 55.53 \pm 10.57 kg respectively. The upper arm circumference ranged between 26.00 – 33.00 cm, average 29.13 \pm 2.37 cm.
- Table II depicts that on physical examination collapsing pulse,

cardiomegally and early diastolic murmur were present in all the 30 subjects, whereas Traub's sign was present in 60% subjects (18 out of 30 subjects). Widened pulse pressure was present in all subjects.

- Table III depicts the associated lesion present in the patients along with aortic regurgitation.
- Table IV depicts the correlation of diastolic phase IV and V pressure with intra-arterial pressure, it was found that Phase IV (muffling of sounds) correlated very well with intra-arterial pressure which was highly significant ($r = .857$, p value $< .000$) whereas Phase V diastolic pressure (disappearance of sounds) correlated moderately with intra-arterial pressure.
- Table V depicts that phase IV (muffling of sounds) pressure reflected closely the true diastolic pressure when the phase V (disappearance of sounds) pressure persisted till zero.

Discussion

The study indicated that phase IV (muffling of Korotkoff sounds) pressure correlate well with intra-arterial diastolic pressure when phase V (disappearance of sounds) pressures persisted till zero. The same results were found by Ragan & Bordley⁵, Robert et al³ and Goldstein et al⁴.

The muffling of sounds has been explained as follows, Korotkoff believed that cuff pressure fell just below systolic pressure, "with the blood stream slipping through the walls of vessel separate and give a short flapping sound"⁶.

Erangler⁷ noted that each pulse passing beneath the occluding cuff causes a rapid distension of partially empty arterial walls distal to the cuff that decreased as the diastolic residuum increases. At the point of muffling, the change in shape of artery is less abrupt as the vessel reached normal volume and flow.

Conclusion

Cuff pressure at the point of muffling of sounds is a reasonably accurate reflection of diastolic pressure, despite persistence of sounds to zero.

Therefore during the physical assessment of cardiac patients, nurses should take both disappearance as well as muffling of sounds into consideration while assessing the diastolic pressure.

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Impact of Mothers Role on Home Care Management of Childhood Tuberculosis

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Abstract

Tuberculosis (TB) with high mortality has become a global health problem in spite of highly effective drugs and availability of vaccine. It is contagious and spreads through the air. If not treated, each person with active TB infects an average 10 to 15 people every year. TB affects all age groups, especially children who are very vulnerable. To cure TB, regular anti-tuberculosis therapy is very essential and they can be successfully treated under DOTS therapy (DGHS-2005). The successful treatment of children depends on the mother's role in caring at home. A study was conducted to "Evaluate the effectiveness of Structured Teaching Programme among mothers of children with TB on home care management in selected DOTS centers in Bangalore city" during the year 2007. The study design was one group pre-test and post-test, quasi experimental design. Purposive sampling method was used to select 50 mothers of children with TB to collect data using Interview Schedule Method. The pre-test was followed by implementation of STP and post-test was conducted after 8 days. The overall pre-test mean knowledge was 43.5% followed by post-test of 82.5%, with mean gain of knowledge being 39.0% ($t=26.61^*$, $p<0.05$). The overall pre-test mean knowledge of practice was 30.8% followed by post-test of 78.7%, with mean gain of knowledge of practice being 47.9% ($t=25.03^*$, $p<0.05$). The overall finding of the study showed that the STP was significantly effective in improving the knowledge and knowledge of practice scores of mothers on home care management of children with tuberculosis. There exists an impact of variables on type of family, family history of TB and

type of TB for knowledge area; family history of TB and types of TB for knowledge of practice area.

Introduction

Tuberculosis, a chronic opportunistic communicable infectious disease remains a worldwide public health problem among six killer diseases. TB is the number one enemy for India's health. Every year 8.8 million people develop TB, accounting for nearly 1/5th of the cases in India. Every 1 1/2 minute one person dies and more than 1000 people die everyday. It has been estimated that 10% children affected with TB are infected from adult (DGHS-2005 & 2006). DOTS therapy recommended intermittent short-course chemotherapy under direct observation as per the RNTCP/ IAP (Indian Academy of Pediatrics). Only critically ill children may require hospitalization, others can be managed at home. So mothers should be aware of TB and its management at home with adequate nutrition, immunization, good housing, rest and regular medication. Due to mother's ignorance, preoccupation with job/household work or clash of school/center timing and/or social stigma, mother delay in taking their children to treatment. Mother is the primary care giver; during sickness her responsibility will be high, especially managing sick child in the home setting. A well accepted saying is, if mother is educated, then the total family will be educated, with this background a study was conducted with the following objectives:

1. To assess the knowledge and knowledge of practice of mothers on home care management of children with TB.

Table 1: Demographic variable of the respondents

N=50

Characteristics	Category	Respondents	
		Frequency	Percent
Age	20-25	15	30
	26-30	20	40
	31-44	15	30
Types of family	Nuclear	29	58
	Extended	13	26
	Joint	08	16
Family history of TB	Yes	17	34
	No	33	66
Children age	0-5	13	26
	6-10	24	48
	11-15	13	26
Type of TB	Pulmonary	29	58
	Extra pulmonary	21	42
Phase of DOTS therapy	Continuation phase	36	72
	Intensive phase	14	28

- To evaluate the effectiveness of Structured Teaching Program (STP) on knowledge and knowledge of practice of mothers on home care management of children with TB.
- To evaluate the effectiveness of Structured Teaching Program (STP) on knowledge of practice of mothers on home care management of children with TB.
- To identify the impact of demographic variables on knowledge of mothers on home care management of children with TB.
- To identify the impact of demographic variables on knowledge and knowledge of practice of mothers on home care management of children with TB.

& knowledge of practices on home care management of children with TB. The cognitive-perception of the mother was assessed by interview schedule method. These factors influence the mothers to engage in health promoting behavior like, symptomatic and preventive care, dietary management, exercise, play and management of treatment & its side effects and follow-up of DOTS therapy.

Methodology

The study was conducted in selected DOTS centers of Bangalore (city), Karnataka during 2007, by using one group pre-test and post-test quasi experimental design with purposive sampling method. Further, 50 mothers of children with TB were interviewed by using interview schedule method. The pre-test was followed by implementation of STP and post-test was conducted after 8 days. Out of total 54 questions, 35 knowledge questions and 19 questions were verbal response on knowledge of practice items; each statement

Conceptual Frame Work

The conceptual framework used for the study was developed from Pender's health promotion model, where the mothers of children with TB act as agents with their knowledge

Table 2: Effectiveness of STP among mothers of children with TB on Home Care Management

N=50

Area	Assessment	Score			Paired 't' test
		Mean	Mean%	SD	
Knowledge	Pre-test	15.22	43.5	12.3	26.61*
	Post-test	28.88	82.5	8.2	
	Gain	13.66	39.0	10.4	
Knowledge of practice	Pre-test	5.86	30.8	13.3	25.03*
	Post-test	14.96	78.7	15.1	
	Gain	9.10	47.9	13.5	

(p<0.05)

Table 3: Area wise comparison of Mean Knowledge score of Pre-test and Post-test on Home Care Management of children with TB

N = 50

S.I.No	Knowledge areas	Max. Score	Knowledge Score									Paired 't' value
			Pre-test			Post-test			Gain			
			Mean		SD	Mean		SD	Mean		SD	
			Score	%		Score	%		Score	%		
1.	Incidence, signs and symptoms	6	3.62	60.3	20.7	5.82	97.0	6.5	2.20	36.7	21.8	11.88*
2.	Diagnostic measures	5	2.42	40.3	19.9	4.28	71.3	12.2	1.86	31.0	18.4	11.88*
3.	Etiology, risk factors and complications	5	2.04	34.0	13.5	4.22	70.3	14.8	2.10	36.3	15.3	16.75*
4.	Transmission and its preventions	5	1.50	25.0	15.2	4.00	66.7	16.5	2.5	41.7	17.3	17.08*
5.	Dietary management	5	1.42	33.7	17.2	3.66	61.0	14.9	2.24	37.3	18.9	13.95*
6.	Treatment and side effects of DOTS therapy	9	4.22	46.9	17.7	6.90	76.7	20.0	2.68	29.8	25.7	8.12*
Total		35	15.22	43.5	12.3	28.88	82.5	8.2	13.66	39.0	10.4	26.61*

(p<0.05)

has four options with one most appropriate correct answer. The maximum score for correct response to each item was "one" and incorrect was "zero". Content validity of the tool was obtained from experts and the reliability was estimated by Split Half method with Spearman Brown's Prophecy formula. The reliability co-efficient of the tool was 0.9456 and validity co-efficient was 0.9724.

The data was analyzed by using descriptive and inferential statistics (paired 't' test and 'F' test). The mean knowledge and knowledge of practice percentage was obtained by dividing the total score obtained by the maximum score and expressed in percentage, as the number of items varies in each area.

Findings of the Study

The demographic data shows that out of 50 mothers, majority of them were in the age group of 26-30 years (40%), belongs to nuclear family (58%), had no family history of TB (66%), children age group of 6-10 years (48%), having pulmonary TB diagnoses child/children (58%) and they were in continuation phase of treatment (72%).

The study showed that the overall mean knowledge in the pre-test is 43.5% which is less and shows that there is lack of knowledge among mothers on home care management of children with TB. However, the mean post-test knowledge was found to be 82.5% with the gain of knowledge being 39.0%. Further, the gain in knowledge from pre-test to post-test found significant ($t=26.61^*$, $p<0.05$).

The study reveals that the overall mean knowledge of practice in the pre-test is 30.8% which is less and indicates that there was lack of knowledge of practice among mothers on home care management of children with TB. However, the mean post-test knowledge of practice was found to be 78.7% with the gain of knowledge of practice being 47.9%. Further, the gain in knowledge of practice from pre-test to post-test was found significant ($t=25.03^*$, $p<0.05$).

Table 3 depicts area wise comparison of mean knowledge score of pre-test and post-test on home care management of children with TB. The gain in knowledge was found highest in transmission and its prevention (41.7%) followed by dietary management (37.3%) and incidence, signs and symptoms (36.7%). Further the gain in knowledge on treatment and side effects of DOTS therapy was found least (29.8%) among the knowledge aspect. It is interesting to note that, mean post-test knowledge was higher when compared to pre-test knowledge on home care management of TB. The statistical test findings reveals significant difference in knowledge between pre-test and post-test ($p<0.05$) for all the knowledge aspect under study.

Similar findings were observed in the study conducted by Koya (2004) and Singh. et al (2002) indicating the difference in knowledge aspect.

Table 4 reveals area wise comparison of mean knowledge of practice score of pre-test and post-test on home care management of children with TB. The gain in knowledge of practice was found highest in child care (54.3%) followed by

Table 4: Area wise comparison of Mean Knowledge of practice score of Pre-test and Post-test on Home Care Management of children with TB
N = 50

Sl. No	Knowledge of practice areas	Max. Score	Knowledge of practice score									Paired 't' value
			Pre-test			Post-test			Gain			
			Mean		SD	Mean		SD	Mean		SD	
			Score	%		Score	%		Score	%		
1.	Preventive care	5	1.22	24.4	20.3	3.9	78.0	21.9	2.68	53.6	20.0	18.97*
2.	Child care	6	0.96	16.0	18.7	4.22	70.3	26.6	3.26	54.3	22.3	17.24*
3.	Child care during DOTS therapy	8	3.68	46.0	15.7	6.84	85.5	10.8	3.16	39.5	15.8	17.63*
Total		19	5.86	30.8	13.3	14.96	78.7	15.1	9.1	47.9	13.5	25.03*

($p<0.05$)

Table 5: Impact of demographic variable on knowledge and knowledge of practice scores

N=50

S.I No	Variable	F- test value			
		Knowledge		Knowledge of practice	
		Pre-test	Post-test	Pre-test	Post-test
1.	Age	1.78 ^{NS}	0.27 ^{NS}	0.38 ^{NS}	2.53 ^{NS}
2.	Type of family	0.05 ^{NS}	3.64*	0.44 ^{NS}	0.22 ^{NS}
3.	Family history of TB	1.11 ^{NS}	3.32*	0.18 ^{NS}	5.84*
4.	Children age	1.66 ^{NS}	0.71 ^{NS}	1.52 ^{NS}	0.95 ^{NS}
5.	Type of TB	6.07*	0.3 ^{NS}	3.43*	3.16 ^{NS}
6.	Phase of DOTS therapy	1.39 ^{NS}	0.26 ^{NS}	1.28 ^{NS}	1.85 ^{NS}

($p<0.05$)

preventive care (53.6%) and child care during DOTS therapy found least (39.5%). It is interesting to note that, mean post-test knowledge of practice found to be higher compare to pre-test knowledge of practice on home care management of TB. The statistical test findings reveals significant difference in knowledge of practice between pre-test and post-test ($p < 0.05$) for all the knowledge of practice aspect under study.

Similar findings were observed in the study conducted by Amen and Clarke (2001) and Adetunji (1991) indicating the difference in practice aspect.

Table 5 shows the impact of demographic variables on knowledge and knowledge of practice. It is evident from the findings that, age of the respondents, children age (years) and phase of DOTS therapy establishment had non-significant impact in pre-test and post-test on the knowledge and knowledge of practice on home care management of children with TB.

The type of family indicate non-significant impact in pre-test in both on knowledge and knowledge of practice and it is interesting to note that the type of family has significant impact in post-test on knowledge and non-significant in post-test on knowledge of practice.

The family history of TB has non-significant impact in pre-test on both knowledge of practice and significant impact in post-test on both knowledge and knowledge of practice. The type of TB has significant impact in pre-test in both on knowledge of practice and non-significant impact in both post-test on knowledge and knowledge of practice.

Conclusion

The study findings reveal and prove that the structured teaching programme was significantly effective in improving the knowledge and knowledge of practice of mothers on

home care management of children with TB. Nurses are key persons of the health team, who play a major role in health promotion and maintenance. Teaching programme can be conducted by the nursing personnel which will improve the knowledge and knowledge of practice of mothers on home care management of children with tuberculosis and success of the RNTCP.

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A Study to Assess the Knowledge and Attitude of Adults on Filariasis and Mass Drug Administration of Filariasis (MDA) in Selected Villages of Udupi District, Karnataka

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Abstract

Objective

To assess the knowledge and attitude of adults on Filariasis and Mass Drug Administration of Filariasis (MDA).

Methodology

A survey approach was adopted using descriptive survey design. The study was conducted in Udupi District with 400 participants. A convenience sampling technique was used. Demographic proforma was used to obtain background information. The knowledge questionnaire was used to assess the knowledge on filariasis and MDA. The knowledge level is arbitrarily classified as good (17-24), average(9-16) and poor(1-8). The attitude scale was used to assess the attitude of adults on filariasis and MDA was arbitrarily classified as favourable (67-110) and unfavourable (23-66) attitude. Frequency and percentage and Chi-square test were used for the analysis.

Results

Majority 43.5% (174) of the participants belongs to the age group of 18-30years. Majority 56% (224) of them belongs to primary and higher primary education. Family income of majority 42.2% (169) of the participants is Rs. 3000-6000per month. Majority52.5% (210) of them were belongs to nuclear family. The majority 68.4% (273) of them were unemployed. Majority 44.1% (177) of them got health information from television. It was identified that majority of 63.2% (253) of the participants have average knowledge, 5.8% (23) good knowledge and 31% (124)have poor knowledge regarding filariasis and MDA. Among the participants, 349(87.2%) of them have favourable attitude and 51(12.8%) of participants have unfavorable attitude. The chi square statistics was computed between knowledge and selected demographic variables. There was significant association between age, education income, occupation and source of health information. But there was no significant association between type of family. Age and source of information has significant association with attitude. Education, type of family, monthly income and occupation has no association with attitude.

Conclusion

Majority of the participants were having average knowledge and favourable attitude towards Filariasis and Mass Drug Administration of Filariasis. (Thus creating awareness among general public to prevent the occurrence and disabling complications of Filariasis).

Key Words

Knowledge, Attitude, Lymphatic Filariasis, Mass Drug Administration.

Introduction

Lymphatic filariasis (LF) is a major public health problem in India. As per recent estimates, about 454 million people with 29.2 million micro filaria carriers and 22.5 million clinical cases are spread in 13 states and Five union territories of India.¹ Lymphatic filariasis (LF) has been targeted by the World Health Organization for elimination as a public health problem by the year 2020.² It is caused by three species of filarial parasites: *Wuchereria bancrofti* infects about 115 million people in Africa, India and other tropical and subtropical areas, whereas *Brugia malayi* infects about 13 million people in south India and south-east Asia and it is replaced by its sibling species *Brugia timori* in eastern Indonesia and Timor-Leste.³ The International Task Force has identified the disease as potentially eradicable. The National Health Policy 2002, India, aims at Elimination of Lymphatic Filariasis by 2015. The strategy for achieving this goal is by annual Mass Drug Administration (MDA) of DEC 6 mg/kg body weight once a year for at least five-seven years to the entire population of an endemic district and morbidity management of lymph oedema. Five to ten rounds of treatment with 75%–80% compliance could possibly eliminate the disease by reducing transmission to very low levels.⁷

Material and Methods

The study had adopted a survey approach which consisted of descriptive survey design and the sample consists of 400 people from Udupi district Karnataka. A convenience sampling technique was selected for this study. The instruments used for data collection were, Tool 1: Demographic Proforma, Tool 2: Knowledge Questionnaire on Filariasis and mass drug administration of Filariasis. Tool-3: Attitude scale.

The content validity of the tools was obtained by submitting the tool to seven experts. Tool was pre tested by administering the tool to six participants in Katapadi village. The reliability of the tools were established by using split half method for the knowledge questionnaire and Chronbach's alpha for the attitude scale and the values were 0.80 and 0.822. Based on pilot study, the feasibility and practicability was assessed and plan for data analysis was finalized. The data was collected in February 2010. Demographic proforma was used to obtain background information. The knowledge questionnaire was used to assess the knowledge on filariasis and mass drug administration of filariasis. The knowledge level is arbitrarily classified as good (17-24), average (9-16) and poor(1-8). The attitude scale was used to assess the attitude of adults

on filariasis and mass drug administration of filariasis was arbitrarily classified as favourable (67-110) and unfavourable (23-66) attitude. Demographic proforma, knowledge questionnaire and attitude scale were administered to all the participants of Athrady and Herebettu panchayath. Leaflet on Filariasis and importance of Mass Drug Administration distributed to each family as motivation.

The obtained data was analyzed based on the objectives by using both descriptive and inferential statistics; hypothesis was tested at 0.05 level of significance.

Results

Section 1: Sample characteristics in frequency and percentages.

This section describes the characteristics of a participants of 400 pupil selected from two villages of Udupi district. The data were collected using demographic proforma. Frequency and percentage were computed for describing the sample characteristics. The description of data is given in table1.

The data presented in table 1 show that majority 43.5% (174) of the Participants belongs to the age group of 18-30years. Majority 56% (224) of the study participants belongs to primary and higher primary education. Family income of majority 42.2% (169) of the participants is Rs. 3000-6000per

Table 1: Frequency and percentage distribution of demographic characteristics of study sample n = 400

Sample characteristics	f	%
Age		
18-30years	174	43.5%
31-42years	86	21.5%
43-55years	58	14.5 %
55 and above	82	20.5%
Education		
Illiterate	36	9%
Primary and higher primary	224	56%
Secondary	80	20%
Degree and above	60	15%
Monthly income		
Less than 3000	146	36.5%
3001-6000	169	42.2%
6001-9000	45	11.3%
9001 and above	40	10%
Family type		
Nuclear	210	52.5%
Joint	177	44.3%
Extended	13	3.2%
Occupation		
Unemployed	273	68.4%
Employed	127	31.6%
Source of health information		
Television	177	44.1%
News paper	82	20.6%
Radio	13	3.3%
Health personnel	128	32%

month. Majority 52.5% (210) of them were belongs to nuclear family. Majority 68.4% (273) of them were unemployed. Majority 44.1% (177) of them got health information from television.

Section 2: Knowledge level of the participants

The knowledge level is arbitrarily classified as good, average and poor. The percentage distribution of the study participants by knowledge score has shown that majority of 63.2% (253) of the participants having average knowledge, 5.8% (23) good knowledge and 31% (124) having poor knowledge.

Section 3: Attitude of the sample

Attitude of the participants was assessed by the use of attitude scale and arbitrarily classified as favourable and unfavourable. The percentage distribution of the participants by attitude score showed that 349(87.2%) of adults are having favorable attitude and 51(12.8%) of participants have unfavorable attitude towards mass drug administration.

Section 4: Association between knowledge score and selected variables

H₁: There will be a significant association between knowledge scores and selected variables like age, education, income, type of family, occupation and source of health information.

The data presented in table 2, shows that there is a significant association between age, education, income, occupation and source of health information. There is no significant association between type of family.

Section 5: Association between attitude score and selected variables

H₂: there will be a significant association between attitude scores and selected variables like age, education, income, type of family, occupation and source of health information.

The data presented in the table3, shows that the age and source of information has significant association with attitude. Education, type of family, monthly income and occupation has no association with attitude.

Discussion

Present study revealed that, among 400 participants majority of 63.2% (253) of the sample having average knowledge, 5.8% (23) good knowledge and 31% (124) having poor knowledge regarding filariasis and mass drug administration of filariasis. In a study conducted in rural areas of Tamil Nadu, South India. Done to identify the gaps in people's knowledge of lymphatic filariasis. Only 9% of those with and 20% of those without the disease knew that filariasis is caused through mosquito bites; the rest attributed it to many other causes. People's knowledge about transmission and prevention of filariasis is also very poor.⁹ This study supports the present study.

Another study conducted on knowledge and beliefs about filarial elephantiasis and hydrocele of people from an endemic area of Orissa, India. They found that people were aware of

Table 2: Chi –square value computed between the knowledge score and selected demographic variables. n=400

Variables	poor knowledge	average knowledge	good knowledge	df	χ^2	p-value
Age						
18-40years	57	187	16	2	30.278	0.001*
41 and above	68	65	7			
Education						
Below SSLC	112	141	7	2	54.397	0.001*
Secondary and above	13	111	16			
Monthly income						
Less than 3000	50	89	7	6	25.094	0.001*
3001-6000	64	100	5			
6001-9000	5	35	5			
9001 and above	6	28	6			
Family type						
Nuclear	70	144	9	2	2.777	0.250
Joint and extended	55	108	14			
Occupation						
Unemployed	102	92	11	2	17.341	0.001*
Employed	23	160	12			
Occupation						
Unemployed	102	160	11	2	17.341	0.001*
Employed	23	92	12			
Source of health information						
Television	54	112	11	3	14.935	0.016*
News paper	14	60	8			
Radio	6	7	0			
Health personnel	51	73	4			

*Significant at 0.05 level

Table 3: Chi Square value computed between the attitude score and selected variables n=400

Variables	unfavourable attitude	favourable attitude	df	χ^2	p-value
Age					
18-40years	26	234	1	5.050	0.025*
41 and above	25	115			
Education					
Below SSLC	38	222	1	2.324	0.127
Secondary and above	13	127			
Monthly income					
Less than 3000	18	128	3	0.050	0.997
3001-6000	22	147			
6001-9000	6	39			
9001 and above	5	35			
Family type					
Nuclear	19	158	1	1.159	0.282
Joint	32	191			
Occupation					
Unemployed	37	236	1	0.499	0.480
Employed	14	113			
Source of health information					
Television	25	156	3	20.646	0.001*
News paper	2	76			
Radio	6	7			
Health personnel	18	110			

*Significant at 0.05 level

different manifestations of filariasis and perceived them as problems in their community. A high proportion of people knew that mosquitoes are the reason for the spread of elephantiasis, but less people were aware of the cause of hydrocele and the association between elephantiasis and hydrocele. Only half of the respondents believed that elephantiasis is curable by modern medicines, and about 84% of respondents thought that surgery is the only method to cure hydrocele. About two-thirds of people know that avoiding mosquitoes can prevent elephantiasis. Age, gender, educational level and caste affiliation were identified as factors influencing awareness and knowledge.¹⁰ This study supports the present study.

Present study revealed that, among 400 participants majority 349(87.2%) of participants have favorable attitude towards filariasis and mass drug administration of filariasis and 51(12.8%) of participants have unfavorable attitude. A study conducted in Leoganne, Haiti after three surveys following the third annual MDA of a filariasis elimination program. The overall surveyed coverage was 78.5%. A survey among adult population showed coverage estimates for persons > 14 years old of 59.4%, 61.0% and 67.3% for the first, second and third MDA respectively.¹¹ This study supports the present study.

This study shows that there is a significant association between knowledge and variables like age, education, income, occupation and source of health information. There is no significant association between type of family. A stratified cluster survey involving 437 respondents aged 18 years old and above in Agusan del Sur, Philippines. They found that 63.3% of the sampled population received the antifilarial drugs; of these, 94.5% ingested the drugs, yielding an acceptance rate of 60%.¹² which supports the present study.

In this study shows that the education, type of family, monthly income, source of information has significant association with attitude. The age and occupation has no association with attitude. A qualitative analysis of the impact of a lymphatic filariasis elimination program using mass drug administration on Misima Island, Papua New Guinea. A combination of focus groups and key informant interviews were used to explore participant's perceptions of health. Participants expressed the belief that individuals infected with filariasis always had visible manifestations of disease.¹³ This study supports the present study.

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Telenursing an emerging field

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Abstract

Telenursing is a component of telehealth. It refers to the use of telecommunications and information technology for providing nursing services in health care whenever a large physical distance exists between patient and nurse. It has been defined as the delivery, management & coordination of care & services provided via information & telecommunication technologies. Technologies used in telenursing may include, but are not limited to Telephones (land lines & cell phones), Personal digital assistants (PDAs), Facsimile machines (faxes), Internet, video & audio conferencing, teleradiology, computer information systems, medical imaging and data transfer and encompass a range of disciplines, including nursing and midwifery, telerobotics etc. Telenursing is achieving a large rate of growth in many countries, due to several factors: the preoccupation in driving down the costs of health care, an increase in the number of aging and chronically ill population, and the increase in coverage of health care to distant, rural, small or sparsely populated regions. Nurses use commercially available protocols that have been developed by physicians & nurses in their own ambulatory care organization to assess the client over the telephone & to recommend approved interventions. Nurses can conduct physical home visits & clients can be supervised by nurses at an agency or at home.

Introduction

Telenursing refers to the use of electronic means by registered nurses to establish communication links with clients & / or other health care professionals in the delivery of professional nursing services. Although it changes the way or medium in which professional nursing services are delivered, but does not fundamentally change the nature of nursing practice. Telehealth Nursing Practice is not new & has been described in the literature since the 1960s. Telenursing is the use of telemedicine (and all other telehealth) technology to deliver nursing care and conduct nursing practice (International Council of Nurses, 2007).

Principles

Effective Telenursing should- Augment existing health care services, enhance optimum access & where appropriate & necessary, provide immediate access to health care services, improve & / or enhance the quality of care, & reduce the delivery of unnecessary health services, protect the confidentiality / privacy & security of information related to nurse-client interactions, reduce the delivery of unnecessary health services, follow position descriptions that clearly define comprehensive, yet flexible roles & responsibilities & improve & or enhance the quality of care.

Core Competencies

Core competencies identified to guide & promote safe, competent & ethical nursing care provided by RNs, via telenursing are -

- Establish a 'duty of care' in all telehealth encounters, to clarify ongoing responsibility for the client, as well as the roles and responsibilities of other healthcare providers.
- Collaborate with other members of the health care team, as appropriate & required, to ensure quality care & effective service.
- Apply a computer-based approach to manage the telephone encounters to complement existing protocols & guidelines to improve the process & documentation of the encounter.
- Implement a quality assurance system to ensure a regular review of telephone logs.
- The professional nurse has the duty to provide advice & counsel in the context of all medical data available to the practice from within the patient's medical record. Therefore, a rapid method for the retrieval of medical record data should be established & integrated into the telephone component of all practices.
- Advocate for technological innovations and systems that support safe, competent, compassionate and ethical care, and enhance the quality of nursing care and services
- Participate in the development, implementation, evaluation, improvement, review or modification of all aspects of telehealth related to nursing practice, including policy development.
- Comply with existing organizational policies and guidelines relating to privacy/confidentiality, informed consent, information security and documentation when providing telenursing care.
- Provide nursing services consistent with standards for Nursing practice, code of ethics, the registered nurses act, other relevant acts, agency guidelines & clinical protocols where applicable.
- Apply standardized protocols & guidelines for the most frequently reported chief complaints.
- Protect the confidentiality and security of client information, and ensure the privacy of interactions by developing and/or implementing appropriate policies. Never leave confidential information on a voice-message system unless a client has indicated that she / he consider it acceptable to do so.
- Adhere to & advocate for agency policies that support informed consent.
- Deliver competent nursing services by assessing their own competence, identifying areas for learning & addressing knowledge gaps relative to the technologies used (e.g. internet ,decision – based software) & the nursing services provided.
- Support evidence- based practice by evaluating the effectiveness of Telenursing services; perform outcome

surveys & modify & improve practices accordingly.

- Maintain a constant availability of physicians & other health care providers to provide consultative assistance to the telenursing nurse as needed.
- Establish therapeutic nurse-client relationships using the nursing process (based on the assessment of clients' health care needs, the planning, implementation & evaluation of nursing care) & should also be characterized by trust, respect & intimacy.
- Nurses should inform clients of their full name, qualifications and registration status (clients may wish to confirm registration status with the regulatory authority) as well as the organization with whom she / he is employed and where this organization is located.
- Consider clients' cultural (including language), spiritual & psychosocial needs & preferences.
- Assess clients' needs to determine whether telenursing practice represents the most effective & appropriate method to provide nursing services. In addition, consideration must be made for the client's & caregivers' feelings & beliefs with regard to allowing the system in their home (e.g. apprehension about technology, cost or loss of privacy).
- Assess whether the client possess sufficient cognitive ability, hearing & vision to use the system or to have a caregiver to provide assistance.
- Provide clients with education/orientation to the telehealth process, communication issues including other persons/professionals who may be participating or present in a telehealth consultation, prior to their initial telehealth encounter.
- Inform clients about their choices regarding telenursing & ensure telenursing services are augmented by face to face interactions as needed and obtain consent before proceeding.
- Nurses should also inform about potential risks and benefits, the choice to decline participation, available alternatives, how care will be documented (e.g., videotaping, still pictures, voice recording etc.), how security, privacy / confidentiality of information is maintained, who is responsible for ongoing care, what to expect during the interaction & also inform about the right to withdraw consent at any time.
- Prioritizing the urgency of client needs & schedule patients with serious problems as soon as possible.
- Document nurse-client interactions, including the chief complaint, history of present illness, past medical history, allergies, emergency precautions provided, home care follow-up plans, or other instructions given following guidelines & agency policies & as appropriate integrate the documentation of telenursing interactions with relevant information systems.
- Ask & confirm that the patient understands & feels comfortable with the plan at the end of the telephone interaction.
- Encourage patients to call back if their condition worsens or if they have additional questions.
- Invite the patient for an after-hours visits if she is uncomfortable with receiving home care instructions or with waiting until the next day to see the physician or other health care provider.
- Advise patients to contact their health care provider the next day if the problem has not improved.

In addition, to reduce the risk of missing important information, nurses should-

- Ask open-ended questions, to elicit sufficient data to assist with decision-making.
- Ask questions in logical sequence, with attention and sensitivity to the client's acuity level.
- Find solutions to communication, language or cultural barriers.
- Avoid using excessive medical or technical jargon.
- Avoid making premature conclusions regarding a client's situation or problem.
- Listen and/or watch for verbal, emotional and behavioral cues that can convey important client information (e.g., tone of voice, background noise, body language).
- Explore a client's self-diagnosis (e.g., a client with chest pain says it's just indigestion; other symptoms and the client's medical history suggest a heart attack)
- Avoid second-guessing the client (e.g., if the telephone caller requests an ambulance, avoid suggesting that she / he drive to the emergency room).

To learn more about telehealth interventions nurses can do the following-

- Make it a point to learn how telehealth works in your community.
- Seek continuing education courses that will educate you on the art & science of telehealth application.
- Seek networking opportunities with professional organizations & other case managers about the uses of telehealth.
- Improve your personal interaction skills to better assist in decision making about the use of telehealth services.

Role of employers in ensuring competence to practice- Employers are expected to facilitate RNs' continuing competence by providing detailed orientation programs that support safe, competent & ethical care & training nurses in proper history taking, protocol or guideline utilization & documentation in addition.

The content of orientation programmes related to telenursing practice might include; an overview of the protocols used most frequently, an introduction to relevant communication media, a review of selected telenursing interactions (e.g. recordings, video or documented notes), a demonstration & hands-on - practice with computer software programs, observation / preceptorship experiences with a nurse skilled in the provision of telenursing care, should foster a professional practice environment by helping RNs' identify their learning needs, facilitating access to educational activities, providing support for continuing education & employers are also responsible for ensuring that policies and procedures specific to telenursing are in place to guide nurses' practice.

Telepractice Settings

Telenurses practice in a range of settings, from large medical call centers, physician's offices, clinics, hospices, college health centers, disease management call centers, poison centers, and emergency departments

Telephone Nursing Interventions

The Nursing Intervention Classification (NIC) lists four telephone nursing interventions. Each of these interventions was proposed by Haas & Androwich in 1999.

Telephone Consultation: The nurse assess the client's need & readiness to learn, teaches clients & provides advice based on protocols approved for use with telephone nursing practice. The nurse must have expert communication skills to elicit information when no visual or physical assessment cues are available. The nurse must listen for nuances in the client's communication, such as inflection, pitch, volume & rate of speech. The telephone encounter time is limited. There is no time to reflect or have second thoughts.

Telephone Follow-up: Is used for clients who have had ambulatory surgery or complex treatments. The nurse calls the client within a specific period to assess how well the client is recovering & to provide guidance or any problems.

Telephone Triage: Telephone triage nurses are also called as advice nurses", "telepractitioners", and "telenurses", "telepractice nurses" or "consulting nurses". They utilize protocols or guidelines, in paper or electronic format which help to sort out symptoms. Clients are sorted by telephone encounter based on the immediacy of the need & the type of problem & it also involves ranking clients' health problems according to their urgency, educating and advising clients, and making safe, effective, and appropriate dispositions, all by telephone. "In one 8-hour shift, a telenurse may field 60-80 telephone calls, one every 6 - 10 minutes. Nurses may also direct clients to obtain a second medical opinion, or advise them where to find relevant, current health information.

Telephone Surveillance: Nurse use telephone surveillance to work with data coming into a central ambulatory site from monitoring equipment used by clients at home. For e.g. - Cardiac monitoring or high-risk Obstetric monitoring can be accomplished by connecting the monitoring equipment to a computer or telephone in the client's home.

Advantages of Telenursing

It will increase public access to health services, especially for people living in rural areas & those compromised of health status, it will decrease waiting times, reduce unnecessary visits to emergency rooms & physician's offices, reduce distances and save travel time, help solve increasing shortages of nurses, allow nurses to make visits in adverse weather conditions & in high-risk neighbourhoods where safety is often threatened, immediacy of information to clients in helping them meet their health care needs & a decrease in feelings of isolation, for both clients & health professionals, improvement of resource and time allocation, greater degree of job satisfaction among telenurses.

The provision of health services through communication technologies may also help attract health care professionals to rural or underserved areas by enabling access to other health care providers through the use of videoconferencing & / or internet. Applications of telehealth in education have shown the potential to bring interactive education, potentially rich in visual content, to audiences dispersed over immense geographical areas in a logistical & cost-effective manner that could not have been achieved through any other means. It makes nurse & expert health advice readily available & for many clients they provide a knowledgeable & caring person to ask about a problem.

Disadvantages

Fear the absence of direct hands-on assessments or face-to-face interactions will diminish the quality of health care & increase liability risks, increased risks to the security & confidentiality of client's health information & records & the potential for health providers to step outside their scopes of practice, likelihood of technology failures, inability (increased difficulty) to provide clients with information to allow them to make informed decisions about whether to give or refuse consent.

