

A Study to assess the Satisfaction and Expectation of People Towards Services Provided by the Nursing Students among Rural and Urban Community in Selected Areas

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ABSTRACT

Home visiting is the nurse's key activity in meeting the needs of patient, family and community in general for nursing services and health counseling. 1

Home visits refer to meeting the health need of the people at their door steps. the goals of these early home health care visits were to care for the sick, to teach the family how to care the ill person, and above all to protect the spread of disease (Adina, Reinhardt M) 4

Keeping in view to assess the satisfaction and expectation of people towards services provide by the nursing students among rural and urban community areas, an exploratory study was undertaken to assess the satisfaction and expectation of people towards services provide by the nursing students among rural and urban community areas.

The study adopted "Health belief" model as the theoretical base for the framework of the study. A Qualitative research approach was adopted to conduct this study and the exploratory survey method was used. A Non-probability convenient sampling was used for the selection of the representative samples for the study. Data was collected from total 300 people, 150 people were selected from rural area and 150 people from urban areas of Pune district.

A final Study was conducted in selected rural and urban areas of Pune district. Descriptive and inferential Statistics was used to analyze the data.

Keywords: Home visiting, Expectation, Satisfaction, Rural area ,Urban area, Community

INTRODUCTION

Home health care cannot be defined simply as "care at home", it includes an arrangement of health related services provided to people in their place of residence. Family, which includes any care taker or significant person who takes the responsibility to assist the client in need of care at home, is an integral part of home health care.⁹

Florence Nightangale did much to improve nursing care in the home in providing the necessity and benefit in education for nursing practice. Nightingale was the first person to insist that nursing, and especially visiting nursing, was not amateur work.²

MATERIAL AND METHD OF STUDY

- Source of Data -; Data will be collected from selected rural and urban area of Pune district where home visiting has been done by 4th year nursing student.

RESEARCH METHODOLOGY

- Research Approach: In order to achieve the desired objectives of this study, a qualitative research approach was considered appropriate.
- Research Design: The research design adopted for this study was exploratory survey method.
- Setting of The Study:

Rural setting: Nasrapur ,Kamthadi,Hathave, Malegaon villages were selected.

Urban setting:Talzai Vasahat area was selected.

- Population: The population of the present study comprises of people who were above 18 yrs of age, people who are residing in selected areas and families to which services are provided by fourth year BSc. Nursing students.
- Sample: Rural and urban population of Pune district who have fulfilled the inclusion criteria
- Sample Size:- The sample size selected for this study was 300 (Rural 150 people,Urban 150 people.)
- Sample Technique:- Non-probability convenient sampling technique
- Collection of Data:- Survey method is used for collection of data by using self-structured summated rating scale for the assessment of the satisfaction of people and questionnaire for the assessment of expectation was prepared.

Assumption

1. People may be satisfied with the services provided by the nursing students.
2. People may be expecting preventive as well as curative health services.

Plan for Data Analysis:-

The data analysis was done by using descriptive and inferential statistics.

- Pilot Study: The pilot study is planned with 10% of the population which will be conducted during 9th to 13th August 2011.

Ethical Consideration:-

1. Does the study require any interventions to be conducted on rural and urban population of Pune district

Yes. Informed consent will be obtained from respondents.

2. Has ethical clearance being obtained from your institution?

Yes. Ethical clearance has been obtained from the institution.

3. Has the consent being taken from the authorities of respective areas?

Yes. Consent has been taken from the authorities of respective areas.

OBJECTIVES OF THE STUDY

- To assess the satisfaction of rural and urban community people toward services provided by the nursing students during home visiting.
- To assess the expectation of rural and urban community people toward services provided by the nursing students during home visiting.
- To compare the satisfaction and expectation of urban and rural community people towards services provide by the nursing students during home visiting
- To associate the findings with selected demographic variables.

Research Approach

The choice of research approach constitutes one of the major decisions, which must be made in conducting a research study as the approach taken on a research project can greatly affect its outcome.

In order to achieve the desired objectives of this study, a qualitative research approach was considered appropriate.

Sampling Technique

It is the process of selecting a part of population to represent the whole population. In the present study, the samples selected for data collection were those who fulfilled the criteria laid down for the selection of the sample and were available during the period of data collection. They were selected by a Non-probability convenient sampling technique. Sample for this study was the people aged above 18 years and who were having experience of home visiting done by fourth year B.Sc. Nursing students from selected rural areas which include Nasrapur village, Kamthadi, Malegaon, Hathave and selected urban area which include Talzai area.

FINDINGS

The main findings of the study were. In the setting of urban slums and rural area, majority were From age group 18-30 years [rural=108(72%), urban=91(60.66%)]

- Males [rural=(65.34%),urban= 91(60.66%)]
- Educated up to graduation in rural 56(37.33%) while in urban 51 (34%) of the people were having educational status up to secondary level
- Having income between 1000 to 10000 [rural=115 (76.66%), urban=118(78.66%)]
- People were employed [rural=105(70%), urban=87(57.99%)]
- Received any health service from student nurse [rural=150(100%), urban=87(57.99%)]
- Exposed to home visiting twice in a week [rural=62 (41.33%), urban=150(100%)]

Overall maximum number of people that is 144(96%) were satisfied by the services provided by the nursing students during home visiting.

People expectations of rural and urban from home visiting was almost same and only for preference of home visiting, regarding treatment of patient, care of female patient and communication language expectation varies in rural and urban area. People were expecting that Home visiting should be done in morning between 10am-12noon, preventive, promotive and curative care should be provided, in one month home visiting should be done according to needs of family, provide Prescribed medicine, spend time with family according to their need, collect the history, do the health check up and give health education according to needs identified by student and by the family member using charts, pictures, street play , puppet show and by documentary films, involve family members in planning and providing the care, give referral chit and concession in treatment, Male student should look after male patient. Home visiting should be done with the permission of head of the family and Doctor or nurse should accompany the student nurse. In the analysis of opinion regarding expectation varied in rural and urban area was given by them is the reason behind the visit, free medicine, and gender issue and communication language. People were also expecting free urine, blood sugar level, blood pressure, blood grouping check up. They want 2 to 4 days free medicines supply when anybody falls sick in family.

ASSOCIATION

There was no significant association found between selected demographic variables i.e. age, sex,

educational status, income and employment status and findings of satisfaction with Chi square value.

RECOMMENDATIONS

- A study can be done on satisfaction and expectation of rural and urban people regarding different cares provided by students.
- A study can be done on satisfaction and expectation of rural and urban people towards services provide by the PHC/CHC.
- A study can be done on satisfaction and expectation of rural people towards services provide by the PHC/CHC nurses.
- A study can be done on satisfaction and expectation of rural and urban people towards health education given by the nursing student.
- Similar study can be conducted on a large scale.

CONCLUSION

The conclusion drawn from the findings of the present study were as follows:

- 1) Majority of people from urban slums of Talzai vasahat and rural area Nasrapur, Kamthadi, Malegaon and Hathave were satisfied with the services(nursing care) provided by the student nurse in terms of approach, diagnosis, planned intervention and evaluation or follow up done during home visiting, which clearly shows that people's perception toward nursing care services is positive and they understand and accept the care provided by the nursing student?
- 2) Overall maximum no. of people that is 144(96%) were satisfied by the services provided by the nursing students during home visiting.

People expectations of rural and urban from home visiting was almost same

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Ethical Clearance: Taken from appropriate authority

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Conflict of Interest: None

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Essential Qualities to be an effective Nurse

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ABSTRACT

Introduction: The public views the nurse as knowledgeable, 'one of us', worthy of respect, trustful, concerned for others, honest, caring, confidential, friendly and hardworking.

Objective: Was to find the reliability of the tool designed to capture nursing aptitude among nurses.

Method and material: Four point Guttman scale was developed and administered among nurses of a selected teaching hospital.

Results: The reliability of the tool was 0.52.

Conclusion: There is scope for refinement of the tool as there was no difference found between nurses' abilities.

Keywords: Nursing Aptitude, Qualities of a Nurse, Reliability, Guttman Scaling

INTRODUCTION

Nurses are the health care providers who spend the most time with the consumer of health services. This encounter is intensely meaningful wherein nurses take leadership roles as primary providers, teachers and educators, home health care managers or advocates. The nurse is a partner in health care and functions as a multipurpose health worker. The public views the nurse as knowledgeable, 'one of us', worthy of respect, trustful, concerned for others, honest, caring, confidential, friendly and hardworking.^{1,2}

Nursing is an art and a science. Nurses perform multi tasks and roles, thus the competencies expected are also multiple. Assessment of competencies related to pure sciences such as math, physics, chemistry and biology are comparatively easier to measure than the psychosocial elements, moreover such tools are available, e.g. General aptitude tests, Mechanical, Clerical, Scholastic, Science aptitude, Math aptitude etc. However, the complexity in measurement of nursing ability lies mostly amidst the psychosocial elements and are to be appraised through the art of nursing. Efforts of the researchers in measuring these abilities are appreciable however are not conclusive.^{3,4,5}

The review suggested that the efforts in this area should be continued, however the investigators of this

study wanted to look at this recommendation from the perspective of nursing potential. What makes one feel to take up nursing profession? Are there some unique pre requisite qualities among nurses, which make them effective in clinical practice?^{4,5,6}

The quest to identify unique qualities which promoted the selection of nursing career among the nurses was the interest of the researcher, which led to undertake this study in a selected teaching hospital, in Udupi District. The core objective of this study was to aid the identification of psychosocial attributes which differentiate nurse's clinical performance.

METHOD AND MATERIALS

Review of literature on the personal qualities that are important for individuals wanting to become a nurse was done and the same was summarized as good communication skills, caring attitude, empathy, detail orientation, adaptability, compassion, commitment, confidentiality and trustworthiness, honesty and integrity, interest to work with people, openness to diversity and non judgemental attitude, desire for a career which is continually changing and evolving, high motivation to achieve, ability to think and act under extreme stress, ability to solve problems with limited resources, realization that nursing is demanding physically, mentally and emotionally,

physical and emotional stability, professional in every aspect and open to learning and to have an enquiring mind. The listed qualities expected of a nurse are numerous, however above were a few, quoted by many nursing recruiting agencies as well.^{7, 8, 9, 10, 11}

Tapping these qualities in true sense would require subscales of each quality and thus the tool may appear lengthy. As per the suggestion from the experts to think of a tool which can be administered for a duration of not more than 45-50 minutes, a tool was prepared using guttmann scaling guidelines. Two nurse educators and a clinical psychologist validated the tool. Suggestions were incorporated and the items were organized in three sections.

The first was a scenario based caring situation (caring expressions) with seven items on communication of caring, compassion, empathy, interpersonal skills and analytical skills; second was with 11 items on personal traits those were recognized by others such as parents/teachers/peers during school/college days and third was with seven items on the focussed behaviours in given scenarios (focussed abilities), such as an action towards a common man/woman collapsed in a general crowd, initiative towards leadership, honesty, problem solving, commitment and an item on the perception on nurses and nursing.

The items on the three sections were organized as four point guttmann scaling, scores ranging from 25 to 100. A section on arithmetic ability was added with ten simple mathematical calculations (additions, multiplications and proportions). The scale was pretested among ten licensed nurses who were teaching in school or college of nursing and the necessary corrections in the language of two items were made, for better clarity.

Official permission was obtained from the ethical committee, the hospital and nursing authorities of the selected teaching hospital. The Nursing Superintendent was requested to send fifty nurses each on four days, in two batches: those whose clinical performance was good and those who required improvement in their performance. The nursing authority were informed group the nurses into these two categories based on the nurse's performance appraisal, reports from the patients or the other health team members. The nursing authority was informed not to disclose the selection criteria to the participant. Informed consent was obtained from each participant.

The nurses were administered the questionnaire in groups, however discussion among the nurses were discouraged during administration. A total of 87 nurses in 'good' and 73 in 'needs improvement' group reported, however for analysis only those who had at least one year of experience were accounted. Data was collected in December (third week) 2012 and was analysed using SPSS software version 16.0

FINDINGS

The sample characteristics of both groups are presented in table 1. Missing data were excluded for analysis. The guttmann reliability of the scale (λ) was = 0.52. The factors which influenced the career choice were explored in the study and the major factors are listed in table 2.

A total of 22 nurses (16 in 'needs improvement' and 06 of 'good performance group) were excluded as their experience was less than a year. There were a total of seven male nurses of whom five were in the category of good performance. Majority (112) of nurses were with diploma qualification of which 30 were above 10 years of experience. A total of 25 diploma nurses and 16 with B. Sc Nursing had the clinical experience between 1-2 years; Forty six with diploma and four with B. Sc nursing had the clinical experience between 2.1 - 5 years; Eleven of diploma nurses and two B. Sc. Nurses were of the clinical experience between 5-10 years.

The scores obtained by nurses in both the groups "needs improvement" and "good performance" in each section is described in table 3. Table 4 reveals that the independent t test does not signify difference between the groups in terms of total scores of each section and of the overall total scores. Some of the personal traits of nurses in each group are described in table 5.

How was nursing and nurses were perceived was assessed through an item in section three: "Which among the following statement related to nursing or nurses do you agree strongly?". 15.4% agreed nursing is care of sick and hence nurses care for the sick; 19.9% agreed that nursing involves care of sick and well individuals; 28.7% agreed that nurses are important as other health care providers and 24.3% agreed that nurses and nursing can make a difference in the lives of people. Of the 112 who expressed their opinion 70 of them had the similar opinion before joining the course as well.

Table 1: Sample characteristics

Characteristics	Needs improvement group (N=55)(f)	Good performance group (N= 81)(f)	Total(f)
Qualification:			
Diploma nursing	42	70	112
B. Sc. Nursing	12	11	23
Age in years:			
19-25	25	34	59
26-30	17	22	39
31-35	5	6	11
36-40	2	7	9
41-45	2	8	10
≥46	3	4	7
Marital status:			
Married	28	38	66
Single	27	43	70
Religion:			
Hindu	29	56	85
Christian	26	25	51
Pre-University Education:			
Arts	30	37	67
Commerce	11	16	27
Science	13	28	41
Residence:			
Rural	36	59	95
Urban	17	19	36
Nursing was first choice:			
Yes	41	65	106
No	14	15	29
Wanted to become a nurse			
Yes	44	70	114
No	7	10	17

Table 2: Factors which influenced career choice among nurses

Factor	Needs improvement group (f)	Good performance group (f)	Total(f)
Job opportunity in India	18	35	53
Job opportunity abroad	22	28	50
Interest to be in the medical field	29	39	68
Interest to help others	31	37	68
Parents influence	10	16	26
Parents pressure	06	04	10
Influences from nurses in the family	13	11	24
Career guidance programs	09	11	20
Financial problems	12	16	28

Table 3: Sectionwise mean and standard deviation of scores

Section	Range of scores	Mean (SD) Needs Improvement group	Mean (SD) Good performance group
Caring expressions	28-Jul	23.32 (2.181)	22.61 (2.077)
Personal traits	Nov-44	34.76 (4.113)	33.53 (3.684)
Focussed abilities	28-Jul	23.67 (1.934)	23.82 (2.213)
Arithmetic ability	0-10	6.98 (1.297)	7.11 (1.249)
Total scores	25-110	88.71 (5.79)	87.07 (6.361)

Table 4: Difference in the scores of abilities between groups

Sections	t value	df	P value	95% confidence level	
				Lower	Upper
Caring expressions	0.978	122	0.330	(0.408)	1.205
Personal traits	1.639	117	0.104	(0.235)	2.494
Focussed abilities	0.431	107	0.667	(0.960)	0.617
Arithmetic ability	0.386	134	0.7	(0.530)	0.357
Total scores	1.320	97	0.190	(0.828)	4.117

DISCUSSION

The expected coefficient of reproducibility (CR) of guttman scaling is at least 0.85, thus there is a scope for the improvement of the developed scale. Use of Guttman scaling proved to be much better in terms of genuineness of item responses and completion of items, compared to the likert scale developed for similar purpose by the investigators, in which responses were to the very extremes.

Several qualitative studies in nursing have described the tasks, roles, abilities and behaviours expected of a nurse in different caring situations and appear similar to the one which is summarized in the

review. Studies which threw light on the factors influencing the choice of nursing career, reported similar findings.^{4,5,6,7}

The study found no significant difference in personal traits, caring expressions or focussed abilities among good performers as well as those who needed improvement and thus revealed that good nurses did not possess unique special qualities or abilities. This study finding in general affirms the general assumption that essential nursing traits or qualities are not unique of effective nurses. Thus study finding challenges the nurse practitioners and nurse administrators, who contribute and strive to maintain the nobility of this

Table 5: Personal traits of nurses

Personal trait	Needs improvement group (f) N=55	Good performance group (f)N=83
During school/college days, I maintained cleanliness of the house/room everyday without anyone saying	50(90.9%)	73 (87.89%)
When a member of the household was admitted in the hospital, I was identified as the most suitable person to look after the sick	24(43.63%)	19 (22.87%)
At college, I consulted classmates freely when I needed guidance	17 (30.96%)	30 (36.12%)
At college, I was approachable for everyone who wanted my help	29 (52.72%)	34 (40.93%)
I was recognised by my classmate as a caring person	33 (59.99%)	31 (37.24%)

Table 5: Personal traits of nurses

Personal trait	Needs improvement group (f) N=55	Good performance group (f)N=83
I was most appreciated by my friends for:		
a. Teamspirit	23 (41.81%)	32 (38.52%)
b. Thoughtfulness	17 (30.90%)	25 (30.1%)
I was appreciated by my teacher or parentts for:		
a. Observation skill	20 (36.36%)	28 (33.71%)
b. Problem solving skill	22 (39.99%)	36 (43.33%)
My approach to learning was 'learning by doing'	25 (45.25%)	36 (43.33%)
If I was blamed by my teacher for no fault of mine, I discussed with the teacher the reality	40 (72.4%)	51 (61.40%)
When my classmate was blamed by a teacher for no fault of hers/his, I convinced the classmate to discuss with the teacher	36 (65.16%)	43 (51.77%)
When I was requested to care for an ill classmate, I remained with the sick	48 (86.88%)	70 (84.28%)
When a classmate requested clarification on a study related matter:		
a. I taught	22 (50.96%)	25 (30.1%)
b. Shared the resource material	28 (39.8%)	37 (44.54%)

profession, to further develop the nursing potential of nurses who need improvement.

