



Effectiveness of coconut oil massage therapy for weight gain among low birth weight babies

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Abstract

Low birth weight (LBW) is one of the causes for neonatal mortality and morbidity in Kolhapur. Admission of LBW neonates in a Neonatal Intensive Care Unit (NICU) causes deprivation of tactile sensory stimulation. Massage with oil can help in improving weight. Hence, the study was aimed to evaluate the role of coconut oil massage therapy in weight gain among LBW babies in the Kolhapur region. As this study involves evaluating the effectiveness of coconut oil massage therapy on weight gain among low-birth-weight babies, a Quasi-experimental non-equivalent re-tests, post-tests and control group design was chosen for this study. Sixty neonates of 8-28 days from birth, and gestational age of >32 weeks, and the parents consenting to the study were included and non-random assignment into experimental and control group was done. Babies in the experimental group were massaged for 10 minutes twice daily with certified coconut oil for 5 days. Whereas the routine massage was given to the neonates of the control group. Pre-assessment and post-assessment weights of all babies were recorded. Wilcoxon sign rank test, Mann Whitney U test and Chi-Square test were used to analyse the data. A significant difference was observed between mean weight gain in experimental and control group ($P=2.96e^{-03}$). Post-assessment weight was significantly associated with age ($P=0.011$) and birth weight ($P=0.03$). Significant mean difference was observed between pre and post-assessment weight of LBW neonate in the experimental group ($P=6.734e^{-03}$). Body massage using coconut oil showed higher weight gain in LBW babies after the 5th day of intervention.

Keywords: Coconut oil, Infant, Intensive care unit, Low birth weight, Traditional massage

1. Introduction

Low birth weight (LBW or birth weight <2500 gm) is caused due to preterm birth, intrauterine growth retardation or both and a reason behind neonatal and postnatal morbidity (WA, 2011; Islami *et al.*, 2012). According to the UNICEF-WHO report, nearly 15% of babies worldwide are born with LBW. The prevalence of LBW in Asia itself is 17.3% and in Indian subcontinent is around 20% and in Maharashtra region is 29.53% (Bharati *et al.*, 2011; Patale *et al.*, 2018; WHO, 2019). LBW neonates are admitted in the neonatal intensive care unit (NICU) and only minimal touch protocol is followed to avoid acquired infection. This deprives them of tactile and sensory stimulation which is important for their growth outcome (WA, 2011).

Previous studies including clinical trial, concluded that massage with coconut oil can improve weight gain in LBW neonates (Arora *et al.*, 2005; ESJ, 2017). Body massage can improve growth in LBW infants including weight gain, decreased stress behaviour, neuromotor development, improved sleep, decreased chances of infections and mortality of LBW infants (Vickers *et al.*, 2004; Field *et al.*, 2010; Kulkarni *et al.*, 2010).

Traditional oil massage is a common practice in many communities, especially throughout the Asian subcontinent (Darmstadt and Saha, 2003). While there are strong traditional practices, like performing oil massage especially before giving bath to the infant has seemingly evolved due



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to discerning benefits, although little has been documented with regards to the actual benefits or detriments of this practice. Benefits may include improved skin condition, prevention of skin injury and skin infection, improved thermoregulation due to decreased trans epidermal water loss, absorption of essential lipids and enhanced maternal-infant bonding with repetitive tactile stimulation (Darmstadt *et al.*, 2003).

There is a lack of evidence on the impact of coconut oil massage on LBW infants of Kolhapur region. As the researcher came across many case of low birth weight babies during her clinical service and she also found that the length of hospitalization was more for such low birth weight babies because of slow weight gain and complications aroused parallel because of it. This provoked the researcher to find out the easiest, economical and feasible solution for increasing weight in LBW babies. Coconut oil massage therapy is a traditional practice followed in India for centuries but lacks concrete evidence. Hence after extensive review of literature, researcher decided to test the effectiveness of coconut oil massage therapy on weight gain among LBW babies.

2. Materials and methods

The Quasi-experimental non-equivalent pre-tests, post-tests and control group design was performed from January 2019 to February 2019 on 60 LBW babies, who were admitted to neonatal intensive care unit (NICU), in randomly selected hospitals named as Komal hospital, Masai hospital, Aster Aadhar hospital and Apple Saraswathi hospital of Kolhapur, Maharashtra. The ethical approval for the study was obtained from the institutional ethical committee prior to the initiation of the study. The informed consent was obtained from all the subjects or guardians prior to enrolment in the study. The samples were selected based on non-probability, purposive sampling technique. LBW babies of 8-28 days of age and gestational age of more than 32 weeks, with APGAR score of 7-10 at 5 minutes and whose parents consented were included in the study. Whereas LBW neonates on a ventilator, on parenteral nutrition therapy, any on breast milk fortifier, who were seriously ill with a skin infection or abnormalities and nil per oral were excluded from the study. The pre-assessment weight was assessed by using infant monitor

weighing scale in both the groups. Coconut oil massage was administered to subjects in the experimental group by the research investigator for 10 minutes twice daily for 5 days as it shows greater increase in the weight. After 5 days, post assessment weight was assessed by using the same scale in both the groups.

2.1. Study tool

It consisted of a questionnaire related to selected socio-demographic data, which was collected through interview method. Infant weighing scale and infant weight monitoring chart was also used. The weighing scale was calibrated, checked and certified by the biomedical Engineer of D.Y. Patil Engineering College, Kolhapur. Coconut oil was used as the intervention in the experimental group. The coconut oil was tested at PUPU lab, Jaysingpur, district Kolhapur, to maintain standard parameters and certified by a qualified Ayurvedic doctor. The tool was validated by 14 experts of whom 9 were specialized in child health nursing, 2 were statisticians and 3 were MD in paediatrics.

2.2. Pilot study

Pilot study was conducted in December 2018 at randomly selected hospitals. D. Y. Patil hospital and research centre was selected for the experimental group and Gurukrupa hospital was selected for the control group. Purposive sampling was used to select 16 participants fulfilling the inclusion criteria. They were divided into two groups experimental and control. Pre-assessment weight was done prior to the intervention using the tool. Coconut oil massage was administered in experimental group for 10 minutes twice daily at an interval of 6 hours for 5 days. Routine procedure (massage without oil) was done in the control group. After 5 days post assessment weight was done by using the same scale in both groups.

2.3. Study groups

The same procedure as the pilot study was carried out in 60 LBW participants who were divided into the experimental (Masai hospital and Aster Adhar hospital) and control groups (Komal and Apple Saraswati hospital) (n=30 in each group).

2.4. Statistical analysis

Data was analysed using R v 3.6.1 software. Explanatory data analysis was performed to know



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Table 1. Distribution of socio-demographic variables

Socio-demographic variables	Subcategories	Experimental group		Control group	
		Frequency	%	Frequency	%
Age	08-14 days	6	20	11	37
	15-21 days	15	50	12	40
	22-28 days	9	30	7	23
Gender	Male	13	43	13	43
	Female	17	57	17	57
Birth weight	1.5-2.0 kg	26	87	24	80
	2.1-2.5 kg	4	13	6	20
Gestational age	32-36 weeks	14	47	10	33
	37-40 weeks	16	53	20	67

the frequency of variables. Paired t-test was used to analyze the mean weight difference of pre and post-assessment in the experimental group. Post-assessment mean difference of control and experimental group was analyzed by using the Mann Whitney U test. Chi-Square test was used to find an association between socio-demographic variables and post-assessment weight gain of the experimental group. $P < 0.05$ was considered as statistically significant.

3. Results and discussion

The pilot study proved that the study tool was reliable and consistent. The study population had a higher number of female participants ($n=34$) with most ($n=27$) in the 15-21 days of age bracket. The distribution of socio-demographical variables is shown in Table 1.

By observing Table 2, we conclude that, at 5 % level of significance there is no statistically significant mean difference between pre and post-assessment of experimental group ($p > 0.05$). post-assessment of experimental group is greater than pre-assessment of experimental group.

Table 2. Summary table of Wilcoxon sign rank test

Experimental group		P-value
Mean of pre-assessment weight	Mean of post-assessment weight	
1784.0667	1835.8667	0.1931

Table 3. Summary table of Mann-Whitney-U test

Sl. No.	Variable	Weight gain (mean $\pm$ sd)	P-value
1	Experimental group	51.8 $\pm$ 25.71	2.96e-07
2	Control group	19.2 $\pm$ 12.06	

From Table 3, we conclude that, at 5 % level of significance, there is statistically significant mean difference of weight gain in experimental and control group ($p < 0.05$).

A significant difference between mean weight gain of experimental and control group was observed ($P=2.96e-07$). A significant association was found between post-assessment weight gain



and age ($P=0.011$) and birth weight of LBW neonates ($P=0.03$). In the experimental group, significant difference was observed between pre and post-assessment weight of the LBW neonate ($P=6.734e-12$). Mean weight gain in the experimental group was 51.8 ± 25.71 gm and in the control group 19.2 ± 12.06 gm (Fig. 1).



Fig. 1. Pre and post assessment weight of experimental group and control group

LBW is one of the causes of neonatal mortality, morbidity and disability and also has a long-term impact on health outcomes in adult life (Singh, 2017). In Maharashtra, during the year 2015-16, 60.6% neonatal deaths were due to LBW, of which 745 neonatal deaths were occurred in Kolhapur region (Saunik *et al.*, 2017). Therefore, the study was conducted to evaluate the role of oil massage therapy in the weight gain of LBW babies.

Mean weight gain in the experimental group was more as compared to the control group (51.8 ± 25.71 gm vs 19.2 ± 12.06 gm) and the difference was found to be significant ($P=2.96e-07$). Significant difference was observed between pre and post-assessment weight of the LBW neonate ($P=6.734e-12$). In a study conducted by Singh *et al.*, 2017, mean weight gain was more in experimental group as compared to the control group (4.5 ± 3.65 gm vs 2.03 ± 0.7 gm). Massage therapy is a non-invasive procedure having a positive impact on the physical and developmental outcomes of LBW neonates (Vickers *et al.*, 2004). Weight gain by massage can be explained by increased vagal activity, sucking increases insulin release, reduced energy expenditure, decreased norepinephrine serum level, increased gastric motility and hence better absorption of nutrients (Chhugani and Sarkar, 2014). Massage of coconut oil is a traditional

practice in Indian subcontinent for centuries. It act by supplementation of essential fatty acids, augmentation of the skin barrier, reduced water loss, reduced hypothermia and thereby reduces infections and new-born mortality. It plays key role in the growth promotion (Konar *et al.*, 2020). Significant association was found between post-assessment weight gain and age ($P=0.011$), birth weight of LBW neonates ($P=0.03$). In a study conducted by Singh *et al.* (2017), reported there was no significant association between demographic variables which included birth weight of the new born and weight gain except sex of the new born in experimental group.

No significant difference was found in the post assessment weight of both groups as the initial weight is lower in the experimental group. By the end of the study, massage of either form has helped in some amount of weight gain.

The present study is the first of its kind in Kolhapur, Maharashtra. The findings of this study are in line with various similar studies that have already proved coconut oil to be effective in improving weight gain in LBW neonates (Shah *et al.*, 2011, Karbasi *et al.*, 2013; Jabraile *et al.*, 2016). In Maharashtra, LBW is the leading cause of neonatal morbidity and mortality therefore, the government of Maharashtra should consider recognizing coconut oil massage as a therapy for the management of LBW babies.

The sample size and neonatal follow-up of the study was small hence, generalization could be better if a large sample size with long term follow-up is included. A comparative study with various other oils and a prospective longitudinal study for analysing the long-term effect of massage on LBW babies are further recommendations of the study.

4. Conclusion

Body massage using coconut oil showed higher weight gain in low-birth-weight babies.