Concerns have been expressed in relation to the potential for agencies to reduce health care expenditures by using telepractice technologies as a replacement for face to face encounters even in situations when a personal contact would be deemed to be in the best interest of a client & also about responsibilities of employers to ensure personnel have the necessary competencies,

Applications

One of the most distinctive telenursing applications is home care. It is especially useful in cases of elderly and chronically ill patients who need to be nursed at home and are remotely located. For example, patients who are immobilized, or live in difficult to reach places, citizens who have chronic ailments, such as chronic obstructive pulmonary disease, diabetes, congestive heart disease, or debilitating diseases such as neural degenerative diseases (Parkinson's disease, Alzheimer disease, amyotrophic lateral sclerosis), etc., may stay at home and be "visited" and assisted regularly by a nurse via videoconferencing, internet, videophone, interactive audio etc. Still other applications of home care are the care of patients in immediate post-surgical situations, the care of wounds, ostomies, handicapped individuals, etc. In normal home health care, one nurse is able to visit up to 5-7 patients per day. Using telenursing, one nurse can "visit" 12-16 patients in the same amount of time. Telenursing can also involve other activities such as patient education, counseling, nursing teleconsultations, examination of results of medical tests and exams, and assistance to physicians in the implementation of medical treatment protocols. Over the telephone, nurses can calm an anxious parent, evaluate an injury or advise whether a person should go to an emergency unit, provide after hours triage, and maintain communication with patients who have chronic conditions and debilitating illnesses. Telephones also allow nurses to take their services out into the community through mobile health teams.

As telemedicine & telenursing systems mature, physical therapy can be administered, nutrition counseling conducted & occupational therapy supervised. Client access to the internet is becoming more common. E-mail can be used to communicate with clients & clients can report directly to health care providers. Successful programs have used e-mail to remind clients about medication dosing & educational information for postsurgery clients on a daily basis(Jerrant,199).

Legal, Ethical and Regulatory Issues

Legal issues such as accountability and malpractice, etc. are also still largely unsolved and difficult to address. In abroad

many state legislatures changed from single-state licensure & have adopted mutual recognition language into statute & are currently implementing it from.

Policies to guide telenursing practice should be developed in relation to:

Locus of Accountability: It is the responsibility of the practicing RN, employer to put policies or mechanisms in place to support clients' access to information about licensure & to know how to address concerns aroused about the practice of registered nurses. To facilitate client access to information about registered nurses providing telenursing services, policies should be developed that require the nurses to properly introduce themselves (e.g. name, designation, licensing body)

Client choice: The client has a right to be informed about choices regarding telenursing, including the right to seek other methods or media for care.

Informed consent: Regardless of how consent is obtained it must be genuine & voluntary, relate to legal procedure (e.g. within the practitioner's scope of practice), authorize a particular treatment or care measure & a particular care giver. It can be obtained from an informed consentor with the necessary mental capacity. Policies related to informed consent should identify how & by whom consent is to be obtained, the type of information to be provided to clients & the mechanism to determine a client's capacity to provide an informed consent, when appropriate.

Documentation: If items such as electronic records, videotapes or taped interviews are used for documentation purposes, policies & procedures need to be developed & implemented to ensure the security & confidentiality of these records. In the case of electronic records or computerized charting, the same principles of documentation for paper & pen should be applied. If security cards or access codes are used, policies should be developed to ensure they are not shared as they equate to an electronic signature. In addition, policies should be developed related to late entries & the method for exiting systems when entries are completed.

Security, confidentiality & privacy: Depending on the type of telenursing the amount of security required will vary. If registered nurses are providing services over the internet or through e-mail, security is of utmost concern. The use of security certificates on websites is also encouraged to provide authentication to users. Policies to protect security, confidentiality and privacy should be made & well defined. Ensure that the technologies themselves are safe (e.g. safe from hacker). In addition to the above information, RNs & their employers must be aware of relevant privacy legislation that may impact their practice & incorporate / develop appropriate policy consistent with legislation.

Liability Protection: The first line of liability protection for registered nurse is usually provided by employers. Additional liability protection may be required by nurses practicing telenursing depending on; the types of technology to be used

(e.g. internet), the services to be provided (e.g. expanded scope of practice); the location of the clients & the employment status of the registered nurse (e.g. self employed). Example of areas for further policy development & / or practices to help reduce liability risk include; using consistent tools to collect data, using evidence - based & protocol -driven software or data to support telenursing, consulting other care providers when appropriate(e.g. 'when in doubt, consult'), RN's are encouraged to discuss liability issues with their employers, legal counsel.

Conclusion

Telenursing is an evolving field & as new technologies emerge & the scope of practice of nursing further expands, registered nurses will need to ensure that they possess the necessary technical & clinical competencies to practice safely, competently & ethically in their respective field. Telenurses help to fill the gap created by the current nursing shortage.

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Nursing Students in a Developing Nation using the Internet: A phenomenological study

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Abstract

Using a qualitative phenomenological method, this study's semi-structured interviews illuminate the lived experience of nursing students from a developing nation, Malawi, Africa, in using the Internet as an educational resource. Analysis proceeded according to van Manen's qualitative phenomenological method.

Five essential themes emerged from the students' stories of their experiences: maintaining interpersonal connections with family and friends, using the Internet to find information, adapting information to fit their culture, using the information they find from developed nations as a comparative standard for care, and facing the challenges of learning to use technology.

Ultimately, the Internet provides these undergraduate nursing students a window of hope. They now know how to provide quality nursing care and bring change to the lives of those they serve by searching for and using the information they find on the Internet and linked research databases. The insight into the students' experiences demonstrates the value of increasing Internet availability to college communities in developing nations.

Key Words

Internet, Nursing Education, Nursing Education in Malawi Africa, Nursing Education in Developing Nations, Internet in Nursing Education, Nursing Students in Malawi.

Introduction and Background

The Internet is a virtual world of electronic information used by all but three nations of the world.^{1,2} Nursing students at all levels of nursing education in the United States (U.S.A.) and other developed nations, as defined by the World Bank, have access to thousands of professional research journals via the databases and Internet connections in their libraries. Educational researchers in the U.S., United Kingdom (U.K.), Canada, and Australia have done extensive research on how their students use the Internet and computer technology. However, there have been no studies on student perceptions of the usefulness of information technology beyond these developed nations.

The disparity between Western educational research and research from the developing world is appalling: currently, developing countries receive only 10 percent of healthcare research funding.¹⁰ The complete absence of research on Internet use in developing nations and the enormous healthcare problems many of these nations face points to the Internet as a possible solution for quickly and effectively disseminating information. This study is an initial attempt to bridge the gap between what we know about healthcare needs and how

students in modern, technology-driven societies access and use this information. It is an attempt to describe the meaning this technology has for these students.

Nurses are "essential to the creation of a healthy world... [and] unless the nursing community is sustained in innovative ways, worldwide, the health of everyone on the planet will be in serious jeopardy."³ In the U.S.A., nursing Students are taught to use the Internet to search for up-to-date, evidence-based, scientific research and practice recommendations. In the same way, Internet access brings comparable information to nursing students in developing countries through access to professional research journals and databases. For students in low-income countries, lack of access to up-to-date healthcare information can compromise their ability to continue to improve the health of their communities. Because we have become an information-based global society, the skills needed to survive in today's world are increasingly linked to our ability to access and keep up with important information.

In addition to accessing basic information, educational researchers tell us that computers can be used for drills, tutorials, testing, simulation, information processing, problem solving, management of instructional resources, and many other uses.⁴ Nursing researchers list some of the newest uses of technology in nursing education as web-based courses, simulations, and use of hand-held electronic devices.⁵ Several phenomenological studies have looked at the meaning of online education for U.S. nursing students^{6,7,8}. Atack⁹ reported that nurses saw web-based courses as meeting their learning needs, and that the nurses changed their practices based on the education and information they had obtained through such courses. However, no research has been done on the use of the Internet for nursing courses in developing nations. A literature search performed between 2007 and 2010 revealed several educational studies about variations in learning styles in different cultures, but no research discussed student perceptions of the Internet.

This study was completed at a college of nursing that offers both basic baccalaureate and advanced nursing degrees in Malawi, Africa. Malawi was chosen as the location for this study in part because it is considered a low-income country that faces many challenges similar to those in other low-income nations.¹¹ Some of these challenges include high rates of infant mortality, maternal death, malaria, and HIV/AIDS. There are also few resources for malaria treatment or effective treatments for suspected simple infections like pneumonia^{11,12}. For example, in 2005, the estimated number of people of all ages living with HIV in Malawi was between 480,000 and 940,000.¹² Malawians, like many people in developing nations, have incomes far below poverty standards in Westernized nations, which leave the government a small tax base to pay for total healthcare expenditures. As of 2010, total Malawian expenditure on health care is \$64.00 USD per

person per year: 12.2 percent of Malawi's GDP.¹³ The average life expectancy for Malawians is 53 years.¹¹

Malawi is located in the southeastern region of sub-Saharan Africa and has a population of between 13 and 14 million. According to World Bank Key Development Statistics¹⁴, the Gross National Income for Malawi is \$280.00 USD per capita¹⁴. The country faces healthcare challenges similar to those of other sub-Saharan African nations. The African continent has the fewest Internet users; however, since 2000, Internet use has grown over 800 percent.² The former, British colonization of Malawi, created a society where today, English is the language of business and education. Students study and access the Internet in English, making it an appropriate place to collect data. An invitation to collect data from a school of nursing finalized my decision to choose this country and location for the study. The College of Nursing in this study allows students to access scientific databases in its library's Internet café. The Internet café, established with private donor funding, gives students access to a variety of nursing journals and research databases made available by the World Health Organization, such as the WHO-HINARI database, EBSCO HOST, Blackwell Synergy, and Pubmed.

The college where data were collected is one of three colleges in Malawi that offer the Bachelors of Science in Nursing degree (B.S.N.). The curriculum and course requirements are similar to the coursework required in U.S. and Western four-year baccalaureate nursing programs. Students on campus access the Internet at an Internet café in the college library, which holds about 25 computers. The librarian and the nursing administrators at the college of nursing have ensured Internet access for their students through a variety of donations and grants and have access to HINARI, the Health Information Network sponsored by the United Nations. The Malawian nursing students seemed determined, studious, and at times idealistic. Like other college students, they are looking forward to what they will become, and they are looking forward to a bright future. As of 2006, only 55 percent of children in Malawi completed their primary education¹¹: the young people who graduate from the college of nursing in Malawi are exceptional in their country.

Method

Van Manen's¹⁵ approach to phenomenological research was used to design the study. Phenomenology seeks to make explicit universal meaning, especially meanings that may be hidden or veiled.¹⁵ Phenomenology allows educators to gain insight into the lived experiences of our students and to what is being taught: the object and the student's perception of that thing, or in this case, the path to what is being taught. By using this approach, the researcher attempts to contrast a fully interpretive description of some aspect of the learner's life-world.¹⁵ This method provides researchers a framework for discovering what it is like to live in an experience. Educators pursue relevance: they ask how students perceive aspects of their educational experience because they are continuously working to create intersections between the learner's life-world and the subjects being taught. In this study, the phenomenological method was chosen to describe the experiences of nursing students in Malawi who are using the Internet as an educational resource. It asks: what are the experiences of nursing students in a developing nation in using the Internet as an educational resource?

Students enrolled in the second- and fourth-year classes of the Baccalaureate Nursing Program at the participating college in Malawi were invited to participate in this study. The student sample was non-random and purposive. Participants were required to speak English, have taken a course that requires the use of the Internet, and be between 19 and 61 years old. Twelve students initially participated in the study; 10 returned to review their transcripts and participate in a follow-up interview. Data from the final 10 participants were included in the analysis, and at this point, data saturation was reached. Institutional Review Board approval was obtained from the institution where the students attended college, and where the researcher was completing her doctoral degree. Faculty from the college handed out an informational flyer, and students who were interested in participating in the study arranged to meet with this researcher in a private office on the college campus, provided by the College of Nursing.

When students arrived for interviews, the purpose of the research was explained, and the students had the opportunity to ask questions about the study and interview process. All participants signed the informed consent form and consented to having interviews recorded. Students created pseudonyms so that data could be coded and participants' names could remain confidential.

A semi-structured interview process was used to ask the student participants to describe their experiences using the Internet. The interview started with basic demographic information: name, current year in the nursing program, hometown and other residences. I then learned about the size and structure of the students' families. These questions helped paint a portrait of life as the students knew it, and allowed me to build trust and an understanding of the participants' formative years. The question, "please tell me about your experience using the Internet as an education resource" began a more open-ended portion of the interview. Students described their experiences, how often they used the Internet, and how relevant they found the information for their studies and clinical work. They also discussed their experiences with technology itself and the amount of assistance available.

Initial interviews lasted between 45 minutes and one hour. Follow-up interviews were conducted within three to six days of the initial interview. During the second interview, the participants were asked to review the transcriptions and validate the information they had provided. In the follow-up interviews students reviewed the transcripts of their initial interviews and answered questions to clarify meanings in the initial interview. The follow-up interviews lasted between 20 and 45 minutes.

Using van Manen's framework, interviews were transcribed and the process of phenomenological reflection was employed to grasp essential meanings. Stories the participants told about their experiences were read and re-read, and taped interviews were reviewed to determine the major themes and subthemes that the participants shared. These themes became the "experience of focus, of meaning, of point" that participant's share.¹⁵ The selective reading and holistic approaches guided the interpretive process. This researcher isolated thematic statements and grouped statements with similar meanings together, identifying themes from experiential structures. The stories the students shared were recognized, clarified, and refined into a summative constitution of meaning.

Lincoln and Guba¹⁶ describe four major criteria for rigor in qualitative research: truth value, applicability, consistency, and neutrality.¹⁷ To demonstrate truth value, participants were asked to validate the truth of the information extracted from the interviews. After reviewing their transcripts, the participants were asked, "Is this what you said?" and "Is this what you meant?" All of the participants either stated that the transcripts were written correctly or offered minor editing and clarification of their statements. To demonstrate applicability, the data were used to describe themes that the participants consistently described in their stories. These similar ideas then became the major themes and subthemes. Consistency in this study comes from using a consistent approach to the research interview with each research participant. All of the students were asked the same demographic questions and the same questions about their impressions and uses of the Internet. Neutrality was maintained by reviewing the findings with the research subjects and having them validate the meanings that they had intended.¹⁷ In addition, this researcher kept a detailed journal of the research process as it unfolded, including her perceptions of each interview and the process, procedure, and interactions with each participant.

Validity was established using VanKaam's expert validating approach.¹⁷ A PhD-level nurse who has done research in the field of phenomenology, has experience with international education, and has done international research reviewed the findings and meanings extracted in the study and discussed them with me to ensure and maintain validity. This nurse-researcher has fifteen years of both qualitative and ethnographical research experience.

Findings

During the interviews, the students talked about their lives and experiences in nursing school, doing assignments, and using the Internet. Analysis of the transcripts revealed five major themes: maintaining interpersonal connections, finding information and making learning easy, finding information for comparative practice, adapting information to fit Malawian culture and resources, and facing issues with technology.

Maintaining Interpersonal Connections

The first theme that emerged from the interviews with students was that they use the Internet because it allows them to make interpersonal connections. The students use the Internet and e-mail frequently for making interpersonal connections for one reason or another.

Chamoh said the first reason she uses the Internet is for "writing e-mails to friends." Paulia, a second-year student, said, "Personally, it also helps me to communicate with my friends, especially those that are out of this country. Those are my Malawian friends who have gone outside the country.... They are friends from here." Peaches, a second-year student, said, "It's very important, because at least you exchange information. We don't know what other nurses are doing out there, and people there don't know what nurses are experiencing here in Malawi." Jennie said, "I also use the Internet to get some information as well for personal issues.... in my family, something happens, I know there is the Internet and people get information." Martha, Jane and Susie, in the second and fourth years, made similar observations.

Finding Information—Making Learning Easy

All of the students also felt that using the Internet helped them to find information easily, and that in turn made learning easier. Martha said:

It's a simple and straightforward way of...finding information.... When we are given an assignment, and I can't find the information, I go straight to the Internet, maybe [to] Google and type the question....it gives straightforward information....like learning easy...and maybe knowing what is happening....

Susie added, "When you want to find the information about something, you type it and it is everyone (everything). When it is a book, we have to wait for long time for this." Rita said, "It's fast," while Paulia said:

It means quick and fast information. It also means that I'm able to get almost everything that I'm asked for my lectures.... We have few books in the library, so...people will go scramble for the books and then the obvious option is the Internet, and then I just go to the Internet...download the information that I want...I get information and I use it.

Peaches added:

Most of the books that we have in the library, they are books [from the]...1980s, 90s. ...We need information that is up-to-date. So [we]...get that information...from the Internet. We have to find up-to-date information about the....current issues in nursing.

All of the students stated that they enjoyed using the Internet, and that it is an easy way to access information as a part of their daily lives as students. Sometimes the information they search for is information for research projects and homework assignments; sometimes they are looking for up-to-date information about the nursing care they give patients and situations they see in a clinical setting. The students do have books and a few journals in their library, but because of the age and limited availability of printed resources, using the Internet is a key part of their educational experience. The meaning of the experience of using the Internet for these students is quickly finding up-to-date information for classes and research projects. However, it does not stop there.

Finding Information for Comparative Practice

Nursing students in Malawi know that many health problems exist in their country. Given the severity of the diseases they witness, and the fact that they seek to provide up-to-date health care to the people in their country, they are constantly looking for information to compare their practices with those who practice nursing outside of Malawi. Khwi said that she would "want to know all of the new practices that have been researched." Later, in the follow-up interview, she added, "In my studies I could use a tool, for example, to find what nurses in America do and wherever, and then you know what others are doing and then you do the same." Paulia said, "We will learn what other people have figured out there, and we will be able to use it in our own city to know how we can also improve our situations here." Chamoh said, "At least you are updated on what others out there are doing." Jessie summed it up:

I feel [that] for me as a nursing professional, the use of the Internet in collaboration with others may help to access certain information. Maybe...information within the country

and outside what nursing is like out there. It may be important because I feel it's only by doing that...you can realize whether you're nursing or the nursing you are giving is a standard or not. It may help you to actually evaluate it.

The students in Malawi use the information they find on the Internet as a standard and benchmark for comparing their nursing practice with nurses in other countries. They are eager to learn what others are doing and whether they need to make changes in their own nursing practices. They are looking for up-to-date, relevant, practical information when they search the Internet as part of their studies: information that will demonstrate how they can (or already do) provide their clients with high-quality nursing care.

Adapting Information to Fit Malawian Culture and Resources

The next theme that emerged was that nursing information found on the Internet often had to be adapted in some way to fit either Malawian culture or resources. The students described very specific examples of information they found, and often they described ways that this information needed to be adapted to "fit" Malawi. Khwi said:

Okay, for example, when you're looking for some diseases that are only common in Malawi, it is difficult to find that information because most of the [existing research was done in the] U.K. or U.S. So, to find that information concerning [those diseases] is difficult. There are things that we learn that are ideal, but at the hospital there is no equipment or facilities to do that nursing. Mostly, we improvise to solve problems.

Rita said, "The only problem is that the management you do outside Malawi is certainly different from what we do here because of the resources we have." Chamoh estimated that only about 50 percent of the information she finds is applicable to nursing practice in Malawi:

If I look at nursing care, [the] resources are not the same as in developed countries. Conditions are different. Health conditions, you have cardiac problems, hypertension... In Malawi, you have diarrhea.... There is not as much information on what they actually see as I [wish] there was."

Jane reported, "Some of the medications we use in Malawi are not the ones used in other countries, like the treatment for malaria." Martha expanded upon Malawi's major healthcare problems:

I was thinking of...malaria. I always think that maybe because the ones who are giving that information, like in the West, I should say like that, maybe the hospital settings, where there are patients, where maybe their conditions which are there is not always seem like the same as what we have in our hospitals, yeah. Sometimes they're like, but not exact. So, we may be seeking information in the book for malaria and it is not enough information for malaria...and my thinking was that maybe because it is not, they say, yeah it is not a common condition and in our country, we do have those conditions most of the times, malaria, malaria, malaria.

Martha went on to fully describe in-depth nursing management for a patient with malaria. Since she couldn't find the information in textbooks, she explained that her lecturers had taught her how to care for these patients, and that she wasn't sure whether that information was published.

Priscilla expanded on the issue of adapting information and

finding relevant, up-to-date evidence-based information based on Malawian nursing research:

In Malawi, the problem that I was telling you about, you find related issues, like in America and other countries. The research is done in Malawi but then it's not published. So, you have a problem relating what is happening in Malawi and what is happening outside. But the issues—I won't say [they] don't relate. They do relate somehow.

The stories and descriptions of finding information on the Internet that the students shared demonstrate that they do find medical and nursing information that relates to their practice. Oftentimes, however, they have to adjust this information in some way. The students also explained that they rely on their professors and other healthcare providers to explain how to handle the differences. In addition, the students said that articles and reports about research done in Malawi and culturally relevant nursing and healthcare practices in Malawi are not readily available.

Facing Issues with Technology

The final theme that emerged in conversations with the students was the issues they face related to using technology. In this category three subthemes emerged: learning to search for information, dealing with technical difficulties, and imagining no Internet.

Learning to search for information. Although all of the students talked about their experiences of finding information on the Internet, not all of them always found the search easy. In describing her experience of searching for information, Chamoh said:

You just go [to the library], maybe you don't know how to use the Internet or you don't know what to do with the Internet, so you just click everywhere, so it really becomes very hard for somebody to read. Mostly in Malawi, it's not always like when you're in primary school, secondary school you don't have that experience, so just come see the computer, it's your first time to use, it's somehow frustrating, you don't know what to do with the computers, where to go and sometimes it is difficult.

Priscilla added:

In the first place I would explain that it's difficult for us here, as I mentioned the courses, take notes, you did not hear me saying there's an orientation course for utilization of the Internet. There's nothing about computers, nothing like that....in secondary school, there's nothing like introductory courses [on using] computers, or the Internet services. So when you come here it's a bit difficult. Where do you find the information? Where do you go from there? The most difficult things that I found, initially using [the] Internet, was that I really didn't know how to go about doing it; where to find information, I mean.

The students explained that it takes time to learn to both search for information and use the research databases. Initially, the students find these challenges frustrating, and sometimes they do not know what words or phrases to use to search. Practice and appropriate assistance with searching seems to play a role, as all of the students did say that eventually they came to enjoy using the Internet.

Dealing with technical difficulties. The second subtheme that emerged was that of student frustrations with technical difficulties. Jennie noted:

On the negative side, one thing that I can point out that I experienced is that sometimes when you want to go into the Internet, you may not access it. I can see that it is technical problem. I don't know, but you go, and you want to search, and you can't access it, the page cannot open. Of course, it is, it happens once in a while, but still, it disturbs.

In a separate discussion, Chamoh echoed this thought:

Well, it is not that easy. Like here, if I talk to the students here, it is not easy, because ...the Internet supply is not sufficient. So it is not...very easy...because in the first place, you have to pay if you want to search the Internet. If you are in fourth year you are given a chance to go there in the evening for free, for one hour, but you cannot go daily, because your friends also want to go. So it is easy sometimes, you get the information very fast, it can be fast, but most of the times it is very slow.

Several other students also mentioned access problems. Khwi said, "Sometimes networks go down, or the computers are too crowded and you have to pay for 30 minutes at a time, so it's difficult to get the money."

Most of the students did not complain about technical difficulties that they experienced when accessing the Internet. Several, however, did. These students rely on the library staff to keep the computers and Internet interfaces functioning smoothly. When glitches occur, it affects the student's experience. Furthermore, in order to manage access to the few computers available and to maintain these resources, the students must pay a nominal fee for Internet use, approximately 40 cents per hour (USD). Although senior nursing students working on research projects are allowed to use the resources for free, this fee is an added financial strain for some students.

Imagining no Internet. In order to ensure that the deeper meaning had been fully revealed, I asked the students how they thought their academic life would be affected if they had no Internet access. Priscilla said:

Wow, if I [didn't] have Internet, that [would mean] no communications from friends, no updated information. I mean, I don't know, but it would be something very difficult. Well, I would say the Internet's part of our lives.

Peaches Said

It would affect me so much because [of] my research project. I'm using much information from the Internet [that isn't in]... the books so, yeah, it [would]...affect me so much. I would have a lot of problems. That means I would need to go in the library and spend hours and hours looking for information.

Jane said, "It would mean it would be long, long times of trying to get information in the books." Chamoh said:

I think for me, it would be very difficult if the Internet was not there...because as I have already told you...we get much of the information from the Internet. Recent information, you can only find on the Internet, because...we don't have the recent journals that have just been published in the library.

Jessie summarized

I feel it would be closed, the campus. Of course in the past they were coping, but nowadays we are used [to it], that if you want this, you do this. If you want this, you do this, and we are used [to having the Internet]. We know where we can find the information, but if the Internet [was] not there, it would

be difficult to access some information. Especially the recent information, because in our campus we have the problem that the books...we are using...old books.

Conclusions

The Internet is by nature a cross-cultural phenomenon. It spans countries and cultures and reaches anyone who can read the language printed on its pages and gain access to these pages via a computer and a dial-up, satellite, or broadband connection. What we read on the Internet, however, is interpreted in light of our unique experiences. Stated another way, what is interesting or useful for one user and the reasons for that interest may be completely different for another.

In the West, we use the Internet for gathering information, social networking, marketing, education, and research, and individuals in developing nations use the Internet for similar purposes. However, upon closer examination, the meaning of the experience for the nursing students in Malawi lies within the lens and cultural differences unique to these students.

The students stated that using the Internet means being able to connect with family and friends. Kraut et al.¹⁸ stated that the Internet had a positive effect on social and psychological well-being and that most people use the Internet to keep up with offline relationships. Malawian nursing students, like people all over the world, use Internet technology and e-mail as a means of communication. The cost and limited availability of computers, however, prohibits students' extensive use of the Internet, even for e-mail communication. Nevertheless, they rely on this form of communication, especially when family and friends are not living nearby.

Next this study showed that finding up-to-date information is very important to this group of students, but for different reasons. The first reason is that the nursing students in Malawi don't have many up-to-date books or professional journals. According to one student, "most of the time at this school, most books are not enough...most of the time we use the Internet when we are trying to find information." Unlike students in, say, the U.S. or the U.K., the students in Malawi do not have the financial resources to buy their own textbooks. According to the librarian, the library does have a budget for new textbooks, but as the students stated, the numbers of these textbooks are limited. Spending the equivalent of \$100.00 USD on a textbook would be equivalent to spending one-third to one-half of a Malawian's annual income. In addition, all of the students know that they may find information on the subjects they are studying; they also know they must share their textbooks with 60 to 100 other classmates. Therefore, in order to quickly find up-to-date information, nursing students often turn to the Internet. If the Internet were not available, it would be much harder for them to access this lifeline to up-to-date information. Additionally, the senior nursing students are required to do database searches for their research projects, making access to professional journals essential.

The third theme emerging is using the Internet for finding information to compare nursing practices. Students stated that they find information to be able to compare Malawian healthcare practices with those in the rest of the world, since they felt it was very important to have a standard for comparison. Healthcare providers all over the world seek to provide their clients with the best services and medical care.

In Malawi, however, the need to address healthcare problems appropriately, with the most up-to-date, relevant, cost-effective treatments and strategies, is critical because of the health problems and disparities that exist. Nursing students are taught to search for information and ways to improve these disparities. They hope to provide nursing care that meets the standards set by those who publish information and that is appropriate for their patients.

The fourth theme is adapting information to fit Malawian culture and resources. Students stated that they “adjust information” to fit either the local patient’s health problem or the resources available to treat the problem. While the Internet allows them to connect with people around the world, nurses need to provide care that is culturally sensitive and appropriate.¹⁹ The students recognize this and understand that the most prevalent diseases, illnesses, and treatments discussed in Western nursing publications are different from those they will see in their client base: malaria, diarrheal diseases, cholera, and malnutrition.

Additionally, the resources suggested for use in patient care situations are often different from the resources that are available in Malawi. Simple items like antibacterial soaps or oxygen tubing may not always be available, let alone complex traction equipment or wound management material. Malaria treatments effective in one zone are not necessarily those prescribed or proven most effective for the patients they will see, and the names of the medications discussed in journal articles may be different from those available or suited for use in Malawi. Students stated that they knew Malawian healthcare research is being done, but that it is not published and/or is not readily available on the Internet. They suggested that they needed more locally applicable information.

The last main category that emerged from the data was the issues students faced in using technology. Students noted that it can be difficult learning to use Internet technology because there are technology glitches and hassles that would frustrate any user, let alone someone who is fairly new to using computers. They also stated that Internet access can be difficult because of usage costs.

Several students reported multifaceted technical issues that come with using satellite-based Internet connections. This frustration complicates matters for the students. At the time of data collection, the Internet connection used by the students in Malawi came from a satellite link, which is than the high-speed or broadband connections commonly used in the West. The reason for this slow speed is that fewer kilobytes of data are transferred per second via satellite; furthermore, fewer providers mean that satellite access is comparatively very expensive. The library covers most of the connection fees; however, students who are not seniors must pay nominal fees for any Internet time. At the time the data were collected, college administrators were hopeful that the East Africa cable being laid would improve the quality and lower the cost of access for the school and the students.

The final subtheme to emerge was the students’ perceptions of how life would be different if there were no Internet. They all explained that they would not want to go back to a world without the Internet and found it very difficult to envision life without it, since the Internet brings them information and connects them to the rest of the world. For these students, the educational process is an important part of becoming

a successful adult, and improving healthcare outcomes for clients. The significance of using the Internet for these students is best expressed in the thoughts they shared when they imagined it ceasing to exist. These students know that improving health outcomes is possible, and they know that by using up-to-date information, they can work to improve health outcomes and disease statistics right where they live. Ultimately, the Internet provides these students a window of hope and possibility.

This qualitative phenomenological study has illuminated the meaning of the lived experience of nursing students from a developing nation, Malawi, in using the Internet as an educational resource. Results of qualitative studies should not be generalized to larger populations. However, the evidence presented points to the need for further research on Internet use in developing countries. The focus on use of the Internet in healthcare education and nursing education should be a high priority for educators, researchers, and policy makers.

Researching the lived experience of nursing students who use the Internet as an educational resource provides insight into the experiences of the students and demonstrates the value of extending Internet availability to the nursing communities in underdeveloped nations. Leininger states that “knowledge of meanings and practices derived from world views, social structure factors, cultural values, environmental context, and language uses are essential to guide nursing decisions and actions in providing culturally congruent care.”¹⁹ This study has demonstrated that Internet resources connect us with our colleagues around the world, and that sharing knowledge via this information super-highway is and can continue to be very beneficial.

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Nutritional Support in Critically ill Patients

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Abstract

Nutrition is an integral component of general care for critically ill patients, and numerous randomized trials have addressed research questions related to the optimal feeding route, formulation, dose, and timing of initiation. Critically ill patients are hypermetabolic and have increased nutrient requirements. It is assumed that nutrient depletion is associated with increased morbidity and mortality, and that correction or prevention of such nutrient depletion can eliminate this excess morbidity and mortality associated with malnutrition. There are many factors that determine outcome from critical care and indeed any hospital treatment, and nutritional status clearly has an effect.

Key Words

Nutrition in ICU Patients, nutrition, enteral feeding , parenteral feeding.

Introduction

Nutritional support is an important issue in the management of critically ill patients. Integrity and functioning of most of the cells of the body depends on continuous delivery of nutrients. Critically ill patients are characterized by acute changes in their metabolism, which are described by the term 'hypermetabolism'. Provision of nutritional support to critically ill patients can be challenging. Critical care nurses must be aware of which patients require specific nutritional support, when to initiate nutritional support, and by which route to provide nutritional support. Consultation with a dietitian or nutritional support service can help facilitate this process.

Assessing Nutritional Status In Critically Ill Adult Patients

Nutrition assessment is an integral part of evaluation of the critically ill child. Its goal is to identify malnourished ones and those who are at risk of developing it. Assessment consists of a detailed history taking and clinical examination, which is evaluated in conjunction with anthropometry and appropriate lab investigations. Nutrition requirements may also be determined by measurement from complex formulas which provide useful guidelines on caloric management in the critically ill. Some of these are:

- (a) Basal Metabolic Rate (BMR)
- (b) Indirect Calorimetry (Metabolic Cart)
- (c) Respiratory Quotient:
- (d) Stress Factor: The energy expended is calculated by multiplying the BMR with 1.25 and the stress factor for the particular illness. The stress factor in various illnesses as assessed by Souba and Wilmore is

Starvation = 0.9%

Elective Operation = 1.1

Peritonitis, major infection = 1.25

Multiple blunt trauma = 1.5

Burns = 2%

Anthropometric measurements also used, included patients' height and weight on admission, triceps skinfold thickness (TSF), and mid-arm circumference (MAC).

Types of nutritional support

The two main routes for providing nutrition in critically ill patients are

1. Enteral feeding
2. Parenteral nutrition

Enteral feeding is being preferred now-a-days because of ease of administration, decreased cost, decreased risk of infection, no need for central venous access and improved gastrointestinal function.

Tube Placement Options

1. Nasoenteric Feeding Tubes

Tubes are passed through the nose to various points in the GI tract and are named with reference to the location of the terminal end of the feeding tube. Examples include nasogastric, nasoduodenal, and nasojejunal tubes.

2. Tube Enterostomy

Tubes are placed either laparoscopically, operatively, or percutaneously. Examples include esophagostomy, gastrostomy (PEG), percutaneous endoscopic jejunostomy (PEJ), needle catheter jejunostomy (NCJ), operative laparoscopic gastrostomy, operative laparoscopic jejunostomy.

Types of Feeding Mixtures

Following are the various categories of feeding mixtures from which selection should be made for a given patient.

1. **Elemental Diets:** These are monomeric formulas of low molecular weight which require minimal digestive effort and are easily absorbed without leaving much residue. Carbohydrates are present in these diets as oligosaccharides, sucrose and glucose.
2. **Polymeric Formulas:** These diets consist of intact proteins, complex carbohydrates, fat and residue. The various types of polymeric formulas include milk based diets and lactose free diets which are preferred in critically ill patients and in lactose-intolerant patients.
3. **Modular Diets:** These formulas are available as individual nutrients. Various nutrients can be mixed according to the need of the patient.

Selection of diet formulas in specific condition

- 1. Sepsis, Trauma and Burns:** Stress caused by sepsis, burns and trauma, results in release of various hormones in the body. These hormones cause skeletal muscle proteolysis and hydrolysis of branched chain amino acids (BCAA). Therefore, in such stress conditions, formulas rich in BCAAs are preferred
- 2. Pulmonary Compromise:** Increase intake of carbohydrates can lead to increase in CO₂ production and oxygen consumption, which can complicate and delay weaning in artificially ventilated patients. Therefore, in patients with pulmonary compromise, a formula containing decreased carbohydrate calories should be selected.
- 3. Hepatic Failure:** High concentration of BCAA and low concentration of aromatic amino acids may help in normalizing the altered amino acid profile in patients with hepatic encephalopathy.
- 4. Renal Failure:** Diets for patients with renal failure should contain high concentrations of essential amino acids combined with a large calorie to nitrogen ratio.

Routes for Enteral Feeds

Nasoenteric Feeds (Nasogastric, Nasoduodenal or Nasojejunum Tubes)

If enteric nutrition is needed for a short period, nasoenteric feed is preferred because of its temporary nature, ease of administration and simple technique of insertion. Among all nasoenteric routes, nasogastric is the preferred site. If there is increased risk of aspiration, feeding can be administered into distal duodenum or jejunum

Alternative Routes (Pharyngostomy, Gastrostomy and Jejunostomy)

If requirement for enteral nutrition is expected for more than 4 weeks, these routes are chosen. In the past, these tubes were being inserted at the time of surgery. However, nowadays percutaneous insertion techniques are available using local anesthesia

Methods of Enteral Feeding

Bolus Feeding: It has advantages of requiring less amount of time and equipment and reduced risk of contamination. However, there are more chances of aspiration after a bolus feed. Patients with short bowel or malabsorption who run the risk of physiologic intolerance to the bolus of carbohydrate/protein or fat do not tolerate this type of feeding.