Nurses are described and featured as frontline health care providers and hence the challenge is to express the uniqueness of nursing profession as gatekeepers in health care market. That is possible only if nurses project unique abilities. The appraisal of personal traits in table 5 revealed that many of the good performers were thoughtful, had observation and problem solving skills, promoted hygiene, shared resources or taught and preferred to remain with sick, however the difference was not significant in terms of traits, between groups. Thus there is a need to capture the unique abilities in a refined tool nursing supervisors need to develop performance appraisal skills.

There was no difference found in this study in the perception towards nursing and nurses before and after being a nurse and these findings justify the need for a reformation in nursing education and administration. Nursing and nurses have a greater scope to revive nursing within nurses first, to create a positive image and thereby project the art of nursing and caring. Nurse educators and administrators need to promote a virtual feeling among nurses that nurses and nursing are/is capable of making a difference. The attraction and influence towards nursing as well as the interest to be in the medical field has to be transformed into 'passion for helping' than the habit of providing assistance.

The qualities listed and described to become an effective nurse are many and are more challenging in practice. Pretending or masking feelings and behaviours are not possible in practice, and hence if

nurses have to make a difference in nursing one needs to live these qualities. Thus the challenge for nurse educators is: 'How a young entrant to nursing should be shaped to live these qualities?.'

The setting where study was held is accredited for its quality and there are on-going in-service education programmes. The employee appraisal system is inbuilt and the supervisors are with good number of years of experience. However the researcher felt that if groups were identified by the researcher through observation and a structured appraisal, possibly study findings would have been conclusive. There could be an error in selection of staff at supervisor level as their staffing was not planned based on the expressed study purpose, instead selection was done among those who were available in the unit, which could be a limitation of this study.

CONCLUSION

It is a fact that nursing is an art and science. Science promotes and influences the art of nursing. Nurses are expected to express the art of nursing which is possible if a nurse lives the abilities and qualities essential for nursing. Nursing qualities are expected from every living being, however, expectation from a trained nurse are superior to that of others. There is a need to strengthen the nursing practice through development of abilities in expression of the art of nursing.

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Valuing Communication for effective Nurse Leadership in Nursing Practice

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ABSTRACT

There is a need for establishing effective Nurse Leader communication framework through the application of effective leadership principles. The objective of the paper is a synthesis of the scholarly literature and its application to the Nurse leadership in health care settings. The information gathered will be analyzed in relation to its usefulness for the Nurse Leader communications in hospitals. The attributes and strategies of effective communication are applied into a framework for the Nurse Leadership. Nurse leadership principles and practices provide a new dimension to the Nurse Leader communication. This paper shows that the role of the Nurse Leader is to communicate vision, goals, initiatives and changes in plans and policies that promote both clients' care and multidisciplinary team work. This paper concludes that effective Nurse Leader communication principles and strategies should be utilized to meet the health goals of clients in nursing practice and education.

Keywords: Nurse Leader, Communication, Clinical Nurse Perspective, Interpersonal Relations, Quality Care, Management, Barriers to Communication

INTRODUCTION

In today's healthcare industry there is a need for Nurse Leaders (NL) who will intertwine the concept of leadership in everyday role of serving the needs and health issues of the client. The concept of leadership promotes service to others in a holistic approach that develops a sense of community by sharing powers in decision making. Nurse leaders spread a culture of positive attitude and action that makes a positive difference to clients and employees with the ultimate goal of the success and sustainability in healthcare organizations. Transformational and leadership values is about implementing new ideas; these individuals continually change themselves; they stay flexible and adaptable; and continually improve those around them¹. One of the major tools involved in the nursing service for enhancing growth and increasing teamwork is the use of creative communication strategies. Leadership is "influencing the attitudes and behaviour of people toward the accomplishment of a goal while meeting the needs of people, including followers²".

In this systematic literature review, nursing leadership refers to the services of a leader utilizing transformational leadership principles and concepts

to enhance end results. These principles include listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of others, and building community³. This paper discusses the value and effectiveness of good communications for Nursing Leadership in clinical practice. Approximately 90% of the participants reported collaboration among nurses, physicians and administrators as one of the most important factors in perceptions of a healthy work environment⁴. The core competencies for professional nurses include skilled communication, collaboration, effective decision-making, appropriate staffing, meaningful recognition and authentic leadership. In recent years, interdependence of professional nurses between departments calls for smart communication strategies because their coordination of service has direct impact on patient care, treatment plans and aims to improve team member relationships. In hospital care effectively communications in the Nursing Leadership will provide a better understanding of client's healthcare vision and vital information to determine goals for care ultimately aimed to improve nursing care and satisfaction. Most nurses report better team work and participation through forums and open dialogues⁵.

Nursing Leadership is the connecting force between nurses, clients, their families and the other members of the healthcare team. Through the use of appropriate communication strategies the Nurse Leader can build a cohesive and positive work environment.

AIM

The aim of this paper is review the principles of communication skills for effective Nurse Leadership in nursing practice.

METHOD

A synthesis of the scholarly systematic literature review and its application to the Nurse leadership in hospital care settings was undertaken to inform the study. The information gathered was used to analyze its usefulness for the Nurse Leader communications in hospital care facilities. The attributes and strategies of effective communication were used to develop a framework for the Nurse Leadership (Figure 1). This framework detailed the strategies of good Nursing Leadership communications. Through the literature synthesis barriers and influencing factors will be determined for use in the clinical leadership context. The researchers will also draw expertise from professional and educational experiences that add to the credibility of information presented in the paper.

REVIEW

The online databases used were Business Source, Academic Search Premier, MEDLINE, CINHALL, and SCIRUS. Nurse leaders' need to listen to problems, perform assessment, and reply constructively, to help patients solve their health issues. All leaders in health care need to optimize their communication skills such as listening, conflict resolution, speaking and writing effectively in order to achieve positive outcomes⁶. In a case study in an out-patient Cardiac Rehabilitation clinic, the goal was to improve the attendance rates of patients to the unit thus reducing readmission and cost per life year⁷. The findings show that the Nurse Leader listened to existing problems of the patient and became aware of concerns for non-attendance. The Nurse Leader utilizing information from these patients was able to create solutions by involving the right personnel and thus eliminated frustration to patients. This resulted in increased attendance to the rehabilitation clinic confirming compliance to therapy and improved health. Nursing Leadership programs encourages

observation, reflection, and communication skills to challenge themselves, other staff and the culture of the organization with the ultimate goal of improving quality care to patients.

The nursing staff perceptions of communication and leadership were explored in a study to facilitate improvement in quality of patient care in clinical units⁸. The study measured communication along openness, accuracy, timeliness, satisfaction, understanding and leadership had four dimensions: high standard, clear expectations encourage initiative and supportive behaviours. The staff reported frustrations with communication and leadership issues that needed improvement. They expressed need for open, accurate, and constructive communication between nurses. They also expressed the need to feel comfortable while making suggestions, bringing forth information and sharing their insights to one another and to their leader. A descriptive study was conducted to investigate nurses, physicians and clients attitudes towards collaboration and leadership in an organization experiencing transition from a traditional model of patient care delivery to a patient-centered model of practice⁹. The sample consisted of 419 registered nurses, 61 physicians and 17 clients. The registered nurses scored significantly higher than physician scores for both the need for collaboration and leadership. Nurses have their traditional roots in values of taking care of others while traditional physician roles are as the leaders of the health care team. But both professions and the clients were more positive than negative towards collaboration of professional services to enhance client care.

Discussion: Conceptual Framework for Effective Nurse Leader Communication

The Nurse Leader can achieve both organizational and client goals by creating an environment and unit culture that foster open, trusting communication¹⁰. By adapting to leadership style the Nurse Leader develops a charisma to influence their employees, followers and clients. Spoken and written communications have increased over the recent years due to inter-departmental meetings resulting in more teamwork, and personal contact between clients and professional team members and leaders. These groups of team members (client, multidisciplinary, non-professional and management) serve one great purpose- 'meeting client healthcare needs and safety' with the Nurse Leader as a connecting mechanism (Figure 1).

Effective communication can motivate mutually accepted values, directed towards providing quality patient care and delivery of effective nursing practice¹⁰. A conceptual framework is prepared based on systematic review that guides Nurse Leaders to develop their communications in Client care for positive results in client care and team functioning (Figure 1). The Nurse Leader takes initiative in opening the lines of communication and interactions with the team, client and management and encouraging ongoing input and feedback. Reaching consensus and setting mutually accepted goals are also useful to develop and evaluate standards of nursing care and performance. This framework outlines components to be considered for effective communication in Nurse Leader practice. It is essential that Nurse Leaders are highly competent and dynamic communicators because they deal with information and interactions that can set the tone of success and harmony.

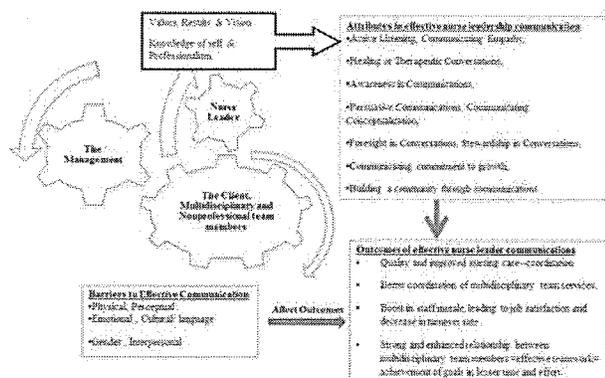


Fig. 1. Framework for effective Communication in Nurse Leadership in Practice

Knowledge of Self and Professionalism: Nurse Leaders communicate advocacy, support, counselor, and collaborative roles in their communications for better client healthcare service.

Values, Results and Vision: Nurse Leaders need to realize that ‘means’ is as important as the ‘end’¹¹. In client care, the Nurse Leader wants to communicate the value of justice along with courage to voice right from wrong decisions.

Active Listening in Nurse Leader Communications: Giving staff and clients the opportunity for expressing their creativity and opinion will be an important leadership practice for the Nurse Leader¹².

Communicating Empathy: Nurse Leaders need to support and empathize with the staff and clients as

valuable members in accomplishing the goals of quality and safe services.

Healing or Therapeutic Conversations: Clients in the hospital lose partly or wholly lose their independence and control of their personal everyday lives with complex co-morbidities and illnesses. Healing through communications (counseling, validation of feelings and offering encouragement) depicts the caring nature of the Nurse Leader.

Awareness in Communications: The Leader requires increased self-awareness and awareness of those activities happening at the work place for better understanding of the direction they take. The ‘open-door’ approach positions the leader to get in touch with their staff and clients, formulate priorities and anticipate concerns.

Persuasive Communications: The Nurse Leader in client care seeks to promote ‘client-centered’ service and actions through persuasion rather than coercive force of command and orders.

Communicating Conceptualization: Nurse Leader prepares themselves for these meetings and discussions by gathering relevant data, and based their suggestions on authentic rationale of nursing and medical services.

Foresight in Conversations: For success, the Nurse Leader critically examines the teams’ present activities and goals, and then projects the path toward the future which is based on the values and previous experiences. Blanchard (1998) describes the visionary role of the leader is to define the direction and future path of the organization (e.g. communicating the mission, objectives, values and beliefs of the organization)¹³.

Stewardship in Conversations: Employees are better motivated and work with passion when they are encouraged to participate in taking accountable decisions in setting goals and planning implementation of standardized care.

Communicating Commitment to Growth: Encouraging registered nurses for continuing education sessions, counseling, mentoring, participation in workshops, conferences, and research enhances their growth and development.

Building a Community through Communication: Community building in the workplace reduces negative experiences, and gives employees ownership

to making positive changes for better outcomes of services and interactions, participation and decision-making for collaboration of multidisciplinary services to the client.

Outcomes of Effective Nurse Leader Communications: The topmost responsibility of the Leader is to be strong advocates for quality and safe client care towards delivery of evidence based nursing care. Positive and better interpersonal relationships are outcomes of effective and efficient Leadership communications. The multidisciplinary team, clients and families rely on appropriate and timely communications from the Nurse Leader. A 'positive' work culture of respect, fairness, cooperation, and helping each other achieves better and higher outcomes in the unit. Positive communications promote enhanced interpersonal relationships stimulating stronger teamwork and achievement of goals in lesser time and effort. The Nurse Leader will highlight on the mission of the organization so employees have a common purpose to the client they serve. To be an effective communicator the Nurse leader will work to enhance existing techniques, learn new ones, practice and self-evaluate.

Overcoming Barriers of Communications in Nursing Leadership: The best and effective communications take place 'face-to-face' because they build stronger relations. A Nurse Leader works to remove physical barriers by welcoming discussions through an 'open-door' approach at her office. Emotional barriers are comprised of those negative vulnerable emotions that can result in false messages and interactions. Emotions like fear, mistrust and suspicion can lead a person to feel vulnerable, rejected, and frustrated. Employees and clients in these situations will avoid expressing their feelings and concerns. The Nurse Leader promotes the development of two-way communications with a culture of encouragement and support in the unit. Different cultures have different beliefs, practices and assumptions and way of communications¹⁴. The Nurse Leader will have to be open to new learning of expressions, words and meaning. To overcome cultural communications in work it is important to respect each other differences and offer support, patience and time to interactions. Language is a barrier to effective communication because it describes what we want to say in our terms, our expressions, buzz-words and jargon¹⁵. In a multi-cultural work place it is important to include every staff into discussions and decision-making when needed. Nurse Leaders will understand

that by promoting communications between employees and team members, they will feel valued and contribute more to the mission of the organization. The Nurse Leader's responsibility is to ensure safe, clean, and quality care of clients or patients, a resourceful and healthy work environment for staff and clients. Good and effective communication skills are essential for nursing leadership to reach their goal of excellent service and care.

Recommendations for clinical nursing practice

The Nurse Leader role models to treating clients, their relevant others and the multidisciplinary team with respect and compassion. Effective communication, setting a clear vision and trajectory can increase standards of care and professional integrity that compliments the organizational policies and procedures. Nurse Leadership provides for direction and exchange of vital information within client care services through the effective communication strategies and principles. Nursing leadership is in need of expanding their roles to more proactive decision making and communication strategies. Client care services requires leadership involving walking the talk, striving for ethical and moral values while encouraging nurses and team members to plan ahead. Nurse Leadership need to be good communicators "articulate, persuasive and effective in communicating nursing contributions to healthcare and patient outcomes. Nurse Leadership shares commitment of creating a common vision, within Client care that leads to cooperation and collaboration of multidisciplinary services to the client. The Nursing leadership needs to communicate compassion to their work and people they meet through therapeutic, healing, and listening competencies of conversations.

Implications for Nursing Practice

Student nurses will require practicum hours in leadership roles and responsibilities to help them develop the art and skill of effective communication. Nursing leadership communications are used in comprehensive reporting, charting client information, entering client information into computers and most of all engaging in therapeutic communications to clients. Communication is also used in nursing education programs in leadership, public education initiative, media interest and forums on health care policy. This study recommends support, validation and evaluation of resources and outcomes to build effective

clinical nurse leadership. Healthcare organizations are searching for leadership styles and structures to support a work environment that focuses on quality care for the patient and a meaningful work environment for healthcare providers⁹. The value of good communication, team-bonding and leadership interventions will help Nurse Leaders to improve their client-nurse care services and inter-team relations. Effective communication can reinforce leadership, make a difference and create alternatives for a hopeful future in the health organization. Utilizing the principles of leadership in the Nurse Leadership communications can be 'the change' and support to their followers, thus achieving higher and more effective goals. "People admire and respect leaders who are dynamic, uplifting, enthusiastic, positive, and optimistic¹⁷."

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Conflict of Interest Statement

The authors declare that they have no potential competing interests.

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Ethical Clearance

This is a systematic review of literature of the paper. There is no involvement of human subjects or study of human minds.

Authors' Contributions

All authors meet the criteria for authorship, have designed, interpreted the systematic literature, drafted, revised and approved the final article and are entitled to authorship.

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Healthy Lifestyle among Iranian Menopausal Women

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ABSTRACT

Objective: to assess doing exercise, smoking, and using hormone therapy among menopausal women in Borujerd, Islamic Republic of Iran.

Method: This cross-sectional study was conducted through cluster sampling among 220 menopausal women who attended in different outpatient centers between March and July 2010. Data were collected using a face to face interview with subjects.

Results: In relation to smoking habit, only 12.7% of women were smoker after menopause. Regarding hormone therapy, the results showed that 87.7% used no hormone therapy. Almost 63% of women did not exercise regularly a day.