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References

- Anjali Kulkarni, Jaya Shankar Kaushik, Piyush Gupta, Harsh Sharma and Agrawal R K 2010. Massage and touch therapy in neonates: the current evidence. *Indian pediatrics*, 47(9): 771-776.
- Arora J, Kumar A and Ramp S 2005. Effect of oil massage on growth and neurobehavior in very low birth weight preterm neonates. *Indian pediatrics*, 42(11): 1092-1100.
- Bharati P, Pal M, Bandyopadhyay M, Bhakta A and Chakraborty S 2011. Prevalence and causes of low birth weight in India. *Malays J Nutr*, 17(3): 301-313.
- Chhugani M and Sarkar S 2014. Therapeutic touch modalities and premature neonate's health outcome: a literature review. *J Neonatal Biology*, 3(4): 148.
- Darmstadt G L and Saha S K 2003. Neonatal oil massage. *Indian Pediatr*, 40(11): 1098-1099.
- Darmstadt G L, Mao-Q M, Chi E, Saha S K, Ziboh V A, Black R E, Santosham M and Elias P M 2003. Impact of topical oils on the skin barrier: possible implications for neonatal health in developing countries. *Acta Paediatr*, 91(5): 546-554.
- ESJ S 2017. Effectiveness of coconut oil massage on weight gain among low birth weight newborns. *Int J Innovative Research in Medical Science*, 2: 630-634.
- Field T, Diego M and Hernandez-Reif M 2010. Preterm infant massage therapy research: a review. *Infant Behav Dev*, 33(2): 115-124.
- Islami Z, Razieh Fallah, Toktam Mosavvian and Mohammad Reza Pahlavanzadeh 2012. Growth parameters of NICU admitted low birth weight preterm neonates at corrected ages of 6 and 12 month. *Iran J. Reprod. Med*, 10(5): 459-464.
- Jabraele M 2016. Effect of olive oil massage on weight gain in preterm infants: a randomized controlled clinical trial. *Niger J Med*, 57(3): 160-163.
- Karbas A S, Golestan M, Fallah R, Golshan M and Zinabossadat Dehghan 2013. Effect of body massage on increase of low birth weight neonates growth parameters: a randomized clinical trial. *Iran J Reprod Med*, 11(7): 583-588.
- Konar M U, Ishim K, Roy A, Ghosh T 2020. Effect of virgin coconut oil application on the skin of preterm newborns: a randomized controlled trial. *J Trop Pediatr*, 66(2): 129-135.
- Kulkarni A, Kaushik J S, Gupta P, Sharma H and Agrawal R K 2010. Massage and touch therapy in neonates: the current evidence. *Indian Pediatr*, 47(9): 771-776.
- Patala P J, Masare M S and Hansode G S S 2018. A study of epidemiological co-relates of low birth weight babies born in tertiary care hospital. *Int J Res Med Sci*, 6: 1006-1010.
- Prakesh S Shah, Taiba Balkhair, Arne Ohlsson, Joseph Beyene, Fran Scott and Corine Frick 2011. Intention to become pregnant and low birth weight and preterm birth: a systematic review. *Matern. Child Health J*, 15(2): 205-216.
- Saurik S, Jaiswal C, Nair R, Radkar A, Patil A, Irani S and Phadke M 2017. Analysis of neonatal deaths in Maharashtra: policy implications. *Int J Community Med Public Health*, 4(12): 4513-4519.
- Shah P S, Taiba Balkhair, Arne Ohlsson, Joseph Beyene, Fran Scott and Corine Frick 2011. Intention to become pregnant and low birth weight and preterm birth: a systematic review. *Maternal and child health J*, 15(2): 205-216.
- Singh J S 2017. Effectiveness of coconut oil massage on weight gain among low birth weight newborns. *Int J. Inn. Res. Med Sci*, 2: 630-634.
- Vickers A, Ohlsson A, Lacy J and Horsley A 2004. Massage for promoting growth and development of preterm and/or low birth-weight infants. *Cochrane Database of Systematic Reviews*. John Wiley & Sons Ltd, 2.
- WA C 2011. *Nelson Textbook of pediatrics*, 19th edn. Philadelphia: PA: Saunders, pp. 456-458.
- WHO 2019. UNICEF-WHO low birthweight estimates: levels and trends 2000-2015. <https://apps.who.int/iris/handle/10665/324783>.



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Review Article

Anxiety and Coping Strategies: The Adequate and Integrative Review

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Abstract

Stress has become part of students' academic life due to the various internal and external expectations placed on their shoulders. Adolescents are particularly vulnerable to the problems associated with academic stress as transitions occur at an individual and social level. It, therefore, becomes imperative to understand the sources and impact of academic stress to derive adequate and efficient intervention strategies. Understanding the sources of stress would facilitate the development of effective counseling modules and intervention strategies by school psychologists and counselors to help students alleviate stress. Anxiety in nursing students negatively impacts academic as well overall success. This review highlights anxiety and coping strategies in nursing students.

Key words: Anxiety, counseling, coping strategies

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Introduction

Stress contributes to health problems worldwide. Its presence is felt in home, office, industry, and academic environments. It is a common element in life regardless of race or cultural background. The emotional and physical ways in which we respond to pressure can cause mental and physical symptoms. The effects of stress vary with the ways it is appraised, and the coping strategies used differ between individuals and are influenced by ethnic, cultural, and socioeconomic characteristics.¹ Students are subjected to different kinds of stressors such as the pressure of academics with an obligation to succeed, an uncertain future and difficulties of integrating into the system. The students also face social, emotional, physical, and family problems, which may affect their learning ability and academic performance. In recent years there

is growing appreciation of stressors involved in Medical Training College students, especially freshmen, are a group particularly prone to stress.^{2,3}

The nursing profession is currently in a state of crisis. The number of nurses available and seeking employment is not meeting the demands of the health-care industry. Nursing education is responding to this need by attempting to increase the number of graduate nurses.⁴ Due to fiscal considerations, restrictions on student to teacher ratios, and limited clinical facilities, it is not always feasible to rely on increasing program size to increase the number of graduates. In many schools of nursing, the focus is shifting from efforts to enlarge nursing programs to strategies to increase the retention of the students who are accepted and enroll in the programs. The National League for Nursing reported an 80% net retention rate in nursing programs across the country, with 83% net retention in public institutions, and 79% net retention in the south.⁵ 20% of the nursing school population that leaves school each year before graduation is a vital element in meeting the demand for nurses in the future.

When in a nursing education program, students are often exposed to high levels of stress when compared to other students in other formalized programs.⁶ In particular, the clinical component of the nursing program which is meant to prepare nursing students for professional nursing roles and enhance their critical thinking and decision-making

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skills in the clinical settings produces high levels of discomfort, stress, and anxiety.^[1]

Existing evidence showed that there are two major sources of stress among nursing students: Academic and clinical stressors, with the latter being perceived more intensely by nursing students at all levels.^[2] Stressors related to academia include the academic process, heavy assignments and workloads, and examinations. Studies consistently show that nursing students experience moderate-to-severe levels of stress during clinical practice.^[3,4]

Clinical sources of stress include fear of the unknown, new clinical environments, engaging in various clinical activities, taking care of patients, lack of professional knowledge or nursing skills, fear of failure, clinical incompetence, experience of death and dying, unfamiliarity with patients' medical history, unfamiliar patients' diagnoses and treatments, fear of making mistakes, giving medication to children, and lack of control in relationships with patients.

Other reported stressors include peers, daily life and the environment, nursing staff and nurse educators finding of new friends, learning of new responsibilities, being placed in unfamiliar situations, working with people they do not know, financial strain, relationships with friends, tutors and companions, negative interactions with instructor's, being observed by instructors, and being late and poor relationships with clinical staff.^[5]

Stress is considered beneficial in minimal amounts as it increases excitement and motivation. However, unmanaged stress or failure to cope with chronic stress may be harmful to the health and well-being of an individual. Chronic stress may affect the learning, decision-making, thinking, and eventually the academic performance of the nursing student. Stress may even be a reason why they choose to leave the nursing program. Unmanaged stress may also cause the nursing student to experience negative emotional states such as sadness, apprehension, anxiety, worry, anger, lack of self-esteem, guilt, grief, nervous breakdown, depression, feeling of loneliness, listlessness, or sleeplessness.^[6]

Coping mechanisms are a necessity when dealing with stress and accompanying stressors. Lazarus and Folkman classified coping ways as problem based and emotion based.^[7] Several studies highlighted problem-solving approach as the most common coping behaviors in nursing students while the avoidance approach as the least utilized coping behaviors in nursing students. Problem-based coping ways are known to be beneficial to students' learning, clinical performance, and well-being, while emotion-based coping ways were found to be harmful to their health.^[8]

Studies Related to Anxiety and Coping Strategies

Shadairfat *et al.* illustrated the level of stress and common stressors among nursing students, to determine the difference

in stress level related to demographic data, and to identify coping mechanisms used by nursing students. A descriptive cross-sectional study was carried out to determine the type of stress and coping strategies among nursing students. The level of stress was evaluated through perceived stress scale (PSS) and type of coping strategies was assessed by the use of coping behaviors inventory. Students perceived moderate level of stress, most commonly attributed to assignments and workload, teachers and nursing staff, peers and daily life, and taking care of patients. The most frequently used coping mechanism was problem-solving. The study found that age, grade point average, education level, and residence are good predictors of the use of transference as a coping behavior. A moderate level of stress among students illustrated the need for stress management programs and the provision of suitable support.^[9]

Aslan and Akturk determined the stress levels experienced by nursing students during the nursing education and the associated factors. The population of the study consisted of the students of the University, Faculty of Health Sciences Nursing Department. There were 1200 students in the faculty of nursing. The sample consisted of 479 students. Participants used introductory questionnaire, nursing education stress scale. According to the results of this study, it was determined that the nursing students experience high level of stress and their demographic characteristics were affected by their education stress and practical stress and academic stress subscale scores. It was also determined that stress scores of the students who preferred the nursing profession willingly or liked it while studying and found the profession prestigious were lower.^[10]

Rafati *et al.* explored the coping strategies of Iranian nursing students with stress in a clinical setting. This qualitative content analysis study was carried out with 20 nursing students who were selected using purposive sampling at the Razi nursing and midwifery school in Kerman, in Iran, during a 10-month period in 2016. Data were collected using semi-structured face-to-face interviews and analyzed through Graneheim and Lundman's qualitative content analysis method. "Seeking well-being" as the main theme and three categories of "active confrontation with stress," "mastering the mind and body," and "avoidance" were obtained from data analysis. The exploration of nursing student's experiences of coping with clinical stressors increases students' awareness of their coping strategy. The academic authorities in recognizing the coping strategies of students with stress in clinical setting can provide necessary training on effective coping strategies for students.