Intermittent Feeding: This is given as 2 ml/kg every 4-6 hourly, each time for 20-45 minutes. This type of feed is usually well tolerated.

Continuous Drip Feeding: This type of feeding has the advantage of leaving smallest residual volume, has least potential for aspiration, bloating and diarrhea. Feed should be started with small volumes, 1 ml/kg/h of half strength formula. If tolerated for 24 h, it can be increased by 0.5 ml/kg/h until the desired volume is delivered. Once the required volume is achieved, concentration can be increased to full strength.

Parenteral Nutrition

This should only be used when the enteral route is either not possible or cannot provide sufficient nutrient input. Complications are more frequent with the parenteral route and are usually related to catheter insertion and infection. It should be remembered that TPN can be delivered into peripheral veins via very fine-bore catheters, as well as through central lines. Lines used for TPN should be inserted under full aseptic technique and TPN should be delivered through a dedicated catheter. Interruptions and reconnections should be kept to a minimum and again carried out under aseptic conditions. A TPN team, responsible for inserting the feeding catheters, prescribing the feed required, adjusting the nutritional regimen as necessary in individual patients and monitoring the occurrence of line-associated sepsis, is used in many hospital

Macronutrient requirements	Standard Range	Maximum
Calories kcal/kg/day	Infants = 90 - 100 Children = 70 - 100 Adolescents = 40 - 55 Adults = 28 - 30	Adults = 40
Protein g/kg/day	Infants = 2.0 - 2.5 Children = 1.5 - 2.0 Adolescents = 0.8 - 2.0 Adults = 0.8 - 1.0	Adults = 2.0
Dextrose rate	4 - 5 mg/kg/min	7 mg/kg/min

Conclusion

Adequate nutrition should be a part of management protocol for critically ill patients. Enteral nutrition is as good as parenteral nutrition with added advantages of being less costly and easier to administer. A proper protocol and adequate monitoring are key points for ensuring successful enteral feeding.

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Effectiveness of two Teaching Methods for 'Cranial Nerve Assessment'

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Abstract

The purpose of Health Assessment is to collect data to determine peoples' overall level of functioning in order to make a professional clinical judgment. This Health Assessment can be taught by using different instructional methods. A study was conducted to find the effectiveness of two teaching methods for 'Cranial Nerve Assessment', on knowledge and skill of Undergraduate Nursing Students was conducted with the aim to compare Teacher Guided Instruction (TGI) and Computer Assisted Instruction (CAI).

Method

The data were collected using Base line information, Interpretive Exercises and Observational Checklist on Cranial Nerve Assessment. The study adopted a quasi experimental (pre experimental) design with evaluative approach. The samples were 64 (TGI=34 and CAI=30) students 2nd year B.Sc. Nursing. The students were divided into two groups and were taught using TGI and CAI respectively.

Result

In comparison between the effectiveness of two teaching methods, TGI and CAI, both the teaching methods were effective to improve the knowledge and skill of Cranial Nerve Assessment (CAN) and there was no significant difference { $t_{(62)}=0.13$ (knowledge) and $t_{(62)}=0.185$ (skill)} found in the resultant knowledge and skill of students in Cranial Nerve Assessment.

Conclusion

The science and general education is advancing every day. Hence changes in nursing curriculum are done frequently. Instruction methods also must be changed along with curriculum change, without which objectives may not be achieved effectively.

Key Words

Teaching, Teacher guided instruction, computer assisted instruction, nursing student, cranial nerve assessment, interpretive evaluation, teaching methods.

Background

Health Assessment is the most critical phase of the nursing process. The purpose of Health Assessment is to collect subjective and objective data to determine peoples' overall level of functioning in order to make a professional clinical

judgment. Health assessment is critical skill for nurses and is required for any nursing undergraduate.¹ This Health Assessment can be taught by using different instructional methods.

Simulated patients are used when real clinical situation is not available or to ensure uniformity in teaching-learning process and its outcome. Nursing student and faculty satisfaction with teaching using simulated patient method also improved the teaching-learning process.²

Teaching methods for theory and practical differ from each other. Clinical practice demands hands - on experiences; theoretical knowledge incorporated to practice. Clinical evaluation in advanced practice nursing education using standardized patients in health assessment showed improvement in physical examination skill³. Simulated patient is used traditionally in teaching nursing and health care domain. The reason for its wide use in nursing are: nursing shortage and need to increase enrollment into nursing programs, a need to supplement limited numbers of clinical tests, low cost, emphasis on evidence-based practice and competencies, acceptance of simulation as a useful tool and increasing awareness of the need to address patient safely.

Use of simulation patient has many advantages in nursing education. The clinical setting can be realistically simulated, no threat to patient safety, active learning, specific unique patient situation, correction of errors and discussion immediately and consistent and comparable experience can occur for all students and it develops interactive critical thinking^{4,5,6}.

The students usually avoid doing neurological assessment or do it incompletely. The reason seems to be poor understanding, complexity of neurological assessment and lack of confidence. A Research has reported that fewer than half of the skills taught in a physical examination course were actually used in clinical practice⁷.

Nurses are not performing neurological assessment routinely and the common mistakes are that they start with an inadequate baseline assessment, do not describe assessment accurately, and fail to recognize subtle clues⁸.

Though all most all nurses use Neuro assessment forms irrespective of neurological diagnosis, 30% data were not documented and few nurses tried assessment in narrative nurses notes; still it was not consistent across time, patient or nurses⁹. Therefore, there should be uniformity in neurological assessment.

Based on the above facts, a comparative study of the effectiveness of two teaching methods for CNA, on knowledge and skill of Undergraduate Nursing students of selected Nursing College of Udupi District was conducted. The objectives of the study were to develop TGI and CAI materials on CNA, compare the effectiveness of TGI and CAI, in terms

of UG (N) students' gain in mean knowledge and skill scores in CNA learnt through these two methods and determine the correlation between knowledge and skill of UG (N) students in CNA.

Method

An evaluative research using a Quasi experimental two group pre-test post-test design was adopted. The study was conducted in Manipal College of Nursing, Manipal University, Manipal. The population in this study comprised second year B.Sc. Nursing students. Sample consisted of 34 (TGI) and 30 (CAI) = 64 Students. Data collection tools were Baseline information (Tool 1), Interpretive Exercises (Tool 2) and Observational Checklist (Tool 3) on Cranial Nerve Assessment. Total items present in the interpretive exercise were 20 with six main introductory parts (with paragraphs and pictures). All the tools were validated by seven experts. Reliability of tool 2 and observational check list were $r = 0.836$ (split half technique) and $r=1$ (interrater) respectively.

The teaching methods used were CAI and TGI. CAI is a teaching process in which a computer program, which includes video clippings of CNA techniques, is used to enhance the students learning whereas TGI is a lecture cum demonstration method of teaching process in which a teacher uses a simulated patient to teach CNA. Both CAI and TGI were validated by experts from different fields of health care. Pilot study was conducted among 30 students, and the study approach and design were found feasible.

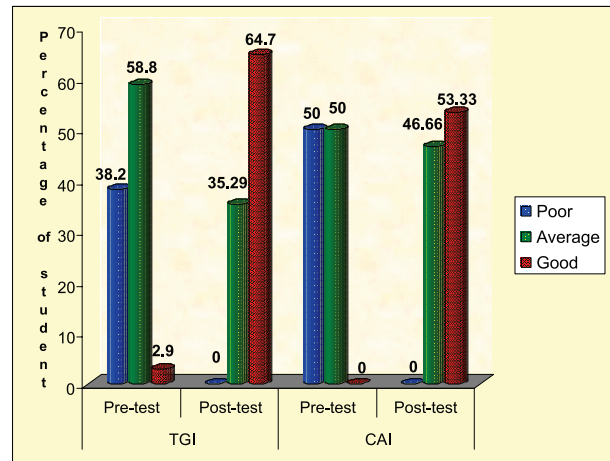
The students were divided into two groups: the students posted in morning shifts were taught by TGI method and evening shifts with CAI method. The groups were divided as morning and evening shifts in order to reduce the sample contamination, as they do not meet each other to share the information. Pre-test was done by administering all three tools. Two groups of students were taught with TGI and CAI method respectively. Post-test was done after eight days. The data were analyzed based on the objectives of the study, using descriptive and inferential statistics with SPSS (11.5 version).

Results

Sample characteristics

Sample characteristic is presented in table 1. Majority of the

Fig. 1: Percentage Distribution of Pre and Post Knowledge Score



students were female, aged between 19-20 years and have passed first year B.Sc. nursing degree examination with first class.

Knowledge of Cranial Nerve Assessment

Based on the score obtained, students were arbitrarily categorized as Poor, Average and Good. The percentage distribution of pre-test and post-knowledge scores is presented in figure 1.

The data in figure 1 indicates that 2.9% (1) student out of 34 had "Good" knowledge on CNA in TGI group, whereas in CAI group no student was in "Good" category in pre-test, but in post-test 16 students were in "Good" category. Thus there was increased knowledge in both (TGI & CAI) teaching methods.

The data in table 2 indicate that in the TGI group the mean posttest knowledge score (14.32) on CNA was higher than the mean of the pre-test knowledge score (7.76). In the CAI group the mean of the pre and post-test knowledge score were 6.90 and 14.23 respectively. Thus it indicates that both the teaching methods were effective in increasing mean scores of the students' knowledge. The t-value ($p < 0.05$) was found significant. Therefore, this indicates that both teaching methods were effective in improving the knowledge of the students.

Table 1: Frequency and percentage distribution of students in TGI and CAI

n = 34+30=64

Area		TGI		CAI	
		Frequency	Percentage	Frequency	Percentage
Age in years	18-19	2	6	3	10
	19-20	29	85	25	83
	>20	3	9	2	7
Gender	Male	7	21	4	13
	Female	27	79	26	87
Percentage of marks in first year B.Sc. nursing examination	50-64	6	18	6	20
	65-74	24	71	21	70
	>75	4	11	3	10

Table 2: Mean, range, standard deviation and t value of pre-test and post-test of scores of knowledge on CNA in TGI and CAI group N=34+30=64

	TGI				CAI			
	Mean	Range	SD	t	Mean	Range	SD	t
Pre-test	7.76	3-14	2.764	*9.10	6.90	3-12	2.440	**15.34
Post-test	14.32	9-20	3.062		14.23	9-19	2.417	

Maximum possible score = 20 * $t_{(33)} = 2.04$, ** $t_{(29)} = 2.05$ $p < 0.05$

Skill in Cranial Nerve Assessment

The skill on CNA was assessed using observational check list. Based on the score obtained, students were arbitrarily categorized as "Poor", "Average" and "Good". The percentage distribution of pre-test and post-test skill score are presented in figure 2.

The data in figure 2 indicate that all the students in TGI and CAI group were in poor category. In post-test 22 were in "Average" and 12 students were in "Good" category, where as in CAI group 12 students were in "Average" and 18 students were in "Good" category. Thus there was increase in the skill in performing CNA of both teaching methods.

Mean, Range and standard Deviation and t value of pre-test and post-test of knowledge and skill on Cranial Nerve Assessment in TGI and CAI are presented in table 2 and table 3 respectively.

The data in table 3 indicate that in the TGI group the mean posttest skill score (31) was higher than the mean of the pre-test skill score (3.06). In the CAI group the mean of the pre and the post-test skill score is 4.60 and 30.70 respectively. The t value ($p < 0.05$) was significant. This indicates that both teaching methods were effective in improving the skill.

Comparison between TGI and CAI groups

The descriptive statistics computed in order to determine the significance of difference of knowledge and skill. The findings are presented in table 4.

In comparison between the effectiveness of two teaching methods, TGI and CAI by independent t-test computation, the t value show that there was no significant difference ($t_{(62)} = 2.00$ $p < 0.05$) in the resultant knowledge and skill of students. But statistical analysis proves that both methods were effective to improve the knowledge and skill of students. Therefore, it could be concluded that both the teaching methods were more or less equally effective for students learning.

Correlation between knowledge and skill

Pearson's Correlation was computed and the computed r value ($r = 0.237$, $df_{(33)} = 0.325$, $p < 0.05$) show that there was no significant correlation between the post-test knowledge and skill scores by TGI method. But there was significant correlation ($r = 0.470$, $df_{(29)} = 0.349$, $p < 0.05$) between the knowledge and skill scores in CAI method of teaching. Hence, knowledge and skill on CNA were interdependent to each other in CAI method of teaching.

Discussion

The present study findings were in accordance with the study of Jones and Avery (2004) in a study of teaching pharmacology to graduate nursing students evaluation and comparison of

web-based (CAI) and face-to-face methods, which resulted that CAI was effective teaching method to improve students' self efficacy ($p < 0.001$).¹⁰

A comparative study was done on nursing review course with CAI and lecture-discussion method of teaching for senior nursing students of undergraduate Baccalaureate nursing program (n=36). The CAI group demonstrated a significant increase ($p < 0.01$) in the post-test mean score compared to lecture discussion method¹¹. Even though the exit exam after three week of post-test did not show the significant difference, CAI was recommended as it saves faculty time. Present study also did not show the statistical significant between tow teaching method.

Present study supports the study on effects of standardized patient as teaching method done by Yoo in Korea, with the purpose of comparing effects of two teaching methods. A quasi-experimental study using a non-equivalent control group pre and post design with traditional teaching (n=40) and simulated patient (n=36) as two methods of instruction, simulated patient method was found effective ($t = 4.92$, $p = 0.000$)¹². Present study also used simulated patient for teaching as well as for evaluation of the students.

The findings were consistent with result of the study of effects of two teaching methods on nursing students factual knowledge and performance of psychomotor skills carried out by Beeson and Kring in North Carolina, with the aim to determine the factual knowledge of the students with two type of teaching methods i.e. lecture method and interactive video teaching. The lecture method (M=92.43) showed significant increase in gain student knowledge compared with interactive video teaching (M=88.30)¹³.

Fig. 2: Percentage Distribution of Pre and Post Skill Score

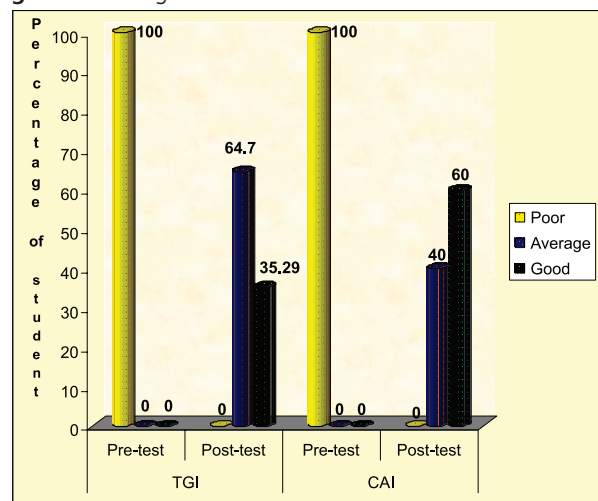


Table 3: Mean, Range, Standard Deviation and t value of pre-test and post-test of scores of skill on CNA in TGI and CAI group. N=34+30=64

	TGI				CAI			
	Mean	Range	SD	t	Mean	Range	SD	t
Pre-test	3.06	0-8	2.074	*24.75	4.60	0-13	3.21	**21.56
Post-test	31	19-41	5.959		30.70	19-47	7.01	

Maximum possible score=50 * $t_{(33)} = 2.04$, ** $t_{(29)} = 2.05$ $p < 0.05$

Table 4: Mean and Standard deviation on pre-test and post-test knowledge in TGI and CAI group N=34+30=64

Knowledge on CAN			
		Mean	Standard Deviation
Pre-test knowledge	TGI	7.76	2.764
	CAI	6.90	2.440
Post-test knowledge	TGI	14.32	3.062
	CAI	14.23	2.417
Skill on CAN			
Pre-test knowledge	TGI	3.06	2.074
	CAI	4.60	3.212
Post-test knowledge	TGI	31.00	5.959
	CAI	30.70	7.010

The present study hold up the result of the study carried out by Buckley. Evaluation of class room based, web enhanced and web based learning nutrition courses. Nutritional course was taught by using class room based (n=24), web enhanced (n=23) and web based (n=11) methods in Washington. Three different evaluations were reported; midterm ($F[2,57]=2.94;p=0.06$), final examination ($F[2,57]=.46;p=0.62$) and course grade ($F[2,57]=1.37;p=0.3$). There was no statistical significant difference was found¹⁴.

The finding of the present study contradict the study reported by Flannery, which was aimed at finding the most effective method of instruction by comparing self directed manual, teaching with video and class room presentation. The classroom teaching (n=23) score was significantly lower (73.9%) than other two methods; self directed manual with 23 sample (89.9%) and teaching with video with 25 sample (94.7%). It also reports that the classroom teaching was lacking in consistency¹⁵. The present study imply that TGI which was similar to class room teaching has significant effect on improving students knowledge and skill.

Conclusion

The findings show that most of the B.Sc Nursing students had average knowledge, but poor skill in performing CNA. The students improved their knowledge and skill after the teaching. Both teaching methods i.e. TGI and CAI were effective means of teaching. Even though both are good methods of instruction, literature supports use of CAI as it saves time of the faculty and consistency can be maintained, interaction with teacher is lost in CAI. Maintenance of consistency in TGI would be difficult task. TGI provides opportunity for the students to clear their doubts. Teacher can modify the teaching method based on the students' level of understanding. Knowledge

and skill need not to be positively correlated all the time. So we can expect the student who is dull in theory may not be weak in practical.

The findings of the study have implications in various areas of nursing education, nursing practice and nursing research. Different types of teaching methods are implemented in many nursing colleges which demands less faculty time. CAI or video teaching is the best example which saves teachers' time and provides students to learn in their own time. Instruction methods must be changed along with curriculum change in nursing as the science and technologies are advancing. TGI is one of the innovative methods, where the students get confidence to work in the clinical area. The teacher and students interaction is also improved with this.

Teaching all physical assessment at a time may not helpful, especially for the student who is weak in remember the facts. Use of simulated patients and teaching on specific part of the assessment is regarded as better.

There are many researches on effectiveness of different methods teaching. But very few studies recommend the appropriateness of the methods for particular subjects. Nurse researchers have enormous responsibility to find out the best method which can be adopted in India.

In the present study the student of 2nd year B. Sc. nursing students were selected using purposive sampling, which limits generalizability of the study.

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Assess and Compare the Behavioural Practices on Preventive aspect of Oral Problems among Students of a Medical and Nursing College at Sri Venkateswaraa Medical College Hospital and Research Centre in Puducherry

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Abstract

Assess and compare the behavioral practices on preventive aspect of oral problems among students of a medical and nursing college at Sri Venkateswaraa Medical College Hospital and Research Centre in Puducherry. A cross-sectional study was carried out among 170 medical and nursing students (89 & 81 respectively). The subjects were above 18 yrs of age in 2nd year studying at Sri Venkateswaraa medical college and Indrani college of nursing in Aug 2009. A self administered, structured questionnaire was used. The study findings revealed that health professional students like medical and nursing students also were not following the healthy practice to preventive oral health problems, in spite of their high literacy levels and easy access to dental care. But nursing students were better than the medical students in their practice.

nursing college at Sri Venkateswaraa Medical College Hospital and Research Centre in Puducherry.

Material and Methods

A cross-sectional study was carried out among 170 medical and nursing students (89 & 81 respectively). The subjects were above 18 yrs of age in 2nd year studying at Sri Venkateswaraa medical college and Indrani college of nursing in Aug 2009. A self administered, structured questionnaire was used. Verbal consent was obtained. The questionnaire probed into the behavioural practice issues of preventive dental care and took 20 minutes for completion. The questionnaire had well designed options and anonymity was ensured. Data was collected and analyzed using SPSS 17.0. The population that was opted for the survey was medical and nursing students in whom the concept of prevention and well being can be easily understood. The concepts of preventive oral health can be easily put into practice by them and well informed students could be expected to inculcate hygienic practices in the community.

Introduction

“Even pearls are dark before the whiteness of his teeth”

- William R. Alger

A smile is the shortest distance between two people. Smiling is a way to make yourself stand out while helping your body function better. To make sure that your smile reflects the best about you is to practice good oral hygiene. Teeth are important, not only for the smile and speech, but also for their contribution to the structure of the face and the jaw. Regular oral hygiene is very important to eliminate bad bacteria. Oral hygiene consists of both professional and personal care. Many research study findings reported that 60-90% of school children worldwide have dental cavities. Severe periodontal (gum) disease, which may result in tooth loss, is found in 5-20% of middle-aged adults; the rate varies across geographical regions. So, the investigators were interest to know that how the health professional students follow their oral hygiene practice and preventive aspect of oral problems.

Statement of the Problem

Assess and Compare the Behavioral Practices on Preventive Aspect of Oral Problems among Students of a Medical and Nursing College at Sri Venkateswaraa Medical College Hospital and Research Centre in Puducherry.

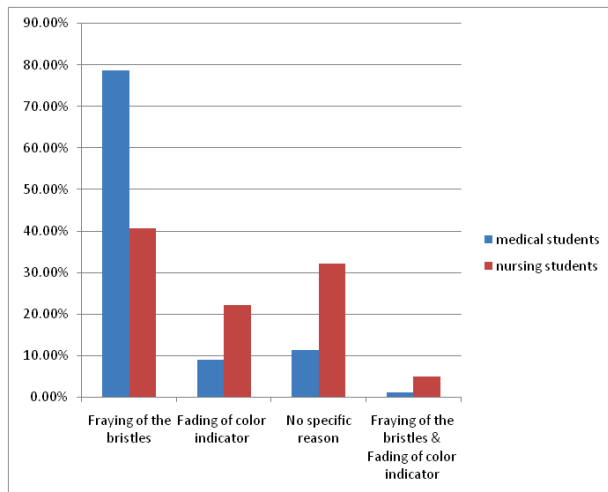
Objectives

- # To assess the behavioural practices on preventive aspects of oral problems among students of medical and nursing college at Sri Venkateswaraa Medical College Hospital and Research Centre in Puducherry.
- # To compare the behavioural practices gap on preventive aspects of oral problems among students of a medical and

Study Findings

- The study reported that 95.51% of the medical students said that maintaining oral hygiene is individual responsibility and 96.30% nursing students said oral hygiene is individual responsibility.
- 62.92% medicos said that visit to a dentist is periodically necessary to maintain the oral hygiene. Among nursing students 79% agreed visit a dentist regularly is necessary to maintain the oral hygiene.
- 13.64% medical student and 51.85% nursing students were of the opinion that improvement and maintenance of oral hygiene is not in ones control.
- The study revealed that among medical students 41.57 % used toothbrush but still old practices like neem stick were practiced by 13.48%. When enquired with nursing students, 55.56% used tooth brush and tooth paste while just 4.94% were neem stick users.
- Regarding the tooth brush, half of the medicos used medium soft while only 7.87% used super soft brush advised by ADA. In nursing students, 45% used soft and 7.41% practiced super soft brush.
- Among medical students, about 42.70% brushed in the morning and 49.44% brushed twice a day while just 7.87% brushed after every meal. Among nursing students 45% brushed in the morning, 55% brushed twice a day.
- 21.35% of medicos and 37.04% nursing students pressed the paste in between the bristles of the brush, while the others did not.
- As for as visiting the dentist is concerned, 71.43% of the medicos and 54.55% of the nursing students visited only in pain.

Comparison of medical and nursing students on Reason for changing brush



- Just 5.71% of medical students and 20.78% nursing students visited once in three months which is the method advised by WHO.
- About 60% of medical students and 40.74% of nursing students drink aerated fluids sip by sip. Only 15% of the medical students and 32% of the nursing students used straw.
- When asked whether they use fluoridated tooth paste, 29.41% medicos replied YES and 54.32% nursing students said YES for the same.
- Only 9.09% medicos and 6.17% nursing students knew about flossing.
- 69.66% medical students and 72.84% nursing students had visited a dentist before.
- When we asked about going for scaling, 12.20% medicos and 56.25% nursing students replied YES.
- 78.65% of the medicos said they would change the brush while fraying of the bristles occurs, 8.99% when the colour fading occurs, 1.12% when fraying of the bristles and fading of colour both occur, 11.24% reported no specific reason.
- Reason for changing brush, 40.74% of the nursing students

expressed that they would change the brush while fraying of the bristles occurs, 22.22% when the colour fading occurs, 4.94% when fraying of the bristles and fading of colour both occur, 32.10% reported no specific reason.

Conclusion

The study findings revealed that health professional students like medical and nursing students also were not following the healthy practice to preventive oral health problems, in spite of their high literacy levels and easy access to dental care. But nursing students were better than the medical students in their practice. Only when they follow, they can educate to others confidentially. Health professional students also need review lecturer class on dental hygiene and strategies to prevent oral problems.

Based on the study findings the following recommendations were made:

- Faculty may conduct seminar on oral health at least once in a year.
- May conduct screening programme for all students.
- The study can also be done on experimental basis.
- The study can be carried out in large sample size.
- The study can be done on different age group of students like school and college.

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A Study of Awareness of Mothers on Pediculosis

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Abstract

Objective

A study to identify the prevalence of pediculosis capitis among school children, to assess the knowledge of mothers of children with pediculosis capitis on pediculosis capitis and its management and to find the association between knowledge of mothers of children with pediculosis capitis and its management.

Study Design

Exploratory survey.

Material and Methods

The schools for the study and children for the management were selected by random method and purposive sampling technique was used to identify the children with pediculosis capitis. Prevalence of pediculosis capitis was identified among 342 children aged between 5 to 13 years from two schools. Among them 135 children were identified with pediculosis capitis and their mothers were included to identify the knowledge on pediculosis capitis and its management.

Statistical Analysis Used

Frequency and percentage and Chi-square tests were used for the analysis.

Results

Prevalence of pediculosis capitis infestation was 46.68% in rural primary school children. Majority (71.7%) of the children belongs to the age group of > 9- 13 years and were females (80%); and belonged to joint families (53.3%). Majority (46.7%) of the parents had no information about the management. Majority (67.4%) of the mothers had average knowledge on pediculosis capitis and its management. There was a significant association between source of information and the knowledge score of mothers ($p=0.002$)

Conclusion

Prevalence of pediculosis capitis among rural primary school children is very common. Thus creating awareness among mothers about different methods of management and promoting personal hygiene is very important.

Key Words

Prevalence, Knowledge, Pediculosis capitis

Introduction Pediculosis is an important communicable infestation posing a public health problem in India. Infestation with pediculus humanus capitis (head louse) is more commonly observed among population who live in an overcrowded and insanitary environment. Though pediculosis can occur in any age group, younger children are more frequently affected as they probably have more contact with other affected children in overcrowded houses and schools. This infestation adversely affects not only their health but also their curricular activities.¹

Currently, pediculosis affects 6-12 million persons in the United States each year, and this number continues to rise. Social stigma and persistent misconceptions complicate the implementation of appropriate management strategies. Diagnosis is made on the basis of finding nits (i.e., silvery-white eggs firmly attached to the hair shaft), concentrated on the crown, behind the ears, and at the nape of the neck. Transmission occurs by direct contact with an infested person or indirectly by contact with clothing, personal grooming articles, bedding, or upholstered furniture containing viable nits or lice. Although three chemical agents are currently available; permethrin 1.0% (Nix Crème Rinse) is the treatment of choice. Environmental treatment is also necessary for the eradication of the infestation. Health care personnel who come in contact with this population need to be well informed of the facts in order to disseminate accurate information for diagnosis and management.²

Indian studies have reported a wide – ranging prevalence of pediculosis in different groups, 51.26% among villagers, 6.4% among school children, and 4.6% in the semi urban community. Pediculosis is one of the most common parasitic infestations in the community, responsible for a high level of morbidity. The condition in most cases simply reflects poor hygiene. A house to house survey was conducted in 5 villages of Wardha district, Maharashtra, with a combined population of 2063. A study conducted among 337 males and 329 females up to age 14 years found a prevalence rate of pediculosis capitis infestation of 20.42%. Infestation was detected in 8.9% of males and 32.2% of females. The infestation rate increased from 9.31% to 30.17% with the age group from 0-4 years to 10 – 14 years. 54.4% of children did not wash their hair daily; 35.6% of females and 21.3% of males. When hair was washed on a daily basis, the infestation rate was 11.8%, compared to 27.6% when the washing was done irregularly. Teaching the community about personal hygiene and the availability of anti- pediculosis drugs could lead to the reduction in the prevalence of pediculosis capitis among children.³

Objectives

1. To identify the prevalence of pediculosis capitis among school children.
2. To assess the knowledge of mothers of children

with pediculosis capitis on pediculosis capitis and its management.

- To find the association between knowledge of mothers of children with pediculosis capitis and its management.

Hypothesis

H₁: There will be a significant association between the knowledge of the mothers identified with pediculosis capitis and selected variables.

Material and Methods

In this study schools were selected by random method, children for identifying the prevalence of pediculosis were by purposive sampling technique.

Data collection instruments were, Tool1: Demographic proforma, Tool2: Knowledge questionnaire on pediculosis capitis and its management.

The content validity of the tools was obtained by submitting the tool to 7 experts. Tool was pre tested by administering the tool to four mothers whose children had Pediculosis capitis in Pithrodi village. The reliability of the tool was established by using split half method for the knowledge questionnaire and the value obtained was 0.76 and the tool was considered reliable. Pilot study was conducted to assess the feasibility and practicability.

The main study was conducted in Aided Higher Primary School, Herebettu and Zilla Panchayath Higher Primary School, Athrady in 2010. The pediculosis capitis infestation among children was identified by visual inspection and were informed to ask their mothers or care takers to come to school on a fixed date. On that day demographic proforma and the knowledge questionnaire were administered to them.

The obtained data were analyzed based on the objectives and the hypotheses by using descriptive and inferential statistics and hypothesis was tested at 0.05 level of significance.

Results

Section 1: Prevalence of pediculosis capitis among school children.

The prevalence of pediculosis capitis among school children was identified by visual inspection. Analysis of the data related to the prevalence is shown in Table 1.

Data presented in table 1 show that in school I, prevalence of pediculosis capitis infestation was 32% and in school II, it was 61.36%. Total prevalence was 46.8%.

Table 1: Prevalence of Pediculosis capitis among school children. N=342

School	Total strength of students	Children identified with Pediculosis capitis. f	Percentage of the prevalence %
School I	254	81	32.00
School II	88	54	61.36

Section 2: Frequency and percentage distribution of selected variables.

Data obtained to describe the background information like age of the child, gender of the child, type of family, annual income, parent's educational status, source of information, previous experience with the management are presented in Table 2.

Data presented in the table 2 show that majority (71.7%) of the children belongs to the age group of > 9- 13 years and were females(80%); belongs to joint families(53.3%). Majority (68.9 %) were having annual income less than 10,000. Majority of both parents had primary education (father (52.6%); mother (49.6%). However none of the parents had an education of postgraduate and doctorate level. Majority (46.7%) of them had no information about the management; however none of the mothers received information from internet and 69(51.1%) did not have previous experience with pediculosis management.

Section 3: Description of knowledge score of mothers of children identified with pediculosis capitis.

Data obtained to describe the knowledge score of mothers of children identified with pediculosis capitis were presented in the Fig. 4.

Data presented in Fig 4 show that 67.4% of them had average knowledge; none had good knowledge.

Section 4: Association between knowledge of mothers identified with pediculosis capitis and selected variables

Chi square test was used to compute association between the knowledge and selected variables like type of family, annual income, parent's educational status, source of information, previous experience with the head lice management.

H₁: There will be a significant association between the knowledge of the mothers identified with pediculosis capitis and selected variables.

Table 4: Chi- square test between knowledge score and the Data presented in the table 4 show that there was a significant association between source of information and the knowledge score of the mothers. Thus it was inferred that mothers who had an exposure to information about pediculosis and its management were having better knowledge about pediculosis management; other variables were independent of knowledge score. Therefore the research hypothesis is partially accepted.

Fig. 1: Frequency and percentage distribution of knowledge score of mothers

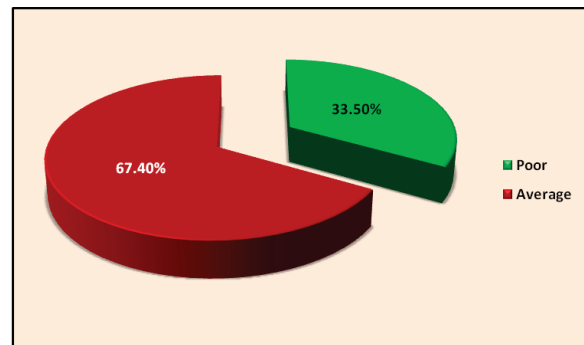


Table 2: Frequency and percentage distribution of selected variables.

N = 135

Sl. No	Sample Characteristics	f	%
1	Age of the child in years		
	≤ 9	39	28.9
	9 -13	96	71.1
2	Gender		
	Male	27	20.0
	Female	108	80.0
3	Type of family		
	Nuclear	63	46.7
	Joint	72	53.3
4	Annual income in Rupees		
	Less than10, 000	93	68.9
	10,001-40,000	33	24.4
	40,001-70,000	05	03.7
	70,001 -1,00,000	02	01.5
	Above 1, 00,000	02	01.5
5	Parent's educational status		
	Father		
	Illiterate	19	14.1
	Primary	71	52.6
	Secondary	40	29.6
	PUC	02	01.5
	Diploma	01	00.7
	Graduate	02	01.5
	Mother		
	Illiterate	21	15.6
	Primary	67	49.6
	Secondary	35	25.9
	PUC	09	06.7
	Graduate	03	02.2
6	Source of information about head louse management		
	Nil	63	46.7
	Books	11	08.1
	Newspaper	02	01.5
	Television	15	11.1
	Health Worker	27	20.0
	Relatives	10	07.4
Neighbours	07	05.2	
7	Previous experience with head louse management		
	Yes	66	48.9
	No	69	51.1

Discussion

The present study findings showed that the study prevalence of pediculosis capitis infestation among school children was 46.68%. The supportive study findings are: A study conducted in Maharashtra revealed that prevalence was higher (38.38%) among children who were attending school than those not attending school (2.74%).¹

A study conducted on epidemiological aspects of head lice among 884 children aged 0-15 years attending day care centre, urban and rural schools in Uberland, Brazil. The Study findings revealed that the prevalence of 35% among children.⁴

The present study findings contradicted with the study findings which was conducted to compare the prevalence of

pediculosis and to determine the factors associated with the spread of the disease among school children in Islamic and Christian communities in Kwara State, Nigeria. Study findings revealed that the prevalence rate of pediculosis among the 6882 urban school children was 3.7% and observed that the infestation rate among the children in the Islamic community was 4.1 %, whereas the infestation rate was 3% among the children from the Christian community.⁵

The present study findings showed that majority 71.7% of the children belongs to the age group > 9 to 13 years and were females (80%). The following study findings supported the present findings.

A study conducted in Mersin, Turkey revealed that infestation

Table 4: Chi- square test between knowledge score and the selected variables.