Conclusions: Study analysis suggested that exercising and using hormone therapy among our participants were inadequate.

Keywords: Menopause, Exercise, Hormone Therapy, Smoking

INTRODUCTION

Menopause is a normal event in women's life that can be associated with health complaints, a decreased quality of life, and an increased risk for some illness.¹ The experience of menopause varies widely from woman to woman and from culture to culture.² Life style modification, including balanced diet, regular exercise, smoking cessation, weight management may be recommended to reduce the severity of menopausal symptoms.³

The most important component of life style relates to physical activity.⁴ regular moderate exercise is beneficial for general health and well being in particular for menopausal women. Exercise increases energy levels, muscle strength and bone density, and can reduce stress, anxiety and the likelihood of depression, improve sleep, help cardiovascular health

and weight loss and keep the body's joints, ligaments, muscles and tendons mobile.^{1,5,6} The general recommendations for exercise are to do at least 30 minutes of exercise on five or more days of the week.⁶

Smoking is believed to increase the likelihood of hot flashes as estrogen may be metabolized faster in smokers, which could lead to an earlier decrease in estrogen levels in those individuals. Nicotine may also inhibit the synthesis of estrogen and therefore lead to more vasomotor symptoms. There is a large body of evidence suggesting that greater proportions of smokers than non smokers have vasomotor symptoms during the menopausal transition.¹ Smoking is a big risk factor in osteoporosis and it doubles chance of developing heart disease.⁷

Hormone therapy (HT) effectively decreases menopausal symptoms and is the only current treatment approved by the FDA.⁸ The decision regarding HT should be individualized for each woman based on her medical history, the severity of the symptoms, and the potential risks and benefits of hormone administration.^{9,10,11}

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Lifestyle interventions seem to be at least as effective as drugs and improve menopausal symptoms.^{12,13} Although assessing the effects of comprehensive lifestyle intervention programs on diet, physical activity and smoking behaviors is not new, few reports are available from developing countries and Asia.^{13,14} Also there are a few researches about Iranian's menopausal women life style; therefore, the present study aimed at assessing exercise, smoking, and hormone therapy (HT) among menopausal women in Borujerd, a city located in west of Iran.

METHOD

Research Design

This cross-sectional study has been done on urban women from March to July, 2010. The purposes of the research were as follows: 1) To investigate doing regular exercise. 2) To assess smoking in subjects. 3) To study the history of using hormone therapy in participants. The study was approved by Islamic Azad University of Iran, Borujerd branch.

Study Subjects

A total of 220 menopausal women constituted the present study sample. The subjects were selected from different outpatient centers of Borujerd by cluster sampling method. Four centers were selected randomly from various geographically areas. Women who had no menstrual bleeding at least in the previous 12 months were categorized as postmenopausal women.

Instruments

Data collection and Development of the questionnaire

Data collected for this study included filling questionnaires through personal interviewer. The questionnaire covered the following factors and information:

1. Demographic characteristics including menopause age, education level, occupation, marital status, and economic status satisfaction.
2. Anthropometric characters: height, weight, body mass index (BMI). Weight was measured while the subjects were minimally clothed without shoes,

using digital scales, height was measured in standing position without shoes using, tape meter while the shoulder was in a normal position. Body mass index (BMI) was calculated as weight in kilograms by height in meters squared. Those with a BMI < 18.5 Kg/m², BMI=18.5-24.9 Kg/m², BMI=25-29.9 Kg/m², BMI ≥ 30 Kg/m² were classified as underweight, appropriate, overweight, obese.¹⁵

3. Medical condition: include no suffering from mental disorders and contraindications of Hormone therapy (HT).
4. Medication: the history of hormone therapy (HT).
5. Habits: smoking. In this study, smoking included use of cigarettes, and hookah. We categorized individuals as current smoker if they smoked once a day.
6. Exercise: consisted physical exercise and Kegel exercise.

Study Analyses

Face and content validity and Test-re-Test were used respectively, to ensure the validity and reliability of the questionnaire. The questionnaire was completed during face to face interviews. Women excluded from the study were those who refused participation or were incapable of understanding the items included in the questionnaire.

Data were entered by Statistical Package for Social Science Software (SPSS) version 15 and percentages, frequency, means ± standard deviation (SD), χ^2 test, t-student were used for data analysis. A p-value less than 0.05 were considered as statistical significant for this study.

RESULTS

We presented the baseline characteristics of our study participants in Table 1. The average menopausal age was 47.8 ± 6.5 years that most of them (87.3%) had physiologic menopause. Almost 34% of subjects had an overweight (BMI= 25-29.9 Kg/m²). As shown in Table 1, 50.9% of subjects were illiterate women and they were unable to read or write while only 3.2% if the respondents had college education.

Table 1: Sociodemographic characteristics of study participants.

Characteristics	N (220)	%	Mean ± SD
Menopause age			47.83 ± 6.52
30-39	18	8.2	
40-49	104	47.3	
50-59	98	44.5	
Menopause kind			
Physiologic	192	87.3	
Induced	28	12.7	
Body mass index (BMI)			
BMI < 18.5	15	6.8	
BMI = 18.5-24.9	68	31	
BMI = 25-29.9	76	34.5	
BMI ≥ 30	61	27.7	
Occupation			
Housewife	193	87.7	
Retired	13	5.9	
Employed	14	6.4	
Literacy level			
Illiterate	112	50.9	
Under diploma	55	25	
Diploma	46	20.9	
Academic	7	3.2	
Economic status satisfaction			
Complete dissatisfied	20	9.1	
dissatisfied	122	55.4	
satisfied	71	32.3	
Complete satisfied	7	3.2	
Marital status			
Married	156	70.9	
Divorced	5	2.3	
Widow	52	23.6	
Single	7	3.2	

Results are presented as number and percentage; SD: standard deviation

In relation to smoking habit only 12.7% of women were smoker after menopause (Table 2). Regarding hormone therapy the results showed that 87.7% used no hormone therapy (HT) and the longest time of hormone therapy was up to 23 months among women who took HT (Table 2).

Table 2: Smoking features and Hormone therapy (HT) history of study participants.

Variable	N (220)	%
Smoking		
Yes	50	22.7
No	170	77.3

Table 2: Smoking features and Hormone therapy (HT) history of study participants. (Contd.)

Variable	N (220)	%
Kind of smoking		
Cigarette	3	1.4
Hookah	47	21.4
Smoking after menopause		
Stopping	18	8.2
Continuity	32	14.5
Taking HT		
No	193	87.7
Yes	27	12.3
Estrogen therapy	5	2.3
E. + P. Therapy	22	10
Duration of HT (month)		
Up to 23	11	5
24-47	8	3.7
48-71	3	1.4
72-95	1	.4
≥ 96	4	1.8
Method of HT		
Injected	3	1.4
Oral	24	10.9
Teransdermal	0	0
Vaginal	0	0

Results are presented as number and percentage; HT: Hormone therapy; E: Estrogen; P: Progesterone

Table 3. Doing exercise in participants.

Variable	N (220)	%
Doing regular daily exercise		
Yes	81	36.8
No	139	63.2
Kind of exercise		
Walking	75	34.1
Swimming	1	.4
Yoga	3	1.4
Others	2	.9
Time of exercise		
< 15 minutes	15	6.8
< 30 minutes	35	15.9
= 30- 60 minutes	31	14.1
Weekly exercise times and duration of exercise		
1- 2 T, each time 10 – 20 m	25	11.4
1- 2 T, each time 30 m	15	6.8
3- 4 T, each time 20 m	41	18.6

Table 3. Doing exercise in participants.

Variable	N (220)	%
Exercising Continuity / month		
Up to 23	40	18.2
24-47	17	7.7
48-71	14	6.4
72-95	3	1.4
≥ 96	7	3.1
Doing regular daily Kegel exercise		
Yes	22	10
<5 M	11	5
= 5-10 M	11	5
No	198	90

Results are presented as number and percentage; M: minutes; T: times

Table 4: Association between some sociodemographic characteristics of Women and healthy life style components.

Variables	Exercise (P- value)	HRT (P- value)
Age	0.001	0.382NS
Education level	0.000	0.113NS
BMI	0.017	0.471NS
Menopause age	0.002	0.021
Occupation	0.201NS	0.264NS

NS: Non significant

As shown in Table 3, 63.2% of participants did not exercise regularly per day. Among women who reported doing regular exercise a day, most of them (15.9%) were exercising less than thirty minutes a day. Also results showed that 18.6% of subjects were exercising three to four times a week with duration of 20 minutes. Regarding to Kegel exercise, the results study depicted a large percentage (90%) of participants who told that they did not exercise at all.

Finally, we examined the chi-square test among some demographic characters and components of lifestyle in our study. The statistical analysis indicated that there were statistical significant association between regular daily exercise and women's menopausal age, educational level, body mass index, and their occupation. Also findings showed that there is statistically significant association between HT and only educational level. No statistical significant association was found between smoking and demographic characters (Table 4) that it was likely result from a few number of smoker subjects in our study.

DISCUSSION

Our study findings showed that the lifestyle of participants was not healthy. According to the results of epidemiologic studies, the mean age of natural menopause in this study was similar to the mean age at menopause that has been reported for Iranian and Asian women in other studies.^{16,17} Consistent with many studies, various socioeconomic factors may impact lifestyle through its effects on physical activity and quality of life (QOL).¹⁸ It is noticeable that most of our participants were not satisfied of their socioeconomic status and they belonged to illiterate group. Lower educational level and income may affect lifestyle adversely.¹⁹

Smoking cessation is effective on decreasing some of menopausal symptoms²⁰ and fortunately in our study the majority of participants were not smoker and some of the smoker subjects stopped smoking after menopause.

Hormone therapy (HT) in Iran has been shown as a protective factor of osteoporosis.¹⁹ Our research findings showed that the majority of our subjects reported not taking HT and among user HT women the most common using form was oral estrogen plus progesterone therapy with maximize duration 23 months. Hormone therapy (HT) is not a popular first-line option Among the Asian countries. The Taiwanese and Thais women have the highest rates of women who had ever used HT (25% to 30%) but even these are low by most Western standards. China has the lowest rates of women who had ever used HT (2%).⁹

Physically active lifestyle can reduce the perceived intensity of menopausal symptoms and increase the state of being physiologically fine.^{21,22} The results we obtained showed that most of our subjects did not exercise regularly. Doing Kegel exercise three to four times a day are extremely important in order to strengthen the pelvic floor muscles and prevention to stress urinary incontinence.^{23,24} The findings related to doing Kegel exercise showed that only 10% of respondents did it less than five minutes per day. We found no lifestyle study in relation to this one.

Overall, similar to other reports, we found statistical significant association between exercise and educational level (P= 0.000), body mass index (P=

0.017), and between HT and menopausal age ($P=0.021$). No statistical significant association was found between other variables. However, this issue requires further study.

Several methodological limitations should be considered when interpreting the findings of this study. First, errors associated with any self-report of participants may have attenuated the findings, so future prospective studies are needed to verify our finding. Second, approximately most of subjects were dissatisfied of their socioeconomic status and they belonged to illiterate group; therefore, socioeconomic factors may impact women's physical activity and their lifestyle. Third, it might have been better if there was also the dietary pattern of subjects. Finally, the sample size was relatively small due to the nature of used study design (cross-sectional study based on a convenience sample).

Despite these limitations, the present study has some advantages. First, the nature of data collecting through interviewer-administered, and cluster sampling. Second, investigating about doing Kegel exercise in studying lifestyle of subjects.

CONCLUSION

Our analysis shows that regular exercising and Hormone therapy (HT) among our participants were inadequate. Findings, suggested that special efforts are needed to promote healthy lifestyle among menopausal women in our city. These results may also help plan education programs which aim to increase women's knowledge about healthier lifestyle. Furthermore, these results may help primary health care providers particularly nurse. One of the important roles of nurses is helping women to find a balance between understanding menopause as a natural process and necessity of having a healthy lifestyle in order to reduce menopause-related complaints. Thus, we hope these data provide some information to future researches on various aspects of menopausal women's healthy lifestyle in different areas of Iran and other countries as well.

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Research Committee of Islamic Azad University Borujerd Branch has approved this article. The authors would like to express their gratitude to all colleagues.

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Conflict of Interests

The authors declare that they have no conflict of interests.

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Ethical clearance

- i) The study subjects provided a verbal consent. ii) The right was kept for respondents to refuse study participation in all of the research time, iii) Subject's identification was not revealed, iv) The data were kept strictly confidential, v) Acknowledgment of each participants and all of dears who helped us in this study.

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Explorative Study to Assess the Nutritional Status, Socio-cultural Practices, and the Level of Stress during Menstrual Period among Adolescent Girls

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ABSTRACT

The present study was undertaken to assess the nutritional status, socio-cultural practices and the level of stress during menstrual period among adolescent girls. The sample for the study comprised of 60 adolescent girls in the age group of 17-20 years. Simple random sampling by using lottery method was used for selection of the samples. Interview technique was used for collecting the 24 hr recall method regarding nutrient intake, semi-structured questionnaire to obtain information regarding dietary pattern, 5 point Likert scale for Socio-cultural practices and modified stress scale to assess the level of stress during menstrual period. The results revealed that study sample (78.3%) were undernourished and 65% of the samples had moderate menstrual problems. The highest percentage of the samples followed moderate level of cultural practices (55.5%) and suffered from stress (83.3%). All the samples reported that these cultural practices are followed without questioning and suffered from stress due to imposed cultural practices which hinders during studies. The results hold implications for professionals involved in improvement of adolescent reproductive health in particular.

Keywords: Menstrual Period, Nutritional Status, Menstrual Problems, Socio-cultural Practices, Level of stress, Adolescent girls

INTRODUCTION

Adolescent period in girls has been recognized as a special period which signifies the transition from girlhood to womanhood (Bansal RD, 1998). This transitional period is marked with the onset of Menarche, an important milestone. In the existing Indian culture milieu, the society is interwoven with set of traditions, myths, and misconceptions especially about menstrual period. Studies have reported that restrictions in daily activities such as, not being allowed to see men before taking bath, pour water to plants, wear ideal jewels, enter holy places etc., Apart from these, dietary restrictions, taboo on consumption of food (hot and cold foods) are also imposed during menstrual period (Center for Social Research, Talwar, 1997; Singh, 2006; and Paul, 2007). Strong bondage with traditional beliefs, taboos and misconceptions during menstrual period has led to many serious health issues (Bhatia et al 1995). Various factors such as heredity, environmental conditions, body stature, socioeconomic status, nutritional and health status, family size, level of education, and psychological well being are known to influence during menstrual period

and its related problems (Chaturvedi et al 1996; Vasanthi et al 1994). Psychological Stress produces physiologic responses, such as activation of the corticotropin-releasing hormone nervous system, which might affect menstrual function (Rose et al 1987; Chrousos et al 1998). Stress (measured by life event or perceived stress scales) has been associated with variation in the length of the menstrual cycle anovulation, duration and amount of menstrual bleeding (Harlow et al 1991). Cultural practices and dietary restrictions imposed during menstrual period may also increase the psychological stress among adolescents. Hence, a study was carried out with a fold of objectives:

- 1) To find the nutritional status of adolescents girls
- 2) To find the menstrual problems prevailing during menstrual period among adolescent girls.
- 3) To find the dietary pattern followed by adolescent girls during menstrual period.
- 4) To find the socio-cultural practices followed by adolescent girls during menstrual period.

- 5) To find the level of stress prevailing during menstrual period among adolescent girls.
- 6) To identify the Correlation existing between Socio - Cultural practices & the level of stress during menstrual period.
- 7) To associate Socio-cultural practices, the level of stress and Menstrual problems during menstrual period with selected Demographic Variables.

METHODOLOGY

Design: Explorative survey design.

Population: Adolescent girls enrolled in Vinayaka Missions College of nursing, Puducherry during academic year 2012-2013.

Sampling Technique: Simple Random Technique by using lottery method.

Sample Size: 60 adolescent girls.

Tools: Interview Technique, Semi-Structured Questionnaire, 5 Point Likert scale, and Modified Stress Scale.

Data Analysis: Descriptive and Inferential Statistics are followed for analyzing the data.

DATA COLLECTION

After obtaining formal permission from the institutional hierarchy, informed consent was obtained from the samples and the study was carried out with the help of interview technique 24 hour recall method was assessed for Nutrient intake, semi-structured questionnaire to obtain information regarding dietary pattern, 5 point Likert scale was used for Socio-cultural practices and modified stress scale to assess the level of stress during menstrual period.

RESULTS

Demographic Variables: Among 60 samples 50% of the students belong to low income group and the remaining samples (50%) were in middle income group. Majority of the samples were Hindu (98.3%) residing in rural areas (83.3%) followed nuclear type of family system (61.7%).

Table 1.1: Body Mass Index (BMI)

Sl. No	BMI	Frequency	Percentage	Mean	Standard Deviation
1	<16 (CED Grade III)	22	36.7	14.7	1.06
2	16-17 (CED Grade III)	8	13.3	16.6	0.27
3	17-18.5 (CED Grade III)	9	15	17.6	0.31
4	18.5 – 20 (Low weight Normal)	8	13.3	19.1	0.59
5	20-25 (Normal)	10	16.7	22.08	1.40
6	>25 (Obese I)	3	5	26.1	0.1

Table 1.1 Depicts that 36.7% of the samples were in Grade III Chronic Energy Deficiency (CED), 13.3% in Grade II CED, 15% in Grade I, 13.3% falls under low weight normal, in which only 16.7% tend to be normal. On the other hand only 5% of them were in Grade I Obesity. BMI was calculated Height & Weight of the samples (WHO standard, 2004).