Seyedfatemi *et al.* conducted a descriptive cross-sectional study to determine sources of stress and coping strategies in nursing students studying at the Iran faculty of nursing and midwifery. All undergraduate nursing students enrolled in years 1-4 during academic year 2004-2005 were included in this study, with a total of 366 questionnaires fully completed by the students. The Student Stress Survey and the adolescent coping orientation for problem

experiences inventory were used for data collection. Most students reported "finding new friends" (76.2%), "working with people they did not know" (63.4%) as interpersonal sources of stress, "new responsibilities" (72.1%), and "started college" (65.8%) as intrapersonal sources of stress more than others. The most frequent academic source of stress was "increased class workload" (66.9%) and the most frequent environmental sources of stress were being "placed in unfamiliar situations" (64.2%) and "waiting in long lines" (60.4%). Interpersonal and environmental sources of stress were reported more frequently than intrapersonal and academic sources. Mean interpersonal ($P = 0.04$) and environmental ($P = 0.04$) sources of stress were significantly greater in the 1st year than in the 4th year students. Among coping strategies in 17 areas, the family problem-solving strategies, "trying to reason with parents and compromise" (73%) and "going along with family rules" (68%) were used "often or always" by most students. To cope with engaging in demanding activity, students often or always used "trying to figure out how to deal with problems" (66.4%) and "trying to improve themselves" (64.5%). The self-reliance strategy, "trying to make their own decisions" (67%), the social support strategies, "apologizing to people" (59.6%), "trying to help other people solve their problems" (56.3%), and "trying to keep up friendships or make new friends" (54.4%); the spiritual strategy, "praying" (65.8%); the seeking diversions strategy, "listening to music" (57.7%); and the relaxing strategy, "daydreaming" (52.5%) and the effort to "be close with someone cares about you" (50.5%) were each used "often or always" by a majority of students. Most students reported that the avoiding strategies "smoking" (93.7%) and "drinking beer or wine" (92.9%); the ventilating strategies "saying mean things to people" and "swearing" (85.8%); the professional support strategies "getting professional counseling" (74.6%) and "talking to a teacher or counselor" (67.2%); and the humorous strategy "joking and keeping a sense of humor" (51.9%) were used "seldom or never." The 1st year nursing students are exposed to a variety of stressors. Establishing a student support system during the 1st year and improving it throughout nursing school is necessary to equip nursing students with effective coping skills. Efforts should include counseling helpers and their teachers, strategies that can be called upon in these students' future nursing careers.¹¹

Menon *et al.* assessed the levels of stress and its associated adverse behavioral effects in undergraduate medical students in a tertiary care medical college. This cross-sectional, descriptive, and analytical study included medical students from the 2nd to 4th years who had given informed consent to participate in the study. Students were assessed with a semi-structured questionnaire, students stress scale (SSS), perceived stress questionnaire, and risk-taking and self-harm (RT and SH) inventory. A total of 405 students (153 males and 252 females) participated in the study. There were no significant differences in the age, perceived family support, religious practices, physical activity, and SSS scores of the male and female students. A significant

higher score was obtained by boys as compared to the girls on the scores of the RT subscale and total score on RT and SH inventory. However, girls obtained significantly higher scores as compared to boys on the PSS. Among girls, 23.4% reported high stress, 63.5% had moderate stress, and 13.1% reported low stress. Among boys, 11.1% reported high stress, 68.6% had moderate stress, and 20.3% reported low stress. The difference was statistically significant. The majority of medical undergraduates were under stress, however, the majority perceived themselves to be under moderate stress. Male students had higher scores on RT and SH inventory as compared to females. There is an urgent need to study the causes and devise effective management and preventive measures to avoid the harmful long-term effects of stress on their careers and well-being.¹²

Bass and Bradford determined if journaling decreased anxiety among beginning nursing students. The reasons behind this study were add to nursing knowledge on journaling to relieve anxiety among nursing students, to hopefully help them perform better in the nursing program, and to avoid burnout in the future as registered nurses. The design involved a convenience sample of incoming summer HSN students randomly assigned to an experimental or control group. A pretest-posttest design with classroom instructor reminders on a week-to-week basis regarding weekly journal writing was used over the course of 12 weeks. All students received a notebook, and the experimental group was given instructions to journal, while the control group was given instructions to take notes. Beck's anxiety inventory (BAT) and Draw-a-Person-in-the-Rain (DAPR) were administered at the beginning and end of the study in the classroom setting. Furthermore, before the study, the institutional review board approval was obtained, and students completed informed consent with the knowledge of details pertaining to the study and the risks involved. All data were collected anonymously with no student identifiers, and results were reported as aggregate data. The pretest-posttest data, in addition to the demographics, were analyzed using paired t-test analysis, a regression line, and Chi-square tests through SPSS software. An analysis of the results showed no statistically significant data, with the exception of a slight correlation between expected end grade in class and post-BAT score – better grade expectations were associated with lower BAT scores or less anxiety. Visual analysis of the data showed a small negative correlation between the control group's anxiety levels and BAT scores. DAPR was found not to show any correlation with BAT scores. Further research is necessary to note the possible correlation between note-taking and anxiety reduction among the nursing student population, in addition to the potential benefits of more creative journaling interventions to reduce anxiety.¹³

Karimi *et al.* explored Iranian nursing students' perception regarding the consequences of reflection during clinical practices. This qualitative study was conducted by a conventional content analysis approach in two nursing schools at Shiraz and Fasa Universities of Medical

Sciences in Iran. Data were collected through in-depth semi-structured interviews during 2015-2016, from 20 students selected by purposive sampling. All the interviews were tape-recorded, transcribed verbatim, and analyzed by content analysis method. Rigor of this study was approved by member check and external audit. Two categories emerged from the data analysis, including movement toward professionalism and self-actualization of emotions. The former consisted of three subcategories of function modification, sharing experiences, and generalizing experiences. The latter consisted of two subcategories of inner satisfaction and peace of mind. The results indicated that nursing students' reflection in clinical settings is effective in personal and professional levels. Reflection in a personal level led to positive emotions that increased the quality of care in patients. Accordingly, nursing educators need to create a nurturing climate as well as supporting reflective behaviors of nursing students.⁽¹⁰⁾

Rathnayake and Ekanayaka examined depression, anxiety, and stress and associated factors among undergraduate nursing students in Sri Lanka. This cross-sectional study was conducted at the Department of Nursing, Faculty of Allied Health Sciences, University of Peradeniya. A purposive sample of 92 undergraduate nursing students completed a pretested self-administered questionnaire. Depression, anxiety, and stress were measured by the Sinhala version of Depression, Anxiety, and Stress Scale. The sample consisted of 30.4% of male and 69.6% of female students. The mean age was 24.1 years (standard deviation ± 1.6). The majority of the respondents reported mild to extremely severe symptoms of depression (51.1%), anxiety (59.8%), and stress (82.6%). It showed a significant positive relationship between depression and anxiety. Depression, anxiety, and stress are highly prevalent among undergraduate nursing students and correlations between these variables are positive. Self-rated physical health and self-rated mental health are the factors most closely related to negative emotional states. The improvement of mental health among nursing students is essential. The findings call for initiation of stress management interventions and increased counseling facilities for nursing students.

Hirsch *et al.* identified the coping strategies used by nursing students in a university in southern Brazil, establishing the relationship between the sociodemographic and academic variables examined. An exploratory, descriptive, and quantitative study carried out with 146 nursing students, through application of the coping strategies inventory. For the data analysis, descriptive statistics, analysis of variance and regression analysis were used. It was found that the coping strategy most used by nursing students is escape. A connection was also detected between the academic dissatisfaction variable and the use of negative coping strategies. It was noted that students satisfied with the course used positive coping strategies targeting the problem, whereas dissatisfied students used negative strategies focusing on the emotion.

Conclusion

The review suggests that nursing students suffer from anxiety. Efforts are required to cater to nursing students who are distressed, in a non-intrusive manner. Awareness about manifestations of distress among nursing students needs to be increased among not only students themselves but also other stakeholders such as educationists and parents. Further research is required on this issue, and multicentric longitudinal studies would help to provide better answers about psychological distress among nursing students in India.

References

1. Al-Ayadhi IY. Neurohormonal changes in medical students during academic stress. *Ann Saudi Med* 2005;25:36-40.
2. D'Zurilla TJ, Sheedy CF. Relation between social problem-solving ability and subsequent level of psychological stress in college students. *J Pers Soc Psychol* 1991;61:841-6.
3. Rosenfeld P. Measuring student retention: A national analysis. *Nurs Health Care* 1988;9:198-202.
4. Alzayyat A, Al-Gamal E. Correlates of stress and coping among Jordanian nursing students during clinical practice in psychiatric/mental health course. *Stress Health* 2016;32:304-12.
5. Dunn SV, Burnett P. The development of a clinical learning environment scale. *J Adv Nurs* 1995;22:1166-73.
6. Pulido-Martos M, Augusto-Landa JM, Lopez-Zafra E. Sources of stress in nursing students: A systematic review of quantitative studies. *Int Nurs Rev* 2012;59:15-25.
7. Blomberg K, Bisholt B, Küller U, Gustafsson A, Ohlsson U, Sundler Johansson A, Gustafsson M, *et al.* Swedish nursing students' experience of stress during clinical practice in relation to clinical setting characteristics and the organization of the clinical education. *J Clin Nurs* 2014;23:2264-71.
8. Labrague LJ. Stress, stressors, and stress responses of student nurses in a government nursing school. *Health Sci J* 2014;7:424-35.
9. Labrague LJ, McInroe-Petite DM, Glue D, Thomas L, Papathanasiou IV, Tsanis K, *et al.* A literature review on stress and coping strategies in nursing students. *J Ment Health* 2017;26:471-80.
10. Lazarus RS, Folkman S. Transactional theory and research on emotions and coping. *Eur J Pers* 1987;1:141-69.
11. Chang EM, Bidewell JW, Huntington AD, Daly J, Johnson A, Wilson H, *et al.* A survey of role stress, coping and health in Australian and New Zealand hospital nurses. *Int J Nurs Stud* 2007;44:1354-62.
12. Shdaifat F, Jamama A, Al-Amer M. Stress and coping strategies among nursing students. *Glob J Health Sci* 2018;10:33-41.
13. Aslan H, Aktürk U. Nursing education stress levels of nursing students and the associated factors. *Ann Med Res* 2018;25:660-6.
14. Rafati F, Nouri E, Sabzevari S, Dehghan-Nayeri N. Coping strategies of nursing students for dealing with stress in clinical setting: A qualitative study. *Electron Phys* 2017;9:6120-8.
15. Seyedlatemi N, Tafreshi M, Hagani H. Experienced stressors and coping strategies among Iranian nursing students. *BMC Nurs* 2007;6:11.
16. Menon P, Chaudhury S, Saldanha D, Sahu S, Singh V, Pathak V, *et al.* Stress levels and its association with self-harm and risk-taking behavior in medical undergraduates.

and Psychiatry J 2018;27:41-6

- Hass A, Bradford SR. Exploring Experiences of First Semester Nursing Students: Journaling as a Means to Reduce Stress and Anxiety. Proceedings of The National Conference On Undergraduate Research (NCUR) 2015 Cheney, WA Eastern Washington University, 2015. p. 320-30
18. Karimi S, Haghani F, Yamani N, Kalyani MN. Exploring the perception of nursing students about consequences of

reflection in clinical settings. Electron Phys 2017;9:5101-8.

19. Rathnayake S, Ekanayake F. Depression, anxiety and stress among undergraduate nursing students in a public university in Sri Lanka. Int J Caring Sci 2016;9:1-13
20. Hirsch CD, Barlen FL, Amsendal K, Tomaszewski-Bartem JC, Figueroa AB, Lunardi VL. Coping strategies of nursing students for dealing with university stress. Rev Bras Enferm 2015; 68:501-8.




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Effectiveness of Self Instructional Module on Knowledge of Artificial Cardiac Pacemaker among Staff Nurses

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Running Title: Artificial cardiac pacemaker and staff nurses

Abstract: **Objective:** Heart diseases are a huge burden and cause of concern for everybody from doctors to policy makers. Heart disease leading to heart failure is a further cause for worry. In fact, approximately 60% of all cardiac deaths occur due to arrhythmias leading to Sudden Cardiac Arrest (SCA). Annual incidence of SCA in India is 0.55 per 1,000 populations. Today, pacemakers are used to manage symptomatic bradycardia but rising cost of technology that saves life has been out of reach for many poor patients in India leading to confinement, morbidity and death. Each year 1-2 million individuals worldwide die due to a lack of access to pacemakers. In India, about 1, 00,000 patients suffer from bradycardia every year. However, only 15,000 patients resort to pacemakers in India annually. Hence, the study was aimed to determine the effectiveness of the self instructional module on knowledge of Artificial cardiac pacemaker among staff nurses. **Materials and methods:** Pre - experimental study was performed on 60 staff nurses working in medical, surgical, and intensive care units of selected hospital of Kolhapur. The effectiveness of a Self Instructional module on artificial cardiac pacemaker was evaluated through a structured knowledge questionnaire using one group pre-test post-test design. Improvement in knowledge score was determined through the quantitative evaluative survey approach. **Results:** The calculated paired 't' value ($t_{16} = 17.16$) was greater than tabulated value ($t_{16} = 2.00$). This indicates that the gain in knowledge score was statistically significant at $P < 0.05$ level. Therefore the findings revealed that the SIM on Artificial cardiac pacemaker was effective in increasing the knowledge regarding artificial cardiac pacemaker among staff nurses. In present study there was significant association between pre test knowledge score & selected socio-demographic variable such as Age in years [$\chi^2 \text{ cal} = 127.9$, $\chi^2 \text{ tab} = 7.82$], Educational qualification [$\chi^2 \text{ cal} = 11.93$, $\chi^2 \text{ tab} = 5.99$] & Total clinical experience in years [$\chi^2 \text{ cal} = 7.84$, $\chi^2 \text{ tab} = 7.82$]. This indicates that there is significant association between pre test knowledge scores and selected socio-demographic variables at 0.05 level of significance. **Conclusion:** The self instructional module was effective in improving knowledge of artificial cardiac pacemaker in staff nurses and can be used as an effective method to train nurses in Kolhapur.

