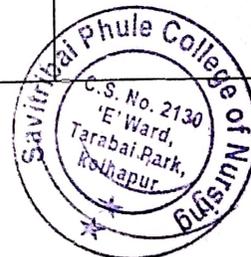


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The effect of mirror therapy on mental ill clients- signs and symptoms	Mr. Vishal Pawar	Department of Mental Health Nursing	International journal of nursing research (IJNR)	2016	ISSN NO.- 162-171		



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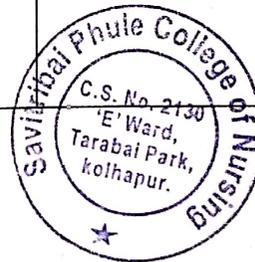
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Assess the impact of social networking sites among the students of selected nursing colleges	Mr. Vishal Pawar	Department of Mental Health Nursing	International journal of nursing and medical investigation (IJNMI)	2018	ISSN NO.- 2456-4656		



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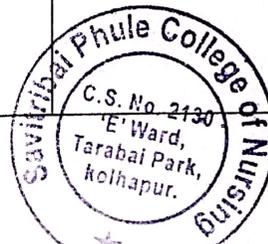
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Systematic review of the effectiveness of mirror therapy for treatment of mentally ill patients	Mr. Vishal Pawar	Department of Mental Health Nursing	International journal of nursing and medical investigation (IJNMI)	2016	ISSN NO.- 162-168		



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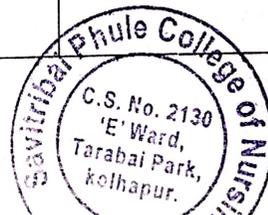
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Title of the paper	Name of the author	Department of teacher	Name of the journal	Year of publication	ISSN number	Link of the recognition in UGC enlistment of the journal	Name of the indexing database
Anxiety and coping strategies: The adequate and integrative review	Mr. Vishal Pawar	Department of Mental Health Nursing	Indian journal of nursing sciences (IJNS)	2019	ISSN NO.- 2581-4638		



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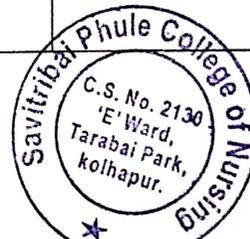
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Assess the anxiety and coping strategies among first-year B.Sc. nursing students in selected institutes.	Mr. Vishal Pawar	Department of Mental Health Nursing	International journal of nursing research (IJNR)	2019	ISSN NO.- 2456-1320		



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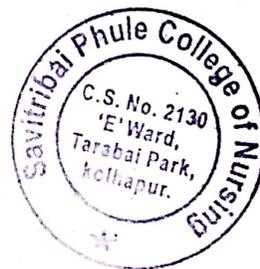
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Title of the paper	Name of the author	Department of teacher	Name of the journal	Year of publication	ISSN number	Link of the recognition in UGC enlistment of the journal	Name of the indexing database
Effectiveness of planned teaching programme on the knowledge regarding menstrual hygiene among adolescence girls	Mrs. Sushila Lamba	Department of Obstretical & Gynecological Nursing	Asian journal of nursing education and research (AJNER)	July-September 2013	ISSN NO.- 2231-1149		



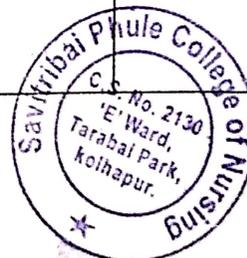
  
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Title of the paper	Name of the Author	Department of teacher	Name of the journal	Year of publication	ISSN number	Link of the recognition in UGC enlistment of the journal	Name of the indexing database
A Study to assess the effectiveness of self instructional module on knowledge regarding prevention and complications among patients with diabetes mellitus in selected hospitals.	Mr.Solomon Athawal	Medical surgical nursing	A and V publications	April 28/2022	Paper ID- 21129110 04775199 6		