Choice of Food: Among 60 samples 33.3% skip their breakfast regularly during menstrual period and 68.3%

of them were on diet during those days. Rice was mostly preferred (65%) among cereals and 46.6% prefer red gram dhal among pulses & legumes. 73.3% prefer leafy vegetables, chicken & fish (33.35. 33.3%) is the best choice of them among non-vegetarian food items. 83.3% of the samples prefer iron rich food during menstrual period in which their choice is on to consume dates during menstrual period.

Table 1.2: Nutrient Intake

Sl. No	Nutrients	RDA	Mean Intake	Deficit
1	Energy (K.Cal)	2060	1806.18	-253.82
2	Protein (g)	63	53.37	-9.63
3	Fat (g)	22	22.23	+0.23
4	Calcium (mg)	500	445.98	-54.02
5	Iron (mg)	30	24.55	-5.45

The mean nutrient intake of the subjects was seen in Table 1.2 found to be Energy-1806.18K.Cal, Protein-53.3g, Fat-22.23g, Calcium-445.98mg, and Iron-24.55mg respectively. It was exposed from the data that RDA for adolescent age group was compared with the mean nutrient intake and found to be deficit in their daily nutrient intake.

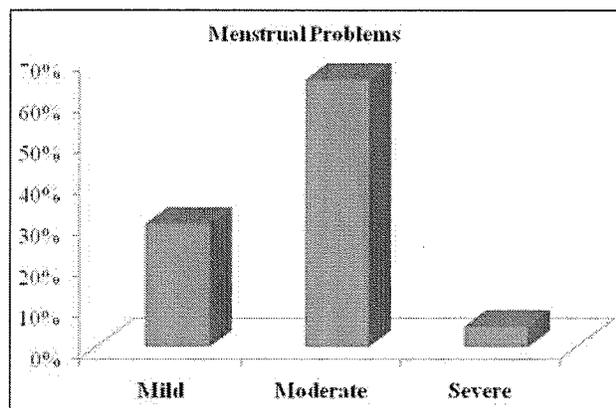


Fig. 1. Menstrual Problems

It was revealed from the Figure1 that most of the samples had moderate menstrual problems (65%), where as severe menstrual problems were reported as 5% and 30% of the samples had mild menstrual problems.

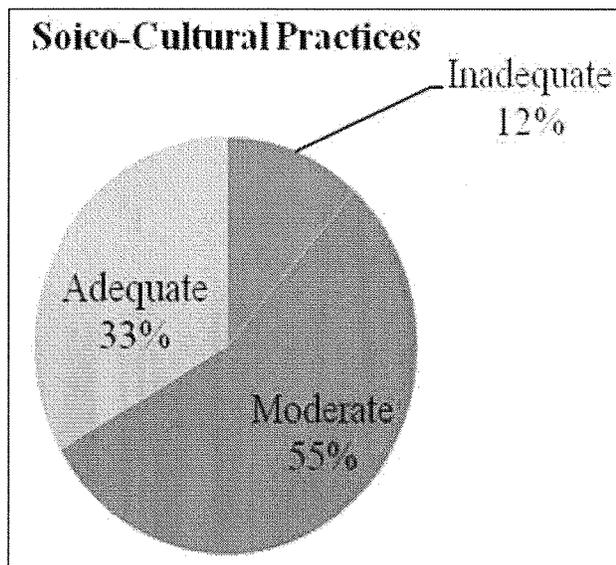


Fig. 2. Socio-Cultural Practices

From the Figure 2 the highest percentages (55.5%) of the samples were following moderate level of socio-cultural practices during menstrual period.

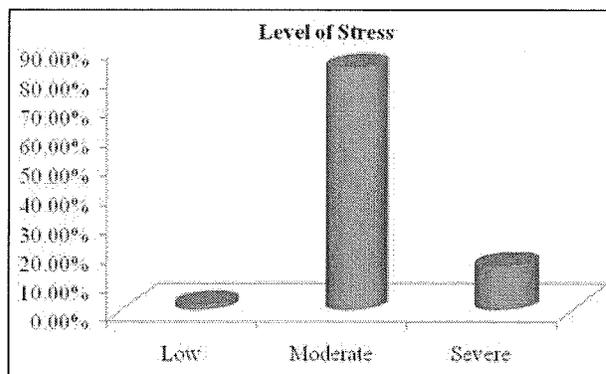


Fig. 3. The Level of Stress

From the data Figure 3 it was exposed that during menstrual period 83.3 % adolescents suffered from moderate level of stress.

Table 2: Correlation between Socio-Cultural Practices and the Level of Stress

Sl. No	Variable	Mean ± SD	r-value
1	Cultural Practices	50.33±16.77	0.158
2	Stress	77.00 ±15.11	0.229

Study findings have revealed (Table 2) that very low positive correlation was found between socio-cultural practices and the level of stress among adolescents during menstrual period.

Table 3: Association between Cultural practices, level of stress and menstrual problems with selected Demographic Variables.

Sl. No	Variables	df	X ² Table Value	Cultural Practices - X ² value	Level of Stress - X ² value	Menstrual Problems - X ² value
1	Age	4	9.49	3.465	4.856	7.924
2	Educational Status	-	-	-	-	-
3	Educational Status of father	6	12.59	11.319	7.482	3.438
4	Educational Status of mother	4	9.49	5.605	2.149	2.532
5	Income of the family	2	5.99	1.216	7.164	0.786
6	Type of the family	4	9.49	7.040	3.387	4.367
7	Religion	2	5.99	2.034	0.203	2.373
8	Place of residency	2	5.99	1.159	2.400	2.615

From the Table 3, it was shown that the association between cultural practices, level of stress and menstrual problems with selected demographic variables was found that the level of stress had association with income of the family alone, where as cultural practices and menstrual problems had no association with demographic variables.

DISCUSSION

Menstruation is the important sign, which will indicate that adolescent girls are ready for reproductive life. However, many adolescent girls are uncomfortable during this menstrual time. This would be mainly depends on nutritional and physiological status. So, the researcher investigated and found that most of the samples (78.3%) were undernourished. This finding were supported by Family Planning Association of India, Mumbai reported that 61% of adolescent girls were suffered from undernutrition this could be mainly due to geographical distribution, poor diet and psychological factors (Mohite R.V, *et al*, 2013). There were four authors Lee *et al*(2006), Sharma *et al*(2003), Wilson *et al*(1989) & O'Connell *et al*(2006) reported that adolescent girls had some menstrual problems like nausea and vomiting (55% and 44%) during menstrual period. The researcher also found that study samples had abdominal pain, waist pain, nausea & vomiting during their menstrual period.

Researcher observed that samples had changes in their food consumption during their menstrual period like high fat intake, low carbohydrate, protein, calcium and iron and the present study also par with the findings of Gallant *et al* (1987). Abraham *et al* (1981) also reported that there were significant changes in both fat and protein intakes during menstrual period. Investigator also found that one third of the study samples were skipped their breakfast and 68% of samples were on diet during menstrual period. During menstrual period samples like to consume rice, red gram dhal, leafy vegetables, chicken, fish and especially iron rich food like dates.

The community depicted strong web of social and cultural practices during menstruation. It was observed that through several generations these practices were believed and followed. There were many social and religious restrictions on girls during menstruation. Girls received these instructions for do's and don'ts from mothers, elder sisters and friends. Restrictions particularly related to prohibitions in going to religious places, offering prayers and keeping fast were reported by the sample girls. Taboos/myths were also exported by all the girls by avoid wearing ideal jewelry (27%), 50% believed not to see men before bathing during menstrual periods. Few (23%) showed prohibition in going to temple, neglected during religious festivals, etc. All the samples reported that they are following these cultural prescriptions and prohibitions without questioning and all these

practices were hindering during their studies. The sample was socially and culturally bounded with traditional practices during menstruation. Like previous studies (Centre for Social research 1990; Talwar 1997 and Singh 2006) the present research has also documented similar results about several restrictions related to menstruation.

This study revealed that majority (83.3%) of the samples had moderate level of stress due to imposed cultural practices during menstrual period and the impact of stress had directly affected the studies of the learners.

CONCLUSION

It is concluded that it is important to educate adolescents about issues related to menstruation, so that they can safeguard themselves against various infections and diseases. This could further help them to lead a healthy life. The data of the study can be used for planning programs, making new policies for improving the level of information of adolescent girls.

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Ethical Clearance: Written permission was obtained from Principal, Vinayaka Missions College of Nursing and also written consent from the participants were taken.

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Knowledge about the Complications of Obesity in People and effect of Training Booklet to Increase their Awareness

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ABSTRACT

Introduction: The relationship between weight and health, is a complex process . About 31% of people between 20 and 79 years are obese (6), but body fat distribution is important , so that fat excess in the abdomen, increase the risk of type 2 diabetes, hyperlipidemia, hypertension and cardiovascular disease .Men with waist more than 102cm and women with waist more than 85cm or those with BMI = 35 or higher (even without identity waist), are in health risk (1). Factors such as tobacco misuse ,increasing LDL, decreasing HDL, reducing the daily activities and positive family history ... with obesity, increase the risk of diseases (7). Increasing knowledge of people about these risk factors and avoid them, can reduce the risk of diseases - type 2 diabetes and cardiovascular disease - thus it 's be effective to increasing the useful life of people.

Objective: The purpose of this study was investigation of people 's knowledge about complications of obesity and influence of training booklet in their awareness. Also in this study, people 's comments were collected about increasing educational effects of training booklet.

Materials and Method: This quasi-experimental study was done, in health centers of Borujerd, 2009 . In this study, 66 couples referred to health centers were selected by random sampling. Criteria for entering the study for couples, was having high BMI (more than 27) or abdominal obesity, data collected by questionnaires in two stages (before and after intervention) , and were analyzed by SPSS13 software.

Results: In this study, mean age was 38.8 years (with SD=10.7).The results showed that before education, awareness about the complications of obesity in people was low and 43.9% of people wasn't familiar with the complications of obesity and other people had low to moderate awareness.38% of people were not aware of the causes of obesity and about 58.5% of people were aware of causes of obesity, but were not informed how to control the factors. After studying of educational booklet, 69.7% to 77.3% of people had high to very high Knowledge about the complications and the causes of obesity and its risk factors and how to prevent obesity and its complications. In general 97% , were recommended the study of booklet to others.

Conclusion: With importance to prevalence of obesity and its role in increase dangerous diseases such as type 2 diabetes and cardiovascular diseases, the appropriate and accessible educational tools is essential to raise awareness of people.

Keywords: *Complications of Obesity, Knowledge, Training Booklet*

INTRODUCTION

The Change of human society's structure, especially in industrialized countries lead to change of pattern disease risk. The relationship between weight and

health, is complex process. Recent studies show that 64.5% of American adults are overweight and about 31% are overweight or obese persons between 79-20 years, of course statistics in Iran are unavailable. The amount of body fat distribution in the body is important and effect on its health, for example, some not people like athletes who are very muscular, despite being overweight, much fat, so less danger threaten their health⁽⁶⁾. Accumulation of body fat, is considered of the most important risk factor for disease, so that excess fat in the abdominal area increase the risk of type 2 diabetes, hyperlipidemia, hypertension and

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cardiovascular disease . In general, men and women (after menopause) tend to store fat in the upper trunk, especially in the abdominal area, while women that are in pre-menopausal, tend to store fat in the lower body, particularly in the pelvis and thighs. In addition to gender people who have high fat accumulation in abdominal area (apple shape), compared to people who accumulate fat in their hips and thighs area (pear shaped), are high risk for health. Waist measurement is common assessment of abdominal fat, men with waist circumference greater than 102 cm and women with waist circumference greater than 85 cm, are at risk for health. However, those with BMI=35 or higher, even without a clear waist circumference, are high-risk for some diseases ⁽¹⁾. Many health problems and diseases, are associated with weight gain. People suffering from cardiovascular disease, atherosclerosis, type 2 diabetes and sleep apnea, are classified among groups with high risk of death. When several risk factors associated with obesity agent, the risk goes up, risk factors include: smoking, high blood pressure, high LDL concentrations, low HDL concentration, high fasting blood sugar, positive family history of cardiovascular disease and ... age (45 years or above for men and for women 55 years or above), low physical activity or disabled and high serum triglycerides, if associate each of these cases with obesity, will be increased the risk of diseases ⁽⁷⁾. Factors such as genetics, nutrition (positive balance of calories), activity, mental conditions, medications, and socio-cultural factors are associated with incidence of obesity ⁽¹⁾. Therefore, awareness of risk factors for obesity and avoid them, can reduce the risk of diseases such as type 2 diabetes, cardiovascular diseases and etc , increase of their useful life effectively. Booklet is one of the available and affordable tools, has an important role to inform health messages.

OBJECTIVE

This study aims to assess people's awareness about complications of obesity, and impact of booklet for raising their awareness. Also in this study, people's comment collected on points that needed to increase the impact of educational booklets.

MATERIALS AND METHOD

This quasi-experimental study, has been done in Boroujerd's centers of health , 2009. In this study, 66 couples referred to the centers of health were selected by random sampling method. Criteria for entering the study was having a BMI above 27 or abdominal obesity

in selected couples and data were collected by questionnaires in two stages (before and after intervention). After getting consent from the study's sample, the questionnaire was completed, which included questions about demographic characteristics of individuals, and inform them about symptoms and risk factors about obesity. After that, subjects were studied booklet (including information about the characteristics, complications and risk factors of obesity), after two weeks the questionnaires were completed by the subjects. Also after the intervention, was asked questions about the impact of booklet in individual's knowledge and it's volume and content. When the person was illiterate and hasn't enough education or experience, or question was ambiguous, the interview questionnaire was completed by the researcher. Data were analyzed by SPSS13 Software, Chi-square tests and descriptive statistics and analysis of variance.

RESULTS

In this study, the average age was 38.8 years (SD = 10.7 years) and a minimum age 21 and maximum age was 60 years. Most people in this study were located in the 40-49 years age group (39.4%) and lowest in above 50 years age group (15.1%). Occupational group for most women in this study, was housewives (81.8%), most men were employees (67.5%). Education Level in 65.1% cases was high school and diploma. 93.8% of all people were, no smoking history and 97%, no history of type 2 diabetes and cardiovascular disease and other complications obesity, but 3% expressed the risk of cardiovascular disease. The results showed that pre-intervention training awareness of people about the complications of obesity has been little, about 43.9% of people not familiar with the complications of obesity and other people were also aware of low to moderate. 45.4% said that prevalence of complications of obesity are average and low, and 33.3% said that it's too much, and 3.21% had no information about prevalence of obesity's complications. 93.9% of people believed that obesity is preventable. 38.8% of people do not have knowledge about the causes of obesity and 58.5% of people aware of the causes of obesity, were not informed how to control factors. More awareness of risk factors for obesity, related to nutrition (27.1%) and lowest awareness (7.8%) related to socio-cultural factors, and 14.8% expressed inactivity as a risk factor for obesity and 8.4% consider psychological factors, and 12.3% genetics and 1.3% taking medication. There was no significant relationship between awareness of the

complications of obesity and age, occupation, smoking history and the history of cardiovascular disease ($P=0.4$). Similarly, there was no significant relationship between knowledge of prevention possibility of obesity with age, education, occupation and history of cardiovascular disease ($P=0.9$). But there was a significant relationship ($P=0.000$) between smoking history and prevention of obesity, because of few people who smoked (6.2%) is not documented. There was a significant relationship between knowledge about complications of obesity and level of education ($P=0.01$). Intervention in this study, was booklet training were studied by subjects. After studying of educational booklet, knowledge of 69.7% increased about the causes, complications and risk factors for obesity, and knowledge of 77.3% greatly increased about how to prevent obesity and its complications and so too. The comments of these people were investigated about the effect of this booklet to raise their awareness. 86.3% of individuals, greatly considered appropriate educational content to raise awareness about obesity and related factors and generally 97% of individuals, were greatly recommended the study of educational pamphlets and booklets to others.

DISCUSSION

Findings showed that awareness of people about the complications of obesity was low. Holyrod (2008) has been expressed the amount of people training needs 87.9% and 53% had no knowledge⁽³⁾. In the present study 43.9% of people were unaware of the complications of obesity. In the present study, 38% of people had knowledge about the causes of obesity, Santillen (2006) also stated that 60.2% of individuals were aware of this case⁽⁶⁾. In this study, 58.8% of people were not informed about causes of obesity, how to control and prevent obesity agents. Gaffikan (2007) stated that 72% of individuals were unaware about how to prevent obesity⁽²⁾. After studying, awareness greatly increased (69.7% to 77.3%) about complications of obesity, its causes and risk factors and how to prevent obesity and its complications. Jepsun (2008) also expressed in 75.33% cases, learning by using tools such as pamphlets, books, leaflet and etc is effective in raising awareness⁽⁴⁾. Results indicated that, education in field of obesity complications, causes and associated risk factors has an important role in how to prevent obesity and its complications and increase awareness and improve their attitude and performance⁽⁵⁾.