N= 135

Sl. No	Sample characteristics	Knowledge score		χ^2	df	P value
		Average	Poor			
1	Type of family			1.691	1	0.193
	Nuclear	46	17			
	Joint	45	27			
2	Annual income in Rupees			0.472	1	0.718
	≤ 40,000	84	42			
	> 40,001	07	02			
3	Parent's educational status			0.356	1	0.851
	Father					
	≤ higher secondary	87	43			
	> higher secondary	04	01			
	Mother			0.003	1	1.000
	≤ higher secondary	83	40			
	> higher secondary	08	04			
4	Exposure to source of information about pediculosis capitis			9.711	1	0.002 *
	No					
	Yes	34	29			
		57	15			
5	Previous experiences with head lice management			0.851	1	0.356
	Yes	47	19			
	No	44	25			

*Significant.

was significantly higher in girls (13.3%) than boys (1.1%). Children aged 8-9 years exhibited a significantly lower prevalence rate than those aged 10-11 years and 12 years and above.⁶

Another study conducted in Greece, revealed that the median age of the children was 8years (range: 3-13yrs) and the risk was increased by 15% for every year of age ; 54% of them were girls.⁷

Present study findings showed that majority of the parents were having annual income less than Rs 10,000.This finding supported by a study conducted in Kwara State, Nigeria. By socioeconomic status, the highest infestation rate (28.4%) was observed among girls in the lowest socioeconomic group. The infestation rate (11.2%) among boys in the low socioeconomic class was also high.⁵

Present study findings revealed that both parents had primary education (father 52.6%; mother 49.6%). This finding supported by the study conducted in Afyon Turkey among 1,134 children. The education level and occupation of the mother were found to be associated with the rate of infestation. The ratio of infested children with a mother whose highest level of education was primary school, was significantly higher than children whose mother attended high school or college($\chi^2=19.4, P<0.05$).⁸

The present study findings revealed that majority of the children belongs to joint families (46.7%). The present study findings contradicted the findings of a study conducted in Maharashtra revealed that the prevalence of head louse infestation was found to be higher (42.70%) in children from nuclear families as compared to those from joint families (26.94%).¹

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Effectiveness of Planned Teaching Programme on Knowledge and Attitude Regarding Selected Aspects of Planned Parenthood Among Degree College Students of Udupi District

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Abstract

Adolescents constitute the healthiest group in the population, having the lowest mortality and morbidity compared with other population age groups. Adolescents belong to a very vital age group because they are the entrant population to be prepared for parenthood. Adolescents undergo vital physical and psychosexual changes. During this phase of transition from childhood, adolescents are often confused about the physical and emotional changes in their bodies and feel hesitant and embarrassed to discuss them with anyone. Adolescent girls are especially vulnerable to the biological and social changes taking place during this time and their effects.

An evaluative study was conducted to identify the effectiveness of planned teaching programme on knowledge and attitude regarding selected aspects of Planned Parenthood. There was a significant improvement in the post-test knowledge and attitude scores of the students who were exposed to the session. It was encouraging to see that the students were interested in learning Planned Parenthood and apply this knowledge in their life style.

Key Words

Reproductive system, contraception, adolescent, pregnancy, diet.

Objectives of the Study

To determine effectiveness of a planned teaching programme in terms of gain in knowledge scores and change in attitude scores as expressed by them.

Find association between pre-test level of knowledge and attitude regarding Planned Parenthood and selected variables like age, educational status, socioeconomic status and exposure to mass media.

Introduction

Adolescence is a developmental phase that bridges childhood and adulthood. Young people experience physical and psychosocial changes along with conflicting demands from parents, family, friends and society at large. During adolescence period, the feelings become more intense, relationships become more complex and consequences radically alter the lifestyle pattern. The major problem of our country is the "population explosion"². About one-fifth of India's population is in the adolescent age group of 10-19 years. It is estimated that there are almost 200 million adolescents in India (ages 15-24 years). However growth for this age group will peak at 223 million in 2015 and will then slow. There is wide disparity between educational achievement for boys and girls. It can be

controlled through education of women regarding health and safe maternal and child health practices including safe sexual practices. However, despite adolescents being a huge segment of the population, policies and programs in India have focused very little effort on the adolescent group. Over the past 50 years, the population has grown at a rapid pace and so, too, has the adolescent population, despite a formal and a well-organized family planning program in India. The newer focus on RCH also has been invigorated by the continuing realization of the importance of women's health; it is now widely accepted that if the health of women is to be improved, the health of adolescents must be given high priority in Indian policy and program development and implementation.

Research Methodology

The study used an evaluative approach. A pre-experimental one group pre-test post-test design was used to assess the effectiveness of planned teaching programme on selected aspects of Planned Parenthood. Non probability purposive sampling was used to select 100 female students of a selected college of Karnataka. Researcher used a demographic proforma, knowledge and attitude scale for data collection. Intervention was given in the form of administrating a planned teaching on Planned Parenthood. The post test was conducted on 8th day.

Results

Sample characteristics

Among the students participated in the study, majority (70%) were of 20 years, (56%) were third year students. Majority of them (59%) belonged to low socio economic status, among the participants majority (74%) of them had moderate exposure to mass media.

Pre-test and post-test knowledge scores

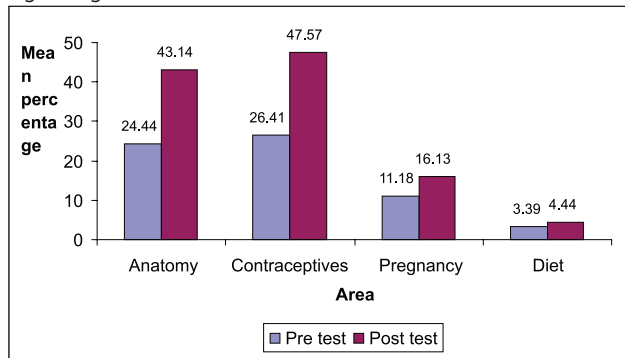
It was noted that in the pre-test, 72% of the student had average knowledge and 19% had good knowledge. In the post-test 99% had good knowledge, none of students got poor score in the post-test. The data represented in table 1.

Table 1: Frequency and percentage distribution of pre-test and post-test knowledge scores. n=100

Score range	Pre test		Post test	
	f	%	f	%
0-12 (Poor)	9	9	0	0
13-24 (Average)	72	72	1	1
26-36 (Good)	19	19	99	99

Maximum possible scores = 36

Fig. 1: Bar graph showing area wise gain in the knowledge regarding Planned Parenthood.



3. Area wise knowledge score

The data is presented in the following bar diagram. (fig.1)

4. Effectiveness of knowledge score

A normality test was done to identify, whether to undertake parametric or non-parametric statistics for analysis of the data. It was found that there is no normality in the sample, and so, the non-parametric Wilcoxon's Signed Rank test was used to analyze the data.

The analysis revealed that there is a significant difference in the pre-test and post-test knowledge scores of the students ($p < 0.001$) with a median score of 33 in the post-test, in comparison with the median score of 20.5 in the pre-test. The Z score was found to be 8.637, which showed a significant improvement in the knowledge of the students.

5. Distribution of sample based on their pre-test post-test attitude scores

It was noted that in pre-test (96%) of students have positive attitude. In the post-test (100%) had positive attitude towards Planned Parenthood. The data represented in table 2.

Table 2: Distribution of sample based on their pretest posttest attitude scores $n = 100$

Scale range	Pre test		Post test	
	f	%	f	%
Positive (53-90)	96	96	100	100
Negative (15-52)	4	4	0	0

Maximum possible scale = 90.

6. Association between pre-test level of knowledge and attitude regarding planned parenthood and selected variables

Association between pre-test level of knowledge regarding Planned Parenthood and selected variables

There was significant association between pre-test knowledge scores and selected variables like age ($p < 0.001$) and educational status ($p < 0.003$). But there was no significant association between socio economic status ($p < 0.351$) and exposure to mass media ($p < 0.001$).

Association between pre-test level of attitude score regarding Planned Parenthood and selected variables

There was significant association between pre-test attitude scores and selected variables like age ($p < 0.013$) and

educational status ($p < 0.001$). But there was no significant association between socio economic status ($p < 0.229$) and exposure to mass media ($p < 0.693$).

Discussion

The analysis of the data revealed that, the knowledge and attitude on Planned Parenthood has significantly improved the knowledge and attitude of the subjects. The teaching on Planned Parenthood can effectively be undertaken and students can be helped to modify their life style based on the information and prevent the complication. Hence, lack of knowledge on Planned Parenthood may increase the women mortality and morbidity rate. Positive attitude towards Planned Parenthood and promotion of healthy a lifestyle towards sexual activity among adolescent women will reduce morbidity and mortality.

The researchers also identified that the students who participated in the study were keen to know about the knowledge on Planned Parenthood and awareness programme was effective in changing the attitude towards Planned Parenthood, and they expressed that this knowledge could be incorporated into their daily life style. This shows that the students consider the area of Planned Parenthood is an important area to know and prevent maternal morbidity and mortality.

Studies have shown that the knowledge and attitude on sexual health and risk taking behavior can be improved through awareness programme.^{5,6,7} Though knowledge has a major influence in developing the individuals attitude towards anything in life, but attitude to get translated into practice has so many intervening factors, these factors are intrinsic and some extrinsic on which, researcher had no control, so the researcher felt that there is need for reinforcement every year.

Conclusion

The study concludes that by providing Planned Parenthood education in college was found to lead an increase in the adoption of safer Planned Parenthood. And also found that it was most effective, when given before the marriage can prevent maternal morbidity and mortality.

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A Study to Identify the Knowledge and Utilization of Integrated Child Development Scheme (ICDS) Services Among Women in Udupi District, Karnataka

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Abstract

Objective

To study the knowledge and utilization of Integrated Child Development Scheme (ICDS) services among women.

Study Design

Descriptive survey.

Material and Methods

A sample size of 225 women from Udupi.

Statistical Analysis Used

Frequency and percentage to describe sample characteristics, knowledge level and utilization of ICDS services. Chi-square test to find the association between knowledge and selected variables.

Results

Out of 225 women 49.3% had average knowledge and 46.7% with poor knowledge regarding ICDS. Among pregnant women there was 74.1% utilization of supplementary nutrition and 7.4% utilization of immunization. Among lactating mothers there was 76.2% utilization of supplementary nutrition, 4.8% utilization of health education. Mothers having children revealed that, there was 71.1% utilization of supplementary nutrition, 58.3% utilization of health checkup, 69.3% utilization of non-formal preschool education, 26.7% full and 50.5% partial utilization of immunization services. The main reason for not utilizing ICDS services were due to household work (43%), distance from anganwadi (40%) and due to lack of awareness (13%).

Conclusion

Accurate information and encouragement from health personnel will further help to improve the knowledge and utilization of ICDS services.

Key Words

Knowledge, utilization, health checkup, supplementary nutrition, preschool education, immunization, health education.

Key Messages

An integrated package of services will help in the holistic development of the child.

Introduction

India is the home of the largest child population in the world. "The development of children is the first priority on the country's development agenda, not because they are the most vulnerable, but because they are our supreme assets and also the future human resources of the country". A recently released annual report by the UNICEF says that, every year nearly 10 million children dying below the age of five, 2.1 million are Indians and 78,000 mothers die in childbirth and from complications of pregnancy in India. And the real shock lies in the fact that all these lives could be saved with better child care facilities. Fifty per cent of the total under-five mortality is due to malnutrition. Karnataka's maternal mortality rate stands at 195 per 100,000 live births. Karnataka's under five mortality rate stands at 69.8 per 1000 live births.²

Government of India proclaimed a National Policy on Children in August 1974 declaring children as, "supremely important asset". The programme of the Integrated Child Development Services (ICDS) was launched in 1975 seeking to provide an integrated package of services in a convergent manner for the holistic development of the child. The beneficiaries are children below 6 years, pregnant and lactating women and women in the age group of 15 to 45 yrs. The Scheme aims to improve the nutritional and health status of vulnerable groups through providing a package of services including supplementary nutrition, pre-school education, immunization, health check-up, referral services and nutrition & health education. The program services are coordinated at the village, block, district, state and central government levels. These services are provided through community-based anganwadi centres.³

The aim of the study was to identify the knowledge and utilization of ICDS services among women. This study will further help in creating awareness among women and to improve the health status and utilization of services

Material and Methods

The present study was a descriptive survey analysis done among 225 women residing in Udupi district, Karnataka. The study used purposive sampling technique. Structured knowledge and utilization questionnaire was used to collect data. The content validity of the tools was obtained. Tools were translated to Kannada. and pretesting was done on 5 women, to determine the clarity of items. The reliability of the instrument was tested by administering the tool to 25 women. The reliability coefficient of the knowledge questionnaire was

Table 1: Frequency and percentage distribution of samples characteristics (N = 225)

Sl.No	Sample characteristics	Frequency (f)	Percentage (%)
1	Age (in years)		
	15-20	05	02.2
	21-25	54	24.0
	26-30	100	44.4
	31-35	54	24.0
	36-40	12	05.3
2	Marital status		
	Married	233	99.2
	Widow	01	00.4
	Divorced	01	00.4
3	Education		
	Uneducated	09	04.0
	1-4 th standard	23	10.2
	5-9 th standard	71	31.6
	SSLC	58	25.8
	PUC	32	14.2
	Diploma	24	10.7
	Graduate	02	00.9
	Post graduate	06	02.6
4	Occupation		
	House wife	184	81.7
	Coolie worker	15	06.7
	Unprofessional	15	06.7
	Professional	11	04.9
5	Type of family		
	Nuclear	73	32.4
	Joint	152	67.6
6	Religion		
	Christian	10	04.5
	Hindu	183	81.3
	Muslim	32	14.2
7	Monthly income (in rupees)		
	Upto 3000	23	10.2
	3001 – 6000	96	42.7
	6001 – 9000	78	34.7
	More than 9000	28	12.4
8	Pregnant women		
	Yes	27	12.0
	No	198	88.0
9	Lactating mothers		
	Yes	21	09.3
	No	204	90.7
10	No of living children		
	No child	17	07.6
	One child	103	45.8
	Two child	90	40.0
	Three child	10	04.4
	Four child	04	01.8
	Six child	01	00.4
11	Aware about ICDS programme		
	Yes	219	97.3
	No	06	02.7

12	Source of information	09	04.0
	Family members	17	07.6
	Neighbours	49	21.7
	Health personnel	144	64.0
	Anganwadi teacher	06	02.7
	Nil		

r = 0.87. Pilot study was conducted among 30 women to assess the feasibility and practicability.

The data was collected after obtaining formal administrative permission from the Dean, Manipal College of Nursing, Manipal University, Manipal and the permission from panchayat president of Udupi district. Informed consent were obtained from the participants. The data collection was done in February 2010. The obtained data was tabulated and analyzed using the statistical package SPSS 11.5 version for windows. Findings were described using percentages and chi-square.

Results

Sample Characteristics

Table 1 shows that out of 225 women, 44.4% belonged to the age group of 26-30 years and 99.2% were married and living with their husbands. 31.6% had education upto 9th standard, 81.7% were house wife, 67.6% were belonged to joint family, 81.3% were Hindu's and 42.7% had a monthly income between Rs.3001 to 6000. Out of 225 women, 27 were pregnant, 21 were lactating mothers and 103 mothers had one child. 97.3% women were aware about ICDS services and among that 64% got information from anganwadi teacher.

Knowledge Level of Women

Table 2 shows that out of 225 women, 4 % had good knowledge, 49.3% had average knowledge and 46.7% with poor knowledge.

Utilization of Services

Table 3 and 4 shows that out of 27 pregnant women 74.10% was utilizing any one of the ICDS services, out of 21 lactating women 76.20% was utilizing any one of the ICDS services and out of 208 mothers having children below 6 years of age 77.20% was utilizing any one of the ICDS services.

Among pregnant women there was 74.1% utilization of supplementary nutrition and 7.4% utilization of immunization. Health checkup and health education facilities were not used. Among lactating mothers there was 76.2% utilization of supplementary nutrition, 4.8% utilization of health education and no utilization of health checkup. Mothers

Table 2: Frequency and percentage distribution of knowledge score (N=225)

Knowledge score	Range of score	Frequency (f)	Percentage (%)
Poor	0 – 10	105	46.7
Average	11 – 20	111	49.3
Good	21 – 30	09	04.0

Table 3: Utilization of ICDS services by different category of women

Category	Utilized		Not utilized		Total	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Pregnant women	20	74.10	7	25.90	27	100
Lactating women	16	76.20	5	23.80	21	100
Mothers having children below 6 years of age	161	77.20	47	22.80	208	100

Table 4: Utilization of ICDS services by women

No	ICDS Services	Pregnant women (N=27)	Lactating women (N= 21)	Mothers having children less than 6 years of age (N=208)
1	Supplementary nutrition	20 (74.10%)	16 (76.20%)	148 (71.10%)
2	Health education	0 (0%)	1 (4.80%)	NA
3	Health checkup	0 (0%)	0 (0%)	121 (58.30%)
4	Immunization	2 (7.40%)	NA	161 (77.20%)
5	Preschool education	NA	NA	144 (69.30%)

NA – Not Applicable

having children below 6 years of age revealed that, there was 71.1% utilization of supplementary nutrition, 58.3% utilization of health checkup, 69.3% utilization of non-formal preschool education, 26.7% full and 50.5% partial utilization of immunization services. The main reason for not utilizing ICDS services were due to household work (43%), distance from anganwadi (40%) and due to lack of awareness (13%).

Association between knowledge and selected variables

There was significant association between knowledge and selected variables like education and occupation and no significant association between knowledge and selected variables like age, religion, type of family and monthly income.

Discussion

A study was conducted on awareness and utilization of ICDS services among pregnant (106) and lactating women (177) in Haryana. Awareness of women regarding services provided by ICDS was mainly for 2 areas viz, nutrition (50%) and immunization (70%). Less than 25% of women were aware of rest of the services viz, nonformal education and health checkup. The study showed that in subcentre areas beneficiaries were less aware of location and staff of anganwadi centre (AWC) and that they visited AWC less often as compared to their counterparts in non-subcentre areas. Utilization of services was more in non-subcentre area than subcentre area.

A comparative study was conducted to identify the pattern of utilization of selected maternal and child health services before and after the commissioning of integrated child development services scheme at Rural Project Kathura, Haryana. First survey was conducted in the year 1976 and repeated survey was conducted in 1979. Health check up utilized by children < 6 years increased from 28.2% to

92% and in pregnant and lactating mothers increased from 18.7% to 38%. Supplementary nutrition utilized by children < 6 years increased from 8% to 50% and in pregnant and lactating mothers increased from 0% to 25%. There was a marked reduction in prevalence of severe degrees of malnutrition in children (below 6 years of age) from 17.6 to 8.4 per cent attributable to delivery of a package of services and interventions. Immunization utilized by pregnant mothers increased from 1% to 50%. The utilization of supplementary nutrition, health check up and immunization increased significantly in pregnant women, lactating mothers and children.

A survey was conducted on utilization of ICDS and the reason for non-utilization among ICDS beneficiaries of Chhattisgarh. Data was collected from pregnant and lactating mothers. The survey revealed that all centres suffer from extremely low attendance of children. The main causes for poor usage of services were scattered habitation, lack of awareness, irregularity in anganwadi centres opening, poor quality of food served, negligence from the part of anganwadi worker.

A study was conducted in New Delhi to assess the reasons of under utilization of ICDS services by children below 3 years of age. A total of 75 anganwadi centres were included for the study. 3725 mothers were interviewed. The major reasons for under utilization of ICDS services reported by mothers were child to be carried to anganwadi centres and inadequate contact with mother by anganwadi workers.

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Comparison of Pulmonary Function between Beedi, Cigarette and Combined Smoker

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Original Research Article

Abstract

This study was aimed to compare pulmonary function parameters in beedi smokers, cigarette smokers and both a type of smokers on the basis of the pulmonary function tests. The pulmonary function tests were done on 447 subjects which included, 150 beedi smokers, 160 cigarette smokers, 137 who smoked both beedi as well as cigarette. In beedi smokers the values of Forced vital Capacity(FVC), Forced Expiratory Volume in 1st second (FEV1), Peak Expiratory Flow Rate (PEFR), Forced Expiratory Flow (FEF) 25%–75%, were significantly lower ($P < 0.01$) than those of cigarette smokers and both a type of smokers. Moreover, the Forced Vital Capacity (FVC) and FEV1 of beedi smokers were significantly ($P < 0.0001$) lower than those of Cigarettes-smokers. It may be concluded that pulmonary functions are more affected in beedi smokers than in cigarette smokers and both a type of smokers.

Key Words

Smokers, pulmonary function, beedi smoking, cigarette smoking, and Both a Type of smoking

Comparison of Pulmonary function between Beedi, Cigarette and Combined Smokers.

Introduction

If you asked many people to mention name one thing that's bad for your health, a most of them would say smoking. Though the ill effects of Cigarette smoking on health are widely known, many people continue to smoke in spite of its risks involved. Smoking is one of the most common causes of avoidable health hazards in the world. There are many factors favored the people for tobacco smoking: one is the simplicity of technique, the others are easy availability, rate is cheap and the quick onset of the effects on the central nervous system, which include stimulation, sedation and a combination of both.¹

Table 1: Description of Demographic Characteristics

(N=447)

Demographic Characteristics		Beedi (150)	Cigarette (160)	Both (137)
Age(Years)	30-35	23	59	49
	36-40	32	40	31
	41-45	34	30	16
	46-50	35	21	18
	51-55	18	6	17
	56-60	8	4	6
Duration (Years)	5-10	29	71	39
	11-20	58	68	61
	21-30	51	20	35
	>30	12	1	2
occupation	Heavy	47	8	21
	Moderate	51	34	33
	Sedentary	52	118	83
Average Number Per Day(Dose in Terms of Cigarettes)	5-10	8	101	55
	11-20	24	36	68
	21-30	88	16	10
	31-40	20	3	1
	41-50	9	2	2
	> 50	1	2	1

Table 2: Description of pulmonary parameters between different Types of Smoking

N= 447

Pulmonary parameters	Beedi (150)		Cigarette(160)		Both(137)		F	Sig.
	Mean	S.D	Mean	S.D	Mean	S.D		
FVC	74.93	10.22	76.48	8.15	76.52	10.26	12.345	.000
FEV1	72.68	9.013	76.69	8.41	74.60	10.05	19.021	.000
PEFR	73.00	15.51	79.16	17.44	73.48	16.94	11.407	.000
FEF25-75%	65.24	15.71	71.41	16.60	67.75	16.15	12.442	.000

The World Health Organization's (WHO) report on the Global Tobacco Epidemic in 2008 highlighted that approximately 5.4 million deaths every year are related to tobacco use. About 80% of tobacco-related deaths will occur in low and middle-income countries by 2030 and could kill one billion during this century. Tobacco is a risk factor for six of the eight leading causes of death in the world². Tobacco smoking is common among all over the world and by 2030 the developing world is expected to have 7 million deaths annually from tobacco use.³ The projects of World Health Organization say that tobacco use may account for more than 1.5 million deaths in India by 2020⁴.

Smoking significantly leads to chronic non communicable diseases, like heart disease, stroke, cancer (lung, larynx, oral cavity, pharynx and oesophagus) and chronic obstructive pulmonary diseases (COPD)^{5,6}. India is the second largest producer and third largest consumer of tobacco worldwide.¹ Cigarettes are the major consumption category in other parts of the world. In India cigarettes smoking occupies the third place and the beedi is the most popular form of tobacco smoking⁷.

Some other forms of tobacco smoking also are practiced here, including chillu (clay pipes), chutta(reverse smoking), and hukka(hubble-bubble), but the beedi and cigarette smoking are common in urban and rural areas. There is lot of studies found controversy results that beedi smokers had poor lung function than cigarettes smoking or vice versa. It is generally assumed that beedi smoking is less harmful than cigarette smoking although there is no scientific documentation of this belief. Many nurses too thinking that as beedis are small in

size, which cause less harm than cigarettes. But the results may not be like that. Beedis are made from suncured tobacco rolled in tendu leaf wrapper (*Diospyrus melanoxylon* or *Diospyrus ebenum*) about 6 cm long and do not have filters. Cigarettes are made from tobacco rolled in paper about 8 cm long with or without filters.

Pulmonary function tests (Spirometry) helpful in identifying the current pulmonary status and the presence or absence of obstructive, restrictive or mixed airway diseases of smokers for effective therapeutic intervention. Nurses are playing a key role in primary, secondary and tertiary prevention of smoking. The hospital visits of the smokers can be utilized by the nurses to provide health education to quit of smoking.

Many studies focused on impact of smoking on pulmonary function, few studies showed the result that people smoking beedis had more affected pulmonary function than cigarettes⁸ and few studies supported the result that people smoking cigarettes had more affected in pulmonary function than beedi smokers. Therefore the researcher interested to do the study and carried out a descriptive survey to study the effect of beedis, cigarettes and both on pulmonary function among smokers with a view to create tips for Evidence Based Nursing.

Material and Methods

Sample Selection and Methodology

A descriptive survey design was adopted and a stratified random sampling design was used to select the samples. Smokers who were the permanent residents included in this study. Samples

Table 3: POST-Hoc Test (Tukey HSD)

Dependent Variable	(I) Brand	(J) Brand	Mean Difference (I-J)	Std. Error	Sig.
FVC	Beedi	cigarette	-.2890(*)	.06137	.000
		both	-.2370(*)	.06382	.001
	cigarette	Both	.0521	.06286	.686
FEV1	Beedi	cigarette	-.3178(*)	.05225	.000
		both	-.2123(*)	.05433	.000
	cigarette	Both	.1056	.05352	.12
PEFR	Beedi	cigarette	-.8580(*)	.18201	.000
		both	-.3162	.18926	.218
	cigarette	Both	.5418	.18642	.011
FEF25-75%	Beedi	cigarette	-.4356(*)	.08738	.000
		both	-.2111	.09086	.054
	cigarette	Both	.2245	.08949	.033

Table 4: Association Between Demographic Characteristics of Smokers and Type of Smoking

Demographic Characteristics		Type of Smoking			Total	df	X ² value	P value
		Beedi	Cigarette	Both				
Age Group	30-35 yrs	23	59	49	131	10	36.34	.001
	36-40yrs	32	40	31	103			
	41-45yrs	34	30	16	80			
	46-50yrs	35	21	18	74			
	51-55yrs	18	6	17	41			
	56-60 yrs	8	4	6	18			
Number of Smoking Per Day (In Cigarettes)	5-10	8	101	55	164	6	230	.0001
	11-20	24	36	68	128			
	21-30	88	16	10	114			
	More Than 30	30	7	4	41			
Duration (Years)	5-10	29	71	39	139	4	46.70	.01
	11-20	58	68	61	187			
	More than 20	63	21	37	121			
Nature of Work	Heavy	47	8	21	76	4	58.52	.01
	Moderate	51	34	33	118			
	Sedentary	52	118	83	253			

were selected from 10 different areas of Coimbatore. About fifty smokers from each area totally 447 smokers were tested the pulmonary function test by spirometry. Only male Smokers aged between 30 years and 60 years and smoking atleast 5 beedi or cigarettes per day for atleast 5 years were included in the study. All smokers were explained the purpose of the study, the demographic and clinical data were collected. In demographic data age, duration, type of smoking, average number of beedi and cigarettes per day, and nature of activity at home or work place were collected.

The clinical data includes height and weight of the smokers was assessed. Lung function test (Spirometry) was carried out in all the subjects using a computerized spirometer (Spiro Bank-G, Italy). The equipment was calibrated daily before the tests, maximal expiratory flow volume (MEFV) curves were obtained as per the European Respiratory Society (ERS). Three acceptable and at least two reproducible curves were obtained in each subject. The selection of spirometry parameters was done as recommended by European Thoracic Society. The highest values of Forced Vital Capacity (FVC), Forced Expiratory Volume In first Second (FEV1), Peak Expiratory Flow Rate (PEFR) and Forced Expiratory Flow 25-75% (FEF25-75%) were selected, irrespective of the curves. The net weight of tobacco per beedi averages from 150 to 240 mg which is about one-fourth of that in a cigarette. Quantification of amount of smoking must take into account these differences. Accordingly, we have considered smoking of 4 beedis being equal to 1 cigarette.

Results

The calculated F value for FVC, FEV1, PEFR, and FEF25-75% are 12.34, 19.02, 11.40 and 12.44 respectively significant

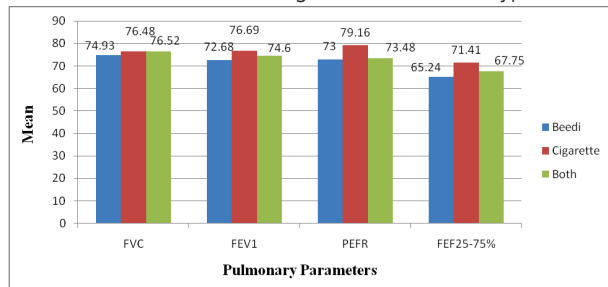
at <.01 level. The results showed that there is a significant relationship between the FVC, FEV1, PEFR, and FEF25-75% and Type of smoking. So the post-hoc (Turkey) test was performed. The results of the post-hoc test show that the pulmonary parameters such as FVC, FEV1, PEFR and FEF25-75% are significantly reduced in beedi smokers than cigarette smokers ($p < .0001$). The FVC and FEV1 are also significantly reduced in beedi smokers than both a type smokers ($p < .001$) but no significant difference between cigarette and both a type of smokers. The PEFR and FEF25-75% are significantly differ between cigarette and both a type of smokers ($P < .05$) but no significant difference between beedi and both a type of smokers.

Data presented in the table-4 shows that the calculated chi-square values for association between type of smoking and demographic characteristics of smokers viz, age, number of smoking per day, duration of smoking and nature of work are significant at .01 level. So age, number of smoking per day, duration of smoking and nature of work are the factors that influencing the type of smoking of smokers in this study.

Discussion

In this study, the values of FVC, FEV1, PEFR and FEF25-75% show significant reduction ($P < 0.01$) in beedi smokers than cigarette and both type of smokers. This can be accounted on the basis of excess of carbon monoxide, tar and other toxic constituents present in the smoke of the beedi. Beedies contain higher level of steam volatile phenol, hydrogen cyanide and benzopyrene along with higher level of particulate matter and nicotine than cigarettes, although strict comparison with cigarettes have not been made⁹. The above findings consistent

Fig. 1: Bar diagram shows the mean value of pulmonary parameters between beedi, cigarette and both a type smokers



with the findings of Padmavathy¹⁰ and Chhabra⁸.

Nevertheless, the deleterious effects of beedi or cigarette or both a type smoking cannot be ignored and they are well documented by Read and Selby¹¹. Malik¹² has shown no change in FVC. The findings of this study have shown that the reduction in FEF25–75% was significantly greater ($P < 0.01$) than those reported by Udwardia et al¹³.

The FVC and FEV1 are also differ significantly between beedi and both a type smokers, but no significant difference between cigarette and both a type of smokers. This can be due to the both type of smoking consists more number by the cigarettes than beedis, so there is no significant between cigarette and both a type of smokers.

The PEFr and FEF25-75% are differ significantly between cigarette and both a type of smokers, but no significant difference between beedi and both a type of smokers. The PEFr showed significant reduction in beedi smokers, than cigarette smokers due to reduction of respiratory muscle strength. It may be inferred from the results that the type of smoking accounted for significant reduction in flow rate. Gokhale et al¹⁴ investigated the acute effects of smoking a single beedi or cigarette.

In this study the type of smoking is significantly associated with demographic variables viz age of the smokers ($P < .0001$), number of smoking per day (In Cigarettes) ($P < .0001$), duration of smoking ($P < .01$), and nature of work ($P < .01$). The above findings consistent with the findings of Padmavathy and Gokhale et al^{10,14}. This because of normal aging itself cause decline in lung function, when it added with smoking this effect may be more. The longer the period and higher the doses of smoking cause greater the decline in lung function, due to the adverse effect of chemicals in the tobacco smoke.

Conclusion

On the whole, beedi smokers showed the lowest value of pulmonary function parameters (FVC, FEV1, PEFr and FEF25-75%) than only cigarette smokers and both type of smokers.

Acknowledgement

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Interest of Conflict

Nil

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Outcome Based Education

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Abstract

Outcome-based education, a performance-based approach at the cutting edge of curriculum development, offers a powerful and appealing way of reforming and managing nursing education. The emphasis is on the outcomes -what sort of nurses will be produced-rather than on the educational process. In outcome-based education the educational outcomes are clearly and unambiguously specified. These determine the curriculum content and its organisation, the teaching methods and strategies, the courses offered, the assessment process, the educational environment and the curriculum timetable. They also provide a framework for curriculum evaluation. A nurse is a unique combination of different kinds of abilities. Nursing schools need to prepare young nurses to practise in an increasingly complex healthcare scene with changing patient and public expectations, and increasing demands from employing authorities. Outcome-based education offers many advantages as a way of achieving this. It emphasises relevance in the curriculum and accountability, and can provide a clear and unambiguous framework for curriculum planning which has an intuitive appeal. It encourages the teacher and the student to share responsibility for learning and it can guide student assessment and course evaluation. What sort of outcomes should be covered in a curriculum, how should they be assessed and how should outcome-based education be implemented are issues that need to be addressed.

Key Words

Nursing education, Curriculum, Educational outcomes, Teacher, Practice.

Introduction

There has been concern by educators about the loss of focus on content and traditional testing of student mastery of content, community pressure for accountability in education due to fact that the present educational system has failed to adequately prepare students for life and work in the 21st century. This has prompted educators and policy makers to challenge the ways and mode of now educational institutions measures the acquired learning outcomes and skills required or possessed by students. Many countries are now exploring new ways of designing their educational system by advocating for a shift from the traditional ways of learning to a new method of learning, which is now called outcome based education.

Outcome based education vision states that all learners will be able to have good quality education that is adapted to the needs of country. In the light of this vision there must be a shift from the current educational practices and policies to a new approach of learning outcomes to reflect the nation's expectations¹².

In 1989, this education system has been adopted in Australia, New Zealand, the UK, Canada, Ireland & the USA. Other full signatories are Hong Kong (1995), South Africa (1999), Japan (2005), Singapore (2006), Taiwan (2007), Korea (2007) Provisional members include Malaysia, Germany, India, Russia and Sri Lanka³.

Philosophy of Outcome Based Education

Every teacher has a philosophy of teaching, whether or not teacher realizes it. The philosophy determines the teachers understanding of his or her role, approaches to teaching, selection of teaching and learning activities, uses of evaluation process. Outcome based education can be regarded as a theory (or a philosophy) of education⁴⁵. Within outcome based education there are a certain set of beliefs and assumptions about learning, teaching and the systemic structures within which activities take place. Spady (1994) proposes three basic assumptions: all learners can learn and succeed; success breeds success; and "teaching institutions" (schools) control the conditions of success. Killen (2000) defines two basic types of outcome. The first includes performance indicators often measured in terms of tests results, completion rates, post course employment, and so forth. It also emphasizes learner mastery of traditional subject related academic outcomes/content and some cross discipline outcomes (such as problem solving or working cooperatively). The second is less tangible and usually expressed in terms of what the learners know, are able to do or are like as a result of their education. It stresses long term, cross-curricular outcomes which relate to future life roles of the learner (such as being a productive worker, a responsible citizen or parent)³.

Definition of Outcome Based Education

"Outcome based education means starting with a clear picture of what is important for students to be able to do, then organising the curriculum, instruction, and assessment to make sure that this learning ultimately happens⁴.

"Outcome based education is a learner centered, result oriented system founded on the belief that all individual can learn. The four points to this system that are necessary to make it work i.e. What the student is to learn must be clearly identified, the student's progress must be based on demonstrated achievement, multiple instructional and assessment strategies need to be available to meet the needs of each student, and adequate time and assistance needs to be provided so that each student can reach their maximum potential."

Objectives of Outcome Based Education

- Facilitate desired changes within the learners, by increasing

knowledge, developing skills and/or positively influencing attitudes, values and judgment.

- Ensure all learners are successful in that they are equipped with the knowledge, skills and qualities (values and attitudes) required after they exit the educational system.
- Achieve and maximize selected outcomes for all students by structuring and operating education facilities to be success oriented.
- Raise educational standards at all levels.
- Make further education and training more relevant and available to larger numbers of people.
- Determine how well the overall education system is performing⁴.

Components of Outcome Based Education

- Malan (2000) summarizes the following components
- Explicit learning outcomes with respect to the required skills and concomitant proficiency (standards for assessment)
- A flexible timeframe to master skills.
- A variety of instructional activities to facilitate learning.
- Criterion referenced testing of the required outcomes.
- Certification based on demonstrated learning outcomes.
- Adaptable programmes to ensure optimum learner guidance.
- Support for the notion the learner is accountable for his or her own achievement⁶.

Characteristics of Outcome Based Education

- Result oriented.
- Learner centered.
- Curriculum framework specifies the desirable outcomes, level of learning, methods of teaching, and standard of assessment
- Student promotion to the next class/ grade based on achievement of the predetermined standards and the students who do not achieve the predetermined standard either should have extra classes or should repeat the year.
- All the student of a group ultimately should reach a minimum standard irrespective of the time.
- Quality is more important than quantity.