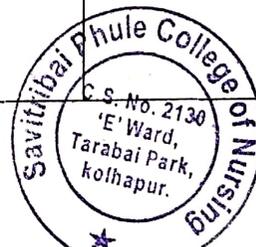
  
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Title of the paper	Name of the author	Department of teacher	Name of the journal	Year of publication	ISSN number	Link of the recognition in UGC enlistment of the journal	Name of the indexing database
Knowledge regarding self care measures and quality of life among patients with CRF undergoing heamodialysis	Mrs. Milka Kalekar	Department of Medical-Surgical Nursing	International journal of science and research (IJSR)	December 2021	2319-7064		



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Title of the paper	Name of the author	Department of teacher	Name of the journal	Year of publication	ISSN number	Link of the recognition ' in UGC enlistment of the journal	Name of the indexing database
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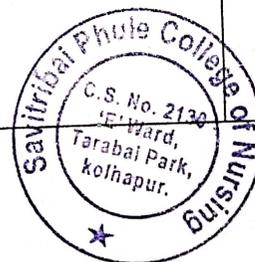


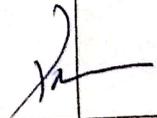
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INFORMATION OF RESEARCH ARTICLE PUBLICATIONS

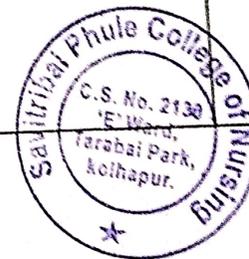
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Effectiveness of informational booklet on knowledge and attitude regarding breast milk banking among mothers	Ms. Pranali Dhanawade	Department of Obstertical & Gynecological Nursing	International Journal of research and analytical reviews (IJRAR)	July 2020	ISSN NO.- 2349-5138		



  
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Title of the paper	Name of the author	Department of teacher	Name of the journal	Year of publication	ISSN number	Link of the recognition in UGC enlistment of the journal	Name of the indexing database
Effectiveness of SIM on knowledge of artificial cardiac pacemakers among staff nurses	Ms. Shweta Jadhav	Department of Medical-Surgical Nursing	International journal of science and research (IJSR)	December 2021	ISSN NO.- 2319-7064		



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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 1<sup>st</sup> 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 ( $30.79 \pm 7.47$  vs.  $28.65 \pm 7.98$ ;  $P = 0.036$ ). Coping behavior was comparable in females in comparison to males ( $53.70 \pm 4.62$  vs.  $53.29 \pm 4.40$ ;  $P = 0.768$ ). **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.<sup>[1]</sup> Mounting evidence has shown that nursing students face various forms and levels of stress which ranged from moderate to severe.<sup>[2]</sup> 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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**How to cite this article:** Powar V. A Study to Assess the Anxiety and Coping Strategies among First-year B.Sc. Nursing Students in Selected Institutes of Navi Mumbai. Int J Nur Res. 2019;5(2):1-4.

to transitional nature of college life, for example, many college students move away from home for 1<sup>st</sup> 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 1<sup>st</sup> 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.<sup>[3]</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> year B.Sc nursing students from selected institutes of Navi Mumbai.

### Development of tool

A tool was developed to assess anxiety among 1<sup>st</sup> 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.

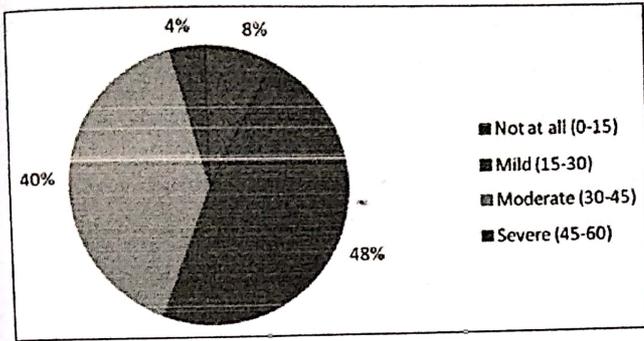
### Results

#### 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 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.<sup>[7]</sup> 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%).<sup>[8]</sup> 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.<sup>[3]</sup> A study done on Iranian students which reported solving family problems and being humorous as the most common and least common used strategy, respectively.<sup>[6]</sup>

Stress has become a chronic and pervasive condition in the world today.<sup>[9]</sup> 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.<sup>[10]</sup> 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.