CONCLUSION

Considering the prevalence of obesity and its role in increase prevalence of serious diseases such as type 2 diabetes and cardiovascular diseases and etc, Attention to teaching and designing appropriate, available and free learning tools is essential to promote individual's awareness. Also providing these programs in health service centers and clinics could increase amount of accessing for people. According to these results, a simple and inexpensive intervention lead to significant changes in awareness about symptoms, causes and prevention of obesity, therefore recommended that appropriate training methods (such as training booklets, inexpensive or free pamphlets) is used in health centers, obviously designing and developing such notes need to specialized and scientific centers.

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Conflict of Interest and source of support

There isn't any conflict of interest in my article , and Islamic Azad University of Borujerd, Iran is our sponsor for doing this project.

Ethical Clearances

They were agree that their responses being used for education and research and privacy was respected. They understood that they are under no obligation to take part in this project. They understood They have the right to withdraw from this project at any stage.

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Assessment of Depression among Post Myocardial Infarction Patients

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ABSTRACT

A descriptive study was undertaken to assess the depression among post myocardial infarction patients at Jayadeva Institute of cardiovascular sciences and research. All patients attended Cardiac OPD diagnosed with myocardial infarction were selected using convenience sampling technique and sample size comprised of 50 patients. A standardized tool, Beck's Depression Inventory was used to collect self reports. The findings revealed that 76.25% of respondents experienced depression following myocardial infarction. And 10% of respondents self reported that they experienced mild depression, 50.85% moderate depression and 38.95 % severe depression. Pertaining to association of depression scores and selected demographic variables it was found that except educational qualification remaining variables have association at $P < 0.05$ level of significance.

Keywords: Depression, Beck's Depression Inventory, Myocardial Infarction

INTRODUCTION

Depression is common among patients recovering from a myocardial infarction (MI). Approximately, one in six patients with MI experience major depression and at least twice as many as that have significant symptoms of depression soon after the event¹. Depression in the patient who has recently suffered a MI is common with an estimated prevalence of 20%. However, despite this high prevalence, depression in the post MI patient is poorly diagnosed and treated. In addition, depression in these patients has been associated with increased cardiac morbidity and mortality as well as increased disability and health care cost².

A study on prevalence of major depressive disorder and subsyndromal depression in patients with first episode of MI and to compare the socio- demographic, clinical and coronary risk factors in patients with and without depression. The results showed unrecognized and untreated major depressive disorder and subsyndromal symptoms were frequent in patients in MI. Established coronary factors were more commonly present among depressive symptom group. The study findings emphasize the need for routine screening for depression in post MI phase³.

Increasing attention has been focused on mood disturbance in patients recovering from an acute MI

especially since it was first reported that depression was associated with increased mortality after acute MI⁴. A meta- analysis found that depression is associated with cardiac and all- cause mortality in post acute MI patients after controlling for other predictors⁵.

Post MI depression is an independent risk factor for increased mortality. Coronary revascularization procedures also appear to be used less often in those with post MI than in comparable patients with out mood disorder. Cardiac rehabilitation programs and increasing levels of social support may help improve symptoms¹.

Statement of the problem

A descriptive study to assess depression among post myocardial infarction patients in selected cardiac hospital, Bangalore

OBJECTIVES OF THE STUDY

1. Assess the depression scores among post myocardial infarction patients
2. Assess the range of depression scores among post myocardial infarction patients
3. Associate the depression scores of post myocardial infarction patients with selected demographic variables

MATERIALS AND METHOD

The research design adopted for the study is descriptive survey of non- experimental design. The setting for the study is cardiac OPD at Sri Jayadeva Institute of Cardiovascular sciences and research, Bangalore. The population of the study encompasses all the patients diagnosed with MI in the specified setting. The sampling technique adopted for this study was convenience sampling of non- probability type. The sample size for the present study was 50. The inclusion criteria were patients with the diagnosis of MI; patients who can read English or Kannada; patients who are willing to participate in this study; and patients who are available during data collection period. And the exclusion criteria were patients who are not oriented; patients who are blind; and patients who are on antidepressants medication. The tools for data collection comprises of two sections. Section- A: Consists of demographic data and Section - B: Consists of Beck's Depression Inventory. The data collection procedure was furthered by obtaining ethical clearance from the authorities of the hospital and the respondents meeting the inclusion criteria were selected using convenience sampling method. The tool was distributed to them and collected after the completion of the self reports. The data was collected in the month of October 2012.

Data analysis and interpretation

The demographic characteristics of the respondents are shown in table 1.

Table 1: Percentage distribution of demographic variables of respondents N=50

Variable	Categories	Frequency	Percentage
Age group	40 - 45	7	14
	45 - 50	16	32
	50 - 55	18	36
	55 -60	4	8
	60 -65	1	2
	65 -70	4	8
Gender	Males	25	50
	Females	25	50
Marital Status	Married	50	100
Occupation	Retired/ House wife	18	36
	Private	12	24
	Self employed	16	32
	Government	4	8

Table 1: Percentage distribution of demographic variables of respondents N=50 (Contd.)

Variable	Categories	Frequency	Percentage
Educational Qualification	No formal education	7	14
	Primary	15	30
	Secondary	12	24
	High School	12	24
	Graduate	4	8
Family income	Rs. 5000- 10000	16	32
	Rs.10000- 15000	34	68
Type of family	Nuclear	18	36
	Joint	32	64
Site of Myocardial Infarction	Anterior	31	62
	Posterior	13	26
	Inferior	12	24

Table 1 reveals the distribution of selected demographic variables included in the study. With regard to age, 14% belonged to 40 – 45 age group, 32% to 45 -50, 36% to 50 – 55, 8% to 55 – 60, 2% to 60 – 65 and 8% to 65- 70 age group. Maximum percentage of respondents belonged to 50 - 55 age group. Related to gender, 50% were males and 50% were females. 100% of respondents were married. In relation to occupation, 36% were retired, 24% in private sector, 32% self employed and 8% in Government service. The educational qualification of the respondents showed 14% had no formal education, 30% went to Primary School, and 24% to Secondary school, 24% to High School and 8% were Graduates.32% of respondents had income of Rs.5000- 10000 range and 68% in Rs.10000- 15000 range. 36% belonged to nuclear family and remaining 64% to joint family. With regard to site of infarction, 62% had anterior wall infarct, 26% posterior wall infarct and 24% inferior wall infarct. Maximum of respondents had anterior wall infarction.

Table 2: Overall mean score and mean score percentage of the respondents N=50

Scale	Over all mean score	Over all mean %	Standard deviation
Beck's depression inventory	48.04	76.25	5.69

Table 2 shows the over all mean score of respondents measured by Beck's Depression Inventory was 48.04 and mean percentage was 76.25 with standard deviation of 5.69.

Table 3: Percentage distribution, mean score and mean score % of range scores of each item on Beck's depression inventory N=50

Items on Beck's depression inventory	Minimal range	Mild range	Moderate range	Severe range
Sadness	0	4	84	8
Pessimism	0	6	72	22
Past failure	0	6	50	44
Loss of pleasure	0	6	56	38
Guilty feelings	0	6	50	44
Punishment feelings	0	6	42	52
Self- dislike	0	16	52	32
Self- criticalness	0	16	60	24
Suicidal thoughts or wishes	0	60	28	12
Crying	0	20	42	38
Agitation	0	18	42	40
Loss of interest	0	10	52	38
Indecisiveness	0	6	46	48
Worthlessness	0	8	42	50
Loss of energy	0	6	44	50
Changes in sleep pattern	0	2	70	28
Irritability	0	2	74	24
Changes in appetite	0	8	78	14
Concentration difficulty	0	2	34	64
Tiredness or fatigue	0	0	30	70
Loss of interest in sex	0	2	20	78
Mean Score	0	5	25.42	19.47
Mean Score %	0	10	50.85	38.95

Table 3 reveals the range score on individual item in the Beck's Depression Inventory by the respondents. It is clear from the findings that none of respondents experienced depression in the minimal range. The mean score and mean score percentage of mild range, moderate range and severe range were 5 and 10, 25.42 and 50.85, and 19.47 and 38.95 respectively.

Table 4: Association of scores of Beck's Depression Inventory with selected demographic variables N=50

Variables	Chi-square Value	Level of significance
Age	29.44	P <0.05
Occupation	9.20	P <0.05
Educational qualification	7.8	NS
Family income	6.48	P <0.05
Type of family	3.92	P <0.05
Site of myocardial infarction	19.96	P <0.05

Table 4 displays the association with the scores of Beck's Depression Inventory and selected demographic variables. It is quite evident that except educational qualification remaining variables have association at P < 0.05 level of significance.

DISCUSSION

Assessment of depression scores: The over all mean score of respondents measured by Beck's Depression Inventory was 48.04 and mean percentage was 76.25 with standard deviation of 5.69. It is evident from the findings that 76.25% experienced depression following MI. This finding is consistent with a study that was conducted to assess the occurrence of anxiety and depression in patients with recent MI and also to assess the relationship of these symptoms with other relevant factors and clinical outcome. It was found significant anxiety and depressive symptoms were present in 48.5% and 25.2% respectively ⁶. Another study also supports the findings of the present study that was undertaken to explore relation between depression and prevalence of cardiovascular diseases. The study findings showcased in patients with cardiovascular disorders depression is more frequent than in healthy individuals. History of myocardial infarction increases the prevalence of depression ⁷.

Assessment of range of depression scores: The mean score and mean score percentage of mild range,

moderate range and severe range were 5 and 10, 25.42 and 50.85, and 19.47 and 38.95 respectively. It is apparent from the finding that majority of the respondents experienced moderate range of depression. The finding of the present study is similar to the findings of a study that was designed to determine anxiety and depression levels in patients with MI. The results of the study showed 100% of patients were found to have severe anxiety. Depression scores showed a clinically normal level in 8.9%, borderline level in 57.1%, severe in 34%⁸.

Association of depression scores with selected demographic variables: It is quite evident from the findings that except educational qualification remaining variables have association at $P < 0.05$ level of significance.

Implications of the study

- Early diagnosis and aggressive treatment are crucial to reducing cardiac related morbidity and mortality. Cardiac rehabilitation programs, psychotherapy, counseling and pharmacotherapy are effective in management of acute MI depression.
- Efforts to improve health status after MI should therefore include standard assessment and guideline based treatment of post MI depressive disorder.
- Efforts to improve adherence to post MI treatment guidelines and to enhance patient compliance may improve prognosis in this high risk group.
- Formal screening for symptoms of depression should be considered as a part of routine acute MI care.

CONCLUSION

There are several reasons why it seems appropriate to screen for depression during acute MI hospitalization. Depression may have a greater effect on quality of life and physical limitation in patients with coronary disease than traditionally determined measures of cardiac function. A study was conducted to determine the ability of cardiovascular health care workers to assess the symptoms of depression in patients hospitalized with acute MI in absence of formal screening. The findings of the study revealed

cardiovascular nurses and medicine residents and interns under recognize depression in patients with acute MI in the absence of formal screening⁹.

The National Service Framework for coronary heart disease recommends that psychological support should be offered to those patients who require it. A six-month study carried out measured psychological support needed by patients following MI. Of 80 patients, 25 were eligible for referral for psychological support as a result of high depression scores measured during the study period. The study also found a high degree of patient satisfaction. The recommendations were to plan nursing interventions to decrease depression levels and implementation of cardiac rehabilitation programs are of particular importance in patients with MI¹⁰.

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Perceptions of Smoking Behaviours and Habits among University Students in Oman

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ABSTRACT

The aim of this paper is to explore smoking behaviours and habits among students at a public University in Oman. An exploratory cross sectional research design was used. 840 students were randomly selected in clusters drawn across nine colleges in the University. A Modified World Health Organization Smoking Behaviours Self-administered Questionnaire was used in 2012. 10.01% of the students smoked, of which 8.69% of the students lived more than 5 years outside homes and had leisure time (8.33%). 14.2% of the students had history of smoking, of which 10.71% have an intention to smoke. There is significant difference in smoking behaviours among male and female, fathers or a family member. Results provide baseline data to develop pro-interventions for smoking awareness and counseling for university students and encourage policy makers to strengthen the policies to curb tobacco products.

Keywords: Smoking Prevalence, Habits, Perceptions, Behaviours, University students, Reported smoking, Oman

INTRODUCTION

Smoking and tobacco consumption is increasing and is a leading predisposing factor for multiple health problems affecting both active and passive smokers with no gender specificity across the world¹⁻¹¹. Tobacco contains more than 4000 chemicals that are poisonous and carcinogenic^{3,12}. Smoking and tobacco consumption is on the increase in countries of the Eastern Mediterranean contributing to high risk for morbidity and disability¹³. Smoking in adolescent populations has been associated with a number of environmental, personal and behavioural factors in Middle East and Oman¹⁴⁻¹⁶. Smoking in Oman is increasing due to the growing population, income, media and interest in smoking and lack of awareness of the dangers and hazards of smoking^{17,18}.

The prevalence of smoking among college students has increased during the 1990s though they smoke fewer cigarettes and are less likely to smoke daily than the general population¹⁹. Cigarette-smoking habits among 1500 public secondary school boys showed that 18.9% were currently smoking and another 28.2% had smoking experience in the United Arab Emirates. Most of the smokers had begun smoking between the age of 10 and 15, and were much likely to have family

members who smoked²⁰. 29% (N=6470) students in the college were current smokers at Saudi Arabian University²¹. Prevalence of smoking in Oman among students between the age of 13-18 years is as high as 20% and 25% among adults^{17,18}. There is little research in Oman on prevalence of smoking between 18-25 years. There is also a need to identify smoking behaviours to incorporate smoking cessation and counseling programs in the nursing curricula and to train Omani nurses to assess and counsel high-risk smoking behaviours among youth and younger population in Oman.

METHOD

An exploratory cross-sectional research design was used to identify smoking habits and behaviours among students in a public university. Assuming a prevalence of smoking of 50% and accepting a margin of error not exceeding 4% with a 95% confidence level, the sample size calculated was 822. A cluster random sampling was used to select 840 students out of a total population of 6262 (2010) in a public university. Ethical approval was obtained from the Medical Research and Ethics Committee at College of Medicine and Health Sciences and the University Student Affairs, Sultan Qaboos University.

The sampling criteria were student enrolled in any college at SQU, age 18-25 years, Omani. The selected students were contacted and their willingness to participate in the study. The study objectives and data collection tools were explained to the students and a packet containing the demographic and MWHOSB-SAQ, cover letter and consent form with instructions was directly administered to the students who were willing to participate in the study. A written consent was obtained from the randomly selected students. Confidentiality and anonymity was maintained throughout the study.

The Modified World Health Organization Smoking Behaviours Self-administered Questionnaire-Arabic (MWHOSB-SAQ) was developed using Wisconsin Tobacco Survey (WTS), MONICA smoking questionnaire, WHO modified Arabic version of smoking questionnaire and CINDI Health Monitor questionnaire²²⁻²⁵. The WHOSB-SAQ consisted of questions about type of smoking, practice of smoking (number of cigarettes and smoking place) and initiation of smoking (age, source, causes of first smoking). The Arabic version of the instrument was pilot tested among 20 students in the University. The Cronbach's Alpha obtained was 0.81.

RESULTS

Demographic characteristics (Table 1). 10.01% of the students reported smoking between 18-25 years and 6.55% of these students lived off-campus. More male students (6.199%) reported smoking compared to the female students (3.81%).

Smoking behaviours and habits (Table 2). 14.29% of the students reported smoking ($p < 0.000$) and 10.71% of these students initiated smoking between 10-16 years and 10.48% of them had an intention to smoke. 8.69% of the students used shisha and 9.76% of them reported peer influence. 11.07% of the students smoked with friends or in public places. 89.05% of the non-smokers had initiated smoking in younger age groups 10-16 years, while 8.57% of these students had intention to smoke.

Association between demographic and smoking behaviours (Table 3). Mothers education, initiation and intention of smoking, duration and frequency of smoking, money spent for smoking, number and cost of cigarettes, tobacco products, motivating factors, and place of smoking were found to be significant among university students ($p < 0.05$).

DISCUSSION

10.01% students (18-25 years) reported ever-smoking, while more male students (6.19%) reported smoking compared to the female students (3.81%). Living off campus, single marital status, mother's education and parents living together were found to be significantly associated to smoking behaviours among these university students. More students had been studying away from their parents for more than 5 years and were exposed to smoking among family members and friends. Access to pocket money and tobacco products, initiation and intention of smoking, and peer influence motivated students to smoke. The study showed that most smokers were over 20 years of age due to the new acquired freedom being away from family and family pressure lessens. The students' residential status and years spent outside home was another indicator of smoking in our study as significantly more smokers were living away from their parents. This supports the theory that the social environment surrounding the youth plays a major role in smoking behaviour. Both parental and peer smoking and initiation and intention of smoking have been shown to be important predictors of smoking. Students living away from their parents may be subject to a higher degree of peer influence compared with those living with their parents. Peers' smoking was associated with current smoking among university students.