Keywords: Effectiveness, Self-instructional module, artificial cardiac pacemaker, Staff nurses

1. Introduction

Cardiovascular diseases have been on the increase in India which has resulted in several deaths occurring every day across the country. A report by the WHO, to the end of year 2005, states that all the deaths occur in India would mainly be due to heart diseases. Heart disease leading to heart failure is a further cause for worry. In fact, approximately 60% of all cardiac deaths occur due to arrhythmias leading to Sudden Cardiac Arrest (SCA). Annual incidence of SCA in India is 0.55 per 1,000 populations¹.

A cardiac pacemaker is a device that is used to regulate the heart rate. If you have been found to have a heartbeat that is too slow, a pacemaker can be implanted in the body to take over the function². Advances in pacemaker patients have resulted in tremendous changes in the care of patients with a wide range of cardiac diseases, including AV block, sinus node dysfunction and congestive heart failure³. Technology has helped the health lives of thousands of people around the world. All of these health findings are used to detect the diseases and help patients to cope with health problems⁴.

Studies had shown that intervention can increase the knowledge of cardiac pacemaker among nurses^{5, 7, 8, 9}. The present study, first of its kind in Kolhapur, aimed to determine the effectiveness of self instructional module on knowledge of artificial cardiac pacemaker among staff nurses in Kolhapur.

2. Materials and Methods

A Pre - experimental study was performed during July 2021 on 60 staff nurses working in medical, surgical, and intensive care units of selected hospital, Kolhapur. Participants of both genders, present at the time of data collection and willing to participate in the study were included. Those who were not available at the time of data collection were excluded. The study was performed after the clearance of the institutional ethical committee and local authorities. The structured knowledge questionnaire (tool) on artificial cardiac pacemaker was designed after extensive literature reviews and expert discussion. Items in the tool were analyzed according to Gifford's method¹⁰. The self instructional module on artificial cardiac pacemaker was developed through expert consultation and literature review.

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Both, the tool and self instructional module were validated by 14 experts from medical surgical nursing, MD medicine and statistics. The reliability of the tool and self instructional module was determined using the Karl Pearson's coefficient of correlation formula. Pre-test and post-test data (intervention being self instructional module) were collected to determine the improvement in knowledge of Artificial cardiac pacemaker by using the tool. Pre-experimental knowledge evaluation was conducted by providing study participants the tool and arbitrarily grading the response as Good knowledge (20 - 28), average knowledge (10 - 19) and poor knowledge (0 - 09) based on correct answers. The self instructional module was provided to the study participants at the end of the pre-experimental evaluation. Post-interventional knowledge score was evaluated after the 7th day of administration of the self instructional module. Responses were graded similar to the pre-experimental evaluation. The time allotted to respond for each set up was 30 minutes.

A pilot study was conducted in a selected hospital of Kolhapur on 10 staff nurses. The tool was distributed to participants and the results were recorded for pre and post-intervention response.

The difference in pre-test and post-test score were compared using paired 't' test. A chi-square test was used to find an association between pretest scores and socio-demographic variables. $P < 0.05$ was considered as statistically significant.

3. Results

The tool consisted of a structured knowledge questionnaire related to socio-demographic variables and artificial cardiac pacemaker. According to Gilbert's classification difficult index on item analysis of the tool revealed the number of difficult questions was 9 whereas, good and poor questions were 16, and 3 respectively. No marginal questions were present in the tool. Discrimination index indicated that the number of excellent, good, marginal, and poor questions was 6, 11, 0, and 11 respectively. Item analysis was performed on 30 items, among which the final tool contained 28 questions. The description of the questionnaire is shown in Table 1.

Table 1: Description of Questionnaire

Sr. No.	Questions regarding	Total number of Questions
1.	Anatomy of heart & conduction system	07
2.	Types & indications of artificial cardiac pacemaker	10
3.	Nursing care & health education	07
4.	Complications	04

The self instructional module consisted of information about artificial cardiac pacemaker such as introduction, conduction system of heart, definition, components & functions, types, indications, nursing care, health education & complications. The pilot study proved that the tool and self instructional module was reliable and consistent, the reliability of the tool was computed as $r = 0.81$.

Detailed demography of the participants is given in Table 2.

Table 2: Frequency Distribution of Socio-Demographic Variables

Socio-demographic Variable	Frequency (%)
Age (in years)	
21 - 30	11 (51.67)
31 - 40	13 (21.67)
41 - 50	10 (16.67)
Above 50	06 (10.00)
Gender	
Male	16 (26.67)
Female	44 (73.33)
Educational qualification	
GNM	48 (80.00)
Basic B.Sc nursing	07 (11.67)
Post Basic B.Sc nursing	05 (8.33)
Area of working	
Medicine ward	16 (26.67)
Surgery ward	15 (25.00)
ICU	29 (48.33)
Clinical experience in years	
0 - 2	29 (48.33)
3 - 5	16 (26.67)
6 - 8	09 (15.00)
9 & above 9	06 (10.00)
Have you taken any in-service education regarding pacemaker	
Yes	21 (35)
No	39 (65)

GNM - General nursing and midwifery, B.Sc - Bachelor of Science, ICU - Intensive care unit, % - Percentage

In the pre-test scores, 78.33% of the participants had average knowledge score ($n=47$) whereas 21.67% had poor knowledge scores ($n=13$) & none of the participants had good knowledge. In post-test, 71.67% of participants had good knowledge ($n=43$), 28.33% of participants had average knowledge ($n=17$) and no poor knowledge score was observed (Figure 1).

There is significant association between pre test knowledge scores and selected socio demographic variables at 0.05 level of significance such as Age in years [$\chi^2_{cal} = 12.19$, $\chi^2_{tab} = 7.82$], Educational qualification [$\chi^2_{cal} = 11.93$, $\chi^2_{tab} = 5.99$] & clinical experience in years [$\chi^2_{cal} = 7.84$, $\chi^2_{tab} = 7.82$].

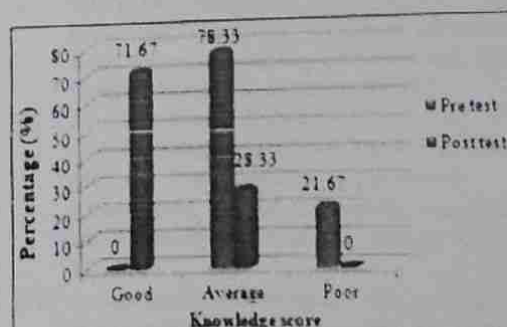


Figure 1: Distribution of pre and post-test score

4. Discussion

Nurses play a central role in detection, prevention, control and rehabilitation. They are often the case manager, working

in partnership with patients and families, based in the general/family practice, hospital and community sectors. Advances in pacemaker patients have resulted in tremendous changes in the care of patients with a wide range of cardiac diseases. Taking care of such a rapidly growing patient population constitutes a challenge for all health care providers working in a cardiology ward, operating room or primary care practice. Nurses among them have a unique role by being the most appropriate persons to provide in-hospital and long-term health care, education and psychological support to these patients¹³.

The present study is the first of its kind in Kolhapur. It aimed to determine the effectiveness of Self instructional module on knowledge of artificial cardiac pacemaker among staff nurses in Kolhapur and to evaluate association between socio - demographical variables of the subjects and their pretest scores.

A significant improvement was observed between pre-test and post-test scores. A significant association between pretest knowledge score & socio demographic variables such as age, educational qualification & clinical experience was seen.

An expert validated self instructional module used in knowledge improvement was distributed to the participants at the beginning of the study. Information retention through the self instructional module was impressive as evident by the improvement in the post-test conducted after 7 days. These findings are in agreement with the studies of Peter Jasper Youtham et al. and Sneha Sahay Youtham et al.^{11,6} A significant associations were observed between age, educational qualification & clinical experience with pretest. However, this association was absent in the post test. This shows that the self instructional module was able to bridge this learning gap. This could be because of the ability to relate and interpret better with practical experience. Similarly, in this study self instructional module was used showed significant improved artificial cardiac pacemaker knowledge.

The limitation of the study was the small sample size. Generalization could be better if the large sample size is used, also an experimental study including control and experimental group with various other interventional modalities are the further recommendation of the study.

5. Conclusion

The self instructional module was very effective in improving knowledge of artificial cardiac pacemaker. Hence, it can be used to improve the practices & uses of cardiac pacemaker for all nurses. There is significant association between pre test knowledge scores and selected socio demographic variables at 0.05 level of significance.

6. Ethical Approval

Ethical approval for this study was obtained from Institutional Ethical Committee of D.Y. Patil Medical College, Kolhapur.

7. Acknowledgments

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Conflict of Interest: None to declare

Authors Contribution

Study conception and design: Ms. Shweta S Jadhav & Mr. Amos Talsandekar

Data collection: Ms. Shweta S Jadhav

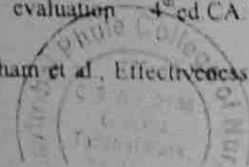
Data analysis and interpretation: Ms. Shweta S Jadhav & Mr. Amos Talsandekar

Drafting of the article: Ms. Shweta S Jadhav

Critical revision of the article: Ms. Shweta S Jadhav & Mr. Amos Talsandekar.

References

- [1] Tanmay Nag, Arnabghosh et al., World Health Organization, the world health report 2005 preventing chronic disease: A vital investment. WHO, Journal of cardiovascular disease, Geneva 2005
- [2] https://en.m.wikipedia.org/wiki/Artificial_Cardiac_pacemaker.
- [3] Narayani S, Manju J et al, Protocol on pre and post-operative nursing management of cardiac surgery. Indian journal of nursing studies 2011 Jan;2(1):51-56.
- [4] Daniel Z Usan, Imad M et al., Permanent cardiac pacing, American Heart Journal May 2008 ;155(5): pageno-896-903
- [5] Available from URL: <http://nursingstandard.rcnpublishing.co.uk/archive/article-an-overview-of-permanent-cardiac-pacing>
- [6] Shivani R, Sanjay G, Deepak K T, Sanjula V et al., Anesthetic Management of Patients with Cardiac Pacemakers and Defibrillators for Non cardiac Surgery. Annals of Cardiac Anesthesia 2005; page no 156-180.
- [7] Sneha Sahay Youtham, Effectiveness of informational booklet on knowledge regarding cardiac pacemaker. International journal of nursing & health science 2016, March, volume 6, page no 589-602.
- [8] Swaty and Andrews, Chapagai et al., A study the knowledge and quality of life of pacemaker patients. Asian journal of nursing education and research. 2017, January, volume 7; Page no 108-115.
- [9] Ayadmohamad, Wafaaismaishreif et al., Effectiveness of educational program on knowledge and practice of patients undergoing permanent pacemaker. International journal of nursing and health science. 2016, December-November; volume 5(6): Page no 72-83.
- [10] Sunitavarma, Effectiveness of learning packages on management of patients with permanent pacemaker. Indian journal of applied research. 2019, October, volume 9 (10); page no 25-34.
- [11] Gilbert S. Principles of educational and psychological measurement and evaluation. 4th ed. CA Wadsworth Publishing; 1996.
- [12] Peter Jaspel, Youtham et al., Effectiveness of SIM on



knowledge regarding pacemaker. International journal of nursing & medical science. 2019, Jan-March, volume 2(1); page no 2454-6674.