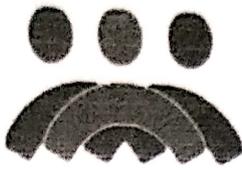
**Conclusion**

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.

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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.<sup>[1]</sup> 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.<sup>[2]</sup>

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.<sup>[1]</sup> 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.<sup>[3]</sup> 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.<sup>[4]</sup> 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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**How to cite this article:** Powar V. Anxiety and Coping Strategies: The Adequate and Integrative Review. Indian Journal of Nursing Sciences 2019; 4(2): 1-5.



skills in the clinical settings produces high levels of discomfort, stress, and anxiety.<sup>[5]</sup>

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.<sup>[6]</sup> 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.<sup>[7,8]</sup>

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.<sup>[9]</sup>

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.<sup>[8]</sup>

Coping mechanisms are a necessity when dealing with stress and accompanying stressors. Lazarus and Folkman classified coping ways as problem based and emotion based.<sup>[10]</sup> 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.<sup>[11]</sup>

## Studies Related to Anxiety and Coping Strategies

Shadaifat *et al.* illustrated the level of stress and common stressors among nursing students, to describe 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.<sup>[12]</sup>

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.<sup>[13]</sup>

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.<sup>[14]</sup>

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

iences 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.<sup>[18]</sup>

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  $\pm$  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.

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phantom) was paralyzed [1]. The mirror image of the normal body part helps reorganise and integrate the mismatch between proprioception and visual feedback of the removed body. Thus, enhancing the effective treatment for phantom limb pain. The clinical effect of mirror therapy is much more significant than any other treatments [2, 3]. Mirror neuron was used to explain the fundamentals of a mirror therapy [4]. At first, a mirror neuron was found in the monkey premotor cortex, and later, discovered that humans also have similar mirror neurons systems [5]. A mirror neuron fires both when a person acts and when a person observes the same action performed by another. Then, the neuron mirrors the behaviour of the other, as though the observer were itself acting. A mirror neuron provides observers with internally recognised experiences, making them understand other's behaviours, intentions, and emotional status [4, 5].

Therefore, while mimicking the behaviour of the other, observers can experience not only the sensation, but also the similar emotion of the other. In this sense, a patient with phantom limb pain can feel the same sense or emotion of his/her normal body part by observing the mirror image. By doing so it is expected to decrease pain by resolving conflict between motor intention, proprioception and visual system. A Mirror box is a device which allows the clinician to easily create this illusion. It is a box with one mirror in the centre where on each side of it, the hands are placed in a manner that the affected limb is kept covered always and the unaffected limb is kept on the other side whose reflection can be seen on the mirror. MT is a non-pharmacological and alternative treatment strategy that has been proposed as a means of managing phantom limb pain. It is a neurorehabilitation technique designed to remodulate cortical mechanisms. With this technique, patients perform movements using the unaffected limb whilst watching its mirror reflection superimposed over the (unseen) affected limb. This creates a visual illusion and provides positive feedback to the motor cortex that movement of the affected limb has occurred. The approach is thought to offer potential relief through the visual dominance upon motor and sensory processes [6].

With the application of mirror therapy to these different types of pathological conditions, each with their own type of mental illness from which it emerges and underlying type of disorder, the question arose regarding the effectiveness of mirror therapy with all these different types of patients.

The current article evaluated with which types of patients mirror therapy was effective.

**This serves at least two purposes:** Information about the effectiveness of mirror therapy is relevant for the clinical practice because it can be determined for which patients this therapy might work. Second, establishing the type of patient groups with which mirror therapy is effective should allow for a better understanding of the underlying working mechanisms of mirror therapy. Understanding the working mechanisms of mirror therapy is useful in determining the (new) types of patients for who mirror therapy might be helpful. To examine the extent to which mirror therapy was effective we performed a systematic analysis of the literature into the effectiveness of mirror therapy in mentally ill patients. Mirror therapy has been used in patients suffering from stroke, cerebral palsy, complex regional pain syndrome, phantom limb pain and fracture rehabilitation. Three particular conditions that have been studied the most are stroke, CRPS and phantom limb pain. During mirror therapy, a mirror is placed in the patient's mid sagittal plane, thus reflecting movements of the non paretic side as if it were the affected side. This arrangement is suited to create a visual illusion whereby movement of or touch to the intact limb may be perceived as affecting the paretic or painful limb. The underlying mechanisms of the effects in these three patient groups have mainly been related to the activation of 'mirror neurones', which may also be activated when observing others perform movements and also during mental practice of motor tasks. Mirror neurons were found in areas of the ventral and inferior premotor cortex associated with observation and imitation of movements and in somatosensory cortices associated with observation of touch. These cortical areas are supposed to be activated by MT. Until now, direct evidence for the mirror-related recruitment of mirror neurons is lacking.