The Oman Family Health Survey revealed over 15% of male adults and 1.5% of females aged >15 years as regular smokers of tobacco²⁶. School reports (1994) in Oman (N = 1036 boys, 926 girls) showed high percentage of smokers aged 12-18 years (5% boys, 1% girls)²⁷. In 2001 there was an increase of smoking in the age 15-19 years among boys (8%) and girls (7.3%). The Global Youth Tobacco Survey (2003) among adolescents 13-15 years showed 1 in 5 (19.55) of all students (N=1962, 1005 boys, 913 girls) have ever smoked cigarettes (19.5%, boys 31.5% and girls 6.8%)²⁸. Among this percentage 18.2% smoked any form of tobacco while 9.1% smoked cigarettes and 12.8% smoked other tobacco products²⁹. Smoking in the age 18-25 years is consistent with studies in other Arab countries finding that the most common age of starting smoking was between 15 and 19 among all ever-smokers³⁰⁻³². The age of onset of smoking is 20 years for the great majority of smokers and described adolescence as the most vulnerable period for acquiring the smoking habit and the prevalence was found to be 28.6% among university students³³. The

prevalence of smoking increased significantly according to year of studies from 9.6% in the first year to 56.7% in the fourth year. Smoking initiation for pleasure and leisure was cited among students (19%) to reduce stress, anxiety and curiosity during university years was found by a national survey of US college students³⁴⁻³⁶.

CONCLUSION

In our study the students who reported smoking were away from parents, had peer influence, lived off campus, previously observed smoking practices at home and were exposed to the outside world. There is a trend of smoking among students at higher levels of education (3-4th year of study) with increasing time spent at the university, exposure to outside world and being away from home. Male students reported higher prevalence of smoking and use of shisha than female

students. Factors associated with continued smoking were smoking with friends, lack of opportunity or motivation to spend time in healthier, pleasure-giving activities, such as sports. Being away from family, experiencing stress from studies and new adulthood are also factors associated with student smoking. As students living away from home with peer off-campus are more likely to be smokers than those living in university residences which provide smoke-free college residences. To encourage a university culture of non-smoking zone and smoke-free society, the university, through education and prevention measures, should develop and implement an active anti-smoking program. Developing a pre-intervention level of motivation is important in quitting smoking in educational institutions. It is important to provide smoking control interventions and health education by health care professionals for youths at an earlier age during initiation and intention of smoking years.

Table 1. Demographic characteristics among University Students N = 840

Variables	Characteristics	Smokers		Non-smokers	
		Yes	Percent	No	Percent
Age (years)	18-21	36.00	4.29	301.00	35.83
	22-25	50.00	5.72	455.00	54.17
Residency	On campus	29.00	3.45	267.00	31.79
	Off campus	55.00	6.55	489.00	58.21
Gender	Male	52.00	6.19	412.00	49.05
	Female	32.00	3.81	344.00	40.95
Family monthly income (OR)	<500 OR	28.00	3.33	333.00	39.64
	501-1000 OR	26.00	3.10	175.00	20.83
	> 1000 OR	30.00	3.57	248.00	29.52
Pocket money (OR)	<100 OR	56.00	6.67	282.00	33.57
	101-150 OR	63.00	7.50	276.00	32.86
Father's education	Primary	17.00	2.02	200.00	23.81
	Secondary	25.00	2.98	195.00	23.21
	University	29.00	3.45	198.00	23.57
	No	13.00	1.55	163.00	19.40
Mother's education	Primary	37.00	4.40	302.00	35.95
	Secondary	19.00	2.26	131.00	15.60
	University	6.00	0.71	79.00	9.40
	No	21.00	2.50	244.00	29.05
Family status	Single parent	30.00	3.57	89.00	10.59
	Living together	83.00	9.88	634.00	75.48
Living away from home (years)	<5	73.00	8.69	455.00	54.17
	5-8	35.00	4.17	121.00	14.40
	> 8	22.00	1.43	69.00	8.21
Leisure	No	14.00	1.67	121.00	14.40
	Yes	70.00	8.33	635.00	75.60

Table 2. Smoking Behaviours and Habits among University Students N = 840

Perceptions	Behaviours	Smokers		Non-smokers	
		Yes	Percent	No	Percent
Father's smoking	Yes	15.00	1.79	78.00	9.29
	No	69.00	8.21	678.00	80.71
Brother's smoking	yes	17.00	2.02	67.00	7.98
	No	67.00	7.98	689.00	82.02
Family members smoking	yes	21.00	2.50	81.00	9.64
	No	63.00	7.50	675.00	80.36
Friends smoking	yes	17.00	2.02	532.00	63.33
	No	67.00	7.98	224.00	26.67
Smoking status	Never	38.00	4.52	457.00	54.40
	Once a day	36.00	4.29	58.00	6.90
	Once a week	21.00	2.50	21.00	2.50
	Once a month	25.00	2.98	32.00	3.81
Initiation of smoking (years)	Never smoked	43.00	5.12	396.00	47.14
	< 10 years	24.00	2.86	329.00	39.17
	11- 15 years	16.00	1.90	10.00	1.19
	> 16 years	7.00	0.83	13.00	1.55
Money spent for smoking (OR)	Never smoking	44.00	5.24	396.00	47.14
	1-5OR	29.00	3.45	211.00	25.12
	6-15 OR	18.00	2.14	22.00	2.62
Intention of smoking	Not sure	0.00	0.00	240.00	28.57
	Yes	88.00	10.48	72.00	8.57
	No	7.00	0.83	433.00	51.55
Use of tobacco products	Chewing	18.00	2.14	0.00	0.00
	Shisha/ snuff	73.00	8.69	0.00	0.00
Motivating factors	Friend/ peers	82.00	9.76	358.00	42.62
	Television/ Magazine	40.00	4.76	200.00	23.81
	Parents/ teachers	6.00	0.71	154.00	18.33
Place of smoking	School / friends room	39.00	4.64	401.00	47.74
	Public/ social events	54.00	6.43	186.00	22.14

Table 3. Association between Demographic Characteristics and Smoking Behaviours N = 840

Characteristics	Value	df	P value
Off campus residence	4.507	1	0.034
Social status	12.923	2	0.002
Education of mother	12.586	4	0.013
Parents living together	22.369	6	0.001
Father's smoking	4.365	1	0.037
Mother's smoking	9.011	1	0.003
Brother's smoking	10.870	1	0.001
Cigarette smoking	5.071	1	0.024
Use of hooka, sheesha, aflan	8.197	2	0.017
Frequency of smoking	11.196	3	0.011
Initiation of smoking	40.491	6	0.00
Intention of smoking	110.477	4	0.00
Number and cost of smoking	144.795	6	0.00
Motivating factors	32.705	7	0.00
Place of smoking	143.978	1	0.00
Duration of smoking	35.776	5	0.00
Money spent for smoking	78.235	4	0.00

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Effectiveness of Structured Teaching Programme on Knowledge and Attitude of Primary School Teachers Regarding Attention Deficit Hyperactivity Disorder

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ABSTRACT

Attention-Deficit/Hyperactivity Disorder is a common childhood disorder affecting approximately 5% of primary school-going children. The disorder is characterized by severe difficulties in one or more of three areas; inattention, impulsivity, and hyperactivity. Considering that, primary school teachers are often the first to notice behavioral difficulties in children, it is surprising that relatively little research has been undertaken with teachers.

The present study was conducted to find out the "effectiveness of structured teaching programme on knowledge and attitude of primary school teachers regarding Attention Deficit Hyperactivity Disorder in selected schools at Mangalore.

The objectives of the study were:

1. To assess the level of pre-intervention knowledge of primary school teachers regarding Attention Deficit Hyperactivity Disorder.
2. To assess the attitude of primary school teachers regarding Attention Deficit Hyperactivity Disorder.
3. To identify the relationship between knowledge and attitude of primary school teachers regarding Attention Deficit Hyperactivity Disorder.
4. To evaluate the effectiveness of structured teaching programme administered for primary school teachers regarding Attention Deficit Hyperactivity Disorder.
5. To find the association between pre-intervention knowledge about Attention Deficit Hyperactivity Disorder among primary school teachers with the selected variables.

Method: An evaluatory approach with one group pre-test , post-test design was used for the study. The sample consisted of 60 primary school teachers, selected by convenient sampling method. Data was collected by administering structured knowledge and attitude questionnaire on Attention Deficit Hyperactivity Disorder prepared by the investigator. After collecting base line data, structured teaching programme was given to the subjects and on 7th day post-test was conducted using the same questionnaire was used for collecting the baseline data. The collected data was analyzed by using descriptive and inferential statistics ('t' test).

Results: The result showed the significant difference suggesting that the STP was effective in increasing the knowledge and attitude of the teachers ($t = 14.34, t = 7.57$). The mean post-test knowledge and attitude scores ($X_2 = 43.17, X_2 = 52.72$) higher than the mean pre-test knowledge and attitude scores ($X_1 = 30.40, X_1 = 44.52$). There was no association between the pre-test knowledge and attitude scores with the selected demographic variables like age ($X^2 = 0.061, 0.126$), sex ($X^2 = 0.755, 0.876$), education of teachers ($X^2 = 0.448, 0.119$), teaching experience ($X^2 = 0.136, 0.259$) and articles read on ADHD ($X^2 = 0.941, 0.650$). There was a significant positive correlation between knowledge and attitude $r = 0.227$ at 0.05 level of significance.

Interpretation and conclusion: Findings of the study showed that the knowledge and attitude of the teachers was not satisfactory ($X_1 = 30.40, X_1 = 44.52$) before the introduction of the structured teaching programme. The STP helped them to learn more about Attention Deficit Hyperactivity Disorder. The post-test knowledge score showed the significant increase in knowledge and attitude of teachers. Hence the structured teaching programme is an effective strategy for providing information and improving the knowledge of subjects. Educating the teachers would help them to handle the Attention Deficit Hyperactivity Disorder problems by supporting them as a counsellor as well as a parent.

Keywords: Effectiveness; Attention Deficit Hyperactivity Disorder; structured teaching programme; primary school teachers

INTRODUCTION

Education is one of the most important aspects of human resource development. The inability to successfully navigate the educational system can cause serious problems for children and their parents. There are many reasons for children to underperform at school such as, medical problems, below average intelligence, specific learning disability, attention deficit hyperactivity disorder, emotional problems, poor socio-cultural and home environment, psychiatric disorders and even environmental causes.¹

A child's academic success is often dependent on his or her ability to attend to tasks, and teacher and classroom expectations with minimal distraction. Such skill enables a student to acquire necessary information, complete assignments, and participate in classroom activities and discussions. When a child exhibits behaviours associated with attention deficit hyperactivity disorder, consequences may include difficulties with academics and with forming relationships with his or her peers if appropriate instructional methodologies and interventions are not implemented.²

Six days-a-week children spend most of their time in classroom and other school settings. Here they are expected to follow rules, behave in socially appropriate ways, participate in academic activities, and not disrupt the learning process or activities of others. The work of the teacher becomes much more demanding when some learners have ADHD. ADHD influences millions of children around the world. Approximately three to five percent of elementary school children have been diagnosed with this disorder.³

Major changes in educational philosophy have led to increased number of children with various disabilities being in mainstream classes. Attention deficit hyperactivity disorder and learning disabilities are the most common diagnoses educators have to face in regular schools. Teachers play a major role in the identification and assessment of children's academic and behavioral problems and make primary decision how to help them⁴. Teachers find aggressive behaviour to be of a more serious nature than withdrawn behaviour and that is why children with emotional disturbance are often ignored at school. Snider, Busch and Arrowood claim that teachers are involved in making the initial referral in 40-60% of the time and thus it is of critical importance that teachers are knowledgeable and objective if they are to play a role in the diagnosis of childhood problems.⁵

The knowledge teachers have about ADHD which may influence how they communicate with and teach children with ADHD. Consequently, if teachers have more accurate knowledge of this disorder, they may have a better understanding of learners with ADHD and this may prevent them from developing negative views of these learners or labelling them. Furthermore, it is vital for teachers to have adequate and appropriate knowledge about the symptoms/diagnosis, aetiology and course of ADHD so that they can offer effective advice. Studies have found that teachers provide inaccurate and inappropriate advice to parents of children with ADHD and that parents frequently follow that advice.⁶

MATERIAL AND METHOD

Research design

The research design selected for this study was pre-experimental, i.e., one group pre-test, post-test design because this study was intended to ascertain the gain in knowledge by the clients who were subjected to a structured teaching programme. Thus, only one group was observed twice, i.e., before and after introducing the independent variable.

Pre-experimental one group pre-test post-test design

Group	Pre-test	Intervention	Post-test
I	O ₁	X	O ₂

Variables under study

Dependent variable

In the present study, it refers to the knowledge and attitude of the primary school teachers regarding ADHD.

Independent variable

In this study, it refers to the structured teaching programme which has brought about change in the knowledge and attitude of teachers.

Extraneous variable

In this study, it refers to the selected variables such as age, sex, religion, qualification, experience, previous knowledge, attended any workshop, articles read, any referrals made etc.

Setting of the study

The present study was conducted in Sri Ramakrishna School Mangalore, Dakshina Karnataka.

This institution constitutes of both English and Kannada medium primary schools.

POPULATION

In the present study, the population consisted of all primary school teachers teaching in the selected primary schools at Mangalore, Karnataka.

Sample and sample technique

Here the study sample comprised of 60 primary school teachers who were teaching in schools (1st standard to 5th standard) in a selected school at Mangalore. Convenient sampling was used for selecting the school. Simple random sampling was used for selecting the sample.

Development and description of the tool

The following steps were adopted in the development of tool:

- Review of literature that provided adequate content area for the tool preparation.
- Consultation and discussion with nursing experts, psychologists, and psychiatrists.
- Personal experience and discussion with friends.

A structured knowledge and attitude questionnaire was used to collect the data. Blueprint was prepared which showed the distribution of items according to the content areas such as general information, symptoms and diagnosis, treatment of ADHD, as well as the domains of objectives; knowledge, comprehension, application.

Reliability of the tool

The reliability of the instrument was established by administering the tool to 10 school teachers in the Sharada Vidyanikethana School, Mangalore. The coefficient of internal consistency was computed for structured knowledge and attitude questionnaire, using split half technique. The reliability of the test was found out using Karl Pearson's product moment correlation formula. The reliability coefficient obtained was 0.903 which indicates that the tool is reliable.

Description of tool

The tool consisted of three parts

Part I: Baseline proforma on variables like age, sex, religion, qualification, experience, management of ADHD included in training, articles read on ADHD, attended any workshop on ADHD, referred any ADHD child to hospital.

Part II: Structured knowledge rating scale comprising of 30 knowledge items covering the following areas: general information, symptoms and diagnosis, treatment of ADHD.

Part III: Structured attitude rating scale comprising of 15 items.

Development of structured teaching programme

The structured teaching programme was developed for school teachers.. It was prepared based on the review of research and non-research literature, discussion with experts and personal experience of the investigator. The steps involved in the development of STP were:

- Assessing learning needs of the study population for which the investigator collected relevant information on the knowledge and attitude level of teachers regarding ADHD.
- Review of literature on the topic.
- Preparation of the blueprint.
- Consultation with experts in the field.
- A set of related teaching aids.
- Development of criteria checklist and content validity.
- Preparation of final draft of STP.

PILOT STUDY

The data was collected from 10 teachers who fulfilled the criteria, set for selection of the sample. The data collected was analyzed using descriptive and inferential statistics. The pilot study results showed that the mean post-test knowledge scores are higher than the mean pre-test knowledge scores. Tool was found feasible and no modifications were made.

DATA COLLECTION

Written permission was obtained from the school headmaster who was made aware of the nature and importance of the study.

Prior to the data collection, the investigator familiarised himself with the subjects and explained the purpose of the study to them. He requested participants' full cooperation and assured them of the confidentiality of their responses.

Pre-test knowledge and attitude questionnaire was administered. There were 60 subjects who were willing to participate in the study. The average time taken for pre-test was 30 minutes. Then STP was administered after pre-testing, which took about 45 minutes. On the seventh day after the administration of STP post-test was conducted on the group by the investigator using the same questionnaire at the same place. The average time taken for post-test was 30 minutes.

Plan for data analysis

Descriptive (frequency, percentage, range, mean, median, standard deviation) and inferential statistics ('t' test and chi-square test) is used for the analysis and interpretation of the data.

FINDINGS

Organization of findings

1. Sample characteristics.
2. Evaluation of structured teaching programme in terms of gain in knowledge and attitude scores.
3. Association between the level of knowledge and attitude with selected demographic variables.

Section I: Sample characteristics

The data obtained on sample characteristics was analysed using descriptive statistics as depicted in Table 1.

Table 1: Frequency and percentage of the sample characteristics N= 60

Sl.No	Variables	Frequency	Percentage
1	Age in years		
	20- 25	13	21.7
	25- 30	14	23.3
	30- 35	13	21.7
	Above 35	20	33.3
2	Sex		
	Male	16	26.7
	Female	44	73.3
3	Religion		
	Hindu	55	91.7
	Muslim	2	3.3
	Christian	3	5
4	Professional education		
	D. Ed	6	8.3
	Graduate	26	43.3
	Post graduate	24	40
	Any other	5	8.3
5	Teaching Experience in years		
	0-5 yrs	26	43.3
	5-10 yrs	12	20
	10-15 yrs	10	16.7
	Above 16 yrs	12	20

Table 1: Frequency and percentage of the sample characteristics N= 60 (Contd.)

Sl.No	Variables	Frequency	Percentage
6	Management of ADHD Included in training		
	Yes	14	23.3
	No	46	76.7
7	Read any articles on ADHD		
	Yes	19	31.7
	No	41	68.3
8	Attended any workshop on ADHD		
	Yes	7	11.7
	No	53	88.3
9	Referred any child to hospital		
	Yes	4	6.7
	No	56	93.3

Section II: Evaluation of STP in terms of gain in knowledge and attitude scores

The effectiveness of structured teaching programme was established by analysing the pre-test and post-test score. The scores obtained were tabulated and the mean, median, standard deviation and mean percentage were computed. Data are presented in Table 2.