Principles of Outcome Based Education

The four basic principles of OBE, which are:

OBE Principles	Explanation	Application to practice
Clarity of focus	<ul style="list-style-type: none"> • Focus on what want learners be able to do successfully 	<ul style="list-style-type: none"> • Help learners develop competencies • Enable predetermined significant outcomes • Clarify short & long term learning intentions • Focus assessments on significant outcomes
Design down	<ul style="list-style-type: none"> • Begin curriculum design with a clear definition of the significant learning that learners are to achieve by the end of their formal education 	<ul style="list-style-type: none"> • Develop systematic education curricula • Trace back from desired end results • Identity "learning building blocks" • Link planning, teaching & assessment decisions to significant learner outcomes
High expectations	<ul style="list-style-type: none"> • Establish high, challenging performance standards 	<ul style="list-style-type: none"> • Engage deeply with issues are learning • Push beyond where normally have gone
Expanded opportunities	<ul style="list-style-type: none"> • Do not learn same thing in same way in same time 	<ul style="list-style-type: none"> • Provide multiple learning opportunities matching learner's needs with teaching techniques

(Source: Spady, 1994; Killen, 2000)^{3,4}

Embracing Outcome Based Concept in Curriculum Development⁷

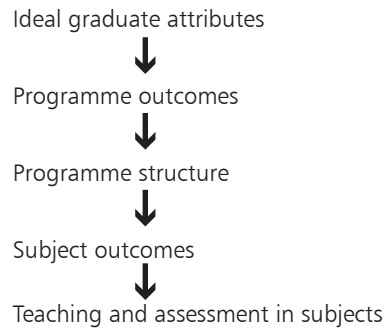
Concept 1

Designing backwards in curriculum development Starting with clarifying the outcomes that students are to achieve

Then organizing the curriculum, instruction, and assessment.

Concept 2

Mapping outcomes through the curriculum



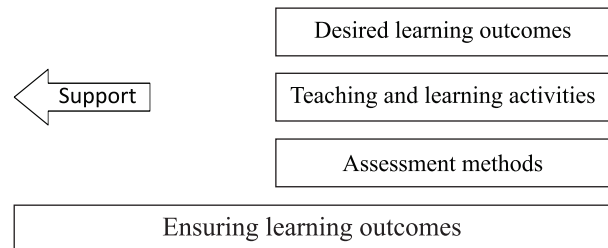
Concept 3

Learning outcomes do not equal to content

Content focus	Outcome focus
What topic the teacher will teach	What students are expected to attain a) Appropriate level of understanding of knowledge b) Capacity to perform c) Affective attributes

Concept 4

Constructive Alignment (Biggs)



Concept 5

'Outcome assessment is not about examination'

Referring to a quality assurance concept

It is about collecting evidence on the extent programme / institutional learning outcomes are attained by students e.g. Problem solving, Design, Critical thinking, Leadership

It concerns 'aggregated' result (not result of individual students)⁸

Under outcome based education, curriculum design includes these steps

- Discern future conditions
- Derive exit outcomes
- Develop performance indicators
- Design learning experiences
- Determine instructional strategies
- Deliver instruction
- Document results
- Determine advancement⁸

Assessment in Outcome Based Education

The entire curriculum in outcome based education is driven by assessments that focus on well-defined learning outcomes and not primarily by factors such as what is taught, how long the student takes to achieve the outcomes or which path the student takes to achieve their target. The learning outcomes are set out on a gradation of increasing complexity that students are expected to master these outcomes sequentially. Willis & Kissane (1995) suggested two techniques for assessing students' learning outcomes:

- Standard-referenced assessment.
- Student portfolios documenting their progress.

Given that assessments in outcome based education focus on the students' learning outcomes (i.e. how much and how well the students have learnt), this could imply that students with different abilities will follow different paths to reach their goals and may finish at different times. Outcome based education requires ongoing feedback between the student and the teacher, continuous assessments could help the teacher to determine the following:

How to achieve the learning outcomes

What is the progress of particular students in the class

When to assess the students on how much they have learnt⁹

Implications for Using Outcome Based Education

O.O Adevodin and D.K Shangodoyin recommended the following implications to the organisations for successful implementation of outcome based education system:

- Organizations must be committed to provide adequate physical infrastructure, relevant curriculum material, and qualified teachers.
- Adopting a learner centered approach in the development of curricular materials as well as teaching and learning strategies.
- Continuous evaluation of learning where learning difficulties are diagnosed and corrected.
- The educational institutions should take responsibility for

ensuring that learners meet their targets, Communities and district authorities also should take keen interest in how their school performs in external examination in comparison with other educational institutions with in district and reward institute that show evidence of good learning achievement. This information should be used for policy making and planning purposes at the national level.

- Trainees must be trained to conduct outcome based education.
- Continuous participant interaction and feedback must take place.
- Individuals attending training must be prepared for outcome based education as their approach is likely to be very different from their past educational and training experiences.¹

Claims in Favour of Outcome Based Education

- Proponents view outcome based education as a valuable replacement of the traditional model of relative ranking by ability and getting credit for merely sitting through class.
- Liberal politicians often support outcome based education because of its vision of high standards for all group conservatives like the idea of measuring outputs rather than inputs such as money spent or number of hours of lecture given and insisting that students demonstrate learning.
- Promotes high expectations and greater learning for all students.
- Fosters more authentic forms of assessment i.e. assess knowledge, writing skills, performance skills, problem solving skills, communication skills etc.
- Encourages decision making regarding curriculum, teaching methods, school structure and management at each school or district level.
- All students including those who live in poverty will meet district, state and national standard.¹⁰

Criticism of Outcome Based Education

1. Opposition to testing

Critics claim that existing tests do not adequately measure student performance in terms of the stated objectives. Some parents also object to the use of standardized tests.

The OBE philosophy insists that assessment models be carefully matched to the stated objectives. High-stakes tests are not required in an OBE system; norm-referenced tests are prohibited. Portfolios, daily assessments, teacher opinions, and other methods of assessment are perfectly compatible with OBE models. Furthermore, the OBE approach does not permit special, lower standards for students who have been badly served by public education in the past.¹¹

2. Inappropriate outcome

Standards can be set too low: Most fear that the focus on achievement by all students will result in "dumping down" the definition of academic competence to a level that is achievable by even the weakest students. Critics are unhappy with having all students meet a minimum standard, instead of most students meeting a somewhat higher standard. Some critics also question whether even such low goals are realistic or attainable, and whether success can only be framed in terms of high test scores and high incomes.

Table 1: Outcome based education Vs Traditional education⁴

Variable	Traditional education(Content based/ Transactional)	Outcome based education (Transformational)
Educational focus	• Content based	• Integration of knowledge, learning relevant or connected real life situations.
Driving force for process	• Teacher, students are passive learner	• Students are active learner, Teacher is facilitator
Framework	• Predefined curriculum, assessment & credentialing in place • Structures “ends”, no defined learners’ outcomes	• Curriculum, instructional strategies, assessment & performed standards • Structures support outcomes, flexible & a means to define “learning ends”
Goal of educational counter	• Rote learning	• Critical thinking, reasoning, reflection and action
Typical assessment tool	• Proxy	• Authentic
Evaluation	• Norm referenced	• Criterion referenced
Learning assessments	• Continuous testing & permanent grading • Mistakes on permanent record: best grades & records fast & consistent performers; slower learners never catch up • Never assess/ document what learners can ultimately do successfully	• Macro view learning & achievement • Mistakes inevitable steps in development, internalizing & demonstrating high level of performance capabilities • Ultimate achievement what able to do
Performance standards	• Comparative & competitive approach • Linked to predetermined “curve” or quota of possible successes	• Learners potentially able receive credit for achieving performance standards • No quotas & standards pursued
Programme completion	• Fixed time- Inflexible constraint for educator & learner schedule controls learning & success	• Variable time - learner work at their own pace&match the needs of educator & learners

Standards can be set too high: Others object that the standards are too high. Outcome based education models do not approve of social promotion, so non-disabled students who perform significantly below the stated standard may be held back or required to take additional instruction.

Objection to additional resources being spent on struggling students: Many outcome based education systems invest resources in identifying and helping struggling students with this schools may find that their costs substantially increases.

Extra paperwork for teachers

Teachers sometimes oppose outcome based education because of the amount of paperwork that often accompanies it. Outcome based education system may require that the teacher track and report dozens of separate outcomes. It takes longer to report that a student can add, subtract, multiply, divide, solve story problems, and draw graphs than to report “passed mathematics class.”¹²

Conclusion

There is likely to be a fundamental shift from traditional model to outcome driven developmental model of education to promote constructivism, problem solving skills and render quality education. There is need for improvement of learning achievement by focusing on improving learning materials, physical facilities, teacher’s proficiency to deal with mixed ability groupings, curriculum development and the evaluation

of student performance in terms of predetermined outcomes by means of various assessment tools and techniques to prepare the student for life and work in the 21st century.

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Quality of Life of Clients with Alcoholic Dependence Syndrome Attending and Not Attending Alcoholics Anonymous Group Meetings

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Abstract

Alcohol is one of the most commonly used psychoactive drugs in the world. Alcoholics Anonymous (AA) attendance is an important predictor of improved Quality of life, such as abstinence, among persons with alcohol use disorders. The purpose of the study was to assess the difference in the Quality of life (QOL) of clients with Alcoholic Dependence Syndrome (ADS) attending and not attending Alcoholics Anonymous (AA) group meetings. A comparative survey design was used in 100 samples. The statistical analysis of data revealed that there is significant difference in the Quality of life of clients with ADS attending and not attending AA group meetings (t value= 7.323 and p value=0.01).

Key Words

Quality of life, Alcoholic Dependence Syndrome, Alcoholics Anonymous group meetings.

Background and Need of the Study

Alcohol consumption has been steadily increasing in developing countries since the 1980's. 62.5 million alcohol users were estimated in India. 270,000 people die due to use and abuse of alcohol every year.¹ The World Health Organization (WHO) estimates suggested that there are about 2 billion people worldwide who consume alcoholic beverages and 76.3 million of them have diagnosable alcohol use disorder.²

The AA programme, set forth in Twelve Steps, offers the alcoholic a way to develop a satisfying life without alcohol.³ The AA movement in India started in the late 1950s. Many who attend AA groups are able to stop the use of alcohol. Alcoholics Anonymous which has helped millions of people worldwide to stay away from alcohol.⁴

Alcoholics Anonymous groups are found to be very effective in motivating and supporting alcoholics to remain sober and maintain abstinence because it is cheap and more community based. Motivating the alcoholics to attend AA group meetings regularly is most challenging factor. No much research has been conducted, in India, among alcoholics to compare the Quality of life who had been attending and not attending AA group meetings.

Purpose of the Study

The study aims to assess the difference in the Quality of life (QOL) of clients with Alcoholic Dependence Syndrome (ADS) attending and not attending Alcoholics Anonymous (AA) group meetings. This would in turn help to encourage people with Alcoholic Dependence Syndrome to attend AA group meetings.

Objectives of the Study

The objectives of the study were:

1. To assess the Quality of life of clients with ADS attending and not attending AA group meetings as measured by WHO QOL-BREF scale.
2. To compare the Quality of life of clients with ADS attending and not attending AA group meetings.
3. To find the association between Quality of life and selected variables: age, education, occupation, marital status, religion, monthly income, duration of alcoholism, and number of hospitalizations for alcoholism.

Hypotheses

The hypotheses will be tested at 0.05 level of significance.

H_1 : There will be significant difference in the Quality of life of alcoholics attending and not attending AA group meetings.

H_2 : There will be significant association between Quality of life and selected variables.

Methods and Procedure

Design and Sample: The study was conducted between January to March 2010. In this study the sample of the study consisted of 100 ADS clients (50 ADS clients attending AA group meetings and 50 ADS clients not attending AA group meetings) from selected hospitals and AA centers. A comparative Survey design was used and the sampling technique used was purposive sampling.

Tools used: Tools used were a background proforma and WHO Quality of life BREF scale.

Background proforma: This was developed to acquire the information regarding the ADS clients. This included the details like age, education, occupation, religion, monthly income, marital status, duration of alcoholism in years, number hospitalization for alcoholism.

WHO Quality of life BREF scale: The WHO QOL- BREF an instrument to measure Quality of life produces score relating to 4 large domains namely physical domain, psychological domain, social relationship domain and environmental domain. There are also two items about individual's perception of quality of life and individual's perception of his/her health. This scale contains a total of 26 questions. Domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life) on a five point scale.⁵

The tools were translated to Kannada and retranslated back to English, with the help of language experts. The translated tool and the English tool was checked by five people to see that the translated tool was similar to English tool and found that it was clear and easy to understand.

To determine the clarity of all items and the time required for completion of the questionnaire, the pretesting was conducted in the month of December 2009 among five ADS clients. The time taken by the participants to fill the tools was approximately 15 minutes. The subjects did not have any difficulty in understanding the tools.

Ethical permissions: To conduct the research study, ethical committee clearance was obtained from the Institutional ethical committee of the tertiary hospital in Karnataka. Administrative permission from the Medical Superintendent and HOD's of psychiatric departments of the tertiary hospital was taken. A subject information sheet and informed consent

were prepared. Informed consent from the participants was taken.

Pilot study: Pilot study was conducted among 10 clients with ADS attending AA group meetings and 10 clients with ADS not attending AA group meetings, possessing the similar characteristics of main study in Udupi District Hospital to assess the feasibility, practicability and to confirm the plan for analysis of the study.

Data collection: The data collected from the month of January 2010 to March 2010 after obtaining administrative permission. The samples were selected based on the inclusion

Table 1: Frequency and percentage distribution of sample characteristics of ADS clients with Non AA and AA group
n=50+50=100

Sample characteristics	Non AA group		AA group	
	(f)	(%)	(f)	(%)
Age in years				
a) 18-28	08	16	05	10
b) 29-38	19	38	11	22
c) 39-48	12	24	15	30
d) 49 and above	11	22	19	38
Marital Status				
a) Unmarried	15	30	07	14
b) Married	31	62	42	84
c) Widowed	03	06	01	02
d) Divorcee	01	02	00	00
Educational Status				
a) Primary education	20	40	18	36
b) Secondary education	14	28	16	32
c) Predegree	06	12	08	16
d) Diploma	02	04	06	12
e) Graduate & above	08	16	02	04
Occupation				
a) Unemployed	06	12	04	08
b) Unskilled workers	31	62	30	60
c) Skilled workers	13	26	16	32
Religion				
a) Hindu	38	76	37	74
b) Muslim	02	04	02	04
c) Christian	10	20	11	22
Monthly Income (in Rs.)				
a) 1,000-1,999	09	18	08	16
b) 2,000-2,999	08	16	09	18
c) 3,000-3,999	08	16	09	18
d) 4,000-4,999	15	30	06	12
e) Above 5,000	10	20	18	36
Duration of Alcoholism in years				
a) 1 year – 2 years	07	14	02	04
b) Above 2 years -3 years	04	08	01	02
c) Above 3 years- 4 years	06	12	04	08
d) Above 4 years	33	66	43	86
Number of Hospitalization for Alcoholism				
a) One	30	60	20	40
b) Two	12	24	11	22
c) Three	03	06	12	24
d) Four and above	05	10	07	14

Table 2: Mean, Standard deviation and 't' value of Quality of life of clients with ADS attending and not attending AA group meetings n=100

Variables	Non AA group		AA group		't' value	'p' value
	Mean	SD	Mean	SD		
Quality of Life	75.06	12.08	93.38	12.91	7.323	0.001*

*Significant at 0.05 level.

criteria. The questionnaire was administered to both the groups, clients with ADS attending and not attending AA group meetings.

Results

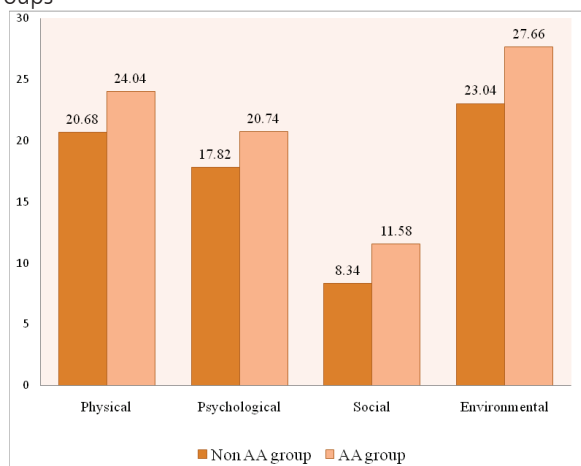
The data presented in Table 1 show that most of the subjects in non AA group- (38%) belong to the age group of 29-38 years, majority (62%) subjects were unskilled workers, majority (62%) of them were married, most of them (40%) had completed their primary education. Most of the subjects in AA group- (38%) belong to the age group of 49 years and above, majority (60%) subjects were unskilled workers, majority (84%) of them were married, most of them (36%) had completed their primary education. 76% of subjects among non AA group and 74% subjects among AA group were Hindu's. 32% of them had monthly income between 2,000- 3,999 among non AA group, 36% subjects had monthly income above Rs. 5,000 among AA group. Among non AA group 66% and among AA group 86% subjects were having ADS for more than 4 years. Among non AA group 60% of subjects and among AA group 40% subjects were admitted once in the hospital for alcoholism.

Description of Quality of life

The Quality of life of clients with ADS attending and not attending AA group meetings was assessed by using WHO QOL-BREF scale. The mean and standard deviation of domain score of both non AA and AA group was represented in the following bar diagram.

Data in bar diagram reveals that the mean scores were higher in the domain of environmental health for both the non AA

Fig. 1: Mean scores of Quality of life among non AA and AA groups



and AA groups which means they shows high Quality of life in this domain. They fared better in Domain I physical where mean scores were 20.68 for non AA group and 24.04 for AA group, and Domain II psychological where mean scores were 17.82 for non AA group and 20.74 for AA group. They fared least in domain III social where they scored 8.34 by non AA group and 11.58 by AA group. The total mean scores were higher among the AA groups comparing to non AA group.

Comparison of the Quality of life of clients with ADS attending and not attending AA group meetings

Independent t test was used to compare the Quality of life of clients with ADS attending and not attending AA group meetings.

The data presented in table 2 show that there is significant difference in the Quality of life of clients with ADS attending and not attending AA group meetings (p=0.01). Thus it can be interpreted that the clients with ADS attending AA group meetings experiences high Quality of life than the Non AA group.

Association between Quality of life and demographic variables

The association of the Quality of life score with different selected variables was done using one way ANOVA and Independent 't' test. The p-values obtained were more than 0.05 level of significance. Thus the null hypothesis was accepted stating no significant association between the Quality of life score and selected variables. Thus it is interpreted that Quality of life was independent of the variables under study.

Conclusion

Alcoholics Anonymous groups are found to be very effective in motivating and supporting alcoholics to remain sober and maintain abstinence because it is cheap and more community based. This study suggests that there is a significant difference in Quality of life of ADS clients who attend AA group meetings compared to non AA group. These findings, if communicated to clients, could enhance their motivation to enter Alcoholic Anonymous group meetings. Nurses working in hospital must carry out screening test to assess alcohol abuse and alcohol related disorders and can give initial counseling and provide education about alcohol, its ill effects and effectiveness of Alcoholic Anonymous group meetings and refer them to self-help groups.

Discussion

In the present study there was significant difference in the Quality of life between the clients of ADS attending and not attending AA group meetings. AA members have scored high mean scores on all the domains of a WHO Quality of life BREF scale compared to non AA group.

A comparative study which supports the present study findings was conducted in North India by Singh J et al, to compare the Quality of life of alcoholic patients with AA group meetings and other psychosocial treatments. Total QOL scores on all the four domains of WHO-QOL-BREF were significantly lower for the patients with psychosocial treatment when compared with twelve step programs.⁶

Another study was conducted at Newyork to assess the effectiveness of AA or TSF (Twelve Step Facilitation) programmes compared to other psychosocial interventions in reducing alcohol intake, achieving abstinence, maintaining abstinence, improving the Quality of life of affected people and their families, and reducing alcohol associated accidents and health problems. Main results shown that AA may help patients to accept treatment and keep patients in treatment more than alternative treatments.⁷

Based on the present study, the following recommendations were made:

1. A qualitative study can be conducted on Quality of life and lived experiences of clients with ADS attending and not attending AA group meetings.
2. A similar study could be replicated with a larger sample including male and female clients.
3. An experimental study can be conducted with the same sample.

4. A study can be conducted to assess the Quality of life and social support of clients with ADS with other mental illness.
5. A similar study can be replicated with one year follow-up.

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Undergraduate Arab Nursing Students Simulation Training (SST) Using Maternity Simulaid: An overview of obstetric skill performance assessment by OSCE, Skill Competency and Student Satisfaction

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Abstract

Clinical simulation in nursing education provides many opportunities for the students to learn and strengthen their clinical competencies in performing various obstetric skills. A Quasi experimental one group post test design was used to assess the effectiveness of student's obstetric skill performance, competency and satisfaction regarding simulation training. Results showed that majority of students performed high after simulation training. Male students proved higher performance compared to female. The students also expressed that simulator training gave competency in performing obstetric skills. 90% of students felt that simulator lab training were useful and more time need to be allotted for simulation lab training in acquiring skills before the actual maternity clinical posting. The findings of the study reveals that simulation based training is an appropriate proactive approach to reducing errors and risk in obstetrics, improving competency, whilst giving the student a multiplicity of transferable skills to improve their performance.

Key Words

Simulation training, skill competency, satisfaction

Introduction

A challenging task to train on maternity health nursing course to Arabic male and female nursing students by overcoming all the cultural norms and barrier demands learning situations that mimic clinical reality. Nursing being a practice discipline has demanded more focus on strengthening the student skills in the lab by simulation. Clinical simulation are used to strengthen students clinical core competencies and overcome the limitations such as inadequate hands on skill expertise, decreased training hours, patient safety, lack of exposure resulting in less expertise to obstetric skill drills¹. Incorporation of simuloids training into various aspects of maternity health nursing course facilitates to bridge gaps in maternal child nursing education and provide students the opportunity to prepare for and experience real-world clinical situations.

Need for Simulation lab training

Simulations are defined as activities or events that replicate clinical practice². Clinical simulation proves a vital role in the field of maternal- child health and allow nursing program to assess competency of student³. In labor and delivery, the student's scope of practice frequently dictates that they assume the role of observer rather than that of an active provider of care⁴. Clinical simulations have the potential to bridge gaps in maternal-child nursing education and provide learners with the opportunity to prepare for and experience real-world clinical situations.

Several methods are adopted in assessing the clinical skill on a simulator. The Miller's 'pyramid of competence'⁵ is useful for mapping assessment methods against the various tiers of the pyramid. The 'knows' level of the pyramid can be assessed using simple knowledge tests, e.g. multiple-choice questions (MCQs). The 'knows how' level can be assessed using unfolding patient management problems (PMPs) or essay questions. Objective Structured Clinical Examinations (OSCEs) can assess the 'shows how' level. The difficulty has always been assessing the 'does' level, which in student learning refers to performance in context to the real clinical environment.

Objective Structured Clinical Examination (OSCE) is one of the practical tests to assess specific clinical skills. It is well established method of assessing clinical competence. Although the OSCE appears to be a promising method for evaluating competence in the performance of clinical skills, there are very few studies in the nursing literature examining the use of the OSCE as a method for evaluating the performance of clinical skills by nurses in the maternity area.

Therefore a well planned maternity simulaid training at the beginning of the maternity clinical course promote planned assessment of the student's performance in context to the simulated environment.

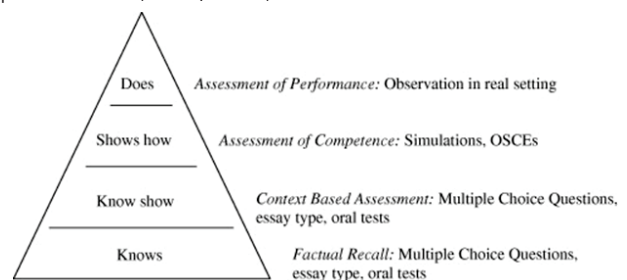
Literature review

Simulations for Orientation

Orientation in maternity nursing specialty area such as labor and delivery can take as long as 12 weeks.

The simulation in orientation can be used as a retention strategy for new nurses. In a study at Vassar Brothers Medical Center, the Bridge to Practice Program was implemented for new nurses working in a high-risk area. These nurses found that, after using simulation during their orientation, they were more able to think critically and make better decisions. These simulations also improved overall sense of well-being in these new nurses by providing social support and improving confidence in their abilities, leading to higher retention rates.⁶

Fig. 1: The development of clinical skills/competence/performance (Miller, 1990)



Simulations to Improve Communication and Patient Safety

Midwives and obstetricians have used simulations to aid in teaching techniques of deliveries of babies for hundreds of years. As the focus increases on patient safety and the importance of communication, simulation in a clinical setting for nurses appears to be a valuable tool not only for clinical competencies related to skills but also to improve communication in the obstetric unit and in maternal health nursing education⁶. The labor and delivery unit contains a surgery suite, a triage and ambulatory care unit, and, often, an anesthesia department. Nurses on this unit must rely heavily on communication skills to relay information to obstetricians and midwives about their laboring patients and to coordinate efforts between obstetricians/midwives, special care nursery, anesthesiologists, pediatricians, administration, and bed control personnel. This is usually done amid a host of visitors and family members, who usually expect perfect outcomes and uncomplicated deliveries. Simulation in this area can provide opportunities to develop and coordinate high-intensity, low-frequency events and also improve patient safety outcomes.

Simulations to Test and Review Obstetric Clinical Competency

Using simulation to assess clinical competencies can be reassuring to student nurses who may not be called upon to use those skills frequently but want to feel competent in such a situation. Simulation provides a safe environment for students to integrate theory into practice. Debriefing is an opportunity for participants and educators to discuss things that went well and things that did not go so well. It also provides an environment for reflective thinking and a place to review patient safety issues. The acquisition of relevant knowledge, the development of psychomotor skills, and the ability to apply the knowledge and skills appropriately in a given context are all required for nursing competence⁷.

Students who practiced deliveries on the simulator were more likely to believe that they could perform most portions of vaginal delivery with minimal supervision or independently than were students who did not receive simulator experience⁸. Creating an ideal objective structured clinical exam is the greatest advantage of simulation learning in any given specialty⁹. It also helps to assess the critical thinking ability of nursing students there by simulation technology has encroached into highly competitive specialty areas of nursing education and established itself as an effective learning method to improve the professional skills, training and assessment.

Use of OSCE

After several innovative techniques developed for assessment of clinical competence, One of the important, continuing and integral parts of clinical evaluation is OSCE .Use of OSCE after an intense lab training increases objectivity in assessing clinical skills and it is an effective evaluation tool to assess practical skill acquisition through simulation training than the traditional method of clinical evaluation. It is a reasonable assessment tool which speaks the students' error and provides appropriate feedback which enhances trust and confidence between teacher and student⁸ OSCE also enables students to put skill in combination with knowledge and communication skills, into practice. It is a very useful process that enables educators to test the students in the upper reaches of Miller's pyramid as it places them in a situation that they might encounter in future. In addition, the use of simulation enables the examiner to identify students learning and skill deficiencies. It also helps students to identify and consider their own learning needs and reflect on their performance to identify range of skills yet to acquire.

In response to this expectation an intensive orientation training using maternity simulaids for novice nursing students is mandatory. In addition to this the student's performance, self assessment competence and satisfaction continues to be a platform for further pedagogy in strategic planning of simulation training.

Method

The aim of this study was to determine the effectiveness of Obstetric skill drill training (OSDT) in terms of obstetric skill performance of the students as measured by OSCE using procedural checklist, Identify and compare relationship between male and female students knowledge scores and skill performance scores. To measure self inventory assessment on competency in performing OSD (Obstetric skill drills) using 3 point rating scale, Describe the satisfaction of students regarding OSD using 5 point likert scale.

Design

Quasi experimental design with only one group post test design was used to assess the effectiveness of OSDT, self inventory assessment on competency in OSD by a rating scale. The students also participated in completing Satisfaction survey on SLT using 5 digit likert scales

Table 1: Correlation of skill performance and knowledge scores between male and female students

		Knowledge scores of male students	Knowledge scores of female students	Combined Knowledge scores of male and female students
1.	Skill performance of male students	R – 0.736 P – 0.010**		
2.	Skill Performance of female students		R- 0. 231 P- 0. 237	
3.	Combined skill performance scores of male and female students	_____	_____	R – 0.395 P- 0.013**

Sample

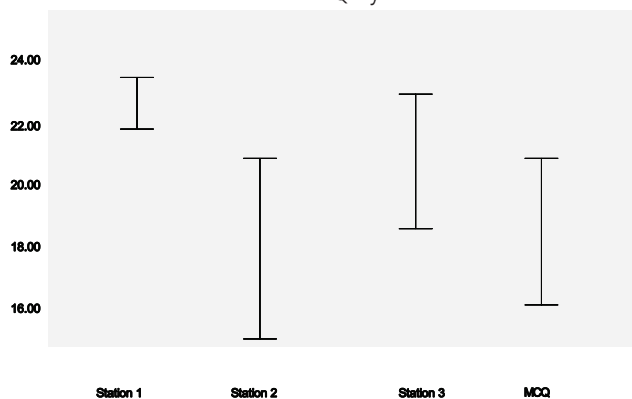
Sample participants were 39 B.Sc nursing students of Sultan Qaboos University who had registered for maternity nursing course Out of which 11 were male and 28 female. Purposive sampling is planned for the study. Students underwent clinical training in maternity health clinical nursing for 15 weeks in Fall 2008 semester. The students were trained in the beginning at the maternity lab for a period of 3 weeks on moderate fidelity simulators on selected obstetric skills by trained clinical instructors. Teaching learning by station method on vaginal examination and mechanism of labor at station 1, conduction of labor and placental examination at station 2, immediate newborn assessment at station 3 by dividing students randomly into 3 groups consisting of 6 to 7 numbers at each station. An assigned clinical Instructor to each station demonstrated the procedure for the students as per the procedure checklist and allowed each student to show return demonstration of the procedure. Among the 3 weeks with total number of 12 days, demonstration and return demonstration took 8 days leaving the last 4 days for assessment by OSCE.

The students were assigned for OSCE to perform procedural skills mentioned below across each station; the allotted time is 20 minutes for each station.

- Vaginal examination
- Conduction of labor
- Placental examination
- Immediate newborn assessment.
- MCQ pertaining to all stations

The station specific assigned instructors tick the detailed specific procedural check list as the students perform the skill based on the structured checklist on obstetric skill procedure. The first station consists of station 1 is on vaginal examination & placental examination, where in the Eva gynecological simulator is used to perform the procedure. The student is tested on vaginal examination skills while performing the procedure with checklist consisting of 20 items on the steps of the procedure. The same station is also examined for the placental examination by the faculty by using a rubber & plastic model of placenta by grading with another checklist of placental examination consisting of 10 items. Station 2 is on conduction of labor, student performs this procedure on moderate fidelity simulator. Assesment at this station was done by using checklist that includes 40 items of the procedure. Station 3 is immediate new born assessment;

Fig. 2: Range and Mean of OBSTETRIC SKILL PERFORMANCE of all three stations and the MCQ by OSCE.



this station set up is on assessment of New born after the spontaneous vaginal delivery. The newborn mannequin was used for the student to perform the assessment, this includes 10 items.

The overall lab structure for all 3 groups was similar as the examination was conducted in three different rooms for each station. The OSCE conducted in three rooms had only one clinical instructor at each station. Per day 9 to 12 students gave their skill performance exam at all three station for total 4 days taking 5 to 6 hours. Each student was given 20 minutes across each station to perform the procedure. A time keeper was kept to alarm the time; Low fidelity simulator was used at all stations to perform skill.

Assessment of overall knowledge pertaining to the procedural skill across each station was assessed on the last day by 20 MCQ to analyze reaches of the miller's pyramid model of learning structure.

Following the MCQ, students completed questionnaire on self inventory assessment on competency in performing OSD and satisfaction survey form.

Measurement and Instrumentation

After the author developed the instrument, seven experts reviewed and validated the checklist, self assessment competency inventory tool, and the 5 point likert scale satisfaction survey had 10 and 20 items respectively.

Numerical data of the instrument after coding were entered by the researcher into the Statistical package for the social science (SPSS) version 16.0 data analysis tool. Descriptive and inferential statistics was used using this version

Statistical Analysis, Results, and Discussion

Obstetric skill drill performance

Analysis of OSD (obstetric skill drill) performance as measured by OSCE using inferential statistics showed that students scored high in station 1 and performed low in station2 and MCQ. Station 2 showed a wide range of scores compared

Fig. 3: Comparison of Range and Mean of OBSTETRIC SKILL PERFORMANCE of all three stations and the MCQ by OSCE between Male and Female students.

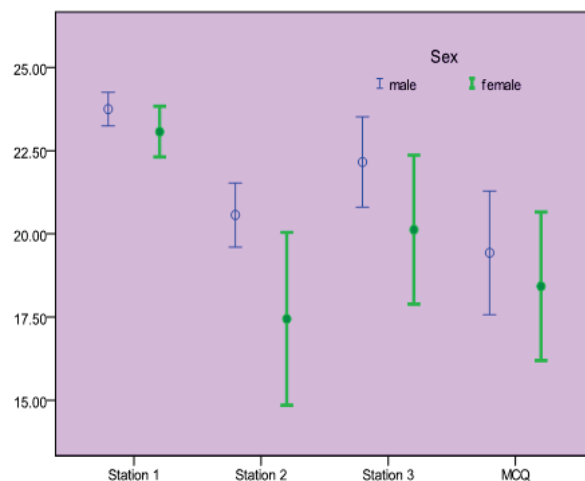


Table 3: Percentage distribution of Students Satisfaction level of Simulation lab training and OSCE

SI No	Items	Highly satisfied %	Satisfied %	Uncertain %	Unsatisfied %	Highly unsatisfied %
1	Objectives of simulation lab training well implemented in the course	61.5	35.9	-	2.6	
2	Content was organized to facilitate learning	51.3	46.2	2.6		
3	Content of the lab was well understood	64.1	28.2	7.7		
4	Demonstration were clear in the observation phase	48.7	35.9	12.8		2.6
5	Group participation was ensured	41	51.3	5.1	2.6	
6	Teacher student ratio was adequate	48.7	43.6	5.1	2.6	
7	Assessment/Evaluation methods were objective	33.3	59	5.1	2.6	
8	Appropriate feed back given	30.8	41	17.9	7.7	2.6
9	Lab sessions made to promote critical thinking	41	35.9	17.9	5.1	
10	Helped in actual clinical training	51.3	43.6	5.1		
11	Content was related to the course objective	43.6	53.8	2.6		
12	Evaluation methods reflect what is taught	38.5	46.2	15.4		
13	Developed adequate knowledge	48.7	46.2	2.6	2.6	
14	Teaching strategy adopted was creative	30.8	53.8	12.8	2.6	
15	Sufficient time was available for practice	23.1	33.3	12.8	17.9	12.8
16	Felt adequately prepared for clinical thro lab training	33.3	41	20.5	2.6	2.6
17	Handouts were supportive while performing skill training	61.5	35.9	2.6		
18	Overall lab posting was useful	70.2	27.2	2.6		

to other stations due to increased number of challenging steps. MCQ also was moderately difficult. Only students who practiced well were able to perform high at station 2. The performance of Male students was high at all stations including MCQ compared to female students. This could be because of vigorous practice of male students to compete with their unavailability of patient cooperation at actual clinical settings. The students also were overwhelmed in mechanism of obstetric skills (Fig 2 and 3). The Pearson correlation showed a positive correlation $p < 0.01$ level between skill performance and knowledge level in simulation lab assessment when compared to female students ($p < 0.01$). However the combined scores showed positive relation which was statistically significant at $p < 0.01$ level. On the whole the students who scored high in skill performance also showed higher level in knowledge about skill lab training (Table 1)

Self inventory assessment on competency in performing OSD (Obstetric skill drills):

At station 1 the students felt vaginal examination skill competency was high when compared with other item such as partogram reading. Majority of student felt partially competent in Partogram charting as it requires more comprehension on the physiological changes in labor process (Fig 4). At station 2 students felt highly competent on delivery

of shoulder, delivery of body, signs of placental separation, delivery of placenta, checking vital signs and demonstration of placental examination. In contrast majority of students felt partially competent at measurement of fundal height (61.5%). Rooming In (35.9%) and examination of vaginal bleeding (41%) were the other significant findings. This probably could be the technical constraints of the manikin (Fig 5). At station

Fig. 4: Comparison of Competency level in station 1
Comparison of competency level in station one

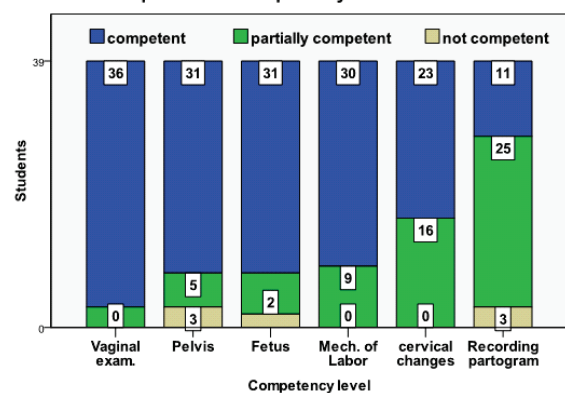
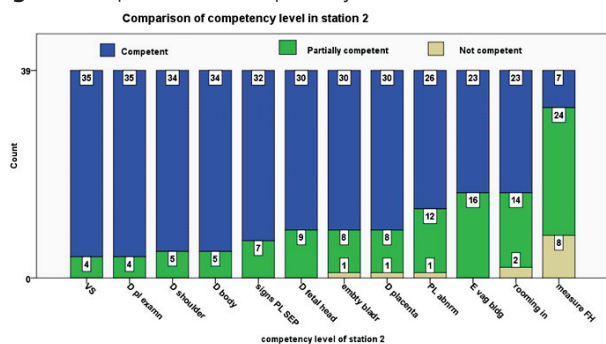


Fig. 5: Comparison of Competency level in station 2



A majority of students felt competent in all items and a small number of students is partially competent on anthropometric measurement (18%) and administering vit k injection to newborn (18%). Most of the students felt highly competent at station 3 compared to the other stations (Fig 6).