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Shriner's Hospital Upper Extremity Evaluation were performed at weeks 0 (baseline), 3,6 (intervention), and 9 (wash-out). Testing of grasp strength behind the mirror improved performance by 15% ( $p=0.004$ ). Training with the mirror significantly improved grasp strength (with mirror +20.4%,  $p=0.033$ ; without +509%,  $p>0.1$ ) and upper limb dynamic position (with mirror +4.6%,  $p=0.044$ ; without +1.2%,  $p>0.1$ ), while training without a mirror significantly improved pinch strength (with mirror +6.9%,  $p>0.1$ ; without +21.9%,  $p=0.026$ ). This preliminary study demonstrated the feasibility of mirror therapy in children with hemiplegic cerebral palsy and that it may improve strength and dynamic function of the paretic arm [14].



Fig 3: Mirror therapy box by placing the paretic limb in the box [14]

### Mirror therapy in CRPS

Complex regional pain syndrome type (CRPSt1) of the upper limb is a painful and debilitating condition, frequent after stroke, and interferes with the rehabilitative process and outcome. A randomized controlled study was conducted to compare the effectiveness on pain and upper limb function of mirror therapy on CRPSt1 of upper limb in patients with acute stroke. Of 208 patients with first episode of unilateral stroke admitted to the rehabilitation center, 48 patients with CRPSt1 of the affected upper limb were enrolled in a randomized controlled study, with a 6-month follow-up, and assigned to either a mirror therapy group or placebo control group. The primary end points were a reduction in the visual analogue scale score of a pain at rest, on movement, and brush-induced tactile allodynia. The secondary end points were

improvement in motor function as assessed by the Wolf Motor Function Test and Motor Activity. The mean scores of both the primary and secondary end points significantly improved in the mirror group ( $P<0.001$ ). No statistically significant differences after treatment ( $P<0.001$ ) and at the 6-month follow-up were found between the 2 groups. The result indicate that MT effectively reduces pain and enhances upper limb motor fuction in stroke patients with upper m=limb CRPSt1 [15]. Altschuler E. et al examined mirror therapy in a patient with a fractured wrist and no active wrist extension. Patient was trained by moving both hands while watching the reflection of the present or good hand in a parasagittal mirror. Mirror therapy found extremely useful after a fractured wrist [16].

### Mirror therapy for mental illness

A study aimed to establish the effectiveness of adherence therapy (AT) training for two multidisciplinary early interventions in psychosis (EIIP) teams in preventing relapse in their patients. This intervention involved six 1 day team AT training sessions delivered monthly over a 6-month period. Participants were patients with early psychosis who were on the caseload of the EIIP teams during the study period. A mirror-image design was used, comparing clinician ratings of relapse in the year preceding training (year 0) and the subsequent year (year 1). Results showed that in year 0, the mean number of relapses was 0.96. During year 1, Relapses reduced significantly. No unexpected effects training were reported. A thematic analysis of staff views of training, and service user's views of their care received from EIIP teams, was also completed. Challenges in faithfully incorporating AT skills into practice were reported. In conclusion, AT training coincided with reductions in relapse rates in patients receiving services from an EIIP team, but no other changes in outcomes were detected [17].