Table 2: Mean, median, standard deviation and mean% of pre- and post-test knowledge scores of teachers N = 60

Area	Mean	Median	Standard Deviation	Mean%
Pre test	30.40	28.00	4.893	50.67
Post-test	43.17	43.00	5.431	71.94

Maximum score =60

Table 3: Mean, median, standard deviation and mean% of pre- and post-test attitude scores of teachers N = 60

Area	Mean	Median	Standard Deviation	Mean%
Pre test	44.52	45.00	5.640	59.36
Post-test	52.72	53.50	5.142	70.29

Maximum score =75

Table 4: Grading of pre-test and post-test knowledge scores N = 60

Level of knowledge	Pre test in percentage	Post-test in percentage
Poor (1-20)	35 (58.3%)	2(3.3%)
Moderate (21-40)	25 (41.7%)	18(30.0%)
Good (41- 60)	-	40(66.7%)

Table5: Grading of pre-test and post-test attitude scores N = 60

Level of Attitude	Pre test in percentage	Post-test in percentage
Unfavourable (1-37)	18(30%)	-
Favourable (38-75)	42(70%)	60 (100%)

Table 6: 't' test showing difference in knowledge scores between pre-test and post-test N = 60

Knowledge score	Mean	Standard deviation	Mean of paired differences	SD of paired differences	't' value
Pre testPost-test	30.4043.17	4.8935.431	12.767	6.895	14.343*

Maximum score 60pd'' 0.05, *significant

The Table 6 shows that the mean post-test score (43.17) was higher than the mean pre-test score (30.40). It indicates that STP was effective in increasing the knowledge score of teachers.

Table 7: 't' test showing difference in attitude scores between pre-test and post-test N = 60

Attitude score	Mean	Standard deviation	Mean of paired differences	SD of paired differences	't' value
Pre testPost-test	44.5252.72	5.6405.142	8.200	8.382	7.577*

Maximum score 75pd'' 0.05, *significant

The Table 7 shows that the mean post-test score (52.72) was higher than the mean pre-test score (44.52). It indicates that STP was effective in increasing the attitude score of teachers.

Section III: Association between pre-test knowledge and attitude scores with selected demographic variable variables

In order to determine the association the following null hypothesis was stated

H_0 : There will be no significant association between the level of knowledge and attitude with the selected variables, i.e., age, religion, sex, years of experience, education of teachers.

Chi square test was computed to test the hypothesis.

Table 8: Chi square value between the levels of knowledge and selected variable N = 60

Selected variable	Level of knowledge		χ^2 value
	<median	>median	
Age			
20-30	9	18	0.061*
30- above 35	19	14	
Sex			
Male	8	8	0.755*
Female	20	24	
Religion			
Hindu	27	28	0.435*
Non Hindus	1	4	

Table 8: Chi square value between the levels of knowledge and selected variable N = 60

Selected variable	Level of knowledge		χ^2 value
	<median	>median	
Teaching experience			
0-5 years	9	17	0.136*
5-10 years	9	3	
10-15 years	5	5	
> 16years	5	7	
Education of teachers			
D. Ed./Graduate	13	18	0.448*
Post graduate& any other	15	14	

$\chi^2 = 3.84$

*Not significant

Table 8 shows that there is no significant association between the selected variables and pre-test knowledge scores at 0.05 level of significance. Therefore the null hypothesis is accepted.

Table 9: Chi square value between the levels of attitude and selected variable N = 60

Selected variable	Level of knowledge		χ^2 value
	<median	>median	
Age			
20-30	16	11	0.126*
30- above 35	13	20	
Sex			
Male	8	8	0.876*
Female	21	23	
Religion			
Hindu	27	28	1.000*
Non Hindus	2	3	

Table 9: Chi square value between the levels of attitude and selected variable N = 60 (Contd.)

Selected variable	Level of knowledge		χ^2 value
	<median	>median	
Teaching experience			0.259*
0-5 years	14	12	
5-10 years	7	5	
10-15 years	2	8	
> 16years	6	6	
Education of teachers			0.119*
D. Ed./Graduate	18	13	
Post graduate& any other	11	18	

$\chi^2 = 3.84^*$ Not significant

Table 9 shows that there is no significant association between the selected variables and attitude scores at 0.05 level of significance. Therefore the null hypothesis is accepted.

CONCLUSION

1. Pre-test findings showed that deficient knowledge and attitude regarding ADHD is existed in varying degree among school teachers in all areas of learning. The highest deficit was noted in the area of "symptoms and diagnosis."
2. The STP tested in the study was found to be effective in improving the knowledge and attitude of school teachers.
3. STP is an effective teaching method for providing information. It was very much appreciated by the teachers and they expressed their gratitude for providing education on the topic.
4. There was no significant relationship between specific variables like age, sex, religion, and years of experience, articles read on ADHD, and workshop attended on ADHD.

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Flipping the Classroom for Student Engagement

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ABSTRACT

Flipping is an innovative method of teaching that promotes an atmosphere of active learning. Originally used by Bergmann and Sams in secondary education to teach science and math. This method of teaching was proven to be successful in keeping students on track and engaged in learning. It has been adapted by many other disciplines. Flipping involves an inversion of learning that takes place outside of the traditional classroom. Through a literature search, evidence of flipping being used in nursing education was not found. Working with RN Students has given us the idea to pilot this new method within our RN to BSN Program.

Keywords: Student engagement, Teaching modality, Innovations in education, Nursing Education

INTRODUCTION

Nursing is an applied profession requiring learners to comprehend, analyze and apply content in varying patient situations. Educators have long considered that active learning and learner participation produce better educational outcomes than traditional, lecture-based teaching methods. Nursing educators believe that it is not until the student applies theory to a given patient situation thereby linking the theory with practice that true understanding materializes. Students typically have on-campus lectures and practice labs (often involving high fidelity simulators) as well as actual clinical experiences with patients. It is virtually impossible to expose students to every possible patient situation. Some patient experiences are not safe for students because of acuity and others are rarely found in hospitals. Yet new nurses are expected to respond accurately and effectively upon hire.

Both the Carnegie report: "Educating Nurses: A Call for Radical Transformation" (2010)¹ and the Institute of Medicine report, "The Future of Nursing: Leading Change Advancing Health" (2011)⁶ stress the need for re-evaluating current nursing education to ensure that future nurses are prepared to manage the rapidly changing healthcare environment. Rather than overloading students with all the facts related to new technology, new medications, new treatments; educators should also focus on helping them critically analyze information and apply what has been learned in a variety of clinical scenarios. New graduate nurses need to be able to communicate with other health team members in a concise, succinct manner; recognize how

and where to access needed information; and make sound clinical judgments.

Can flipping the classroom have an impact on the education of nursing students?

What is flipping?

Flipping involves switching traditional lectures with homework assignments and having students view the lectures at home. If you flip your class students are able watch and listen to your lectures via Camtassia or podcast at home before the class. Students can access this content at a time and place that is most convenient for them. This allows that limited class-time be used for tackling difficult problems, working in groups, analyzing, applying, researching, collaborating, and creating. The Educase Center for Applied Research (2012)² reports that students much prefer blended learning environments combining technology and traditional face-to-face educational strategies. Flipping allows the learner to control access of lecture content and the faculty to control application experiences.

With flipping, classrooms become real-life experiences, and yet content delivery is preserved. One reported benefit of flipping is that the theoretical/lecture-based component becomes more easily accessed and controlled by the learner. The student can listen multiple time to the content at home, while jogging, driving and come to the classroom well prepared and ready to discuss challenging content and expand their understanding in advanced activities.

Students can also review content that is difficult to understand; or that need further reinforcement; as well as those that are of particular interest to learners. The skills involved with knowing what, how and where to access information is facilitated in this framework.

Blackboard, a course content program used in many schools now, has a downloadable app so users can access content through cell phones and tablets. Because it remains available, students can also re-listen before exams; as a review for future lectures; to prepare for future classes as often as they wish. Technology is readily available for faculty to easily create podcasts of lectures and distribute to students. The lecture now becomes homework as preparation for the real work of applying the content in a variety of situations. Class time can use case studies, simulations, group work and a variety of other strategies to help students think through, reflect, collaborate, debate, and create solutions.

Another result is increased dialogue among students and faculty. Students become engaged in the classroom activities especially if they are in small, interactive groups that are tasked with analyzing and solving problems. Nursing traditionally uses case studies. Often these are assigned as homework. Some students excel at solving these scenarios, while others have more difficulty. Using a flipped class model, a faculty member can guide these students through the process and ensure that all are involved in decision-making and truly focus on priority setting. Students also become more actively engaged and responsible for their own learning with this modality. Philosophically, students come to class to share the knowledge rather than find answers.

Literature review

Bergmann and Sams (2012)² reported that their students displayed a more comprehensive understanding of course content. These authors also noted that they were able to connect with more students through the focus on assignments, homework, and group activities during class time. Demski (2013)⁴ reported on interviews with prominent faculty who use flipping in their classes. These faculty noted that while their classrooms may appear chaotic there is demonstrable learning; greater interaction both student-to-student and faculty-student. Another suggestion from Demski is to assess students understanding of assigned readings and podcasts at the start of the flipped session through short quizzes, perhaps using clickers.⁴

Berrett (2012)³ reported that flipping allows for immediate recognition of students' difficulties and instructor feedback in the classroom before examinations. Berrett also relays that the recent move to a focus on education outcomes has sparked interest in using flipping; and economic pressures make more productive use of classrooms an imperative.³

Another suggestion is for faculty to review student postings on discussion boards and blogs so that the flipped session can target challenges and difficult content. According to Demski (2013)⁴ Mazur created a cloud-based interactive system-allowing faculty to create in-depth questions for use in a flipped session. The system analyzes the student responses, via their phones and other handheld devices. The intent is then that faculty can develop appropriate assessment tools. An additional benefit of this system is that faculty can access other teachers' questions since it is cloud-based.

A side benefit noted is that students who are absent from a class session can use these podcasts, pre-class discussion blogs and postings, and other learning activities. This reduces the burden on faculty to re-teach content. Additionally these materials can be used by students to prepare for exams and review prior to starting more advanced classes.

Talbert (2013)⁷ notes that the flipped class can promote a learner's ability to adapt to changing problem situations. It is impossible to provide every possible situation, especially in nursing. However he cautions that most of the evidence supporting the Kahn Academy's classroom innovations is that the evidence to date is primarily anecdotal. So faculty should be cautious when planning to use this concept; and it should not take over the entire semester.

Report on the introduction of flipping in a BSN program

Our experience occurred as a result of the recent super storm. The campus was closed initially because of a lack of power and transportation; this shut down continued because the school sheltered more than 800 persons displaced by the storm. Some nursing faculty chose to contact students via Blackboard and provided a video, readings, and pre-class activities so the students would arrive at the next class with a strong background. The class then was used for students to complete what would have been their homework assignments. They were divided into four small groups and were tasked to analyze problems faced by individuals in an environmental crisis similar to the

storm and develop concept maps to effectively manage the needs of the community. Since many students experienced displacement; loss of personal belongings similar to the community in crisis the assessment and analysis of needs was very rich with reflections of personal experiences and identification of essential strategies for future occurrences. This proved to be an example of learning in context.

When the flipped class concept was used with a group of RN-BSN students, it proved to be extremely beneficial. The students were very engaged in the class. They were well prepared for our class discussions. Many of the theoretical concepts in the text came to life in their discussions, and presentations. Even the initially quiet students became engaged in the discussion groups and classroom presentations.

Our results were very positive; students reported that they were very satisfied with the flipped class; they were able to use some of their experiences from their various work backgrounds as nurses, in the discussions. But more importantly, we had one hundred percent pass rate in the course. All the students graded the course as a positive experience in their learning.

CONCLUSION

Should flipping replace typical nursing education classes? No, but it can be a valuable strategy to add to a nursing educator's toolbox. Our next steps will be to use flipping with select content in select class sections in the generic BSN program and compare student grades as well as anecdotal reports to determine improvement in critical thinking and other essential skills.

Here are some suggestions if you choose to implement this approach.

Suggestions for Implementation

- To begin the faculty needs to have a clear sense of what students are expected to learn:
 1. Learning objectives?
 2. Specific questions to be addressed?
 3. What level should students reach?

Faculty need to be willing to discover what students do not know; or do not understand- and respond to these gaps. Initially flipping requires a significant time

commitment and a change in a faculty member's role perception- from the authority to a guide/ coach role.

- It is important to note that flipping works best with topics/ content that can be explained in 15 minutes or less (Devaney, 2013)⁵. Students will not have as much success if the podcast is an hour or more. Rather provide brief content for the students to listen to at home, with the possible addition of discussion board/ blogs and other learning activities that the students will bring to the classroom completed. This is then followed by group, collaborative learning activities in the class itself.
- These group activities should focus on solving a clinical problem and clinical decision-making and can be scaffolded throughout the semester. The faculty thus has an immediate opportunity to observe how the students think, analyze and apply the content as well as an opportunity to intervene if important facts are ignored. Role-playing is an example of a classroom activity that engages the learners and ensures collaboration.
- Faculty should use existing technology with flipping. Blackboard works well and allows for voiced over powerpoints; insertion of you tube videos and podcast's; and communications via wikis, blogs and discussion board. It is likely that faculty and students are experienced with this mode which will decrease some anxiety.
- Communicate clearly how flipping will be used and expectations so that the students can both express their concerns. Focus on the benefits and expected outcomes for these sessions as well as the entire class. Students should understand that they are expected to complete assigned readings as well as listen to podcasts and communicate with peers before the class.
- Allow opportunities for students to learn from each other in the classroom. This begins with the pre-class discussion board, wiki and blog postings. Short case studies focused on the content with targeted questions can help steer the students to research prior to class. These asynchronous discussions typically become very in-depth.
- When starting to use group work in classes the recommendation is to start small. Pose a question that requires higher-order thinking (e.g., analysis, synthesis, or evaluation). Give students time to

reflect and then discuss their thoughts in the group. Next provide ample time for the group to discuss and develop a shared response.

- Maintain flexibility during the flipped session. Lectures are traditionally static in content whereas the flipped class can move in a variety of directions dependent upon the learner's needs. Faculty should review student postings prior to class to gain an understanding of what is understood and what content remains difficult for them to understand.

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Cystic Fibrosis and Exercise : A Systematic Review

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ABSTRACT

Purpose: The aim of this article is to systematically review the literature that examine exercise programs and evaluate their effect in Cystic Fibrosis patients.

Method: MEDLINE, EMBASE and CINAHL, Biological Abst., Up To Date electronic databases were searched from January 2005 to December 2013.

Results: Only seven exercise interventions met the eligibility criteria for review. They include a very short interval of twice in one hour to a long duration of 12 months. The exercise programs were walk, step test, aerobic, breathing, gaming and breathing. Majority had supervised training and assessment. Interventions carried out in home and in hospital setting.

Conclusions: All kinds of exercises helped in improving the respiratory function. Future research scope is also identified in various unexplored areas.

Keywords: Cystic Fibrosis, Exercise, Physical activity, Aerobic, Systematic review

INTRODUCTION

Cystic fibrosis (CF) is a genetic autosomal recessive disease, associated with decline of pulmonary function, pancreatic insufficiency, and important physical limitation^{(1)&(2)}. CF primarily affects the lung function and nutritional status⁽³⁾. Patients with pulmonary disease caused by CF are known to have reduced exercise tolerance^(4,5). Regular physical activity and exercise are considered important for the well-being of these patients⁽⁶⁾.

Aerobic exercise enhances cardiovascular fitness, enhances airway clearance, slows the decline in lung function⁽⁷⁾ and improves body mass.

Regular self-selected physical activity has been shown to improve lung function in adults with CF⁽⁸⁾. Studies demonstrated that time spent in moderate-to-vigorous physical activity correlated to aerobic capacity, independent of lung disease or function in adolescents and adults with CF⁽⁹⁾. Studies have demonstrated the benefits of exercise for CF patients^(10, 11).

Enzyme replacement capsules address digestive problems. Participation in exercise and physical activity are important part of the treatment process⁽¹⁰⁾.

Exercise is recommended for adults with CF to assist with airway clearance and reduce cardiovascular risk factors associated with inactivity⁽¹²⁾. Exercise also associated with an QoL for adults with CF⁽¹³⁾. It has been stated that aerobic capacity correlates with QoL measures and changes in the former are associated with changes in the latter⁽⁸⁾.

Exercise training may benefit children with CF by improving aerobic fitness and increasing muscle mass. Some studies have shown benefits from exercise and physical activity such as increased cardiorespiratory fitness and exercise tolerance⁽¹⁴⁾. Higher levels of aerobic fitness associated with prolonged survival. Investigations into components of exercise programs, which can increase their fitness are highly relevant for patients with CF⁽¹⁴⁾.

Exercises at home is a best method of getting cooperation and acceptance from children⁽¹⁵⁾. A

randomized cross over trial with concealed allocation on gaming console exercise for CF patients were explored⁽¹⁶⁾.

The aim of this article is to systematically review the literature that examine exercise programs and evaluate their effect in CF patients.