- [13] Usilan D Z, Tleyjeh I M, Baddour L M, Friedman A P, Jenkins S M, St Sauver J L, et al. Temporal Trends in Permanent Pacemaker Implantation. Available from: URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2597171/>
- [14] Angelidou D, Counseling Patients with Implanted Cardiac Devices: The Nurse's Role. Available from URL: <http://www.hospitalchronicles.gr/index.php/hchr/article/download/104/3>

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Research Article

A Study to Assess the Anxiety and Coping Strategies among First-year B.Sc. Nursing Students in Selected Institutes of Navi Mumbai

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ABSTRACT

Background: Students are subjected to different kinds of stressors, such as the pressure of academics with an obligation to succeed, an uncertain future, and difficulties of integrating into the system. **Aim:** A descriptive study was conducted in selected nursing institutes of Maharashtra to assess stress level and coping strategies among nursing students. A total of 100 1st year nursing students participated in the study. Likert scale was used to assess stress level. **Results:** Results revealed that 4% of the samples had severe anxiety, 40% had moderate anxiety, 48% had mild anxiety, and 8% of samples have no anxiety. Anxiety levels were significantly higher in females in comparison to males (30.79±7.47 vs. 28.65±7.98, $P = 0.036$). Coping behavior was comparable in females in comparison to males (53.70±4.62 vs. 53.29±4.40, $P = 0.768$). **Conclusion:** Strengthening nursing students' positive coping skills may be helpful for them to effectively deal with various stressors during their educational experiences while maximizing learning. Implementing empirically tested approaches may be useful to prevent the recurrence of stress and lessen its impact such as stress management counseling, counseling programs, establishing peer and family support systems, and formulating hospital policies that will support nursing students.

Keywords: Anxiety, Coping, Likert scale, Stress level

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Introduction

Stress is a way of the body's response to any kind of demand. Coping is the process of managing demands that are considered as challenging to the individual. Stress in nursing students can be triggered from a variety of issues including academics, and financial concerns. According to the nursing curriculum, they must learn theory as well as practical

classes at the same time. They face different stressors can be related to academic and clinical as well. Stress affects physically, mentally, and academically. They may feel sad, nervousness, sleeplessness, loneliness, etc. Stress may affect the students' health and academic performance. However, students experience increased tension before their clinical rotation and written examination especially their finals. In nursing, students experience stress in day to day life. Stress is a well-documented problem in nursing education that continues to pose a concern to nursing faculty due to its negative consequence on student's health and well-being. In particular, the clinical practice which is required for the acquisition of nurse competencies has been identified as being highly stressful.^[1] Mounting evidence has shown that nursing students face various forms and levels of stress which ranged from moderate to severe.^[2] Academic stress among college students has been a topic of interest for many years. College students, especially freshmen, are particularly prone to stress due

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to transitional nature of college life, for example, many college students move away from home for 1st time, which can necessitate leaving all previously learned support systems such as parents, siblings, and high school friends. Students may need to develop entirely new social contacts and are expected to take responsibility for their own needs. They may have difficulty in adjusting to more rigorous academic expectations and the need to learn to deal with individuals of different culture and belief. Thus, stress may result from being separated from home for the 1st time, the transition from personal to impersonal academics and the very structure of academic experience at the college level.

In nursing, students experience increased tension before their clinical rotation and written examination especially their finals. Dhar *et al* reported 48.83% mild stress and 11.62% moderate stress among nursing students [1]. Clinical sources of stress include working with dying patient, interpersonal conflict with other nurses, insecurity about clinical competence and fear of failure and interpersonal relations with patients, work overload and are concerned about nursing care given to the patient. Other potential sources of stress are assignment submission, excessive homework, assessment deadlines, unclear assignments, uncomfortable classrooms, and relations with faculty members.

To date, a few studies have compared nursing students' stress levels and its sources in a multicultural setting. With the increasing diversity of nursing students around the globe, a study of this kind is essential for the advancement of nursing knowledge in this critical area. This study is also important for the development of common perspectives on these concepts and ultimately in formulating empirically tested stress interventions that can be applied in different cultures.

Aim

A study to assess the anxiety level and coping strategies among 1st year B. Sc nursing students in selected nursing institutions of Navi Mumbai

Methodology

A non-experimental, descriptive design was used in the study using self-administered questionnaires for assessment of anxiety level (Likert scale). This research design was selected for this study as it is convenient, less expensive, and not a time-consuming means of gathering data.

Samples and setting

Sample size consists of 100 1st year B.Sc nursing students from selected institutes of Navi Mumbai

Development of tool

A tool was developed to assess anxiety among 1st year B. Sc nursing student as well as coping strategies among students. The tool consisted of two sections:

Section-I the demographic data collection

We developed this tool as per the objectives of this study. 13 demographic variables selected for the association of the study, i.e., age, sex, marital status, monthly family income, students education, and fathers education.

Section-II self-administered questionnaires for assessment of anxiety level

Likert scale

Data collection

The data gathering began on January. The researcher visited the Mahatma Gandhi Mission College of nursing and Bharati Vidyapeeth College of nursing. The data collection process and obtained permission from the authorities to conduct the study. The researcher introduced themselves and explained about the study and the purpose and the process. Thereby, a rapport was developed to confirm whether the samples met the inclusion criteria selected for the study.

The contents of consent were explained and each participant was respected to confirm his/her written consent before the study commenced.

The researcher encouraged to give a rating about the anxiety and coping strategies questionnaires. Any doubt while filling the questionnaires was clarified, they were requested to answer the entire question. This session lasted for 30 min.

Statistical analysis

Data were presented as frequency, percentages, mean, and standard deviation. Quantitative variables between two groups were compared using Student *t*-test. The relation between two variables was evaluated using the Pearson correlation coefficient. $P < 0.05$ was considered significant. Statistical analysis was performed using SPSS v21.

Results

Demographic variables

Demographic variables of the subjects have been shown in Table 1. We observed that 87% of samples were of age between 17 and 19 years. Only 3% of samples were aged >21 years. 92% of the samples were females. Female to male ratio was 5:1. 68% of the samples belonged to urban areas. 96% of the samples have completed senior secondary education (10+2) and only 4% were graduate.



Table 1: Demographic variables

Particulars	Frequency (%)
Age (years)	
17-19	87 (87)
19-21	10 (10)
>21	3 (3)
Sex	
Male	18 (18)
Female	92 (82)
Locality	
Urban	68 (68)
Rural	32 (32)
Fathers' education	
Illiterate	6 (6)
Primary	8 (8)
Secondary	65 (65)
Graduate and above	21 (21)
Mothers' education	
Illiterate	8 (8)
Primary	15 (15)
Secondary	58 (58)
Graduate and above	19 (19)
Father occupation	
Service	45 (45)
Business	35 (35)
Agriculture	10 (10)
Not working	1 (1)
Any other	9 (9)
Mother occupation	
Service	14 (14)
Business	7 (7)
Agriculture	3 (3)
Housewife	71 (71)
Any other	5 (5)
Religion	
Hindu	71 (71)
Muslim	5 (5)
Christian	25 (25)
Any other	2 (2)
Family income (Rs.)	
5000-10000	30 (30)
10,000-20,000	31 (31)
20,000-30,000	22 (22)
30,000 and above	17 (17)
Type of family	
Nuclear	66 (66)
Joint	32 (32)
Extended	1 (1)
Broken	1 (1)
Marital status	
Single	96 (96)
Married	4 (4)
Widow	0 (0)
Divorcee	0 (0)
Distribution on the basis of state	
Maharashtra	58 (58)
Non Maharashtra	42 (42)

65% of samples' fathers and 58% of samples' mothers have completed secondary level education

Nearly 45% of the samples' fathers occupation was government job while only 10% were working in the agriculture field. 14% of the samples' mothers occupation was government job while 71% were housewives. 71% of the samples were Hindu and 25% were Christian. 61% of the samples' family income was up to 20,000.

66% of the samples were living in a nuclear family. 96% of the samples were single and 4% were married. 58% of the samples belonged to Maharashtra.

Level of anxiety

Our study observed that 4% of the samples had severe anxiety, 40% had moderate anxiety, 48% had mild anxiety, and 8% of samples have no anxiety [Figure 1].

Our study observed that anxiety levels were significantly higher in females in comparison to males (30.79±7.47 vs. 28.65±7.98, $P=0.036$) [Table 2].

Our study observed that coping behavior was comparable in females in comparison to males (53.70±4.62 vs. 53.29±4.40, $P=0.768$) [Table 2].

Relation between anxiety level and coping behavior

Our study observed a very mild and non-significant relationship between anxiety level and coping behavior ($r=-0.023$, $P=0.874$).

Discussion

Stress in nursing students is an area of growing concern and it may result in psychological distress, physical complaints, behavior problem, and poor academic performance.¹⁰ The present study was conducted in a selected nursing college situated in Maharashtra to assess the stress level and coping strategies used by nursing students.

Our study observed that 4% of the samples had severe anxiety, 40% had moderate anxiety, 48% had mild anxiety, and 8% of samples have no anxiety. Our findings were slightly consistent with the study by Nancy¹¹ revealed that out of 180 nursing students, 34.4% had moderate stress whereas 32.8% and 32.8% fall in the category of low and high stress, respectively, and a study conducted among undergraduates students of CMH Lahore Medical College, Pakistan on 200 students who reported 30.84 overall mean perceived stress.¹⁶

Stress level among 1st year nursing student may be higher because the students face more of stressors when they come to college during 1st year of their training because of being placed in an unfamiliar environment, separation from the parents and the demand of making new social groups apart from academic pressures and clinical training. However, the nursing students were constantly facing demands and

Table 2: Level of anxiety and coping behavior

Particulars	Male	Female	P value
Anxiety level	28.65±7.98	30.79±7.47	0.036
Coping behavior	53.29±4.40	53.70±4.62	0.768

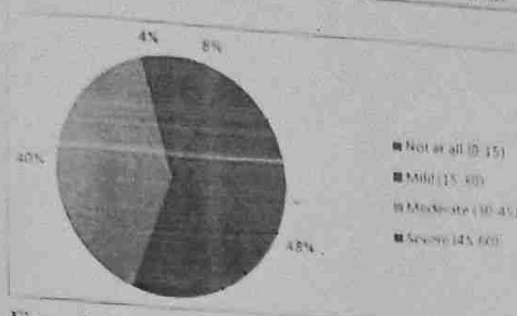


Figure 1: Level of anxiety

challenges of the curriculum which had being a source of stress during their total training program.

Coping strategies refer to the specific efforts, both behavioral and psychological, that people employ to master, reduce tolerate or minimize stressful events. Coping with stress for a student nurse is a dynamic and ongoing process, aimed at survival, growth, and maintenance of individual integrity.¹³ She tries to restore the imbalance and disequilibrium within her by attempted adjustment through the use of various coping strategies which can be healthy or unhealthy. WHO IHA guidelines have stated that there is no standard for coping strategies; rather they were depending on socioeconomic factors.