### Clinical Interpretation

This literature review has given an account of the reasons for the widespread use of mirror therapy. Some of the potential limitations of this review were the lack of meta-analysis



and quality scoring of the included studies. A study summarized the current evidence supporting use of Mirror Box Therapy and its successor, Immersive Virtual Reality. They showed, in recent years the Phantom Limb Pain (PLP) and to some degree Complex Regional Pain Syndrome (CRPS) may prove to be an exception [18]. A study reviewed twenty three articles and concluded that the, mirror therapy seems to be effective mainly for patients. Overall, the current systematic literature review has shown that the use of mirror therapy in rehabilitation seems promising, when combined with stroke patients, while the effectiveness in other patient groups has yet to be determined [19]. Mirror therapy has shown positive effects in the treatment of stroke rehabilitation and complex regional pain syndrome. It also shows positive effects on hand and foot rehabilitation following an injury or surgery [20, 21].

#### Remarks of review:

Twenty three randomized studies are included in this systematic review. Studies use different measures at different times and often include small numbers of unrepresentative patients. In addition, important clinical aspects of MT interventions such as a detailed description of the treatment protocol and possible side effects are only insufficiently addressed. Because of the heterogeneity of included studies this was not possible in our study. In stroke patients, we found a moderate quality of evidence that MT as an additional therapy improves recovery of arm function after stroke. The quality of evidence regarding the effects of MT on the recovery of lower limb functions is still low, with only one RCT [22] reporting effects. In patients with CRPS and PLP, the quality of evidence is also low [23]. Some of the potential limitations of this review were the lack of meta analysis and quality scoring of the included studies. This review included studies of all designs leading to heterogeneity in not only interventions, outcome assessment and follow-up, but in analysis and effect size. Only studies in English were reviewed and this might have missed some other important studies. The increased variability regarding different physiotherapy modalities, comparison interventions & follow-

up, and outcome measures also made it very difficult to compare results across studies and draw relevant conclusions. Further good quality controlled clinical trials on comparison between the physiotherapy modalities and lifestyle modification are necessary to derive valid conclusions.

#### Conclusion

The articles reviewed showed a trend that mirror therapy is effective in stroke, phantom limb pain, complex regional pain syndrome, cerebral palsy and fracture rehabilitation. This study facilitates the author to understand the use of MT, its feasibility and applicability in the management of patients' with mental illness.

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# International Journal of Nursing and Medical Investigation

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## Research article

### A study to assess the impact of social networking sites among the students of selected nursing colleges of Navi Mumbai

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#### Abstract

**Aim:** 1. A study to assess the impact of social networking sites among the students of selected nursing colleges. 2. To assess the impact of social networking sites among nursing students. 3. To evaluate the positive and negative impact of social networking sites. 4. To find the association between impact of social networking sites with selected demographic variables, Bharati Vidyapeeth deemed University, College Of Nursing, Navi Mumbai. Materials and **Method:** The research design selected for the present study is exploratory study design. In the present study, samples are the nursing students from the age group of 18-24 years. The sample sizes of the study consist of 200 nursing students from selected setting. Randomized sampling technique was used for data collection. The tool consists of the following sections: Section A: It contains demographic profile of student such as age, sex, family income, type of family, residence and other recreational activities. Section B: It contains modified questionnaires of Internet Addiction Test. **Result:** Negative impact of social networking sites among students than positive. The impact of social networking sites was assessed with the help of Internet addiction scale. Frequency distribution of demographic data was calculated. Demographic data reveals that there is association between gender and family income with impacts of social networking sites. **Conclusion:** Although there is positive effect of social networking sites on youth, the negative impact of social media is more. Adolescent are at the age where they value their privacy the most, yet they treat the social networking sites like a personal diary. In addition the lack of development of face to face communication skills could be detrimental to their future success.

**Key words:** social networking sites, students, nursing colleges

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#### 1. Introduction

Social media is most recent form of media and having many features and characteristics. It have many facilities on same channel like as communicating ,texting, images sharing, audio and video sharing , fast publishing, linking with all over world, direct connecting etc. It is also cheapest and method of fast access to the world [1].

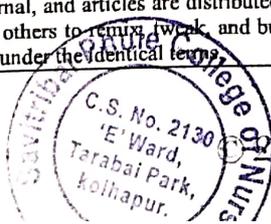
Its use is increasing day by day with high rate in all over the world. Majority of youth is shifting speedily from electronic media like as television viewers and radio listeners to the social media among all age of group. Youth rate of shifting into social media is observed to very much and hence its influences are much on youth [2]. This craze of social media has led to a host of question regarding its impact on society, while it is agreed that the social media affects people's living styles and it is an ongoing process to identify the nature of these influence in every society and country especially on youth. In the last ten years, the online world has changed dramatically.