Satisfaction of students regarding OSD: The highest percentage (97.4%) of student satisfaction was on the overall simulation lab training as very useful to the students and the least (56.4%) of students felt that sufficient time was allotted to the lab training. The handouts circulated during skill training were found very useful for 96% of students. The same percentage was for the successful implementation of objectives to simulation lab training (SLT).

Discussions

This Quasi experimental study is focused on obstetric skill performance assessment by OSCE, Self Assessment on skill Competency and Student Satisfaction.

The discussion therefore is done under the following headings.

- Obstetric skill performance assessment by OSCE
- Self Assessment on skill Competency
- Student Satisfaction

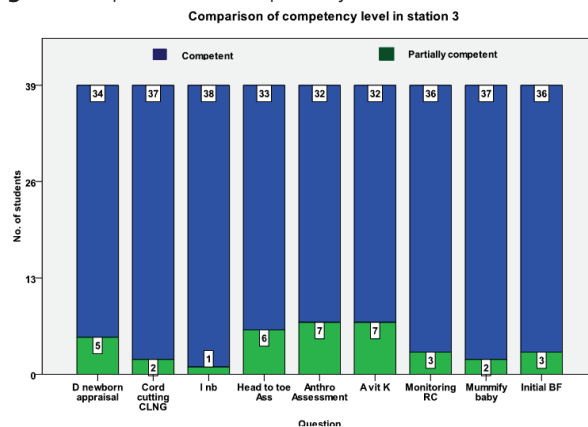
Obstetric skill performance assessment by OSCE:

Among 39 students the finding of OSCE revealed that there is a difference in performance at each station. Station 1 majority of students scored high and in station 2 majorities of students scored low. The reason for low performance is the complexity of steps in station 2. The study done by Schoening, Sittner and Todd (2006) found that the students believed that they gain skill and confidence when simulation objectives are met as the students learn to integrate concepts and respond accordingly. Therefore complex procedure need appropriate integration by repeated practice¹⁰. Simulation based training is an appropriate proactive approach to reducing errors and risk in obstetrics, improving teamwork and communication, whilst giving the student a multiplicity of transferable skills to improve their performance¹².

The second graph on comparison of skill performance between male and female students explains these findings. The male students performed comparatively better than the female students. This was possible because of male student's intense interest in repeating procedure practice to meet the simulation lab objectives.

The correlation value of table 1 shows male student showed higher skill performance and knowledge level on obstetric skill training while compared to females which was statistically

Fig. 6: Comparison of Competency level in station 3



significant at $p < .01$. The overall result too showed students those who performed better at skill station also performed high in knowledge on skill performance. This finding supports that clinical simulations have the potential to bridge gaps and provide learners an opportunity to prepare for real-world clinical situations.

Self Assessment on skill Competency: The self assessment competency ratings showed that in all three stations majority of items had made the students competent enough on a simulator. Because debriefing allows discussion of concepts, correction of errors, and simulation of reflective thought process; research has indicated this is the most important part of the simulation encounter because students learn what they do not know¹¹ (Jeffries, 2007).

Satisfaction survey: Majority of students (90%) felt that the simulation lab was useful, and the time allotted for maternity lab practice was less. This indicates that the students like to have more time spent at simulation lab in acquiring maternity skills.

Conclusion

The result of this study revealed that the performance of students was low when there was complexity of procedures and male students performed better in comparison with female students. The simulation lab training gave majority of student's competency in maternity clinical procedures. Students were satisfied with maternity simulation lab training and they require more number of hours for practice.

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Role of Reference Management Software in Reference and Citation Styles- A review

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Abstract

Citing the reference is the major part of the research paper and report writing. It is acknowledging purpose of giving due credit to the other sources and authors in which they have supported you and contributed to your research and publication. When citing and reference there are numbers various methods are adopted for citation styles, and format of references. Plagiarism will come out if not quoted published work. There are many reference management tools are available for capturing the right source, citing and making list of references.

Key Words

Reference management, Citation style, Reference management tool, End Note

Introduction

Researcher and academician feel the demand to publish but have a some degree of time to write. Collection and management of exact citations of sources of information is more time taking and frustrating task of research and their publications. Our most of time wasted in entering a reference in manually from journal article; inserting a refine in document; some time importing references from online and offline database without journal-specific format and later formatted as journal requirement. When author dose not cite right reference in her publication its goes against other peoples of their intellectual effort and called plagiarism.

When you write a paper related to literature, history, current events, and many other fields, direct quotes may be essential to a full discussion of the subject. In science, there is very rarely any call for a direct quote. On student papers, there is no reason at all to include direct quotes, except in the case when the student doesn't understand the concept and uses the quote to avoid having to explain it his/herself. Obviously, this doesn't go over too well with the grader. As a rule, do not use direct quotes in a scholarly technical paper. Your own thoughts must be expressed, not those of someone else.¹

The main purpose of this seminar paper to discuss the capturing the right references, creating a database and citing in propose publication and later on format as per journal-specific format for publication.

Key Issue of a Research Publication

The following major component should be in a research/ review publication².

- Title
- Abstract

- Introduction
- Methodology
- Result
- Discussion/Conclusion
- References

All the major components the references should be verify in following way

- If the article builds upon previous research does it reference that work appropriately?
- Are there any important works that have been omitted?
- Are the references accurate?
- Are the references proper style?
- Are the references in proper format?

Here the issue is, how can manage the quality and quantity of references available for researcher and how to incorporate in a research article.

What is Citation?

A "citation" is the way you tell your readers that certain material in your work came from another source. It also gives your readers the information necessary to find that source again, including³:

- Information about the author
- The title of the work
- The name and location of the company that published your copy of the source
- The date your copy was published
- The page numbers of the material you are borrowing

Citations symbolize the association of scientific ideas. The references that research authors cite in their papers make explicit links between their current research and prior work in the scientific literature archive⁴.

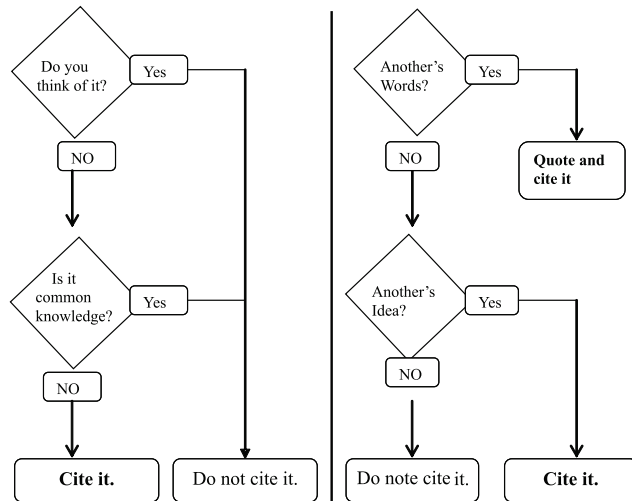
We can say the acknowledgement of a publication receives from another publication is called citation.

What is Reference?

Reference is acknowledging the sources of information, view and ideas that used in your publication. Reference is the confirmation that one document gives to author.

Works Cited is also referred to as References. The terms mean the same thing. Each is an alphabetical list of works cited, or works to which you have made reference. Works Cited is generally used when citing sources using MLA (Modern Language Association) style, while the title References is used when citing sources using APA (American Psychological Association) style. Works Cited and Bibliography are not the same. In Works Cited you only list items you have actually cited. In a Bibliography you list all of the material you have

Fig. 1: Harris:The Plagiarism Handbook, 2001; pp155, 158



consulted in preparing your essay whether or not you have actually cited the work⁵.

Bibliography is listing all the materials that have been consulted while writing an essay or a book. References, on the other hand, are those that have been referenced in your article or book.⁶

Why Reference?

Verify the original work, enable to reader to know the fact about your written work and most important to avoid plagiarism are the main reason to referencing.

References must be provided whenever you use someone else's opinions, theories, data or organisation of material. You need to reference information from books, articles, videos, computers, other print or electronic sources, and personal communications. A reference is required if you⁷:

- Quote (use someone else's exact words)
- Copy (use figures, tables or structure)
- Paraphrase (convert someone else's ideas into your own words)
- Summarise (use a brief account of someone else's ideas).

Robert Harris⁸ designed this simple flowchart to help author to cite their research properly.

Reasons for Giving Citations

E. Garfield said the issue of "when to cite" is closely related to question about the "why of citation" and he given fifteen major reasons for citation⁹:

1. Paying homage to pioneers
2. Giving credit for related work (homage to peers)

Table 1: Comparative study of Reference Management Software

Software	Developer	First release	Latest stable version	Cost	Open source	License	Notes
Reference Manager	Thomson Reuters	1984	11.0.1	Yes	No	proprietary	network version available; built-in web publishing tool
Bookends	Sonny Software	1988	10.4.3	Yes	No	proprietary	integrated web search, pdf download, auto-completion
EndNote	Thomson Reuters	1988	X4	Yes	No	proprietary	Includes EndNote Web account
Scholar's Aid	Scholar's Aid, Inc.	1998	4.1	Yes	No	proprietary	
RefWorks	RefWorks	2001	2010-05	Yes	No	proprietary	centrally-hosted website
BibDesk	BibDesk developers	2002	1.5.2	Free	Yes	BSD	BibTeX front-end + repository
Connotea	Nature Publishing Group	2004	1.7.1	Free	Yes	GPL	centrally-hosted website, web-based
CiteULike	Oversity Limited	2004	?	Free	No	proprietary	centrally-hosted website
Zotero	Center for History and New Media at GMU	2006	2.0.9	Free	Yes	GPL	Firefox extension; stand-alone and other browsers in alpha
BibSonomy	University of Kassel	2006	?	Free	No	proprietary	centrally-hosted website
2collab	Elsevier	2007	?	Free	No	proprietary	centrally-hosted website, no longer accepting new accounts

3. Identifying methodology, equipment, etc.
4. Providing background reading
5. Correcting one's own work
6. Correcting the work of others
7. Criticizing the previous work
8. Substantiating claims
9. Alerting researchers to forthcoming work
10. Providing leads to poorly disseminated, poorly indexed or uncited work
11. Authenticating data and classes of fact- physical constants, etc.
12. Identifying original publications in which idea or concept was discussed
13. Identifying the original publication describing and eponymic concept or term
14. Disclaiming work or ideas of other (negative claims)
15. Disputing priority claims of others (negative homage)

Reference Style

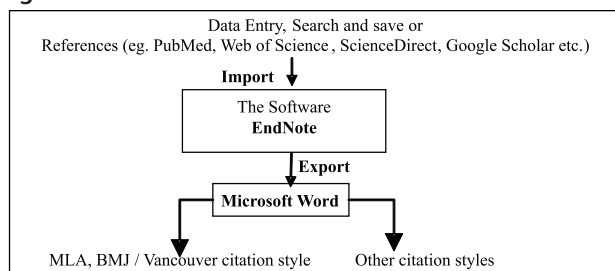
There are many citing and listing of references styles. Author must be follow the instructions as per journal author is submitting paper. We can say that rferences must be in the style required by the journal. There are more than 4,500 bibliographic styles are listed in current version of EndNote. These styles are specific as per journal requirement. Some journals and even organisations are using some popular styles likes APA¹⁰ (American Psychological Association), Chicago Style¹¹ (The University of Chicago Press), MLA Style¹² (Modern Language Association) and Vancouver system¹³.

Reference Management Software

Reference management software (sometime referred to call as citation management, bibliographic management software) is a designed to capture and manage the references and easy to use in document for proper cite. Software is also help to create various bibliography and in bibliometric study. Software is also helping in online capturing as well as offline. Reference automatically created in the end of the publication when author cite any document in which author writing.

These software packages integrated with most usually used word processing application software which are generally used for writing the papers. Earlier version of software packages need more command for run the task but now most of format citation and reference automatically. These software packages have their on database and able to generate various bibliographic reports and list in the different formats, styles as per standard required by the publisher and journals. Software also provides the facilities to create new style and format and also edit the pre-existing style. The major feature is the import

Fig. 2: Flow Chart of EndNote



and export in each others and also web based automatically import features provided.

Reference management software does not do the same job as a bibliographic database, which tries to list all articles published in a particular discipline or group of disciplines; examples are those provided by Ovid Technologies (e.g. Medline), the Institute for Scientific Information (e.g. Web of Knowledge) or monodisciplinary learned societies e.g. the American Psychological Association (PsycINFO). These databases are large and have to be housed on major server installations. Reference management software collects a much smaller database, of the publications that have been used or are likely to be used by a particular author or group, and such a database can easily be housed on an individual's personal computer¹⁴.

There are many software available for the management of references. Some of software are available as proprietary and many one also available in GPL. In early decade 1980s the software are purely proprietary later on after 2001 many software are available in Open source standard. The comparative study is given bellow¹⁵:

The EndNote

The EndNote developed by Institute of Scientific Information (ISI) in 1988. Now it is with Thomson Reuters. The Latest version of EndNote is X4. The software can store s & organizes citations found from many sources and you can inserts these citations into a Word document automatically formats your references according to a predefined citation style

EndNote is a reference management software application used by research, academician and librarian to organize citation, references, bibliography and many other forms of scholarly work. EndNote can be linked with word-processing applications such as Microsoft Word to further automate the citation processes according to a predefined citation style. With this software linkage, users can easily extract or update references between Word and EndNote without changing the citation database itself.

Flow Process EndNote Requirements

Following software and hardware are required for installation and operation of EndNote software.

Fig. 3: EndNote Installation

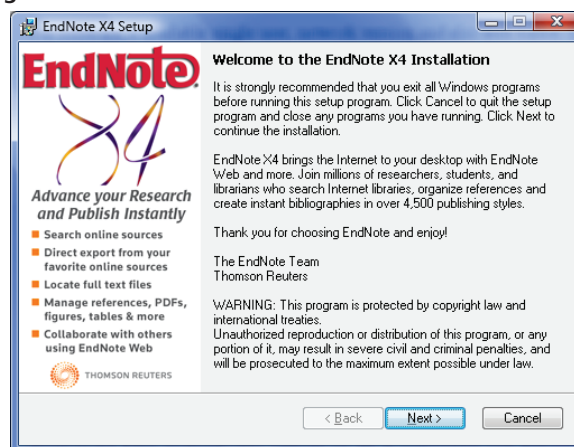
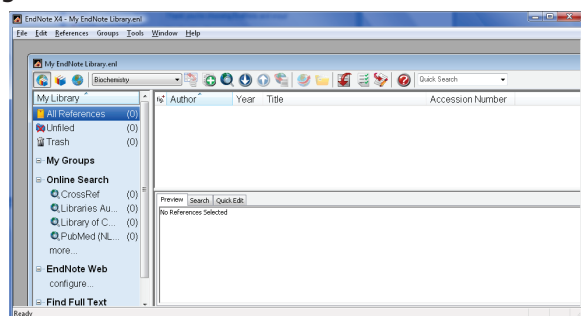


Fig. 4: A New EndNote File



Software Requirements

- Windows XP with SP3 or Vista
- Microsoft Word 2003 or 2007
- NUS Software Catalogue (software@nus.edu.sg)

Hardware Requirements

- Pentium 450 MHz or faster
- At least 180MB hard disk space
- Minimum of 256 MB RAM
- Internet or LAN connection

How to Get EndNote

The software is available single user, network version and also web based. The cost of software is given in their website (www.endnote.com). The software is also available to download 30 days free trial of its latest full version. The software file size is 64.4 MB.

How to Install?

Software can be obtained through purchase and to download direct from internet. After getting the software first it should be install your PC or Laptop.

Follow the all the basic steps of default installation wizard and complete the installation. The following first screen will be display.

It allows to creation of an unlimited number of personal databases which you can call libraries in EndNote. You can allow an unlimited number of libraries to be open at one time. Each library can contain an unlimited number of references and each record can contain up to 52 fields (e.g., Author, Title, etc.) The Thomson Reuters EndNote Styles collection contains more than 4500 bibliographic styles for a variety of disciplines.¹⁶

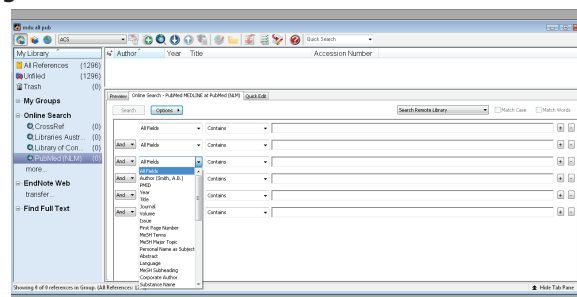
Creating a Reference File

The Sample library is placed in the EndNote Examples folder during installation and is used in the exercises in the EndNote Getting Started Guide. For crating a new file just click on File then new.

File> New> entre the File Name> Select the location to save the file> and Click Save to create the new library.

There are standard format for filling out a simple template that has the proper fields displayed for a given type of reference. There are 46 customizable reference types, covering a variety of

Fig. 5: Online Search: PubMed Search Interface



materials from Ancient Texts to Web Pages, each with up to 52 fields for entering references. Using EndNote's Connect you can Simply open any of more than 3,900 predefined connection files and you're online and searching. Access hundreds of remote bibliographic databases, including Web of Science, Ovid, PubMed, the Library of Congress, and university card catalogs from EndNote. Connect to data sources worldwide—EndNote provides MARC formats that support native language libraries around the world. Search remote bibliographic databases using EndNote's simple search window—great for locating specific references. Export references directly from Web of Science, Highwire Press, Ovid, OCLC, ProQuest and more. Save and load search strategies at the click of a button. Drag and drop references between EndNote libraries in one simple step. No additional importing required¹⁷.

Edit a Reference

Select the reference and double click. It will open a will all fields of the reference in editable mode.

File Attachments: You can attach files or insert links to files on your network or hard drive by selecting File Attachments, then Attach File, from the References menu.

Figure: This is another way of attaching a file. To insert a file, select References > Figure > Attach Figure, then click on the Choose File button and locate the file you want to attach in the Figure field

Export and Import of References

The exact method for using direct export will vary with the data provider you are using. A sample of the data providers that support direct export for at least some of their databases includes: Web of Knowledge (information on Web of Knowledge training options can be found at <http://science.thomsonreuters.com/training/wok/>), All importing uses a pattern matching process where the pattern of the tags in the data is matched against the pattern of the tags in the import filter.

Cite while you Write in Ms Word

Open the EndNote library or libraries that contain the references you wish to cite. Highlight a reference in your EndNote Library by clicking on it once (multiple references can be selected by holding down the ctrl key) Start Microsoft Word and open the paper you are writing. When you are ready to cite a source, position the cursor in the text where you would like to put the citation. This button will insert the

Fig. 6: EndNote Tool Bar in MS Word

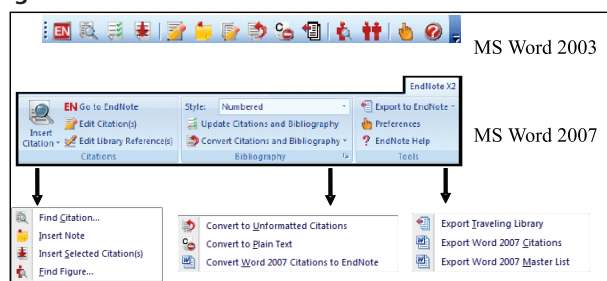
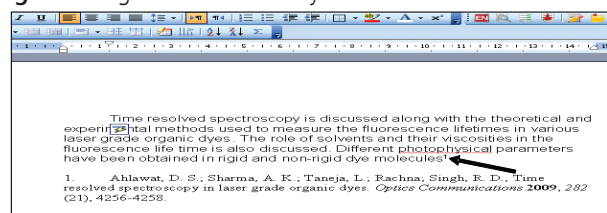


Fig. 7: Citing and Reference Style



references you selected in EndNote into your document at the location of the Word cursor.

Conclusion

If author uses reference management software it will be less chance to citing and referencing errors and avoided duplicate references. Author must be aware to know what is the journal citing and referencing style. Many authors get comments from reviewer that you reference style is not match as per our journal standard. Accurate reference style is also impacting in Impact factor of Journal. The EndNote software helps author to capturing offline and online references, organising the references, generating the bibliography and most important is the its formatting style of cited references.

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A Study to Evaluate the Effectiveness of Acupressure on Menstrual Discomforts Among Adolescent Girls

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Abstract

Dysmenorrhoea is the most common gynecological disorder among adolescents with a prevalence of 60–93%. According to United States of America (USA) based studies, 42% of affected adolescents describe their menstrual pain as severe, 33% as moderate and 25% as mild. A number of studies have shown that in 10–15% of female students, dysmenorrhoea interferes with daily activities including school activities. Dysmenorrhoea accounts for 600 million lost work hours and US \$ 2 billion in lost productivity annually¹. Objectives of the study were to, (i) identify the adolescent girls with menstrual discomfort. (ii) find the association between menstrual discomforts and selected variables such as onset of menarche, family support, dietary pattern, exercise, socio economic status, family history of dysmenorrhea, sleep pattern and academic performance. (iii) determine the effect of acupressure technique on severity of menstrual discomforts among adolescent girls in terms of reduction in menstrual discomforts as measured by menstrual discomfort severity assessment scale. In order to achieve the objectives of the study it was essential to carry out the research in two phases. In phase I, survey approach was used and in phase II evaluative approach is used. The intervention given was Acupressure procedure. Results indicated that acupressure was an effective technique in reducing the menstrual discomforts among adolescent girls.

Key Words

Acupressure

Menstrual discomfort

Adolescent girls

Introduction

Menstruation is a normal natural process that occurs in all healthy adult who have not reached menopause¹. Concern about normalcy of their menstrual cycles is nearly universal among women. In addition menstrual dysfunction like irregular cycles, premenstrual syndrome, menorrhagia, dysmenorrhea are common problems faced by many women. Among these dysmenorrhoea is predominant².

A study had been conducted on incidence of dysmenorrhea among 1648 adolescent girls of Karnataka. The incidence of dysmenorrhoea was 87%, of these 46.69% had severe problem of perceived pain during menstruation³. Another study conducted in United States reported that dysmenorrhoea prevalence rates as high as 90% and it is a common cause of absenteeism and reduced quality of life among women⁴.

A study conducted in Iran among high school girls to identify the prevalence of dysmenorrhoea revealed that 85

respondents (14.4%) suffered from dysmenorrhoea which disturbed their daily activities and was not improved by the use of analgesis. The results also indicate that there was a significant correlation between dysmenorrhoea and certain biological factors, between menarche, age and the severity of dysmenorrhoea, the duration of menstrual flow and early menarche⁵.

Recent research studies are focusing on complementary and alternative interventions for dysmenorrhea include the use of muscle relaxation therapy, magnetic therapy, reflexology, hand acupuncture, aroma therapy acupuncture and acupressure. Complementary and alternative therapies may be adopted as nursing interventions, to alleviate dysmenorrhoea and improve productivity, creativity, work performance and quality of life⁶.

Accupressure therapy was known in India as early as 500 years ago. (Sushrut Samhita). Unfortunately it was not preserved properly and went to Ceylon in the form of acupuncture. The word acupressure is related to acupuncture. Accupressure means the art of healing disease by applying pressure on specific points with the help of one's thumb or unpointed things⁷. Stimulating the potent points (acupressure points) with pressure, needles or heat triggers the release of endorphins⁸, which are the neurochemicals that relieve pain. As a result pain is blocked and the flow of blood and oxygen to the area is increased. This cause the muscles relax and promote healing⁹. In traditional Chinese Medicine (TCM) terms, acupressure points prompt the body to work more efficiently.

As these therapies are becoming more popular and recommended, nurses needs to integrate a holistic approach to the care they provide. It is noted that a fair number of people attend acupuncture training programme in the United States and enter healthcare as nurses^{10,8}. Hence we can strongly recommend nurses working in the main stream to study bodywork technique such as acupressure, shiatsu and incorporate them into practice for the purpose of pain relief augmenting the effects of pain medication and facilitating comfort⁸.

It has been reported that dysmenorrhea can be successfully relieved by acupressure at combinations of different accupoints Qihai (CV6), Guanyuan (CV4), Zusanti (S36), Sanyinjiao (SP6), Sanyinjiao (Sp6), Xuehai (Sp10) and Taichong (LIV3) or at a single Ho – Ku accupoint¹¹.

The merit of utilizing acupressure therapy as a nursing intervention has been proposed in the literature as a non – invasive measure that offers comparable effects to acupuncture therapy. Accupressure for dysmenorrhoea may offer women a non-invasive measure that offers comparable effects to accupuncture therapy. Accupressure for dysmenorrhoea may offer women a non-invasive, cost- free and timely way to manage dysmenorrhea on their own, thereby saving time, cost and effort⁹.

A non randomized controlled trial conducted among college students regarding effects of acupressure on dysmenorrhea and skin temperature, in Korea reported that acupressure at the Sam Yin Jiao (SP6) acupoint may be an effective way to alleviate primary dysmenorrhea⁶. The investigator as a teacher has come across with many students who suffer from dysmenorrhea and are forced to abstain from classes and clinicals. Hence researcher's personal experience of working with adolescent girls motivated to conduct the study.

Methodology

The study was conducted in two phases. In phase I descriptive survey design was used and Quasi experimental pretest-posttest control group design was used in phase II. The study was conducted in selected higher secondary schools in Malappuram District of Kerala state. The study population were plus one and plus two higher secondary girls studying during the study period from January to April 2009.

Sample

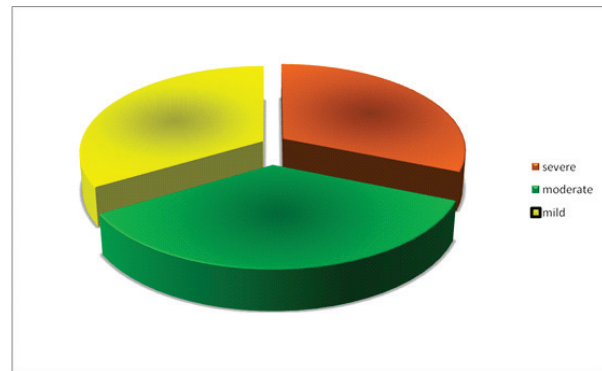
A total of 260 adolescent girls studying in plus one and plus two classes were selected for phase I and 80 adolescent girls in Phase II. Non probability convenience sampling technique was used to select the higher secondary schools. In Phase I, All the girls who met the inclusion criteria and were willing to participate in the study were selected for the study. In phase II, girls who had severe menstrual discomfort were selected. The sample size for second phase was calculated using the n - master soft ware (1.0 version) and the required sample size was 30 in each group. Considering the subject attrition a sample of 40 was selected in each group.

Data Collection Procedure

Data collection was carried out between 2nd February to 28th April 2009. Formal administrative permission was obtained from the principals of the concerned school and informed written consent was obtained from the adolescent girls. They were made to sit in a class room and the following tools were administered. Tool-1: Background proforma, Tool- 2: Modified Agarwalas socio economic status scale, Tool- 3: Menstrual discomfort check list, Tool-4: Semi structured questionnaire on factors affecting menstrual discomfort. These tools were validated, pretested and were reliable. The adolescent girls with severe menstrual discomfort were assigned to experimental and control group.

In experimental group, data was collected before and after acupressure technique twice a day; morning and afternoon, on the first day of menstruation. The acupressure was applied for a period of 3 minutes bilaterally on each leg on SP-6 acupoint and after that again bilateral application of pressure on Rangu acupoint for three minutes. The same procedure was repeated once again. The total duration of one intervention was 12 minutes. In control group data was collected twice a day; morning and afternoon, on the first day of menstruation without intervention. Validated, pretested and reliable, Menstrual discomfort severity scale was used to assess the discomfort before and after the intervention.

Fig. 1: Prevalence of menstrual discomfort



Results

The data obtained were analyzed using computer software programme, statistical package for social sciences- version 11.05 (SPSS-11.05)

1. Demographic characteristics

Majority of adolescent girls 145 (55.8%) belonged to the age of sixteen years. Most of the adolescent girls 169 (65%) had three to five days of menstruation. Majority of the adolescent girls 180 (69%) had painful menstruation. Most of the adolescent girls 225 (86.5%) belonged to middle socio – economic status.

2. Prevalence of menstrual discomfort

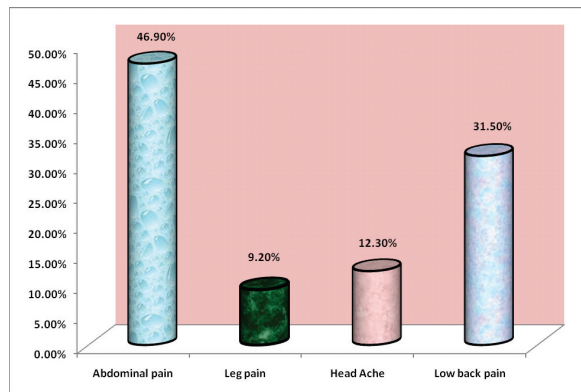
Out of 260 adolescent girls, 87 (33.46%) had mild menstrual discomforts, 92 adolescent girls (35.38%) had moderate menstrual discomforts and 81 (31.15%) adolescent girls had severe menstrual discomforts. The prevalence is shown in fig. 1

The data presented in figure 2 shows that most of the adolescent girls 122 (46.9%) had ranked abdominal pain as the most severe menstrual discomfort.

Table 1: The Z value computed between the median pretest and posttest menstrual discomfort scores in morning and afternoon intervention in experimental group N= 40

Menstrual discomforts	Morning		Afternoon	
	Z value	P value	Z value	P value
Head ache	- 3.602	<0.0001	-3.654	<0.0001
Lower Back	- 2.687	0.004	-2.719	0.004
Lower Abdomen	-5.587	<0.001	-5.616	<0.0001
Lower Leg	-5.657	<0.0001	-5.657	<0.0001

Fig. 2: Bar diagram showing Ranked Menstrual discomforts



3. Association between menstrual discomfort and selected variables.

There was no significant association between menstrual discomforts and onset of menarche ($\chi_{(3)}^2 = 2.766$), family support ($\chi_{(1)}^2 = 0.846$), Sleep pattern ($\chi_{(2)}^2 = 0.210$), academic performance ($\chi_{(6)}^2 = 5.482$), dietary pattern ($\chi_{(2)}^2 = 0.511$), socio economic status ($\chi_{(4)}^2 = 1.372$), family history of dysmenorrhea ($\chi_{(2)}^2 = 0.185$) at 0.05 level of significance. There was a significant association between exercise and menstrual discomforts. ($\chi_{(2)}^2 = 13.921$) at 0.05 level of significance. Hence menstrual discomfort was dependent on exercise.

4. Effectiveness of acupressure on menstrual discomfort

The Z value computed between pretest and posttest showed that the obtained values were statistically significant during morning and afternoon intervention. Thus it is concluded that intervention was effective in reducing the menstrual discomfort of the adolescent girls in the experimental group.

The comparison between posttest percentage reduction scores of control and experimental group is shown in table 2.

Findings presented in table 2 showed that adolescent girls who had undergone acupressure technique during their menstrual discomforts had significant reduction in menstrual discomforts. Hence the acupressure technique was found to be effective in reducing the discomforts due to menstruation among adolescent girls.

Discussion

The findings of the study have been discussed with reference to the related studies.

Prevalence of menstrual discomforts

Out of 26 adolescent girls 173 i.e, 66.5% had menstrual discomforts. The present findings is supported by the findings of a study conducted in Canada revealed that 60% women suffer from primary dysmenorrhoea¹³.

Association between menstrual discomfort and selected variables

In the present study there is no association between onset of menarche and menstrual discomforts. This indicates that onset of menarche is independent of menstrual discomfort. This finding was supported by another study conducted in Canada that earlier age was associated with primary dysmenorrhoea¹³. There was no significant association between menstrual discomforts and family support. It indicates that family support is independent of menstrual discomforts. This present finding contradicts the study findings conducted in 2001 at Wisconsin, USA, that social support moderates the relationship between negative emotions and painful symptoms of dysmenorrhoea¹⁴.

Effectiveness of acupressure technique on menstrual discomforts

In the present study the median of post test scores on menstrual discomforts and inter quartile range were lesser than median pre test menstrual discomfort scores and inter quartiles in experimental group. This indicated that acupressure technique is effective in reducing the menstrual discomforts of adolescent girls. The median of post test scores on menstrual discomforts and inter quartile range were greater than median pretest menstrual discomfort severity scores and inter quartile range in the control group. This indicated that acupressure was an effective technique in reducing the menstrual discomforts of adolescent girls. In the study conducted at Taiwan found that acupressure at Sanyinjiao can be an effective cost free intervention for reducing pain and anxiety during dysmenorrhea. This is also supported by the findings of a study conducted at USA that median pain medication was the same for both groups at base line dropped to two pills per day for the acupressure devise but control group remind at 6 pills at the second treatment cycle¹².

Conclusion

The study concluded that the intervention is effective in reducing menstrual discomforts among adolescent girls. There was a significant difference in the post test scores on menstrual discomforts and inter quartile range in the experimental group. Which indicated that acupressure was an effective technique in reducing the menstrual discomforts of adolescent girls. It is inferred that in the present study

Table 2: The Mann Whitney U value computed between the percentage reduction scores of control and experimental group.

N = 80

Menstrual discomforts	Experimental group		Control group		U value	P value
	Median	IQR	Median	IQR		
Head ache	-50	0	100	100 to 125	3.500	<0.01
Lower back	-50	0	150	75 to 150	208.00	<0.01
Lower abdomen	0	0	150	75 to 175	11.00	0.01
Lower leg	-100	0	100	100to150	10.50	0.01

there was significant reduction of menstrual discomforts in experimental group than in control group.