In the present study, the majority of subjects tend to use more healthy coping strategies as compared to negative or unhealthy ones. A study among nursing students at Chiang Mai University which revealed that the most frequently used coping strategies were seeking social support (62.25%), Planful Problem Solving (23.73%), and accepting responsibility (8.47%).¹⁴ Another study at the NINE, PGIMER, Chandigarh reported the five most frequently used coping strategies were positive thinking, listening to the music/radio, indulging in creative activities, talk to parents, and pray more.¹⁵ A study done on Iranian students which reported solving family problems and being humorous as the most common and least common used strategy, respectively.¹⁶

Stress has become a chronic and pervasive condition in the world today.¹⁷ Every person experiences different forms of stress throughout their life; therefore, a student nurse is no exception as she has to adjust to an entirely new environment on joining a training course in nursing.¹⁸ It has been concluded that the nursing students perceived different levels of stress due to academic, clinical, and other

psychosocial factors. Further, they use a mix of coping strategies to overcome stress so as to maintain a balance in a wellness-illness continuum.

Conclusion

Coping with stress for a student nurse is a dynamic and ongoing process aimed at survival, growth, and maintenance of individual integrity. She tries to restore the imbalance and disequilibrium within her by attempted adjustment through the use of various coping strategies which can be healthy or unhealthy. It is important for nurse educator to find out the sources of stress and coping strategies used by the students so that they can be helped to cope well with upcoming problems and situations.

References

1. Reeve KL, Shumaker CJ, Yearwood EL, Crowell NA, Riley JB. Perceived stress and social support in undergraduate nursing students' educational experiences. *Nurse Educ Today* 2013;33:419-24.
2. Bahadır Yılmaz E. Academic and clinical stress, stress resources and ways of coping among Turkish first-year nursing students in their first clinical practice. *Kontak* 2016;18:e145-51.
3. Dhar R, Walia I, Das K. A descriptive study to assess the causes of stress and coping strategies used by the newly admitted basic B.Sc. Nursing students. *Nurs Midwifery Res J* 2009;5:31-7.
4. Jimenez C, Navia-Osorio PM, Diaz CV. Stress and health in novice and experienced nursing students. *J Adv Nurs* 2010;66:442-55.
5. Nancy RK. Stress and coping strategies among nursing students. *Nurs Midwifery Res J* 2011;7:141-51.
6. Shah M, Hasan S, Malik S, Sreeramreddy CT. Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani medical school. *BMC Med Educ* 2010;10:2.
7. Labrague LJ. Stress, stressors, and stress responses of student nurses in a government nursing school. *Health Sci J* 2014;7:424-35.
8. Hsiao YC, Chien LY, Wu LY, Chang CM, Huang SY. Spiritual health, clinical practice stress, depressive tendency and health-promoting behaviours among nursing students. *J Adv Nurs* 2010;66:1612-22.
9. Wolf L, Sudham AW, Ross R. Predictors of stress and coping strategies of US accelerated vs. Generic baccalaureate nursing students. An embedded mixed methods study. *Nurse Educ Today* 2015;35:201-5.
10. Polit DF, Beck CT. *Essentials of Nursing Research*. 8th ed Philadelphia: Lippincott Williams and Wilkins; 2013.

Knowledge Regarding Self Care Measures and Quality of Life among Patients with Chronic Renal Failure (CRF) undergoing Hemodialysis

Milka Kalekar, Manisha Samudre

Abstract: *Introduction:* Chronic Kidney Disease (CKD) affects 500 million people worldwide. In the US there are 1400 per million of estimated prevalence or established renal failure while in the UK it is recorded more than 600 per million in 2007. This study aims to assess the knowledge on self care measured by structured knowledge questionnaire, and quality of life measured by modified WHO QOL-BREF Scale and try to find out the co-relation between knowledge scores of self care measures and quality of life among chronic renal failure patients undergoing haemodialysis. *Methods:* A non experimental descriptive correlational design with a quantitative, correlational survey approach was used for the study. Non probability, purposive sampling was used to select 100 CRF patients undergoing haemodialysis. The conceptual framework was based on Orem's Self Care Model. The instruments used for data collection were a structured knowledge questionnaire and modified WHO QOL-BREF Scale. The structured knowledge questionnaire was divided into two sections, section I consist selected socio-demographic perfunctura and section II consist Part A- Structured knowledge questionnaire, Part B- Modified WHO QOL-BREF Scale. The main study was conducted among 100 CRF patients undergoing haemodialysis in the month of April and analysis was done by using descriptive and inferential statistics. Karl Pearson's coefficient of correlation was used to compute the co-relation between knowledge & Quality Of Life. *Results:* Among the selected 100 patients, Karl Pearson's coefficient of correlation was found to be $r_{xy} = 0.71$ since $0 < r_{xy} < 1$, there is positive correlation between the knowledge of self-care measures and Quality Of Life. *Conclusion:* The study finding revealed that there is positive correlation between the knowledge and quality of life. As the level of knowledge increases, quality of life improves simultaneously.

Keywords: chronic kidney diseases - chronic renal failure, CRF, quality of life

1. Introduction

Chronic diseases present a significant challenge to 21st century global health policy. The rapid rise of common risk factors such as diabetes, hypertension and obesity especially among the poor, will result in even greater and more profound burdens that developing nations are not equipped to handle. Attention to chronic diseases, chronic kidney disease in particular, has been lacking, largely due to the global health community's focus on infectious diseases and lack of awareness CKD is a worldwide health problem. According to World Health organization (WHO) Global Burden of Disease project, diseases of the kidney and urinary tract contribute to global burden with approximately 850,000 deaths every year and 115,010,107 disability adjusted life years. CKD is 12th leading cause of death and 17th cause of disability. This global prevalence, however, may be grossly underestimated for a number of reasons. Patients with CKD are at high risk for cardiovascular disease and cerebrovascular disease, they are more likely to die of CVD than to develop end-stage renal failure. Moreover, patients with CVD often develop CKD during the course of their disease, which may go unrecognized.

Therefore, an unknown proportion of people whose death and disability attributed to CVD have kidney disease as well. Renal failure is the inability of the kidneys to adequately filter metabolic waste products from the blood. Kidney failure has many possible causes. Some lead to a rapid decline in kidney function (acute kidney failure), others lead to a gradual decline in kidney function (chronic kidney failure, also called chronic kidney disease). In addition to the kidneys being unable to filter metabolic waste products (such as creatinine and urea nitrogen) from the blood, the kidneys are less able to control the amount and

distribution of water in the body (fluid balance) and the levels of electrolytes (sodium, potassium, calcium, phosphate) in the blood. CKD affects 500 million people worldwide. The number of dialysis patients increase by 7% annually. The burden and magnitude of chronic kidney disease (CKD) is enormous especially in developing countries. Lifestyle related diseases are important causes of increased morbidity and mortality in the world today. The calculations by the USRDS (United States Renal Data System, 1999), indicate that 110 of every 100,000 people have ESRD. About 29 of every 100,000 are diagnosed with ESRD each year. The availability and quality of dialysis programmes largely depend on the prevailing economic conditions and social support. The management of ESRD in India is largely guided by economic considerations. Treatment of ESRD in India is a low priority for cost strapped public hospitals and in the absence of health insurance plans, less than 10% of all patients receive any kind of renal replacement therapy. To determine which residents at risk for CKD may be in the early stages of the disease, a simple, cost-effective diagnostic tool is needed. The urine albumin test, which detects micro albuminuria, is the most sensitive test for detecting early-stage CKD. Haemodialysis significantly and adversely affects the lives of patients, both physically and psychologically. The global influence on family roles, work competence, fear of death, and dependency on treatment may negatively affect quality of life and exacerbate feelings associated with a loss of control. The treatment involves circulating the patient's blood outside of the body through an extracorporeal circuit (ECC), or dialysis circuit.

End-stage renal disease and its treatment profoundly affect health related quality of life not only for the patient but the family also. Although renal replacement therapy

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ameliorates some of the symptoms of end-stage renal disease they may not be completely alleviated.¹⁷ Moreover, with treatment often comes significant life style changes, all of which impact on quality of life.¹⁸ Quality of life of patients with end renal disease is influenced by the disease itself and by the type of replacement therapy.¹⁹ Dialysis must be repeated frequently and continued life-long until death or transplant.¹⁴ The burden of pain and other physical and mental symptoms, as previously mentioned, can account for more than one-third of the impairment observed in mental HR QOL in dialysis patients.¹⁹ Depression in CKD is likely multifactorial, though is typically attributed to feelings of loss and dependence.²⁰ Although depression can occur at any time during the course of CKD, there are times of increased likelihood of a depressive episode, such as the time leading up to and the first year following initiation of dialysis, particularly if kidney transplantation is not an option due to advanced age and/or co morbidity.²¹ During this period, patients are required to make decisions regarding treatment modality and to make multiple and radical lifestyle changes, all of which impact their occupation, familial role, relationships, and leisure activities.²² They are expected to assimilate information that is foreign and frightening.²³

2. Methods

The research design used for the present study is Non experimental, descriptive co-relational research design. Settings are the more specific places where data collection occurs based on the nature of the research question and the type of information needed to address it. The setting planned for this particular study is selected at Joshi Dialysis center kadmwadi, sunrise hospital rajarampuri, diamond hospital, nagala park of Kolhapur city. In the present study the sample population consists of CRF patient undergoing Hemodialysis in the hospital with a sample size of 100 CRF patients. Based on the criteria mentioned, Non-probability purposive sampling was used to select the sample according to the purpose of the study. Purposive sampling is non-probability sampling, in which it entails the use of the most conveniently available people or objects as subjects in a study. The tool used for gathering relevant data was a structured questionnaire on knowledge of self care measures and WHO QOL-BREF scale among CRF patient undergoing Hemodialysis. The research investigator obtained ethical clearance and formal permission from the Medical Director, Joshi Dialysis center kadmwadi, sunrise hospital rajarampuri, diamond hospital, nagala park of Kolhapur city, to collect data for the main study. The main study was conducted at respective Hospitals of Kolhapur city; from 8th April 2019 to 22nd April 2019. The steps used for data collection were as follows:

- Step-1 The investigator obtains permission from respective authority to conduct the study
- Step-2 Selection of subjects.
- Step-3 Self introduction of the investigator.
- Step-4 Administration of structured knowledge questionnaire
- Step-5 Administration of WHOQOL-BREF Scale
- Step-6 Data were tabulated and analyzed.

The data obtained were analyzed in terms of the objectives of the study using descriptive and inferential statistics. The plan of the data analysis was as follows.

- Organize the data on master sheet
- Compute frequency, percentage, mean, standard deviation and range to describe the data.
- Classify the knowledge scores as follows

*Good ($\bar{x} + SD$).

*Average ($\bar{x} - SD$ to $\bar{x} + SD$).

*Poor ($< \bar{x} - SD$);

where $\bar{x}$ is Mean and SD is Standard Deviation.

Conclusions were drawn from inferential statistics. Karl Pearson's coefficient of Correlation is used to find out the relationship between knowledge of self-care measures score and Quality of life score.

3. Results

Majority of the subjects were 46(76.66%) had average knowledge and 03(05%) had good knowledge and 11 (18.34%) had poor knowledge, where as in post test 44(73.34%) subjects had average knowledge, 16(26.66%) subjects had good knowledge and none of the subjects had poor knowledge.

Majority of subject were 70(70%) belongs to moderate QOL, then 17(17%) were having average QOL, 11(11%) were having average QOL, and 2(2%) having optimum quality of life.

In the study, the calculated correlation value ($r_{\text{cal}} = 0.198$), this indicates that there is moderately positive correlation between scores of self-care measures and quality of life scores among CRF Patient undergoing hemodialysis.

In the study there is a significant association between knowledge scores regarding self-care measures with their selected demographic variables like age, gender, educational status, occupational status, monthly family income, area of residence, type of family and marital status, therefore the calculated Chi-square values were higher than tabulated value. There was significant association between knowledge scores regarding self care measures with their Selected demographic variables among CRF patients undergoing hemodialysis. At 0.05 level of significance. There is significant association between quality of life scores regarding self care measures with their selected demographic variables among CRF patients undergoing hemodialysis. At 0.05 level of significant.