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**How to cite this article:** Vishal Pawar. A study to assess the impact of social networking sites among the students of selected nursing colleges of Navi Mumbai. Int J Nur Med Inv. 2018; 3(2): 27-34.

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**Exclusion criteria**

1. Students who are absent during the research study.
2. Students who are out of Navi Mumbai.

Section 1: It includes 5 items to assess the demographic data such as age, gender, family income, residence, and other recreational activities.

Section 2: It includes modified Internet Addiction Scale. It includes 20 questions to assess the impacts of social networking sites on students.

The investigators approached the concerned authority of the college and discuss the objectives of the study. A formal permission was taken from the college authorities. The samples were selected on the basis of sample selection criteria and written inform consent was obtained from the participants. The present study was aimed at the study to assess the impact of social networking sites among the students of selected nursing colleges in Navi Mumbai.

For the data collection structured questionnaire was prepared and used questionnaire is quick and generally in expensive means of obtaining data from a large number of respondent. The structured questionnaire was provided by investigation during data collection. The duration of data collection was 20-30 minutes from each respondent. The structured questionnaire consist two section one is sociodemographic data and second is modified Internet Addiction Scale [9].

Table no 01: Validity

SN	Teachers	Suggestion
1.	Ms. Arunima Sreelatha	<ul style="list-style-type: none"> <li>• Change the organization of question pattern</li> <li>• Add more demographic data</li> </ul>
2.	Mr. Dhanraj Babu	<ul style="list-style-type: none"> <li>• Change the organization of objectives</li> </ul>
3.	Mr. Pankaj	<ul style="list-style-type: none"> <li>• Specific selection of impacts</li> </ul>
4.	Mr. Divekar	<ul style="list-style-type: none"> <li>• Add more demographic data</li> </ul>

**Section II**

Table no 02: Association between the impact of social networking sites and demographic variables among student n=2

Demographic variables	Impacts		Totals	X <sup>2</sup>	P value
	Positive	Negative			
<b>A) Age</b>					
16-18	9	10	19	1.9934	0.57 Non significant
18-20	70	68	138		
20-22	15	22	37		
22-24	4	2	6		
Total	98	102	200		
<b>B) Gender</b>					
Male	21	41	66	13.0258	0.0003 Significant
Female	79	55	134		
Total	100	100	200		

**Ethical consideration**

The topic is authorized by ethical committee of Bharati Vidyapeeth College of University, Navi Mumbai and committee made topic valid.

**Pilot study**

A pilot study is the small scale version of trail run of the major study. The function of the study is to obtain information for improving the project or for seeing the feasibility. Pilot study was conducted in Bharati Vidyapeeth College of nursing, Navi Mumbai on 16<sup>th</sup> February 2016. The sample size was 10.

The findings of the pilot study were analyzed and it was found that there was more negative impact of social networking sites among the nursing students than positive [10].

**3. Result**

**Section I**

To assess impact of social networking sites among students.

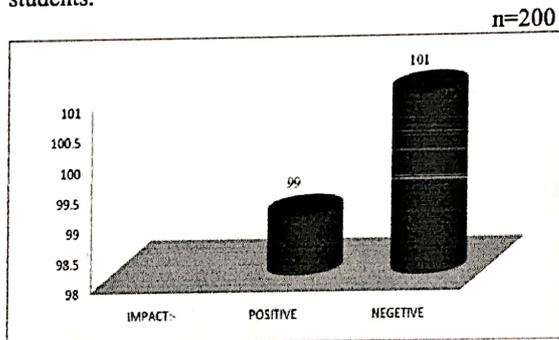


Figure no 1: Impact of social networking sites

Figure 1 states that 49% (99) students having positive impact of social networking sites and 51% (101) students have negative impact of social networking sites.