Recommendations

Based on findings of the study the following recommendations were made

- Similar study can be conducted using larger cross institutional samples
- Similar study can be conducted using true experimental design
- A comparative study can be conducted to assess the effectiveness of acupressure and the acupuncture technique,
- A study can be conducted among nurses about their awareness of complementary therapies in reducing menstrual discomforts,
- Longitudinal study can be conducted to assess the effectiveness of acupressure in adolescent girls

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A Study to Assess the Effectiveness of an Information Booklet on Newborn Danger Signs Among the Antenatal Mothers in Selected Rural Maternity and Child Welfare (RMCW) Centres, Udupi District, Karnataka State

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Abstract

Mothers are the primary caregiver of the newborns, thus the knowledge of the mothers regarding newborn danger signs has great influence on the health of the newborns. The purpose of the present study was to prepare the mothers (antenatally) to handle tactfully and wisely to the situation which can pose threat to their newborn. Moreover, this will improve the health status of the newborns and newborns' survival. The present study revealed that the information booklet on newborn danger signs was found to be effective as the mean post-test knowledge score (18.83) was higher than the mean pre-test knowledge scores (10.13). The overall actual gain in the knowledge was 31.08 and the modified gain was 0.48. Wilcoxon Signed rank test showed that there was significant difference between the mean pre-test and post test knowledge scores ($Z=-6.402$, $p< 0.001$) of antenatal mothers. Significant association was found between pre-test knowledge score and parity of the antenatal mothers. The total percentage of antenatal mothers who strongly agreed on the booklet was 78.47%.

Key Words

Danger signs, Newborn, Antenatal mothers, Information booklet

Introduction

Newborn babies constitute the foundation of a nation. Healthy and sturdy babies are likely to evolve as physically and mentally strong adults with enhanced quality of human resource development. The high neonatal morbidity and mortality rates attest to the fragility of life during newborn period¹. Globally, the Neonatal Mortality Rate (NMR) is 36/1000 (5.1 million annual neonatal deaths). Of the 141 million annual livebirths, 127 million (90%) are born in developing countries, which, compared to developed countries, have a higher NMR (39/1000 versus 7/1000). Five million annual neonatal deaths (98% of the world's total) occur in developing countries.²

A triangulated study conducted to find out the awareness of mothers about newborn danger signs and their health care seeking behavior for sick newborns revealed the poor awareness of mothers regarding newborn danger signs. Thus, it concluded that there is a need for raising awareness building which required for early recognition and prompt treatment³. Hence the investigators was curious to know the knowledge level of the antenatal mothers, and to see whether an information booklet on newborn danger signs increase their knowledge level and build confidence in taking care of their newborn.

The present study had four objectives i.e. to determine the

knowledge level of the antenatal mothers on newborn danger signs, to determine the effectiveness of an information booklet on newborn danger signs in terms of gain in post-test knowledge scores, find the association between pre-test knowledge scores on newborn danger signs and selected variables and to obtain antenatal mother's opinion on acceptability of the information booklet on newborn danger signs.

Material and Methods

An evaluative approach with one group pre-test post-test design was used to find the answers for the research questions. The data was collected from 54 antenatal mothers using purposive sampling technique. Four tools were used to gather data i.e. Demographic Proforma, Modified Kuppaswamy's Socio-economic status scale, Structured Knowledge Questionnaire on newborn danger signs (danger signs include low body temperature, fever or high body temperature, fast breathing, severe chest indrawing, nasal flaring, grunting, poor feeding, persistent vomiting, persistent diarrhea, umbilicus red or draining pus, jaundice, delayed passage of meconium, delayed passage of urine, skin pustules, convulsion, lethargic or unconscious) and opinionnaire on usefulness of the information booklet. The maximum possible score of the structured knowledge questionnaire was 28 and the minimum possible score was 0. Tools were prepared in consultation with experts in the field.

On day one, the antenatal mothers were selected based on the criteria and informed consent was taken. Pretesting was done by administering the first three tools mentioned above, and then the information booklet on newborn danger signs was administered. On the eighth day of pre-test, post-test was conducted for the same subjects by administering the same tools and also an opinionnaire was given to the participants to find out their view on the information booklet given.

Findings and Discussions

Sample Characteristics

The study revealed that majority of the antenatal mothers 40 (74.1%) was in the gestational age of 32 – 36 weeks. Maximum 38 (70.4%) were primigravida and had no live born (nullipara). Most of them i.e. 35 (64.8%) were in the age group of 18 – 26 years. Majority of the antenatal mothers 45 (83.3%) were Hindus and most of them 40 (74.1%) live in joint families. Majority, 61.6% reported that their source of health information is from television. Most of the antenatal mothers 29 (53.7%) had schooling upto 10th standard and majority 44 (81.5%) were housewives. It was also revealed that 38(70.4%) of the antenatal mothers had monthly family income below Rs.6000.

Findings related to the knowledge of antenatal mothers on newborn danger signs

Table 1: Assessment of knowledge on newborn danger signs before administration of the information booklet. n=54

Knowledge scores	Pre-test	
	Frequency (f)	Percentage (%)
Good (20-28)	--	--
Average (10-19)	32	59.3
Poor (0-9)	22	40.7

The data presented in table 1 show that the antenatal mothers had average 32(59.3%) and poor 22(40.7%) knowledge scores in the pre-test.

Table 2: Assessment of knowledge on newborn danger signs after administration of the information booklet. n=54

Knowledge scores	Post-test	
	Frequency (f)	Percentage (%)
Good (20-28)	21	38.9
Average (10-19)	33	61.1
Poor (0-9)	--	--

Table 3: Wilcoxon Signed Ranked test between the pre-test and post-test knowledge scores of antenatal mothers on newborn danger signs. n=54

		Mean rank	Sum of ranks	Z value	P value
Post-test	Negative ranks	0	0		
Pre-test	Positive ranked	27.50	1485.00	-6.403	<0.01*

*Significant at P<0.05

The above data show that, majority 33 (61.1%) of the participants had scored average and 21(38.9%) had scored good knowledge scores. None of them had poor knowledge score after the administration of the information booklet.

Findings related to the effectiveness of the information booklet on newborn danger signs.

As the data did not follow the normal distribution as proved by Kolmogorov - Smirnov, Wilcoxon Signed Ranked test was used for the analysis.

The data presented in table 3 show the effectiveness of information booklet on newborn danger signs in terms of gain in the post-test knowledge scores. The significant difference between pre-test knowledge and post-test knowledge was computed using Wilcoxon signed rank test. The Z score is - 6.403 and the p value is < 0.01 which was significant at 0.05 level of significance. This shows a significant gain in the post-test knowledge scores. Hence the findings showed that the antenatal mothers who had involved in the study have significantly gained knowledge on newborn danger signs.

Findings related to association between pre-test and selected variables

There was no significant association between pre-test knowledge score and selected variables such as gravida, age, religion, type of family, education level of the antenatal mothers and socio-economic status, but significant association was found between pre-test knowledge scores and parity

of the antenatal mothers. Hence the null hypothesis was rejected for the variable, parity only. Therefore it was inferred that the pre-test knowledge on newborn danger signs was independent of selected variables like gravida, age, religion, type of family, education level of the antenatal mothers and their socio-economic status and was dependent on parity of the antenatal mothers.

Findings related to antenatal mothers' opinion about the information booklet

Majority 44 (81.48%) of antenatal mothers strongly agreed that the information booklet on newborn danger signs was a good source of learning and also the booklet was interesting to read. Majority 40 (74.07%) of antenatal mothers strongly agreed that the language used in this information booklet was simple. Maximum 39 (72.22%) of antenatal mothers strongly agreed that the information booklet was easy to understand as the content is explained in simple form. Majority 42 (77.78%) of antenatal mothers expressed that the information booklet helped them to learn in their own free time. Majority 45 (83.33%) found that the booklet has given them sufficient knowledge regarding newborn danger signs. Majority 43 (79.63%) of antenatal mothers found that the picture used in this booklet helped them to understand the content better.

Conclusion

The present study strongly recommend that information booklet on newborn danger signs is an effective educational material in improving the knowledge of the antenatal mothers. This will help the mothers of the newborn to identify and recognized the danger signs and seek medical help as early as possible, thus contributing in reduction of the neonatal mortality with the avoidable causes. This information booklet should be made available in all the areas of maternity and child care i.e hospitals, nursing homes, maternity centres and communities.

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Determining Bio-psychosocial Wellbeing and Family Support of Menopausal Women in Selected Hospitals of Udupi District, Karnataka: A cross-sectional study

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Abstract

Objective

To determine biopsychosocial wellbeing and family support of menopausal women.

Methods; Study Design

Cross-sectional design. The study was carried out in TMA Pai Hospital and District Hospital, Udupi, Karnataka. It included 100 menopausal women aged between 45-58 years. Biopsychosocial wellbeing was assessed using Family Support Scale and Rating scale on Biopsychosocial Wellbeing.

Results

Out of 100 menopausal women 24% had high Biopsychosocial wellbeing, 75% moderate and 1% poor wellbeing and 50% of the respondents received good family support, 42 % received moderate support. Only 8 percent of respondents received poor family support. The mean and standard deviation of biopsychosocial wellbeing (116.4 ± 16.49) and family support (44.6 ± 10.49) respectively. Out of 100 menopausal women 75.5% had biological wellbeing, 69.2% psychological and 76.9% had social wellbeing. The study findings showed that family support did not play a role in wellbeing of menopausal women ($r= 0.095$). The findings revealed that there was a significant positive correlation between family support and social wellbeing ($r= 0.572$). The findings revealed that there was significant positive correlation between biological, psychological and social factors. ($r=0.605$, $r=0.50$, $r= 0.568$). Pearson 'r' and Cramer's V was computed to find correlation between family support, biopsychosocial wellbeing and selected variables. The findings revealed that there was no significant correlation between family support and selected variables like age, marital status, type of family, socioeconomic status., also there was no significant correlation between Biopsychosocial wellbeing and selected variables like age, type of family, socioeconomic status. but significant correlation exists between Biopsychosocial wellbeing and marital status ($r= 0.090$). Conclusion: The current study identified that family support did not play any role in biopsychosocial wellbeing of menopausal women.

Key Words

Menopausal women, Family Support, Biopsychosocial Wellbeing, Survey, India

Introduction

Menopause is defined as the absence of menses for consecutive months. "It is a natural process involving the gradual depletion of ovarian follicle that occurs with advancing age" A Moore, D Noon. Because estrogen is produced primarily in the follicle responsiveness to follicle stimulating hormone (FSH) result in reduction of circulating estrogen, As production of estrogen declines production of FSH increases, initially causing rapid follicular development that result in shortened menstrual cycles.¹

Physiologically the ovaries begin to produce fewer follicles, estrogen level declines and menopausal symptoms appear. In relation with the physiological changes that occur with decreasing hormonal levels- women also experience an alteration in their psychological state. The primary changes resulting from loss of estrogen fall into four categories; vaginal, vasomotor, neurological and psychosexual changes. The variety of alterations in both physiological and psychological state may develop negative attitude towards menopause among women.²

The purpose of this study is to investigate biological, psychological & social wellbeing of women in menopause and to find correlation between biopsychosocial wellbeing and selected variables like age, marital status, type of family, number of children, socio economic status. The findings of the study would help nurses to identify the patients who are at risk of experiencing difficulty in managing the changes taking place in their lifestyle and assist them to adapt to these changes and help menopausal women attain positive biopsychosocial wellbeing.

In any society menopausal phenomenon is inevitably intervened with other aspects of middle age. The biological transformation coincides at least in western society with considerable changes in life situations of women. This is usually the time when children become independent and leave home, women facing an "empty nest syndrome". Spouse may retire, aged parents may die, social circle get constricted, marital discord due to altered sexual interest, general health declines and woman fears widowhood, economic dependency and death.³

Even though there is a cultural difference in the experience of menopause the nurse should be in a position to identify the biological, psychological and social problems experienced by the menopausal women. In Indian context family support plays a vital role in overcoming many problems. Hence the investigator felt to identify the biopsychosocial problems of the menopausal women.

Material and Methods

A cross sectional descriptive design was used in this study to

determine the biopsychosocial wellbeing and family support of menopausal women. The study was conducted at TMA Pai Hospital, District Hospital, Udupi district, Karnataka State. The study population consisted of 100 menopausal women aged between 45-58 years from Udupi district who met the inclusion criteria and selected by the non-probability convenience sampling.

The eligibility criterion was menopausal women who were present during the time of data collection, are able to read and write Kannada. And who attained natural menopause. A total of four tools are used in this study which has been developed by the investigator. They were Demographic Proforma, Modified Srivastava Socio economic Status scale, Family Support Scale, Rating Scale on Biopsychosocial wellbeing of menopausal women.

The data collected was analyzed using the descriptive and inferential statistics with the help of SPSS 11.5. The demographic variables were summarized in the tables. The responses to the rating scale on biopsychosocial wellbeing were summarized in frequency distribution tables and the mean, median and standard deviation were found using the descriptive statistics. Correlation between family support, biopsychosocial wellbeing and selected variables were computed using Pearson correlation and Cramer's V correlation at 0.05 alpha levels.

Table 1: Demographic Characteristics of Menopausal Women in Frequency and Percentage N=100

Characteristics	Frequency (F)	Percentage (%)
Age		
45- 50 years	48	48
51- 58 years	52	52
Marital status		
Married	75	75
Divorced	9	9
Separated	2	2
Widow	14	14
Number of children		
No	9	9
One	18	36
Two	36	21
Three	21	16
More than three	16	
Type of family		
Nuclear	36	36
Joint	41	41
Extended	23	23
Attainment of Menopause		
One year back	28	28
Two year back	18	18
Three year back	1	11
More than three years	43	43
Socio-economic status		
Low	60	60
Moderate	37	37
High	3	3

Results

Table 1 shows the distribution of the subject by study characteristics like age, marital status, number of children, type of family, last menstruation, socio economic status and are described in terms of frequency and percentage. The study characteristics show that 48% of respondents were in the age group of 45 – 50 years and 52% were in the age group of 51- 58 years. Seventy five percent were married. Majority (41%) belonged to joint family. Twenty eight percent had last menstruation one year back and 43% of respondents had it before three years. Majority (60%) of them, were from low socioeconomic status and three percent belonged to high socio economic status.

Rating Scale on Biopsychosocial. Wellbeing was assessed. Individual scores were calculated based upon the responses to each item. Majority of women 75% had moderate wellbeing, 24% had high wellbeing and 1% had poor wellbeing.

Further analysis was done in each area of the Biopsychosocial Wellbeing Scores was scored separately and Mean percentage and Standard Deviation were calculated. Variability of Biopsychosocial Wellbeing score was maximum in the area of psychological wellbeing ($SD \pm 8.46$) and lowest among social wellbeing ($SD \pm 5.409$).

Table 2 shows that Spearman's Correlation was used to address how the family support and biopsychosocial wellbeing were related and found that family support did not play a role in the biopsychosocial wellbeing of menopausal women ($r = 0.095$).

Table 2: Correlation coefficient computed between family support and Biopsychosocial wellbeing

Variables	Mean	SD	r	p value
Family support	44.6	10.49	- 0.095	0.166
Biopsychosocial Wellbeing	116.4	16.49		

Table 3 describes how the selected variables were related to biopsychosocial wellbeing using Pearson's correlation to find relation between age and biopsychosocial wellbeing and Cramer's V to find correlation between marital status, number of children, type of family and socio- economic status and biopsychosocial wellbeing. Findings revealed that there was no significant relationship between biopsychosocial wellbeing and selected demographic variables but there exists relationship between biopsychosocial wellbeing and marital status.

Discussion

In the present study age of menopause ranged from 48- 54 (51.16 ± 3.17) years. Similar findings are reported by Al-qutob (2001) and results was mean age of menopause was 49 years and women were found to be suffering from variety of health problems⁶. Reshmi (1988) in an article on menopausal health- a dimensional issue expressed that as women age; their health is influenced by many factors which affect their wellbeing⁷.

The findings of the present study showed that there is significant correlation between biopsychosocial wellbeing and marital status. A similar study was carried out by Conigrave & Haber (2005) in Greene County, New York, reported that married women generally report a later mean age at menopause. Married and widowed women report a later mean age at

Table 3: Correlation coefficient computed between Biopsychosocial Wellbeing and selected variables

Variable	r	p value
Age	-0.07	0.246
Marital status	0.998	0.021
Number of children	0.492	0.498
Type of family	0.296	0.72
Socio- economic Status	0.518	0.108

natural menopause compared to single and divorced women ($P < 0.05$)⁴⁵. Castello (1991) studied relationship between current mental and physical health and history of education, marital status child rearing and employment among 541 women of 42- 50 years. Employment did not affect the risk of psychological symptoms for the college- educated women who were married with children. Lack of employment doubled the risk of psychological wellbeing, whatever may be the educational status⁹.

Implications

Middle age is often the prime of life, but implied in the pessimistic view that it also marks the beginning of the ends, inaugurating the decline. Middle life refers to a process during middle part of life span that includes growth and development as well as decline. The middle years are not psychologically silent, but very much active, because of increasing life span and greater survival through reductions in infant and child mortality, middle age is now receiving more attention. So the findings of this study have implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

The need for nursing is universal, nurse's work in all spheres where human beings exist. Nurse's work at all levels of health care and all levels of prevention. However, the practice of nursing care must be evaluated from the scientific merit, which requires strong and sound evidence base. Care on the basis of evidence help the practitioner to render high quality patient care and results in visible and measurable patient outcomes. With responsibility for patient care and increasing accountability nursing students and staffs need to be given adequate knowledge regarding care of menopausal women. A systemic and continuous assessment of patients can be done. Up to date knowledge of menopause will promote rendering safe and high level care to the recipients of nursing

Nursing Education

Nursing education can utilize the findings of nursing research in structuring the whole program of study in developing the course content in midlife, care and community mental health program directed towards women. The findings of the study show that women had moderate biopsychosocial wellbeing. Nurses must device a highly innovate strategies to increase wellness. Nurse educators could use these study findings as an input for more assistance of new graduates. They could also encourage student nurses for further in depth educational researches. Besides the findings could help in planning and delivering individual patient, group of patients and public

health education.

Nursing Research

The ultimate goal of nursing research is aimed at improving patient care. Being nurses of the 21st century we are in strong arenas in the health care profession. The competence of nursing as a profession must be backed up by scientific body of knowledge through research. The present study can serve as a baseline for further nursing and community based researches. So more researches are needed to examine various factor (physical, psychological, social and cultural) relating to menopause. This would provide valuable information to plan health promotion program to menopausal women.

Nursing Administration

Nurse Managers need to know the public felt need on which they have to base their plan to address their services. Using the findings of the study they can facilitate in- service education for the staff those who in turn will coordinate awareness program to public. This study will also help the nurse managers to prioritize their community based plans. The study will initiate nurse administrators to support for and rewarding activities to base nursing care on researches. The findings also stimulate administrators to make nursing research available to staff. Using this study finding the administrator could influence the institution/ agency to support and integrate research utilization in policy of patient care.

Recommendations

In view of the findings reported, the following recommendations were made for future research:

- Replication of the same study on a large sample may help draw conclusions that are more definite and generalize to a larger population
- A longitudinal study may be undertaken to identify perceived biopsychosocial problems and wellbeing in different periods of menopause.
- A comparative study can to be done to determine wellbeing among patient's receiving hormonal replacement therapy and women who are not receiving.
- An evaluative study may be undertaken to evaluate the effectiveness of wellbeing education among menopausal women.

Conclusion

All menopausal women were experiencing problems during this period. Majority belonged to age group of 51- 58 years and majority belonged to middle class. Majority of them were from nuclear family and had two children. There was significant correlation between biological, psychological and social factors hence it is concluded that they are dependent. Further analysis found that there was significant correlation between marital status and biopsychosocial wellbeing of menopausal women. No correlation revealed between family support, biopsychosocial wellbeing and other selected variables. Majority of the menopausal women had good family support and hence there was biopsychosocial wellbeing.

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Perceived Bio-Psychosocial Problems and Coping Strategies Adopted by the Post Menopausal Women Among the Age Group of 45-55 Years

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Abstract

An explorative study was conducted among 100 post menopausal women to determine the perceived bio psychosocial problems of post menopausal women and the measures used to cope up with the problems experienced by them. Data were gathered by interviewing the subjects at home. Demographic proforma, socioeconomic status scale, rating scale on perceived bio psychosocial problems and scale on coping strategies were used to collect the data. The findings showed that majority of women experienced mild to moderate problems and used both positive and negative coping strategies. Significant but low negative relationship was found between the perceived bio psychosocial problems and coping strategies adopted by the post menopausal women. ($r(98) = -.212, p < 0.05$). Significant association was found between coping and socioeconomic status ($\chi^2(2) = 5.991, P < 0.05$).

Key Words

Biopsychosocial problems, coping strategies, menopausal women

Introduction

Midlife is a period of transition for both men and women. It brings about menopause in woman and it has implication on women's health. Indian women one tenth of their lives in menopausal stage. Around 25.10% of Indian population belongs to middle age, out of that 12.89% belongs to menopausal age group. The experience of menopause is different for every woman. During this transient period when the endocrine intersectional system is being adjusted to lessen ovarian functioning there are certain physical symptoms which normally occur. These symptoms seem to have physiological effects like flushes involving the head, neck, upper thorax, sweats that accompanies or immediately follows the flush and hot flushes and some symptoms are psychological in origin like headaches, fatigue, vertigo, nervousness, irritability, laryngeal spasms, choking sensations, insomnia, heart palpitations and restlessness. Even though there is a cultural difference in the experience of menopause the nurse should be in a position to identify the biological, psychosocial problems and coping strategies used by the post-menopausal women. This will enable the nurse to provide more comprehensive care especially in community setting. The purpose of the study was to identify the perceived bio psychosocial problems of post menopausal women and the measures used to cope up with the problems experienced by them. It may be useful as an assessment format for finding the problems associated with menopause and also for planning effective interventions for the care and further reference for treatment especially in community settings.

Background

The year of menopausal change signal the end of one chapter and the beginning of another. Menopause is another rung in the ladder in a woman progressing through life. She steps from the stage of production into period of middle life, free from the responsibilities, the stress, the hazards and trials associated with childbirth (Hurlock, 1968). Chaikittisilpa, Chompootweep, Limpaphayom, 1997 conducted a study to assess the symptoms and problems of 119 post-menopausal Thai women in a slum. The women were of low socio economic state and educational background. Their mean age was 58.9 ± 6.9 years. Vasomotor symptoms were 72.3%, urological symptoms 80.7%, genital symptoms 87.4% and psychological symptoms were 98.3%. Among these women recognised symptoms as problems were 29.4%, 19.3%, 15.1%, and 75.6% for vasomotor, urological, genital and psychological respectively. It was concluded that climacteric symptoms of post-menopausal women in the slum were high but recognition as problems were low. Dennerstein (2001) conducted a study to find changes in sexual functioning among 197 menopausal women using shortened version of personal experience questionnaire. Results showed that there was decline in sexual responsibility, frequency of sexual activities and libido. According to Speroff (1994) the menopausal woman experience four category of symptoms in menstrual patterns including anovulation induced fertility decreased or increased flow and irregular frequency of menses vasomotor symptoms-the hot flush is one of them, atrophic conditions

Table 1: Sample characteristics by frequency and percentage

Sample characteristics	Frequency	Percentage
Age group	44	44
45-49	56	56
50-55		
Number of children	66	66
One	19	19
Two	46	46
Three	29	29
>Three		
Type of family	62	62
Nuclear	38	38
Joint		
Socio economic status	3	3
Upper class	83	83
Middle class	14	14
Lower class		

including atrophy of the epithelium dyspareunia and urinary difficulties such as stress incontinence, urgency and bacterial arthritis and cystitis. Psychological symptoms including anxiety mood change, depression, irritability, insomnia and decreased libido. Bersworth, Bastean, and Rimmer (2002) examined the role of coping styles and personality domains in relationship to stress associated with menopause in North Carolina. Data were collected from 170 women aged between 45-54 years using mailed questionnaires and telephone interviews. Results showed that rating menopause as stressful was associated with higher levels of neuroticism, seeking social support an avoidance, seeking social support and neuroticism accounted for 21% of the variance in rating menopause as stressful. Reynold (2000) conducted a study to examine whether highly negative appraisals of hot flush experiences were associated with greater distress and lower perceived control regarding menopause among 39 women who were experiencing hot flushes. The results showed that subjects reported distress during hot flushes was more closely related to their frequency of negative thoughts about the problem than perceived control over flushes. Follow up after 12 months showed that women may develop tolerance for menopausal flushing through challenging negative interpretations of the experience.

Research Approach

Exploratory survey was conducted among 100 post-menopausal women between the age group of 45-55 years by using convenience sampling. The study was conducted in one of the villages in Udupi District of Karnataka, India. Subjects were contacted in their houses and interviewed by the investigator after taking the consent. The instruments used were

- Demographic Proforma which included age, marital status, year of last menstruation, number of children, type of family, and type of menopause.
- Socio-economic status scale which consisted of education, occupation, family income, prescription of newspapers, magazines, membership in club and organization
- Scale on perceived bio psycho social problems, which included 38 items related to biological a psychological and social problem which was used to assess the perceived bio psycho social problems of the post-menopausal women. Each item on the scale used a four a point likert type scale with a range from 1-never, to 4-always. Higher scores reflect severe problems. Coefficient alpha of the scale is 0.94
- The fourth instrument used in the study was a 4 point likert type of rating scale on coping which had 25 items with 13

Table 2: Percentage and obtained score of prioritized perceived bio-psycho-social problems of postmenopausal women

Priorities	Perceived bio-psycho- social problems	Percentage	Obtained scores
1.	Aches and pains especially legs, back and joints	68.25	273
2.	Painful intercourse	67.75	271
3.	Increase in frequency of urination	66.75	265
4.	Feeling hot all over the body (head, neck& upper thorax)	65.25	261
5.	Difficulty to fall asleep	59.0 0	236
6.	Severe sweating	58.50	234
7.	Decreased interest in sex	58.00	232
8.	Less initiative to do activities	57.50	230
9.5	Fatigue especially in the morning	56.00	224
9.5	Forgetfulness	56.00	224
11.5	Difficulty to stay asleep	53.50	213
11.5	Difficulty to concentrate on anything for a long time	53.50	213

Table 3: Obtained score distribution of most used coping strategies (positive items) based on priority

Priorities	Coping strategies	Type of coping	Obtained scores
1.	Pray to God	Emotion focused	324
2.	Avoidance of hot environment	Problem focused	313
3.	Wear cotton clothes	Problem focused	394
4.	Talk with other women	Problem focused	286
5.	Take sufficient rest in cold environment	Problem focused	284
6.	Consult a doctor or nurse	Problem focused	262
7.	Participate in social activities	Emotion focused	226
8.	Consume nutritious food	Problem focused	209
9.	Perform meditation/take a walk in open air	Problem focused	202
10.	Listen to music	Emotion focused	183

positive and 12 negative items under the category of problem focused and emotion focused coping. Each positive item was given with a range from 1-never, to 4-always and negative items with arrange from 1-always to 4-never. High score indicates high coping. Coefficient alpha of the scale is 0.89

Results

Results of demographic data analysis appear in table 1. With regard to perceived bio-psycho social problems 50% of subjects had mild problems and 49% had moderate problems. Severe problem was reported by 1% of the subjects. Data on coping show that 89% had moderate coping, 9% had high coping and 2% had low coping. Percentage and obtained score of prioritized perceived bio-psycho-social problems is presented in table 2. Obtained score distribution of most used coping strategies (positive items) based on priority appear in table 3. Significant but low negative relationship was found between the perceived bio psycho social problems and coping strategies adopted by the post-menopausal women. ($r(98) = -.212, p < 0.05$). Significant association was found between coping and socioeconomic status ($\chi^2(2) = 5.991, P < 0.05$).

Discussion

The finding of the perceived bio psychosocial problems in the present study showed that (68.25%) aches and pains, were the most reported problems, secondly intercourse as painful (67.75%). Thirdly increase in frequency of urination (66.25%) hot all over the body especially head, neck and upper thorax, scored 65.25%. Under psychological problems, difficulty to fall asleep was the most reported problems (59%). Secondly decreased interest in sex (58%), thirdly less initiative to do activities (57.5%). Among social problems reduced interest in attending social functions found to be the major problems. This is supported by the study conducted by Sharma and Saxena 1981 in difficulties of Indian women during climacteric period which showed that hot flushes, night sweat and the findings of Clarke and Howers 1995 showed that sleep diaries of 13 out of 23 subjects revealed sleep disturbance.

The present study reveal that the most commonly used coping strategies by the post-menopausal women were pray to God and avoid being with people. Joseph 2001 in her study on health problems and coping of women using intrauterine device also found that the most commonly used emotion focused coping strategy was praying to God.

Present study reveals that there is significant relationship between perceived psychological problems, social problems

and coping. The study conducted by Igarasha, Morioks and Oiji 1999 to explore the relationship between climacteric and coping reveal that climacteric symptoms were correlated with undesirable life events and degree of coping.

Conclusion

The study concludes that postmenopausal women experience various biopsychosocial problems and adopt both positive and negative coping strategies. So it is necessary to implement appropriate interventions for a better adaptation with these problems. Nurses can play a vital role in the provision of innovative techniques and optimal assistance for post-menopausal women which may help them to maintain a productive and quality life.

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A Slice of Law and Medicine: Legal Issues in the use of Alternative and Complementary Medicine in Mental Disorders

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“Because the newer methods of treatment are good, it does not follow that the old ones were bad: for if our honorable and worshipful ancestors had not recovered from their ailments, you and I would not be here today.”

Confucius (551–478 B.C.)

Abstract

The need for a regulatory approach for products and practitioners of complementary and alternative medicine (CAM) is highlighted in this article, the conviction of which rests on protecting patients from being harmed by alternative treatments should have high priority among public policy makers and regulators, professionals, and consumer advocates. An attempt has been made to canvass the legal issues that are of utmost concern to CAM practitioners and government policymakers. The principal focus is on considering the approach to regulating the field of CAM (both products and practitioners) and the licensure, regulation, and certification (or lack thereof) of CAM providers.

Introduction

Towards a Working Definition for CAM

CAM is sometimes referred to as ‘unconventional’, ‘holistic’, ‘natural’ or ‘unorthodox’². The varieties of terms reflect the difficulty in defining the exact boundaries of CAM, one of the first hurdles in informed policymaking. Research and policy development begins with a definition of what constitutes CAM. A good definition will provide clear boundaries; clear boundaries will provide a good definition³.

The most common approach to defining CAM is to do so in a manner similar to the way “health” is defined – not positively but negatively – ‘as the absence of disease’⁴, and therefore to say that CAM includes those treatment modalities that are not thought to be part of current conventional medical practice⁵. A similar definition has been suggested by the British Medical Association and by the National Center for Complementary

and Alternative Medicine (NCCAM)⁷.

CAM, in this paper represents an approach that (at times) can stand on its own as an alternative to standard medicine, and at other times is used as an adjunct (add-on) to standard medicine.

CAM and Psychiatry

A 2000 study found that 16% to 32% of patients with a mental disorder used CAM⁸. A study of psychiatric outpatients found that 44% used CAM to treat psychiatric symptoms⁹. A survey of 1993-1995 concluded that 70% individuals with mental disorders used CAM¹⁰. In Singapore, CAM use for treating mental disorders was slated at 42.7% of the population¹¹. A substantial number of patients diagnosed with bipolar disorder are using CAM and hence mental health providers should be aware of CAM use among patients with bipolar disorder and assess the potential impact of CAM use on treatment course¹².

Many CAMs have been used for mental health problems but there is little good evidence to support their use. Some of these treatments may work, but most have not been thoroughly tested. The studies have often been too small to give a clear answer. Despite the lack of formal evidence, people all over the world take CAMs and many report that they find them helpful¹³. Some people use them instead of medical treatment or without consulting their doctor – this can be dangerous as substances used in ‘natural’ therapy are not required to undergo the same rigorous tests for safety as prescribed medications. The term ‘natural’ is also misleading, as most prescribed medications are actually derived from natural substances too¹⁴.

Generally, in some Asian and African countries, 80% of the population depends on CAM for primary health care. In many developed countries, 70% to 80% of the population has used some form of alternative or complementary medicine¹⁵.

Cam: Recognition, Risk Leading to Regulation

Owing to the influence of orthodox medicine in the health

¹CAM is sometimes used interchangeably with “traditional medicine” or “natural”, which can be dangerously misleading. Many practitioners of CAM present it to the public as invariably gentle, safe, and natural. However, some of the techniques or herbal remedies may be dangerous, or patients may resort to questionable measures instead of seeking effective conventional care. A senior state official, who had once worked as an emergency medical technician, told of being confronted with a life-threatening emergency that occurred when a couple used a naturopath for home childbirth. Catherine M. Mater, a public member and vice chair of the Oregon Board of Medical Examiners, comments: “CAM practitioners get into trouble when they don’t do standard monitoring of the patient’s condition.” (enhancing accountability: Milbank).

²See generally, “Complementary/Alternative Health Care and HIV/AIDS: Legal, Ethical & Policy Issues in Regulation prepared by Robert Crouch, Richard Elliott, Trudo Lemmens, and Louis Charland

³Achilles R., “Defining Complementary and Alternative Health Care.” Paper prepared for Health Canada, 10 April 2000

⁴World Health Organization on ‘Health’. Available at: <http://who.int/about/definition/en/print.html>.

⁵This approach was adopted by Eisenberg et al in their widely cited study of CAM use in the United States. They define complementary and/or alternative medicine as “medical interventions not taught widely at U.S. medical schools or generally available at U.S. hospitals.” Eisenberg DM et al. “Unconventional medicine in the United States: Prevalence, Costs, and Patterns of Use.” *New England Journal of Medicine* 1993; 328: 246-252 at 246. Available at : <http://www.nejm.org/doi/full/10.1056/NEJM199301283280406>.

sector to date there has been limited involvement by complementary medicine in personal injuries and workers' compensation litigation. Increasingly CAM practitioners are becoming more integrated and accepted in the medical rehabilitation and compensation schemes¹⁶.

Recognition

Though most of these CAM therapies are age-old and often pre-historic, they have not been accredited recognition¹⁷ and hence there exists legal paradigms that need to be catered to, especially with regard to accountability in the absence of legal frameworks and in the event of misuse/abuse of this practice. Alternative medicine is not a new phenomenon. Indeed, in many respects, it was "medicine" before it became "alternative," as it was only in the nineteenth century that the mainstream of modern medicine was defined¹⁸.

Interest in CAM among regulators and health professionals is higher than it has ever been. However, its increased use constitutes a challenge to the executive and legislative branches of government.

Potential risks of CAM

The Federation of State Medical Boards¹⁹ of the United States summarizes potential harm of CAM in three possible ways:

- Economic harm: Many CAMs are marketed directly to the public through advertising and testimonials in the press, the internet, television and through multi-level marketing.
- Direct harm: Harm may result from a side effect of a CAM. For example, a herb-drug interaction or an adverse outcome. (eg. a needle may penetrate the lung during acupuncture treatment.)
- Indirect harm: This results from the delay of appropriate treatment for a medical condition due to misinformation about unrealistic treatment of a condition²⁰.

Regulatory & Policy Challenges

The traditional reasons for the regulation of health care professions are to prevent non-diagnosis, misdiagnosis, non-

treatment and mistreatment by unlicensed medical providers and hence the aims of the regulatory mechanism are:

1. Protecting the public from the dangers of unskilled practitioners and unsound treatment or advice; and
2. Protecting the public from reliance on unskilled practitioners, as well as directing them to proper medical care. Some legal experts consider this to be paternalistic—that consumers are unable to distinguish between competent practitioners and quacks, and therefore must rely on the state to do so²¹.
3. Encouraging states to be "laboratories for experimentation" and thus to offer diverse statutes, policies, and rules and therefore to regulate healthcare providers. Legislative licensure and scope of practice etc. can trump medical evidence. Judge-made law can interpret and thereby modify (or extend) this statutory fiat²².
4. Professional regulation is to ensure, among others: (i) high, uniform standards of practice; (ii) identification of competent practitioners, and (iii) accountability. Essentially they relate to the ethical principle of non-maleficence. This situation also creates serious ethical questions similar to the ones mentioned previously. If someone practices acupuncture, homeopathy, or other with insufficient training, to what extent are they likely to put patients at risk? If a CAM provider does not belong to a professional organization, to whom do their patients complain if they feel badly treated? How far do unregulated CAM providers adhere to essential ethical issues such as informed consent, confidentiality, and maintaining appropriate boundaries?²³

Prevalent Legal Issues: Product and Practise Should CAM Practitioners Be Regulated, if yes, how?