4. Discussion

Findings related to the socio-demographic variables among CRF patients undergoing hemodialysis:

Majority of the patients 58(58%) belonged to age group of 25-45 years, while 29(29%) and minimum of 4 (4%) subjects belonged to the age group of 0-25 years. Majority of subjects 80(80%) were male, and a minimum of

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20(20%) subjects were female. majority of 40(40%) were having secondary educational qualification, and minimum 6(6%) were illiterate, majority of subjects 40(40%) are having private job, and minimum 6(6%) were retired, majority of subjects 40(40%) monthly family income is Rs. 20000-Rs 40000, and minimum 11(11%) were having Rs. 50000 and above, majority of subjects 54(54%) belongs to rural area while 46(46%) were belongs to urban area, majority of subjects 76(76%) belongs to joint family, majority of subjects 69(69%) were married, while 17(17%) were unmarried and 14(14%) were widow.

A similar descriptive co-relational study was done in K.L.E's Dr. Prabhakar Kore Hospital and Medical Research centre, Belgaum-Karnataka. With descriptive approach, was used for the study. With selected 95 CRF patients undergoing hemodialysis, demographic data reveals that majority of patients 41(41.15) belonged to the age group of 52-72 years, and a minimum of 6(6.31%) patients belonged to age group of 73-93 years. Majority of patients 76(80%) were male, and minimum 19 (20%) patient were female. Majority of patient's occupation 25 (26.31%) was business, and a minimum of 8 (8.42%) patients were unemployed. 27 (28.42%) had primary education, and a minimum of 11(11.57%) patient had no formal education. Majority of the patients family income/month 50 (52.63%) was >8000, and a minimum of 8 (8.42%) patients was < 2000. Majority of patient 57 (60%) belonged to urban area, and a minimum of 38 (40%) patients belonged to rural area, 66 (69.47%) belonged to nuclear family, and a minimum of 5 (5.26%) patients belonged to extended family. Majority of the patients 83 (87.36%) were married, and a minimum of 2 (2.10%) patients were widows.

Findings related to knowledge scores of self-care measures among CRF patients undergoing haemodialysis:

In the present study majority of the subjects 46(76.66%) had average knowledge and minimum 11 (18.34%) had poor knowledge, where as in post test 44(73.34%) subjects had average knowledge, 16(26.66) subjects had good knowledge and more of the subjects had poor knowledge.

A similar descriptive study was done at university di Catania, Italia. Aim of the study was to evaluate the knowledge quality of life in maintenance dialysis and to research the influence of various factors related to treatment and ESRD on quality of life with 40 haemodialysis patients. Result of the study indicated that 11(11.57) had good knowledge, 62(65.26%) had average knowledge whereas 22 (23.15%) had poor knowledge.

Findings related to distribution of quality of life scores among CRF patients undergoing haemodialysis:

In the present study the majority of subjects 70(70%) were belongs to moderate QOL and minimum 2(2%) having optimum quality of life.

A similar descriptive study was done at universidade federal de sao Paulo, Brazil. QOL was measured by means of medical outcomes survey 36-item short form classification

of SES (socioeconomic status) was according to validated criteria of the Brazilian association of research institutes. Results showed that the mean scores for QOL-36 dimension were decreased in patients with low compared with high SES, with greater differences noted during follow-up. Multivariate analysis showed that SES continued to significantly affect all QOL dimension, explaining 5.5% to 14.1% of variation in scales.

Finding a co-relation between knowledge scores of self care measures and QOL Scores:

In the present study, the calculated correlatin value ($r_{cal} = 0.65$) is greater than tabulated value ($r_{tab} = 0.198$). Hence H_0 is accepted. This indicates that there is moderately positive correlation between knowledge scores of self care measures and quality of life scores among CRF patient undergoing haemodialysis.

The relationship between knowledge of self care measures and quality of life were analyzed by Karl Pearson's coefficient of correlation method, and it was found that there was positive correlation between knowledge of self care measures and quality of life ($r_{xy} = 0.86$). It indicated that the quality of life of CRF patients undergoing haemodialysis was influenced by their level of knowledge.

5. Conclusion

The study emphasizes on the need for improving knowledge in patients and their care givers in which the health personnel can update their knowledge and skills to provide quality nursing care. The study finding revealed that there is positive correlation between the knowledge and quality of life. As the level of knowledge increases, quality of life improves simultaneously. Nurse administrator can encourage nursing personnel, patients and care givers to make active contribution towards the proper gain of knowledge. Nurse administrator can help prepare skilled nurses, health workers and employees in handling dialysis machines to provide quality of care. The findings of the study have implications for nursing practice, nursing education, nursing administration and research. Since present study showed that most of the patients had average knowledge which can be improved by nurses by providing teaching strategy, it helps in uplifting patients' knowledge and hence improvement in their quality of life.

References

- [1] Gillanders S, Wild M, Deighan C, Gillanders D. Emotion regulation, affect, psychosocial functioning, and wellbeing in hemodialysis patients. *Am J Kidney Dis* 2008;51(4):651-62.
- [2] Varughese S, John GT, Alexander S, Deborah MN, Nithya N, Ahamed I et al. Pre-tertiary hospital care of patients with chronic kidney disease in India. *Ind J Med Res* 2007;126:28-33.
- [3] Bataclan RP, Dial MA. Cultural adaptation and validation of the Filipino version of Kidney Disease Quality of Life - Short Form (KDQOL-SF version 1.3). *Nephrology (Carlton)* 2009;14: 663-8.

- [4] Rebollo P, Ortega F. New trends on health related quality of life assessment in end-stage renal disease patients. *Int Urol Nephrol*. 2002;33(1):195-202.
- [5] Ballal HS. The burden of chronic kidney disease in a developing country, India. *Quest*. 2007;9:12-9.
- [6] Manns BJ, Walsh MW, Culleton BF, Hemmelgarn B, Tonelli M, Schorr M et al. Nocturnal hemodialysis does not improve overall measures of quality of life compared to conventional hemodialysis. *Kidney Int*. 2009;75:542-9.
- [7] Narula AS. Chronic Kidney Disease: The Looming Threat. *MJAFI*. 2008;64:2-3.
- [8] Eskridge MS. Hypertension and chronic kidney disease: the role of lifestyle modification and medication management. *Nephrol Nurs J*. 2010;37(1):55-60, 99.
- [9] Kosmadakis GC, Bevington A, Smith AC, Clapp EL, Viana JL, Bishop NC, Feehally J. Physical exercise in patients with severe kidney disease. *Nephron Clin Pract*. 2010;115(1):e7-e16.
- [10] Segura-Orti E. Exercise in haemodialysis patients: a literature systematic review. *Nefrologia*. 2010;30(2):236-46.
- [11] Gotch F, Levin NW, Kotanko P. Calcium balance in dialysis is best managed by adjusting dialysate calcium guided by kinetic modeling of the interrelationship between calcium intake, dose of vitamin D analogues and the dialysate calcium concentration. *Blood Purif*. 2010;29(2):163-76.
- [12] Finkelstein FO, Wuerth D, Finkelstein SH. An approach to addressing depression in patients with chronic kidney disease. *Blood Purif*. 2010;29(2):121-4.
- [13] Wyszomierska A, Puka J, Myszkowska-Rygiel J, Narojek L. The period of dialysis and nutritional habits of patients with the end stage renal disease. *Rocz Panstw Zakl Hig*. 2009;60(3):289-92.
- [14] Musso CG, Michelangelo H, Reynaldi J, Martinez B, Vidal F, Quevedo M. Combination of oral activated charcoal plus low protein diet as a new alternative for handling in the old end-stage renal disease patients. *Saudi J Kidney Dis Transpl*. 2010;21(1):302-4.
- [15] Hamissi J, Porsamimi J, Naseh MR, Mosalaei S. Status of hemodialyzed patients with chronic renal failure. *East Afr J Public Health*. 2009;6:108-11.
- [16] Koh KP, Fassett RG, Sharmar JF, Coombes JS, Williams AD. Effect of intradialytic versus home-based aerobic exercise training on physical function and vascular parameters in hemodialysis patients: a randomized pilot study. *Am J Kidney Dis*. 2010;55(1):88-99.
- [17] MacLaughlin HL, Cook SA, Kariyawasam D, Roseke M, van Niekerk M, Macdougall IC. Nonrandomized trial of weight loss with orlistat, nutrition education, diet, and exercise in obese patients with CKD: 2-year follow-up. *Am J Kidney Dis*. 2010;55(1):69-76.
- [18] Alavi NM, Ahakbarzadeh Z, Sharifi K. Depression, anxiety, activities of daily living and quality of life scores in patients undergoing renal replacement therapies. *Transplant Proc*. 2009;41:3693-6.
- [19] Mafrá D, Jolivot A, Chauveau P, Drai J, Azar R, Michel C et al. Are ghrelin and leptin involved in food intake and body mass index in maintenance hemodialysis? *J Ren Nutr*. 2010;20(3):151-7.
- [20] Milovanov IuS, Lysenko LV, Milovanova Llu, Dobrosmyslov IA. The role of balanced low-protein diet in inhibition of predialysis chronic kidney disease progression in patients with systemic diseases. *Ter Arkh*. 2009;81(8):52-7.
- [21] Sánchez C, Aranda P, Pérez de la Cruz A, Llopis J. Magnesium and zinc status in patients with chronic renal failure: influence of a nutritional intervention. *Magnes Res*. 2009;22(2):72-80.
- [22] Ranganathan N, Friedman EA, Tam P, Rao V, Ranganathan P, Dheer R. Probiotic dietary supplementation in patients with stage 3 and 4 chronic kidney disease: a 6-month pilot scale trial in Canada. *Curr Med Res Opin*. 2009;25(8):1919-30.
- [23] Reddy V, Symes F, Sethi N, Scally AJ, Scott J, Mumtaz R et al. Dietitian-led education program to improve phosphate control in a single-center hemodialysis population. *J Ren Nutr*. 2009;19(4):314-20.
- [24] Tsutsui H, Koike T, Yamazaki C, Ito A, Kato F, Sato H et al. Identification of hemodialysis patients' common problem using the International classification of functioning, Disability, and Health. *Ther Apher Dial*. 2009;13(3):186-92.



Research Article

A Study to Assess the Anxiety and Coping Strategies among First-year B.Sc. Nursing Students in Selected Institutes of Navi Mumbai

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ABSTRACT

Background: Students are subjected to different kinds of stressors, such as the pressure of academics with an obligation to succeed, an uncertain future, and difficulties of integrating into the system. **Aim:** A descriptive study was conducted in selected nursing institutes of Maharashtra to assess stress level and coping strategies among nursing students. A total of 100 1st year nursing students participated in the study. Likert scale was used to assess stress level. **Results:** Results revealed that 4% of the samples had severe anxiety, 40% had moderate anxiety, 48% had mild anxiety, and 8% of samples have no anxiety. Anxiety levels were significantly higher in females in comparison to males (30.79±7.47 vs. 28.65±7.98, $P=0.036$). Coping behavior was comparable in females in comparison to males (53.70±4.62 vs. 53.29±4.40, $P=0.768$). **Conclusion:** Strengthening nursing students' positive coping skills may be helpful for them to effectively deal with various stressors during their educational experiences while maximizing learning. Implementing empirically tested approaches may be useful to prevent the recurrence of stress and lessen its impact such as stress management counseling, counseling programs, establishing peer and family support systems, and formulating hospital policies that will support nursing students.