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**RESEARCH ARTICLE**

**A Study to Assess the Effectiveness of Planned Teaching Programme on the Knowledge regarding Menstrual Hygiene among Adolescence Girls Studying in the Selected Schools, Kolhapur.**

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**ABSTRACT:**

Adolescent is a period of transition between childhood and adulthood. It is a time of biologic, intellectual, psychosocial and economic changes. The girls who enter the adolescent period have rapid physical and psychological changes. During this period girls develop breast, hair under arms and private parts, oily skin and body odors. At this stage of adolescent majority of girls attain menarche. Menarche is first menstruation of the girls which occurs every month periodically menstruation is phenomenon unique to females. Although every women has an individual cycle of menstruation, it varies in length and the average cycle is taken to be 28 days long and recurs from puberty to menopause except pregnancy and other reproductive disorders. It occurs at the age of 12 to 13 years. Hygiene related practice of women during menstruation is of considerable importance as it has a health impact in terms of increased vulnerability to reproductive tract infection. The findings of the study on menstrual hygiene showed that the girls should be educated about the significance of menstruation, selection of sanitary menstrual absorbent and its proper disposal. Adolescent girls behind the importance of personal hygiene for the reduction of menstrual pain, 51.5% reported not taking a bath for 8 days after the onset of their menstrual period and the vast majority of students (98.5%) indicated that young girls should receive appropriate and sufficient information related hygiene. A descriptive study was approached with pre test design. The sample size was 30, the girls studying in 9th standard of new model English school, Kolhapur other than the pilot study conducted. Demographic data, structured knowledge questionnaire and development of information booklet were prepared for data collection procedure. The tool was finalized by consulting seven experts in the field of nursing. Pilot study was done for its clarity, unambiguity & feasibility on similar subject. Demographic data of the students were presented in graphs. Association of variables was tested by Chi-square with Yates correction test. The age range of the participants was 13-15 years. Majority of them belonged to middle class family. The knowledge level on menstrual hygiene was maximum good in more than half of the participants 24(80%) and 6(20%) were average. The data presented indicates that the majority of girls 15 (50%) belongs to the age group of 14 years, minimum of 8 (2.66%) belongs to 13 years and 7 (2.34%) belongs to 15 years. Majority of the girls 20 (66.72%) belongs to middle class family.

**KEY WORDS:** Menstrual cycle, Adolescent, Knowledge, Effectiveness, Hygiene.

**INTRODUCTION:**

Life is a dynamic process in which a different stage comes and every stage of life comes with different problems. Adolescent is a period of transition between childhood and adulthood.

It is a time of biologic, intellectual, psychosocial and economic changes. The adolescent girls constitute a vulnerable group in India. The girls who enter the adolescent period have rapid physical and psychological changes. During this period girls develop breast, hair under arms and private parts, oily skin and body odors. At this stage of adolescent majority of girls attain menarche. Menarche is first menstruation of the girls which occurs every month periodically menstruation is phenomenon

Received on 04.04.2013

Modified on 15.05.2013

Accepted on 01.06.2013

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Asian J. Nur. Edu. and Research 3(3): July-Sept., 2013, Page 177-179



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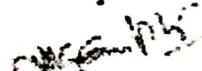
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# Knowledge Regarding Self Care Measures and Quality of Life among Patients with Chronic Renal Failure (CRF) undergoing Hemodialysis

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 Consists selected socio- demographic perfoma 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 21<sup>st</sup> century global health policy.<sup>1</sup> 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 12<sup>th</sup> leading cause of death and 17<sup>th</sup> cause of disability.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup> 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.<sup>5</sup> CKD affects 500 million people worldwide. The number of dialysis patients increase by 7% annually.<sup>6</sup> The burden and magnitude of chronic kidney disease (CKD) is enormous especially in developing countries.<sup>7</sup> 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.<sup>6,7</sup> 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.<sup>8</sup> The management of ESRD in India is largely guided by economic considerations.<sup>5,8</sup> 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.<sup>9</sup> 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.<sup>10</sup> Haemodialysis significantly and adversely affects the lives of patients, both physically and psychologically.<sup>11</sup> 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.<sup>12</sup> The treatment involves circulating the patient's blood outside of the body through an extracorporeal circuit (ECC), or dialysis circuit.<sup>13</sup>