Regulation of CAM Practitioners for Malpractice including information about possible interactions with conventional drugs and the possible effects specific to people with compromised immune systems raises ethical and legal questions for those who use CAM, for manufacturers of

¹⁶Integrated healthcare. A way forward for the next five years? Discussion document. The Foundation for Integrated Medicine on behalf of the Steering Committee for the Prince of Wales. Initiative on Integrated Medicine. London: Foundation for Integrated Medicine, 2000 (available online via www.fimed.org).

¹⁷Defined as "CAM is a group of diverse medical and health care systems, practices, and products that are not presently considered part of conventional medicine". Available at: <http://nccam.nih.gov/health/whaticam/D347.pdf>.

See also, "What Is Complementary and Alternative Medicine?" (same website as above). Although NCCAM's definition is neither universally accepted nor authoritative, it does represent a starting point for thinking about what distinguishes (or fails to distinguish) CAM therapies from conventional care.

¹⁸Unützer J, Klap R, Sturm R, et al, "Mental Disorders and the Use of Alternative Medicine: Results from a National Study." *American Journal of Psychiatry* 157:1851–1857,2000.

¹⁹Knaudt PR, Connor KM, Weisler RH, et al, "Alternative therapy use by psychiatric outpatients." *Journal of Nervous and Mental Disease* 187:692–695,1999.

²⁰Badri Rickhi, Julio Arboleda-Flórez, et al, "Mental Disorders and Reasons for Using Complementary Therapy", (*Can J Psychiatry* 2003;48: 475–479).

²¹Liang Feng, Chiam Peak Chiang, et al. "Use of complementary and alternative medicines and mental disorders in community-living Asian older adults." Available at: <http://www.refdoc.fr/Detailnotice?cpsid=22746709&traduire=en>.

²²Amy M. Kilbourne, Chester B. Good, et al. "Determinants of Complementary and Alternative Medicine Use by Patients with Bipolar Disorder" *104 Psychopharmacology Bulletin* vol 40 no. 3. 104-115 bulletin: vol. 40 · no. 3

²³Complementary and Alternative Medicines The Young Mind: an essential guide for parents, teachers and young adults. Available at: <http://www.rcpsych.ac.uk/mentalhealthinfoforall/treatments/complementarytherapy.aspx>.

²⁴"What are complementary therapies?". Available at: <http://www.sane.org/information/factsheets-podcasts/202-complementary-therapies>

²⁵2008 survey by WHO. <http://www.who.int/mediacentre/factsheets/fs134/en/index.html>. WHO classifies CAM as Traditional Medicine.

²⁶Michael Weir "Complementary and Alternative Medicine- Legal Issues", *The National Legal Eagle*. Volume 11 Issue 1 Autumn 2005 Article 4 April 2005.

²⁷Magnet therapy is often mistaken for a new system but there is broad evidence that it could be as old as prehistory: ancients in all societies were intrigued by "lodestones" (natural magnets). Verses in the Atharva Veda allude to the amelioration of diseases with magnets. Socrates waxed eloquent about the power of magnets. Cleopatra actually wore one on her head to preserve her celebrated charms. And the Chinese, traditionally gifted with more practical acumen than the rest of the world put together, invented the mariner's compass and turbocharged the engine of human progress.

natural health products, for practitioners of various CAM therapies, and for governments and professional regulatory bodies that need to strike the right balance between protecting consumers/patients and respecting their health-care choices.

Practitioners Regulation

The principal purpose of regulation of any healthcare profession is to protect the public from

1. Unqualified or inadequately trained practitioners.
2. The direct regulation of practitioners; and
3. The application of common law principles to practitioners. Laws governing (and attempting to control) potential abuse of authority by health care professionals include: (1) medical licensure²⁴; (2) scope of practice; (3) professional discipline; (4) malpractice; and (5) fraud. One can add to this list concerns such as (6) insurance/third-party reimbursement, and more specific health care law topics such as (7) fraud and abuse and anti-kickback rules.

Product Licensing

Interim Steps Required for Consumer Protection

Alternatives should be immediately available which address consumer protection and quality concerns. Alternatives could include the following:

Alternatives should be immediately available which address consumer protection and quality concerns. Alternatives could include the following:

--Complaint, investigative, and enforcement processes for unlicensed providers similar to that provided for unlicensed mental health providers. The authority could be given, for example, to the Minnesota Department of Health, the Board of Medical Practice, or the Attorney General. The process should focus on harm arising from unethical/unprofessional conduct. Competency standards should not be established at

this time.

--Requirements for unlicensed providers to obtain informed consent or appropriate waivers from consumers.

Consumer and health care practitioner outreach and education should be provided so that consumers are informed of responsibilities and risks concerning what is available, how it is regulated, and how complaints can be made. This could be done either through public or private mechanisms or a combination of the two.

Labeling Requirements including (1) Post-Approval Surveillance and Other Safety Monitoring Mechanisms; (2) Post-approval surveillance by regulators. (3) Reporting all serious adverse reactions. (4) Reporting mechanisms to capture all adverse reactions, serious or otherwise. (5) Other safety monitoring mechanisms. (6) Enforcement of Regulatory Standards. (7) Regulating Practitioners Who Deliver Complementary/Alternative Health Care.

Recommendations

What can be done?

- Include CAM among the treatment options considered by groups that develop practice guidelines for conventional medicine.
- Set standards for evaluating the competency of CAM practitioners.
- Practice guidelines should be based on good studies that show what treatment works best ("evidence based" is the current catch phrase). Individualization of treatment, standard procedure in CAM, contradicts the goal of practice guidelines, which try to reduce variations in practice²⁵.
- Decision makers, especially purchasers in the public and private sectors and public regulators, must confront the critical challenge of protecting the public from fraud, abuse, and ineffective health care and spending health care dollars

¹⁸Supra note. 2.

¹⁹Available at: <http://www.fsmb.org/>.

²⁰Vicki Kotsirilios, Clayton, Victoria, and Chair, "Cam-part2-evidence and implications for GPs", The Royal Australian College of General Practitioners-Australasian Integrative Medicine Association Working Party.

²¹Cohen, M.H. "Holistic Health Care: Including Alternative and Complementary Medicine in Insurance and Regulatory Schemes." *Arizona Law Review*. 38, 83 (1996) 83.

²²Michael H. Cohen, "Licensure, Scope of Practice, and Regulation of CAM Therapies" Harvard Medical School Osher Institute, Institute of Medicine (June 30, 2003)

²³E Ernst, M H Cohen, et al, "Symposium on Evidence Based Medicine: Medicine Ethical Problems Arising in Evidence Based Complementary and Alternative Medicine." *Journal of Medical Ethics* 2004;30:156-159.

²⁴Prerequisites of any new regulatory structure, such as licensure or registration should be that the health occupation has the following:

--existing, accepted standards of education and training for competent practice;

--a national psychometrically valid and reliable test for measuring achievement of minimum or entry-level skill and knowledge; and

--sufficient practitioners such that reasonable fees are paid to support the cost of state regulation.

²⁵"Enhancing the Accountability of Alternative Medicine", A paper by Milbank Memorial Fund. (January 1998).

²⁶Not many countries have national policies for traditional medicine. Regulating traditional medicine products, practices and practitioners is difficult due to variations in definitions and categorizations of traditional medicine therapies. A single herbal product could be defined as either a food, a dietary supplement or an herbal medicine, depending on the country. This disparity in regulations at the national level has implications for international access and distribution of products. Available at: <http://www.who.int/mediacentre/factsheets/fs134/en/index.html>.

²⁷The safety, effectiveness and quality of finished herbal medicine products depend on the quality of their source materials (which can include hundreds of natural constituents), and how elements are handled through production processes.

²⁸Available at: <http://www.who.int/mediacentre/factsheets/fs134/en/index.html>.

²⁹Eisenberg DM, Cohen MH, et al. Credentialing complementary and alternative medical providers." *Ann Intern Med* 2002; 137: 965-973. Available at : www.pudmed.com.

³⁰Ian H Kerridge and John R McPhee, "Complementary and Alternative Medicine: Ethical and Legal Issues at the Interface of Complementary and Conventional Medicine". *MJA* 2004; 181 (3): 164-166. Available at: http://www.mja.com.au/public/issues/181_03_020804/ker10150_fm.html.

wisely labeling of natural health products as a condition of licensing for sale.

- National policy and regulatory frameworks²⁶ to look into the safety, efficacy and quality aspect of products and practitioners.
- Safety, effectiveness and quality: Scientific evidence from tests done to evaluate the safety and effectiveness of CAM products and practices is limited. While evidence shows that acupuncture, some herbal medicines and some manual therapies (e.g. massage) are effective for specific conditions, further study of products and practices is needed²⁷.
- Patient safety and use: Many people believe that because CAM medicines are herbal (natural) or traditional they are safe (or carry no risk for harm). However, traditional medicines and practices can cause harmful, adverse reactions if the product or therapy is of poor quality, or it is taken inappropriately or in conjunction with other medicines. Increased patient awareness about safe usage is important, as well as more training, collaboration and communication among providers of traditional and other medicines²⁸.
- To protect consumers, the government should ensure that penalties established for breach of regulatory requirements regarding the manufacture, licensing, labeling, and distribution and sale of natural health products should be sufficiently strong, and their enforcement sufficiently vigorous, to ensure compliance with those regulatory requirements.

Conclusion

In the next few years the appropriate role for CAM will be debated. One question for policymakers will be whether, based upon the public interest, some modalities require registration or licensing and whether others are sufficiently regulated by the current legal framework. Another question will be with regard to possible integration of CAM into conventional medicine. Integration may actually mean subjugation, disintegration or marginalization; may fail to account for difference; and may fundamentally alter CAM practice (by emphasising standardization, efficiency and generality at the expense of communication and individualized care)²⁹. While major questions remain about the evidence for CAM, the regulation of CAM practitioners and the legal obligations of conventional practitioners in relation to CAM, medical practitioners and students no longer have any choice but to gain some knowledge about CAM and the interface between conventional and complementary medicine. In so doing, the profession will be better able to provide care that accords with patients' values and needs, satisfy the ethical dimensions of healthcare decision-making and reduce the likelihood of litigation³⁰.

While this paper cannot cover the whole gamut of legal and ethical issues related to CAM and the legal issues involved, the hope is that it will assist us in moving forward on these themes of research, education, and appropriate regulation to ensure that providers of both products and practices deliver safe and effective therapies to informed patients. So what is missing from CAM is the kind of scientific zealotry that attracts both funding and practitioners. For only then will it succeed in breaking the stranglehold of modern pill popping and needle-jabbing medicine.

Nurses Role in Prevention of Chronic Kidney Disease (CKD)

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Abstract

Now a days, Chronic Kidney Disease (CKD) is one of the major public health problem in developing countries. Nurses play an important role in prevention of chronic kidney disease. With advancement of medical sciences & nursing, the concept of prevention has become much broader. It has four levels viz. primordial prevention, primary, secondary and tertiary prevention. Primordial prevention means prevention of development of risk factors when they have not yet appeared and it can be achieved through providing adequate M.C.H care in the hospital as well as in the community. Primary prevention can be done through controlling environmental factors and eliminating predisposing factors of chronic kidney disease. Nurses can help in secondary prevention through early detecting CKD by screening high-risk groups and referring CKD clients to nephrologists. Nurses should have thorough knowledge about treatment of CKD and she should be very much careful about aggressive and adequate treatment of CKD. Tertiary prevention includes disability limitation and rehabilitation which can be achieved by initiating adequate renal replacement therapy in time and appropriate counseling.

Key Words

Prevention, Chronic Kidney Disease, Nurses' role.

Introduction

People suffer from many sicknesses due to their lack of adequate knowledge of prevention and care. Nurses are the main caregivers, not only to bring healing but also to teach prevention, so that condition does not occur and complications do not arise. Actually, nurses' role is more important for prevention of sickness and promotion of sound health. Doctors spend more time on diagnosis and treatment. Whereas nurses have to focus on 1) prevention of disease 2) prevention of complication and 3) promotion of healing.

Success of nurses' role depends not only on care but also on how far she has been able to educate her client to prevent occurrence, complications and recurrence of the conditions and thus help in prolongation of the client's life span. She must be through with knowledge of causation, dynamics of the disease, identifications of risk factors, risk groups in order to be effective in her role of curative as well as preventive and promotive care giver.

Chronic Kidney Disease (CKD) has emerged as a major public health problem worldwide. Anticipation, early recognition, and institution of preventive measures can reduce the morbidity, mortality and the economic burden due to CKD.

A patient has CKD if, either of the following criteria is present¹:

1. Kidney damage for ≥ 3 months, as defined by structural or functional abnormalities of the kidney with or without decreased glomerular filtration rate (GFR) manifested by one or more of the following features:
 - a. Abnormalities in the composition of the blood or urine
 - b. Abnormalities in imaging tests
 - c. Abnormalities on kidney biopsy
2. GFR < 60 ml/min/1.73 m² for ≥ 3 months with or without the other above mentioned signs of kidney damages.

Stages of Chronic Kidney Disease: [National Kidney Foundation (NKF/DOQI) clinical practice guidelines for chronic kidney disease]¹

Stage	Description	GFR** (ml per minute per 1.73 m ²)
0	At increased risk	Higher than 60 (with risk factors for chronic kidney disease)
1	Kidney damage (early) with normal or elevated GFR	90 or higher
2	Kidney damage with mildly decreased GFR (early renal insufficiency)	60 to 89
3	Moderately decreased GFR (moderate kidney failure)	30 to 59
4	Severely decreased GFR (pre-end-stage kidney disease)	15 to 29
5	Kidney failure (end-stage kidney disease)	< 15 (or dialysis)

** GFR = glomerular filtration rate.

Prevention: With advancement of medical sciences & Nursing, the concept of prevention has become much broader. It has been described under four levels-

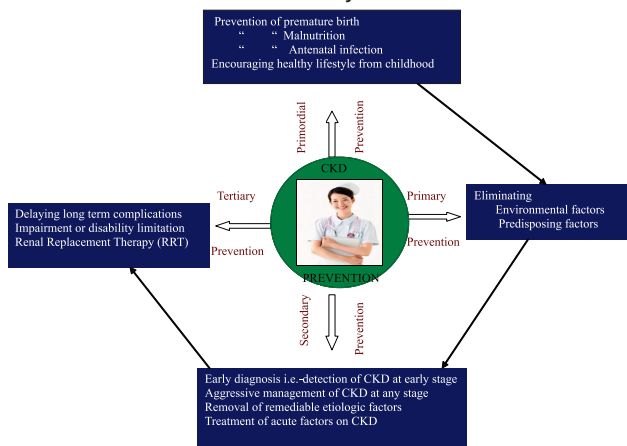
1. Primordial prevention
2. Primary prevention
3. Secondary prevention
4. Tertiary prevention

1. Primordial prevention: Prevention of development of risk factors when they have not yet appeared. Nurses have great role in achieving primordial prevention through

- Preventing premature birth by providing adequate M.C.H care in the hospital & in the community.
- Encouraging healthy lifestyle from childhood through individualized and extensive education.

2. Primary prevention: Primary prevention is inhibiting the development of disease before it occurs. It can be done through

Schematic Representation of Nurses Role in Prevention of Chronic Kidney Disease



A. Control of environmental factors

i) In the Community

Life style modification²: It is very important for prevention of many diseases including CKD. Nurse can play an important role in modification of life style such as-

- Cessation of smoking
- Maintaining normal body weight (BMI-18-23/m²)
- Physical exercise (aerobic and anaerobic exercise for 30 min in the morning & 30 min in the evening)
- Diet modification –balanced diet including high fiber diet, green leafy vegetables.
- Decreased salt consumption
- Stop / decrease alcohol intake
- Use of mosquito net for prevention of Malaria

ii) In the hospital

- Administering correctly matched blood group for transfusion.
- Nephrotoxic substances such as NSAID, chemical & toxins must be avoided.
- Avoiding use of over-counter analgesics.
- Cautious use of nephrotoxic drugs (e.g. Penicillin, vancomycin) and it should be administered according to MDRD creatinine clearance formula.
- Avoiding urinary tract instrumentation & catheterization unless it is extremely necessary and maintaining strict aseptic technique during catheterization & instrumentation.
- Nurse should be careful during radiation therapy focusing on the organ involved only to prevent post radiation nephritis.
- Avoid intravascular iodinated contrast media whenever possible

B. Elimination of predisposing factors²⁻⁵: These are important factor for prevention of renal diseases. Nurses have a great role to play in eliminating the predisposing factors through

- Maintaining adequate fluid electrolyte balance.
- Prevention of over distention of the bladder.
- Maintaining appropriate bladder habits of the patient.
- Appropriate perineal care is important to prevent urinary tract infection.
- Patient who is on immunosuppressive agents, and who is diabetic should be examined regularly for urinary tract infection and report immediately if signs & symptoms of

infection is present.

- Health education should be provided to prevent renal stone disease e.g. increase fluid intake, limit dietary oxalate, calcium, sodium, & animal protein intake, reduction of body weight (BMI-18-23/m²), and avoiding prolong sitting & standing.
- Antimicrobial prophylaxis for urinary tract is important before instrumentation.
- Leukemia patients and others receiving oncolytic drugs may develop hyperuricaemia, there by close monitoring are required.
- Genetic counseling may decrease the occurrence of some renal diseases e.g. - Autosomal dominant polycystic kidney disease (ADPKD), familial juvenile nephronophthisis, congenital urological anomalies and familial nephrotic syndrome, alport's syndrome, medullary cystic kidney etc.
- An evaluation of fluid and electrolyte balance in patients who have undergone surgery or who have burn injury is very important. Nurses have a great role in maintenance of fluid & electrolyte balance and prevention of hypotension.
- Control of HTN-systolic BP should be within - 130-120 mm of Hg, and diastolic BP should be within-90-80 mm of Hg.⁶
- Control of DM-Aggressive use of hypoglycemic agents to keep HbA1C <7.5%.⁷
- Control of hyperlipidemia-Use of statin (Atorvastatin, Lovastatin etc) group of drug if LDL>100mg/L⁶
- Hepatitis B & C vaccination, prevention & control of tuberculosis and HIV/AIDS.
- Prevention of exposure to heavy metals (lead, arsenic etc) through industrial and polluted river water.

3. Secondary prevention: It includes early detection and treatment, which halts the progress of a disease.

A. Early detection- it includes screening to identify individuals with high risk for renal diseases. Risk factors for renal diseases are- old age, low birth weight, diabetes, hypertension, obesity, smoking, hyperlipidemia, high salt and protein diet, oral contraceptives, hormone replacement therapy etc. Nurses should do screening in the workplace, community, & school to identify the high-risk group for renal diseases^{7, 8}.

During screening nurses should refer the high-risk group to the Nephrologists. Indications for Nephrology referral are⁹-

- Any one with estimated GFR < 30mls/mt (eGFR¹⁰)
- Diabetics with estimated GFR < 60mls/mt
- Rapid decline in renal function (>15% over 3months)
- Micro or macro proteinuria
- Active urinary sediment
- Renal impairment with anemia
- Uncontrolled hypertension

Along with the screening and referral, public education is also very important. Public education mainly includes early signs and symptoms of renal diseases such as-

- Changes in urination
- Swelling on the legs, ankles, feet, face, and/or hands
- Fatigue
- Skin rash/itching
- Metallic taste in mouth/ammonia breath
- Nausea and vomiting
- Shortness of breath
- Difficulty in concentrating, dizziness
- Leg pain etc.

B. Treatment

i) Treatment & removal of remediable etiologic factors

- Glomerular disease-like acute glomerular nephritis should be treated immediately and aggressively. Regular follow up of patient with childhood nephritic disease.
- Accelerated or poorly controlled hypertension should be treated with combined antihypertensive therapy.
- Hypotension due to anti-hypertensive drugs should be prevented
- Atherosclerotic renal artery stenosis should be treated adequately with angioplasty & administration of statin group of drugs.
- Obstructive uropathies with recurrent infection should be adequately treated from childhood.
- Exposure to nephrotoxins and analgesics –should be prohibited to prevent further damage.

ii) Treatment of acute factors on chronic renal failure³⁻⁵

- Dehydration, GI illness, volume depletion -should be treated immediately with volume supplement.
- Hypotension due to over use of anti hypertensive should be prevented
- Accelerated hypertension-should be treated promptly & aggressively with combined antihypertensive therapy.
- Cardiac failure-should be treated with adequate diuretics & inotropic agents.
- Cardiac tamponade-should be immediately managed with pericardiocentesis & replacement of fluid.
- Nephrotoxic agents-should be avoided or can be administered according to creatinine clearance (MDRD formula) of the patients.
- Infection- should be treated aggressively with broad-spectrum antibiotics.
- Atheroembolic disease-should be prevented with adequate treatment of BP & cholesterol.
- Renal vein thrombosis-should be promptly treated with anticoagulant.

Acute factors for chronic renal failure usually occur in acute care setting (ICU, ITU), so critical care nurse should recognize the conditions and take prompt action for the above problems.

iii) Prevention of progression of CKD: during the treatment of CKD, hypoxia, malnutrition, renal artery stenosis, and low blood pressure should be prevented²⁻⁵.

4. Tertiary prevention: Tertiary prevention programs aim to improve the quality of life for people with diseases by limiting complications and disabilities, and providing rehabilitation. So tertiary prevention for CKD can be achieved by following measures:

A. Delay of long term complication^{2,8,9}: can be achieved through

- Adequate dialysis by the trained staff.
- Regular checkup to monitor blood levels of creatinine, urea nitrogen, potassium, phosphorus, calcium, parathyroid hormone, hemoglobin, and cholesterol.
- Regular scheduled follow up visits.
- Dietary counseling which limits sodium, potassium, and phosphorus restriction of fluid intake.
- Appropriate treatment of co-morbid conditions (DM, HTN, Hepatitis etc)

B. Impairment or disability limitation- is done through regular exercise, psychological & social counseling.

C. Renal replacement therapy- timely & adequately renal replacement therapy is very important. Indications of renal replacement therapy are-

- Urea > 100mg/dl
- Cr > 10mg/dl
- According to Dialysis Outcome Quality Initiative (DOQI), maintenance dialysis should be started at a creatinine clearance of 9-14ml/min/1.73m². It is applicable for all patients irrespective of their diabetes status, protein intake, & uraemic condition¹.

Conclusion

It is well known that treatment of CKD and its advanced stage ESRD is expensive and beyond the reach of the average population. Therefore, prevention should be the goal of Nephrological health team. Nurse, being a member of this team plays vital role in prevention.

Conflict of Interest

I have selected this topic from my own interest and it has no conflict of interest.

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The Role of Professional Values in Motivating Associate Degree Nursing Students to Pursue Higher Nursing Education

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Abstract

The level of nursing education has been shown to influence nursing care with a direct correlation between higher nursing education and improved patient outcomes. However, only 16-20% of Associate Degree (AD) nurses return to school for a higher degree in nursing. Studies have focused on barriers why practicing AD nurses do not pursue further education, though; no study to date has looked at motivational factors for AD nursing students to continue education. This quantitative structural equation (SEM) modeling study investigates the relationship between motivational factors, professional values and the intent to continue formal post-AD nursing education. A sample of 62 AD nursing students in urban community colleges participated. Self-administered questionnaires included the Academic Motivation Scale (AMS C-28), the Nursing Professional Values Scale Revised (NPVS-R), and a personal questionnaire. Data analysis showed that AD nursing students with high professional values were self-determined with high intrinsic motivation, and professional values were a supportive factor in the intent to continue education. Implications of this study support the enhancement of professional values in the AD nursing curriculum. Additional factors in the intent decisional process should be explored in future research.

Key Words

Motivational style, Professional values, Intent process

Background

The impact of level of education on nursing practice has been a focal topic of conversation throughout the last decade.¹ In fact, level of nursing education has been shown to influence nursing care with a direct correlation between higher nursing education levels and improved patient outcomes.² Aiken and colleagues² found that surgical patients had a survival advantage if treated in hospitals with a higher proportion of Bachelor of Science (BS) or Master's degree (MS) prepared nurses as compared to AD and diploma prepared nurses. Though one might expect that this striking finding concerning patient outcomes would motivate the majority of AD-prepared nurses to attain a BS degree in nursing, at present, only 16-20% of AD nurses attain a BS degree.^{3,4,5} Furthermore, the National Council of State Board of Nursing (NCSBN)⁶ reported in their most recent 2007 statistics that initially prepared AD RNs account for 58.4% of the workforce while only 38.4% hold a BS degree nationally.

Research to date has focused on practicing AD nurses' intent to return to school to pursue a post AD degree in nursing. Results of these studies^{3,5,7,8} show that a lack of such incentives as salary or title differences coupled with presence

of formidable barriers including work and family constraints appear to tip the decisional balance scale against returning to college. These studies, however, do not view intent to attain a post-AD in nursing as a decisional process, but rather a moment decision.^{3,5,9,10,11} In contrast to this momentary approach, Leonard¹² and Spanard¹³ describe intent to pursue education as a multi-step decisional process. Thus, this study took a fresh look at the problem by proposing a three-stage intent decisional process initiated by AD nursing students prior to graduation. In stage one, some AD nursing students have a desire to continue education. Once this desire is recognized, they evaluate the incentives of pursuing a post AD-degree in nursing and make a conscious decision to continue their education. Immediately post-graduation, AD nurses enter the second stage of intent in which they evaluate actual or potential barriers. Though there are few tangible incentives, AD nursing students who reach the third stage of intent and enroll in a formal post-AD education program, are believed to be intrinsically motivated and strive for self-satisfaction through continuous learning. Furthermore, these AD nursing students are presumed to hold high professional values in that they want to be knowledgeable, caring, and compassionate nurses.

Although some AD nursing students are believed to have innate qualities of professional values, including caring and compassion, the majority learn values through nursing education, the clinical setting, and from personal experiences.¹⁴ The literature, however, has questioned if there is a difference in professional values based on educational background.¹⁵⁻²¹ In comparing different nursing degrees, the AD nursing program emphasizes psychomotor learning and technical skills used to carry out basic nursing and medical tasks, as well as provide experience in basic bedside nursing. Although post-AD nursing programs, including RN-BSN and BS in nursing, teach nursing skills, there is an additional emphasis on liberal art education, philosophy, theory, and scholarship in pedagogy.^{5,14} Furthermore, post-AD nursing students are provided with education that supports the core nursing values of the American Association of Colleges of Nursing.^{1,14} If professional values are enhanced through specific courses in post-AD nursing education, implementing an introductory course on professional values in the AD curriculum is suggested to motivate more AD nursing students in the intent to continue education.

Material and Methods

This quantitative, SEM study analyzed the relationships between motivational factors and professional values, and intent to continue formal education. The convenience sample consisted of nursing students enrolled in community colleges with AD in nursing as the highest degree offered. Based on statistical calculations, a minimum sample size of 67 was

suggested when using a moderate effect size (0.15), power of 0.80, and $\alpha = 0.05$.²² These findings were comparable to Nunnally and Bernstein's²² recommendations of a sample size of 60, or 30 subjects per independent variable. The total sample consisted of 62 ($n=62$) eligible AD nursing students, considered an adequate sample size.²³

The AMS-C 28 was used to measure motivational factor and the NPVS-R was used to measure professional values of AD nursing students. Additionally, a demographic questionnaire was collected, including a Likert-type scale to measure intent to continue post-AD education. The AMS-C 28 measures different levels of motivation based on Deci and Ryan's²⁴ Self-Determination Theory (SDT), an empirical human motivational theory concerned with the choices individuals make with their own free will. Seven subscales differentiate between three types of motivation: intrinsic motivation, extrinsic motivation, and amotivation. The AMS-C 28 was found to have adequate validity and reliability.²⁵⁻³⁰ The NPVS-R³¹ measures professional nursing values based on the American Nurses Association's³² Code of Ethics with Interpretive Statements. The scale was found to have adequate validity and test-retest reliability.^{32,33} Human Subject approval was granted by the Institutional Review Board (IRB). Results were tabulated using Predictive Analysis Software (PASW) 18.0 and Analysis of Moment Structure (AMOS). Demographic data was analyzed using frequencies, percentages, and cross-tabulation. Following multiple regression analysis, SEM was used to determine the significance of direct and indirect effects of the independent variables on the dependent variable.

Findings

Descriptive analysis of the sample showed the studied population to be majority female (77%). A total of 81% were 25 years or older and therefore considered to be non-traditional students. Of note, non-traditional students make up the new majority in secondary education, creating several implications for education. They tend to have obligations outside academia, including work and family commitments.³⁴ The overall majority of students worked while attending college (66%) with the amount of work hours ranging mostly from five to 40 hours. Regardless of age or gender, the entire sample except for one student intended to pursue formal post-AD nursing education.

Using PASW 18.0 including AMOS, regression analysis was conducted in order to explore the predictive power of motivation and professional values on intent to continue education. The seven subscales of the AMS-C 28 were regressed as individual subscales in which all specified variables were entered simultaneously, regardless of significance level. A SEM was conducted (Figure 1) in which the NSRV-R was represented as a single variable. Intrinsic motivation was modeled with three individual subscales: "IM To Know"; "IM Toward Accomplishment"; and "IM To Experience Stimulation". Covariance was specified between the three errors relating to the intrinsic motivation subscales. This was justified due to the relationship between the three intrinsic motivation variables.³⁵ This model includes errors for all endogenous variables, which is standard in SEM.

The results of this model are presented in Table 1. In the SEM, the path between professional values and the "IM: To Know" subscale was found to be statistically significant, while the

path between professional values and the "IM: To Experience Stimulation" subscale was found to be non-significant ($p=.069$). Additionally, the path between professional values and intent was found to approach significance at the .05 level ($p=.056$), while the path between the "IM: To Know" subscale and intent to continue formal education was found to be non-significant ($p=.1$).

Findings for the indirect effect of interest, professional values and intent to continue formal education, consisted of a standardized indirect effect of $-.065$, indicating that a one standard deviation increase in professional values was associated with a $.065$ standard deviation decrease in intent, which was indirect, through the three intrinsic motivation variables.

Conclusion

Based on the finding that AD nursing students who hold high professional values are also self-determined with high intrinsic motivation, "IM: To Know", the importance of professional values in nursing cannot be underestimated. Although AD nursing students are faced with ethical dilemmas from the first day they enter the nursing program, it has been argued that the type of educational program for RNs may make a difference in learning professional values.¹⁴ The American Association of Colleges of Nursing (AACN),³⁶ states that the BS programs in nursing must support core values of human dignity, integrity, autonomy, altruism, and social justice¹⁴. The majority of AD nursing curricula, however, do not have a specific course on professional values or ethics in nursing. Rather, professional values are integrated into different courses as topics on ethical decision-making and covered throughout the nursing program. Findings from this study support the suggestion to incorporate an introductory course on professional nursing values in the first semester of the AD program, and integrated content throughout the nursing program.

An in-depth assessment of individual students' situations is necessary to facilitate a smooth transition to continued education. In an open-ended question of the personal questionnaire survey: "What would help you most in your plan to continue education?" several of the study participants expressed the need for "better academic advisement in the second or third semester of nursing", "in-college services for other college transfers", and overall "more information on RN-BSN programs." These findings were similar to research by Jacobs³⁷ and Kearney.³⁸ Academic advisement should not only include transition to the RN-BS in nursing program, but also accelerated higher education programs including master's

Fig. 1: Structural Equation Model

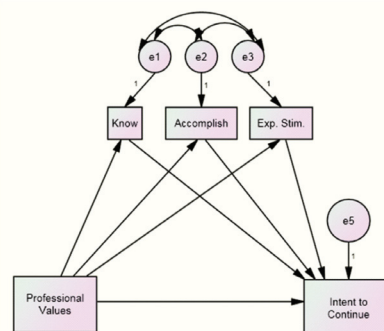


Table 1: Structural Equation Model: regression weights (group number 1 – default model)

Variable	regression	Estimate	S.E	C.R	p
IM: To Know	Professional <----- Values	.450	.114	3.941	***
IM: Toward Accomplishment	Professional <----- Values	.173	.126	1.368	.171
IM: To Experience Stimulation	Professional <----- Values	.227	.125	1.818	.069
Intent	Professional <----- Values	.124	.065	1.912	.056
Intent	<----- IM: To Know	-.136	.083	-1.645	.100
Intent	IM: Toward <----- Accomplishment	.183	.077	1.342	.180
Intent	IM: To Experience <----- Stimulation	.055	.076	.727	.467

level and eventually doctoral degrees to meet the need for nurses to fill specialty roles and faculty positions. ⁽³⁹⁾

Another dominant theme in what would help AD nursing students to pursue further education was financial support. Multiple studies to date have shown that the lack of financial aid is a major barrier to continuing education.^{3,11,40} Thus, creative advisement to explore financial resources or alternative ideas is helpful in motivating AD nursing students to pursue further education. Suggestions may include tuition waver programs through health care institutions⁴¹ or on-line nursing courses to increase flexibility and decrease childcare cost.

Factors contributing to the large number of AD nursing students intending to continue nursing education may include the proposed mandate “BSN in 10” for AD nurses to obtain a BS in nursing within 10 years of initial licensure to maintain RN status.^{42,43} Additionally, there is a shift in nursing shortage with an aging nursing population,^{44,45} making it difficult for new RNs to find employment. The recent recession in the U.S. economy brought certain changes to the field of nursing making it even more difficult for new RNs to obtain jobs. For example, retired nurses returned to the workforce; nurses who had planned to retire held on to their positions; part-time nurses resumed full-time positions; and employed nurses worked overtime to provide financial support for their families, especially if the spouse was laid off.³⁹ A summary of all the factors affecting AD nursing students and nurses in their intent to continue education is shown in Figure 2.

Implication for future health policy is the goal to increase the number of post-AD educated nurses to improve patient care and patient care outcomes. Through appropriate curriculum changes reinforcing professional values early in the AD nursing program, AD nursing students are more likely to be self-determined in their intent to pursue higher nursing education. One suggestion for future research is to use qualitative methods to explore the experience of AD nursing students who intend to pursue the RN-BSN or higher degree in nursing. Another implication for further research is to branch out to include a larger geographic area with participants from more colleges/universities and nursing programs. Finally, even though the power was adequate for the sample size in this study, future studies would benefit from a larger sample.

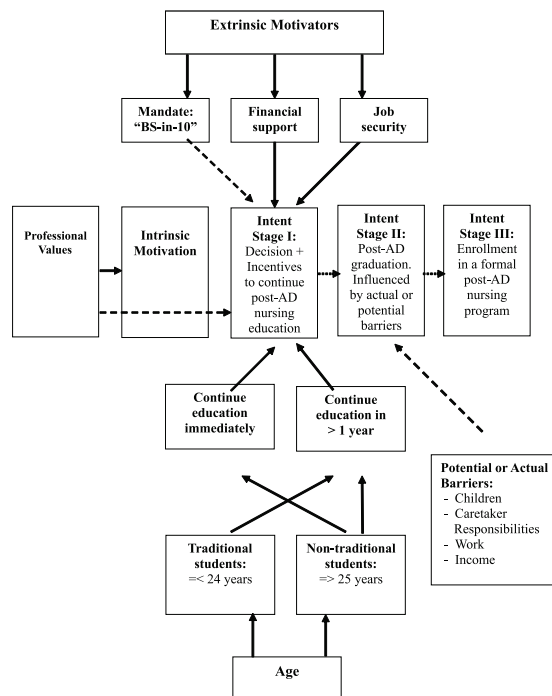
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Interest of Conflict

This is to declare that the article titled: “The role of professional values in motivating Associate Degree nursing students to pursue higher nursing education” is the original research of Unn Hidle. The article has not been submitted to any other journal for publication and there is no interest of conflict.

Fig. 2: Post-analysis considerations in the intent decisional process



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