Keywords: Anxiety, Coping, Likert scale, Stress level

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Introduction

Stress is a way of the body's response to any kind of demand. Coping is the process of managing demands that are considered as challenging to the individual. Stress in nursing students can be triggered from a variety of issues including academics, and financial concerns. According to the nursing curriculum, they must learn theory as well as practical

classes at the same time. They face different stressors, can be related to academic and clinical as well. Stress affects physically, mentally, and academically. They may feel sad, nervousness, sleeplessness, loneliness, etc. Stress may affect the students' health and academic performance. However, students experience increased tension before their clinical rotation and written examination especially their finals. In nursing, students experience stress in day to day life. Stress is a well-documented problem in nursing education that continues to pose a concern to nursing faculty due to its negative consequence on student's health and well-being. In particular, the clinical practice which is required for the acquisition of nurse competencies has been identified as being highly stressful⁽¹⁾. Mounting evidence has shown that nursing students face various forms and levels of stress which ranged from moderate to severe⁽²⁾. Academic stress among college students has been a topic of interest for many years. College students, especially freshmen, are particularly prone to stress due

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to transitional nature of college life, for example, many college students move away from home for 1st time, which can necessitate leaving all previously learned support systems such as parents, siblings, and high school friends. Students may need to develop entirely new social contacts and are expected to take responsibility for their own needs. They may have difficulty in adjusting to more rigorous academic expectations and the need to learn to deal with individuals of different culture and belief. Thus, stress may result from being separated from home for the 1st time, the transition from personal to impersonal academics and the vary structure of academic experience at the college level.

In nursing, students experience increased tension before their clinical rotation and written examination especially their finals. Dhar *et al.* reported 48.83% mild stress and 11.62% moderate stress among nursing students⁽¹⁾. Clinical sources of stress include working with dying patient, interpersonal conflict with other nurses, insecurity about clinical competence and fear of failure and interpersonal relations with patients, work overload and are concerned about nursing care given to the patient. Other potential sources of stress are assignment submission, excessive homework, assessment deadlines, unclear assignments, uncomfortable classrooms, and relations with faculty members.

To date, a few studies have compared nursing students' stress levels and its sources in a multicultural setting. With the increasing diversity of nursing students around the globe, a study of this kind is essential for the advancement of nursing knowledge in this critical area. This study is also important for the development of common perspectives on these concepts and ultimately in formulating empirically tested stress interventions that can be applied in different cultures.

Aim

A study to assess the anxiety level and coping strategies among 1st year B. Sc nursing students in selected nursing institutions of Navi Mumbai

Methodology

A non-experimental, descriptive design was used in the study using self-administered questioners for assessment of anxiety level (Likert scale). This research design was selected for this study as it is convenient, less expensive, and not a time-consuming means of gathering data.

Samples and setting

Sample size consists of 100 1st year B.Sc nursing students from selected institutes of Navi Mumbai.

Development of tool

A tool was developed to assess anxiety among 1st year B.Sc nursing student as well as coping strategies among students. The tool consisted of two sections.

Section-I the demographic data collection

We developed this tool as per the objectives of this study. 13 demographic variables selected for the association of the study, i.e., age, sex, marital status, monthly family income, students education, and fathers education.

Section-II self-administered questioners for assessment of anxiety level

Likert scale.

Data collection

The data gathering began on January. The researcher visited the Mahatma Gandhi Mission College of nursing and Bharati Vidyapeeth College of nursing. The data collection process and obtained permission from the authorities to conduct the study. The researcher introduced themselves and explained about the study and the purpose and the process. Thereby, a rapport was developed to confirm whether the samples met the inclusion criteria selected for the study.

The contents of consent were explained and each participant was respected to confirm his/her written consent before the study commenced.

The researcher encouraged to give a rating about the anxiety and coping strategies questionnaires. Any doubt while filling the questionnaires was clarified, they were requested to answer the entire question. This session lasted for 30 min.

Statistical analysis

Data were presented as frequency, percentages, mean, and standard deviation. Quantitative variables between two groups were compared using Student *t*-test. The relation between two variables was evaluated using the Pearson correlation coefficient. $P < 0.05$ was considered significant. Statistical analysis was performed using SPSS v21.

Results

Demographic variables

Demographic variables of the subjects have been shown in Table 1. We observed that 87% of samples were of age between 17 and 19 years. Only 3% of samples were aged >21 years. 92% of the samples were females. Female to male ratio was 5.1:1. 68% of the samples belonged to urban areas. 96% of the samples have completed senior secondary education (10+2) and only 4% were graduate.



Table 1: Demographic variables

Particulars	Frequency (%)
Age (years)	
17-19	
19-21	87 (87)
>21	10 (10)
Sex	3 (3)
Male	
Female	18 (18)
Locality	92 (82)
Urban	
Rural	68 (68)
Fathers' education	32 (32)
Illiterate	
Primary	6 (6)
Secondary	8 (8)
Graduate and above	68 (68)
Mothers' education	21 (21)
Illiterate	
Primary	8 (8)
Secondary	15 (15)
Graduate and above	58 (58)
Father occupation	19 (19)
Service	
Business	45 (45)
Agriculture	35 (35)
Not working	10 (10)
Any other	1 (1)
Mother occupation	9 (9)
Service	
Business	14 (14)
Agriculture	7 (7)
Housewife	3 (3)
Any other	71 (71)
Religion	5 (5)
Hindu	71 (71)
Muslim	5 (5)
Christian	25 (25)
Any other	2 (2)
Family income (Rs.)	
5000-10000	30 (30)
10,000-20,000	31 (31)
20,000-30,000	22 (22)
30,000 and above	17 (17)
Type of family	
Nuclear	66 (66)
Joint	32 (32)
Extended	1 (1)
Broken	1 (1)
Marital status	
Single	96 (96)
Married	4 (4)
Widow	0 (0)
Divorcee	0 (0)
Distribution on the basis of state	
Maharashtra	58 (58)
Non-Maharashtra	42 (42)

65% of samples' fathers and 58% of samples' mothers have completed secondary level education.

Nearly 45% of the samples' fathers occupation was government job while only 10% were working in the agriculture field. 14% of the samples' mothers occupation was government job while 71% were housewives. 71% of the samples were Hindu and 25% were Christian. 61% of the samples' family income was up to 20,000.

66% of the samples were living in a nuclear family. 96% of the samples were single and 4% were married. 58% of the samples belonged to Maharashtra.

Level of anxiety

Our study observed that 4% of the samples had severe anxiety, 40% had moderate anxiety, 48% had mild anxiety, and 8% of samples have no anxiety [Figure 1].

Our study observed that anxiety levels were significantly higher in females in comparison to males (30.79±7.47 vs. 28.65±7.98, $P = 0.036$) [Table 2].

Our study observed that coping behavior was comparable in females in comparison to males (53.70±4.62 vs. 53.29±4.40; $P = 0.768$) [Table 2].

Relation between anxiety level and coping behavior

Our study observed a very mild and non-significant relationship between anxiety level and coping behavior ($r = -0.023$, $P = 0.874$).

Discussion

Stress in nursing students is an area of growing concern and it may result in psychological distress, physical complaints, behavior problem, and poor academic performance^[6]. The present study was conducted in a selected nursing college situated in Maharashtra to assess the stress level and coping strategies used by nursing students.

Our study observed that 4% of the samples had severe anxiety, 40% had moderate anxiety, 48% had mild anxiety, and 8% of samples have no anxiety. Our findings were slightly consistent with the study by Nancy^[10] revealed that out of 180 nursing students, 34.4% had moderate stress whereas 32.8% and 32.8% fall in the category of low and high stress, respectively, and a study conducted among undergraduates students of CMH Lahore Medical College, Pakistan on 200 students who reported 30.84 overall mean perceived stress.^[6]

Stress level among 1st year nursing student may be higher because the students face more of stressors when they come to college during 1st year of their training because of being placed in an unfamiliar environment, separation from the parents and the demand of making new social groups apart from academic pressures and clinical training. However, the nursing students were constantly facing demands and

Table 2: Level of anxiety and coping behavior

Particulars	Male	Female	P value
Anxiety level	28.65±7.98	30.79±7.47	0.096
Coping behavior	53.29±4.40	53.70±4.62	0.768

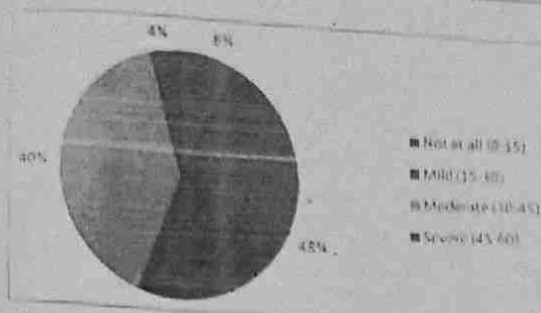


Figure 1: Level of anxiety

challenges of the curriculum which had being a source of stress during their total training program.

Coping strategies refer to the specific efforts, both behavioral and psychological, that people employ to master, reduce tolerate or minimize stressful events. Coping with stress for a student nurse is a dynamic and ongoing process, aimed at survival, growth, and maintenance of individual integrity^[1]. She tries to restore the imbalance and disequilibrium within her by attempted adjustment through the use of various coping strategies which can be healthy or unhealthy. WHO EHA guidelines have stated that there is no standard for coping strategies, rather they were depending on socioeconomic factors.

In the present study, the majority of subjects tend to use more healthy coping strategies as compared to negative or unhealthy ones. A study among nursing students at Chiang Mai University which revealed that the most frequently used coping strategies were seeking social support (62.25%), Planful Problem Solving (23.73%), and accepting responsibility (8.47%)^[4]. Another study at the NINE, PGIMER, Chandigarh reported the five most frequently used coping strategies were positive thinking, listening to the music/radio, indulging in creative activities, talk to parents, and pray more^[1]. A study done on Iranian students which reported solving family problems and being humorous as the most common and least common used strategy, respectively^[10].

Stress has become a chronic and pervasive condition in the world today^[1]. Every person experiences different forms of stress throughout their life; therefore, a student nurse is no exception as she has to adjust to an entirely new environment on joining a training course in nursing^[10]. It has been concluded that the nursing students perceived different levels of stress due to academic, clinical, and other

psychosocial factors. Further, they use a mix of coping strategies to overcome stress so as to maintain a balance on a wellness-illness continuum.

Conclusion

Coping with stress for a student nurse is a dynamic and ongoing process, aimed at survival, growth, and maintenance of individual integrity. She tries to restore the imbalance and disequilibrium within her by attempted adjustment through the use of various coping strategies which can be healthy or unhealthy. It is important for nurse educator to find out the sources of stress and coping strategies used by the students so that they can be helped to cope well with upcoming problems and situations.

References

1. Reeve KL, Shumaker CJ, Yearwood EL, Crowell NA, Riley JB. Perceived stress and social support in undergraduate nursing students' educational experiences. *Nurse Educ Today* 2013;33:419-24.
2. Bahadır-Yılmaz E. Academic and clinical stress, stress resources and ways of coping among Turkish first-year nursing students in their first clinical practice. *Kontak* 2016;18:e145-51.
3. Dhar R, Walia J, Das K. A descriptive study to assess the causes of stress and coping strategies used by the newly admitted basic B.Sc. Nursing students. *Nurs Midwifery Res J* 2009;5:31-7.
4. Jimenez C, Navia-Osorio PM, Diaz CV. Stress and health in novice and experienced nursing students. *J Adv Nurs* 2010;66:442-55.
5. Nancy RK. Stress and coping strategies among nursing students. *Nurs Midwifery Res J* 2011;7:141-51.
6. Shah M, Hasan S, Malik S, Sreeramareddy CT. Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani medical school. *BMC Med Educ* 2010;10:2.
7. Labrague LJ. Stress, stressors, and stress responses of student nurses in a government nursing school. *Health Sci J* 2014;7:424-35.
8. Hsiao YC, Chien LY, Wu LY, Chiang CM, Huang SY. Spiritual health, clinical practice stress, depressive tendency and health-promoting behaviours among nursing students. *J Adv Nurs* 2010;66:1612-22.
9. Wolf L, Studham AW, Ross R. Predictors of stress and coping strategies of US accelerated vs. Generic baccalaureate nursing students: An embedded mixed methods study. *Nurse Educ Today* 2015;35:201-5.
10. Polit DF, Beck CT. *Essentials of Nursing Research*. 8th ed Philadelphia: Lippincott Williams and Wilkins; 2013.