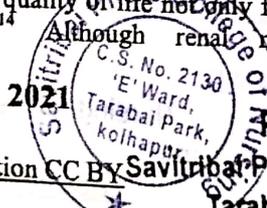
End-stage renal disease and its treatment profoundly affect health related quality of life not only for the patient but the family also.<sup>14</sup> Although renal replacement therapy

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Volume 10 Issue 12, December 2021  
www.ijsr.net

Page ID: SP241206421232

DOI: 10.21275/SP241206421232



PRINCIPAL  
Savitribai Phule College of Nursing  
Tarabai Park Kolhapur





ISSN:2319-7064

# Certificate of Publication

www.ijsr.net

*This is to Certify that the paper ID: SR211206121332 entitled*

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

*Authored*

*By*

*Milka Kalekar*

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*has been published in Volume 10 Issue 12, December 2021*

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*in*

*International Journal of Science and Research (IJSR)*

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Savitribai Phule College of Nursing  
Tarabai Park, Kolhapur.

*This paper has passed the Peer Review and satisfies the required standards.*



# 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 ( $t_{cal} = 17.16$ ) was greater than tabulated value ( $t_{tab} = 2.00$ ). 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 [ $\chi^2_{cal} = 127.9$ ,  $\chi^2_{tab} = 7.82$ ], Educational qualification [ $\chi^2_{cal} = 11.93$ ,  $\chi^2_{tab} = 5.99$ ] & Total clinical experience in years [ $\chi^2_{cal} = 7.84$ ,  $\chi^2_{tab} = 7.82$ ]. 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<sup>1</sup>. 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<sup>2</sup>

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 function<sup>3</sup>. 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 failure<sup>4</sup>. 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 problems<sup>5</sup>.

Studies had shown that intervention can increase the knowledge of cardiac pacemaker among nurses<sup>6, 7, 8, 9</sup>. 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 Gilmer's consistency<sup>10</sup>. The self instructional module on artificial cardiac pacemaker was developed through expert consultation and literature review.

PRINCIPAL

Volume 10 Issue 12, December 2021

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**INTERNATIONAL JOURNAL OF RESEARCH AND**

**ANALYTICAL REVIEWS (IJRAR) | E-ISSN 2348-1269, P- ISSN 2349-5138**

*An International Open Access Journal*

The Board of

International Journal of Research and Analytical Reviews (IJRAR)

Is hereby awarding this certificate to

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**EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE AND ATTITUDE REGARDING  
BREASTMILK BANKING AMONG MOTHERS**

Published In IJRAR ( www.ijrar.org ) UGC Approved (Journal No : 43602) & 5.75 Impact Factor

Volume 7 Issue 3 , Date of Publication: July 2020 02:18:22

**TRUE COPY**

PAPER ID : IJRAR2002454

Registration ID : 222711



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Website: [www.ijrar.org](http://www.ijrar.org) | Email id: [editor@ijrar.org](mailto:editor@ijrar.org) | ESTD: 2014





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

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Received: 13 August 2020

Accepted: 19 September 2020

## 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 in to 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 ( $P=2.96e^{-07}$ ). 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 ( $P=6.734e^{-12}$ ). Body massage using coconut oil showed higher weight gain in LBW babies after the 5<sup>th</sup> 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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# JOURNAL OF TRADITIONAL AND FOLK PRACTICES

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**Project Work**

**Submitted to the**

**SAVITRIBAI PHULE COLLEGE OF NURSING  
SWAMI VIVEKANAND SHIKSHAN SANSTHA'S, KOLHAPUR  
MAHARASHTRA**

**In partial fulfilment of the requirements for the degree of**

**B.Sc. NURSING & MIDWIFERY**

**UNDER THE GUIDANCE OF**

**MS. MILKA KALEKAR,**

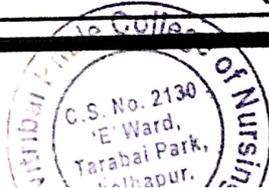
**(M.Sc Nursing, Dept.-Medical Surgical Nursing)**

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**DEPT. OF MEDICAL – SURGICAL NURSING**

**OCTOBER 2021**



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