METHODS

Search Strategy

We performed a systematic review using the methodology addressed by Cochrane Collaboration Protocol⁽¹⁷⁾. MEDLINE, EMBASE and CINHAI, Biological Abst., Up To Date electronic databases were searched from January 2005 to December 2013. The search terms used were Cystic Fibrosis and Exercise or Physical activity or Aerobic Strengthening. We also searched reference lists from relevant articles and searched journals to identify articles to include in the review. Most recent search was performed on 29th January 2013.

Study Criteria

Articles were included if they meet the following criteria: Participants were adolescent or adults with CF, Study published in English or translation available in English.

Exclusion criteria

Unpublished work and articles, articles which are not published in English language or the translation was not available in English.

Study Selection

The literature search was done by single author many sittings. Duplicates were removed; titles abstracts and full articles were made in the hard copy form and screened repeatedly to fit into the eligibility criteria.

RESULTS

Studies Retrieved

Details of the literature search are provided in Figure 1. The search criteria resulted in retrieval of 678

article, with the Boolean /Phrase cystic fibrosis, Fibrosis and Exercise or Physical activity or Aerobic Strengthening. In the review 624 Academic Journals, 43 Magazines 3 news 2 Trade publications and 2 Dissertations were retrieved. It was decided to include only Academic Journals and removed duplicates. Manual screening was done and retrieved only articles which had an intervention. The reviewers found only 7 articles meeting the criteria.

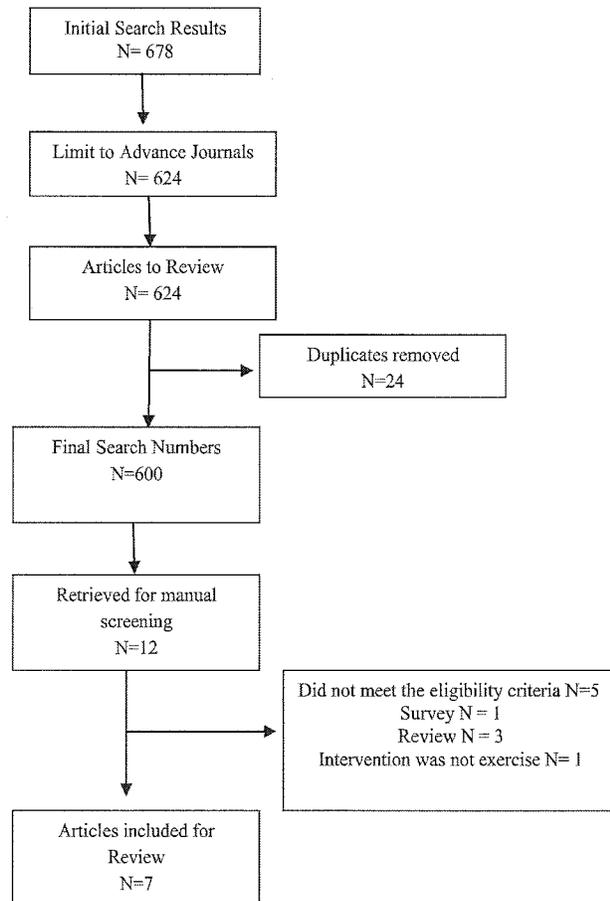


Fig. 1. Flow chart of search results

Study Quality Assessment

Table 1 details the major criteria for methodological study quality assessment. Among 7 none met the full Delphi list criteria⁽¹⁸⁾. An extra criteria of drop out was added because 4 studies reported. Compliance and repeatability of the program was mentioned in all studies. Method of randomization is very clear in all reviewed studies. Two types of interventions mentioned in three studies.

Table 1: Methodological Quality Assessment

STUDY	Holland, A. E., Rasekaba, T., Wilson, J. W., & Button, B. M. (2011).	Ziegler, B., Rovveder, P. M., Oliveira, C. L., Silva, F. e., & Dalcin, P. R. (2010).	Elbasan, B., Tunali, N., Duzgun, L., & Ozcelik, U. (2012).	Schmidt, A. M., Jacobsen, U., Bregnballe, V., Olesen, H. V., Ingemann-Hansen, T., Thastum, M., & OlufSchiotz, P. (2011).	Keochkerian, D., Chlif, M., Delanaud, S., Gauthier, R., Maingourd, Y., & Ahmaidi, S. (2008).	Kuys, S. S., Hall, K., Peasey, M., Wood, M., Cobb, R., & Bell, S. C. (2011).	Paranjape, S. M., Barnes, L. A., Carson, K. A., Loosen, H., & Mogayzel, P. J., Jr. (2012).
	Desaturation During the 3-Minute Step Test Predicts Impaired 12-Month Outcomes in Adult Patients With Cystic Fibrosis	Repeatability of the 6-Minute Walk Test in Adolescents and Adults With Cystic Fibrosis	Effects of chest physiotherapy and aerobic exercise training on physical fitness in young children with cystic fibrosis	Exercise and quality of life in patients with cystic fibrosis: A 12-week intervention study	Breathing Pattern Adopted by Children with Cystic Fibrosis with Mild to Moderate Pulmonary Impairment during Exercise	Gaming console exercise and cycle or treadmill exercise provide similar cardiovascular demand in adults with cystic fibrosis: a randomised cross-over trial	Exercise improves lung function and habitual activity in children with cystic fibrosis
A method of randomization performed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Treatment allocation was concealed	Yes	Yes	Yes	No	No	Yes	Unclear
Groups similar at baseline regarding the most important prognostic indicators			Yes		Yes	Yes	
Eligibility criteria specified	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Outcome assessor blind	Unclear	Unclear	Yes	No	No	Yes	
Compliance rate reported	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drop-out reported	Yes	Yes	Yes	Yes	No	No	Yes
Exercise sessions supervised	Yes	Yes by a Physiotherapist	Yes (Physiotherapist and pediatric pulmonologist)	No	Yes (skilled pediatric pulmonary function technicians who regularly work with children with CF)	Yes (Physiotherapist)	Unclear

Cohort Details

Studies were examined for the number of participants, type of study. The study characteristics are presented in Table II. The sample size ranged from 18 to 101. A total of 291 subjects participating across the seven studies.

The age across the study participants were mentioned in 6 and one study mentioned the mean age of the participants, which shows that the participants were not different in their age. Clinical stability of participants was mentioned in six studies. One study categorized participants as mild, moderate and severe cases⁽¹⁹⁾.

Exercise Intervention

Exercise interventions were examined for their number of groups in the study, type of intervention, mode, location of intervention, supervised or not, duration of intervention. Table III describing the details of exercise intervention. The intervention for the study groups included step test, walking, aerobic, physiotherapy, gaming and cycling. Assessment time varied from twice in 60 mins to a maximum of 12 months. Six studies interventions were supervised by a skilled personal⁽²⁰⁾. 100% compliance reported in two studies^(16,21). Four studies were having single group and three studies had two groups for their intervention.

Table 2. Participants Details

Study	Group	Sample	Gender		Age	Severity of CF
			M	F		
Holland, A. E., Rasekaba, T., Wilson, J. W., & Button, B. M. (2011).	Step test	101	56	55	18-63	Normal lung fun 23 Mild disease 22 Moderate Disease 34 Severe Disease 22
Ziegler, B., Rovedder, P. M., Oliveira, C. L., Silva, F. e., & Dalcin, P. R. (2010).	Walk	31	12	19	15-49	Clinically stable
Elbasan, B., Tunali, N., Duzgun, I., & Ozcelik, U. (2012).	Physiotherapy Aerobic	20	Not mentioned		13-May	Clinically stable
Schmidt, A. M., Jacobsen, U., Bregnballe, V., Olesen, H. V., Ingemann-Hansen, T., Thastum, M., & Oluf Schiøtz, P. (2011).	Aerobic exercise program	24	Not mentioned		14-50	Not clear
Keochkerian, D., Chlif, M., Delanaud, S., Gauthier, R., Maingourd, Y., & Ahmaidi, S. (2008).	Breathing exercise	9CF 9 Healthy	2 2	7 7	14-Nov	Not hospitalized at least 1 month before procedure
Kuys, S. S., Hall, K., Peasey, M., Wood, M., Cobb, R., & Bell, S. C. (2011).	Gaming console Exercise using either a treadmill or cycle ergometer	19	10	9	28 (mean)	Clinically stable
Paranjape, S. M., Barnes, L. A., Carson, K. A., von Berg, K., Loosen, H., & Mogayzel, P. J., Jr. (2012).	The types of activity were chosen by the subject in consultation with the physical therapist and included a wide variety of sports, play, and physical extracurricular activities.	78	45	33	6-16	Severe lung disease and growth failure

Table 3: Details of Exercise Intervention

Study	Groups	Intervention Type	Mode	Intervention Location	Frequency	Duration	Adherence (Calculated from drop outs)	Intervention Duration
Holland, A. E., etal. (2011).	One group	Step test	3 Minute Step Test	Hospital outpatient clinic	During the clinic visit	3 Minute 15cm step	96%	12 months
Ziegler, B., etal. (2010).	One group	Walk	6 Min walk in a 30m corridor	Hospital	2 times, 6 min walk in 60 min gap	6 min walk in a 30m corridor repeat after 60 mins	87.1%	Twice in 60 mins
Elbasan, B., etal. (2012).	Two group	Physiotherapy Aerobic Exercise	Breathing Techniques Treadmill	Hospital	Chest measurement in 3 different times Physiotherapy 6 weeks duration	Sit up test 20m distance in 20m shuttle run test 10 step 15 cm step stair climbing test	80%	6 weeks
Schmidt, A. M., etal(2011).	One group	Aerobic exercise	12 week individually tailored and unsupervised aerobic exercise	Hospital CF center	Measurements taken at the start and end of the study	Instructed to exercise half an hour three times a week for 12 weeks Warm up 5 mins 25 mins of supervised training during the visit	58.3%	12 weeks

Table 3: Details of Exercise Intervention (Contd.)

Study	Groups	Intervention Type	Mode	Intervention Location	Frequency	Duration	Adherence (Calculated from drop outs)	Intervention Duration
Keochkerian, D., etal. (2008).	Two group	Breathing exercise	Subjects underwent firstspirometric measurements at rest. Then sat on the electromagnetic braked cycle ergometer (ER 900, Jaeger) to perform a continuous incremental cycling protocol. Workload were individualized for each patient based on clinical factors to provide exhaustion between 8 and 10 min of exercise.	Not clear	Only once on the same day	1 st Spirometric measurement at rest Electromagnetic braked cycle ergometer (ER 900, Jaeger) to perform a continuous incremental cycling protocol	100%	48 hr period within 72 hrs of discharge
Kuys, S. S., etal. (2011).	Two group	Experimental • Gaming console 15 min • Usual care Control • Cycle ergometry or treadmill walking and running 15 min • Usual care	Intervention • Gaming console Exercise with treadmill or cycle ergometer	Physiotherapy Gym of the Adult Cystic Fibrosis Unit (Hospital)	The two exercise interventions were conducted for all participants within a 48 hour period, within 72 hours of discharge.	25 mins 10 mins rest and 15 mins exercise And a rest period excluded in the calculation	100%	Within 48 hours 2 interventions
Paranjape, S. M.,etal.(2012).		Activity were chosen by the subject in consultation with the physical therapist included a wide variety of sports, play, physical extracurricular activities.	Two-month exercise regimen with selected activities by the subject and designed with the clinic physical therapist	Exercise at home	20-30 minutes of moderate to vigorous activity at least five times a week	20 -30 mins mild to moderate activity 5 times a week	75.6%	2 months

OUTCOMES

Outcomes of the intervention programs are reported.All studies are reported in two categories of measures: pulmonary function and fitness outcomes.

FEV₁ % predicted was examined in all seven studies.BMI was assessed in six studies. One study checked only the weight. Table 1V showing the outcomes of the studies.

Table 4: Summary of Outcomes

Study	Activity		Mean ±SD	Range
Holland, A. E., Rasekaba, T., Wilson, J. W., & Button, B. M. (2011).	3 Minutes Step Terst	FEV1 Predicted FVC % predicted FEV1/FVC (%) BMI (Kg/m ²) Resting SpO2 (%)	61+23 80+20 63 + 14 22.2 + 4.2 95 _ 2	23-122 14-131 37-95 14.1-51.3 89-100
Ziegler, B., Rovedder, P. M., Oliveira, C. L., Silva, F. e., & Dalcin, P. R. (2010).	Walk	BMI (kg/m ²) FEV1 (% predicted) FVC (% predicted)	20.8+ 2.2 61+ 28 71+ 23	16.4-26.1 15-119 30-130
Elbasan, B., Tunali, N., Duzgun, I., & Ozcelik, U. (2012).	Physiotherapy Aerobic Exercise	FVC FEV1 (%) %FEF25-75 (%)	89.37 ± 13.81 87.15 ± 13.12 87.25 ± 14.89	72-107 80-109 61-112

Table 4: Summary of Outcomes (Contd.)

Study	Activity		Mean \pm SD	Range
Schmidt, A. M., Jacobsen, U., Bregnballe, V., Olesen, H. V., Ingemann-Hansen, T., Thastum, M., & Oluf Schiøtz, P. (2011).	Aerobic exercise program	FEV1% n =13 (*) BMI z score n =14	87.6 (74.8;105.8) -0.34 (-0.87;0.43 -0.41	85.0 (76.5;99.0) (-0.92;0.49)
Keochkerian, D., Chlif, M., Delanaud, S., Gauthier, R., Maingourd, Y., & Ahmaidi, S. (2008).	Breathing exercise	BMI FEV1, % predicted FVC, % predicted FEV1/FVC, % RV/TLC, %	Control 21.1+1.5 107+6 103+3 85+4 22+3	CF 20.6+1.6 66+7 79+3 69+6 32.9+8.9
Kuys, S. S., Hall, K., Peasey, M., Wood, M., Cobb, R., & Bell, S. C. (2011).	Intervention • Gaming console Exercise using either a treadmill or cycle ergometer	FEV1 (% pred), FVC (% pred),	51 (21) 71 (16)	
Paranjape, S. M., Barnes, L. A., Carson, K. A., von Berg, K., Loosen, H., & Mogayzel, P. J., Jr. (2012).	Exercise regimen consisted of activities chosen by the subject	BMI FEV1, % predicted	56 99	2-96 32-132

DISCUSSION

It was an effort to find a best good way of exercise for patients with CF. It is a known fact that exercise helps in CF. The search found that there were very less studies conducted in this field. From 2005 to 2012 the reviewers could find only seven studies which are having an exercise intervention for CF. In this review it was found that the intervention varied from 2 times in one hour to 12 months, settings home and hospital and interventions were supervised and non supervised. Although the studies were conducted in different setting with various kinds of intervention and duration and supervision are different in no case intervention or exercise gave a negative effect in respiratory function or in the BMI. The 3 minute step test⁽¹⁹⁾ reported as a good way to improve the lung function and decrease hospital stay at 12 months.

Exercise Intervention Designs

The exercise interventions were clearly described and documented for the repeatability in majority of the studies. Only one study had the intervention on the same day in 60 minutes rest period after the first assessment⁽²²⁾. One study was conducted as individually tailored unsupervised home based aerobic exercise program⁽²⁰⁾. This study reported the maximum drop outs (58.3%). One factor for the drop out may be lack of supervision in exercise. Several factors may influence adherence to any treatment regime, including a patient's willingness to participate

in regular exercise over a period of time. Enjoyment and perceived competence in an activity or exercise have been suggested to be the most important⁽²³⁾. All other studies reported a compliance above 70%. Short duration of exercise was examined in one study⁽¹⁶⁾. All exercise programmes irrespective of its kind improved the lung function of the subjects. Strength training for Cystic Fibrosis patients is still a novel area for further study.

Location

Of the seven exercise programmes 5 of them conducted in the hospital one all exercise sessions were done in home setting. All the hospital based exercise sessions reported a greater compliance among the participants. The main issue of home based aerobic exercise program was it was unsupervised. The lung function was reported high when the training sessions were supervised. Four studies conducted as single group^(15, 19, 20, 22) that means there was no control group for the intervention.

Intervention Duration

The reviewed studies varied in their intervention duration from twice in one hour interval to 12 months. In one study the training and the assessment took place in an hour time⁽²²⁾. The longest duration was 12 months in which participants were assessed on their each visit to the clinic⁽¹⁹⁾. The short term interventions showed a fast change in the respiratory function.

FUTURE RESEARCH

There is very limited studies to investigate the exercise intervention in CF patients. There is a good future to identify a best exercise programme for CF. Combination of exercise interventions will attract the attention of the clients. Life experiences, QOL and impact of exercise programme⁽²⁰⁾ of CF patients can be explored in a future study. Clinical outcomes for 3 min step test and 6 min walk exercise can be compared^(19, 22). Nutritional status and exercise tolerance of CF is another area to be explored⁽¹⁴⁾. Longer duration and large number of samples can be included as a future plan^(15, 16).

CONCLUSION

Regular exercise is very important in maintaining good health. This is very important in patients with chronic illness. Exercise is considered as an important tool in CF care. All the health team members involved should be encouraging CF patients to carry out exercise programs regularly and there should be an assessment for the improvement of the lung function which will motivate the patients. Future research should focus on intervention with control groups and larger samples. Real life experiences of Cystic fibrosis patients can be examined.

Ethical Consideration: Authors used published articles for the review purpose.

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Non-Compliance with Standard Precautions: System Theory Approach

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ABSTRACT

The standard precautions are measures to prevent the transmission of infection in health care setting. Non compliance with the guidelines of standard precautions has increased the rates of hospital associated infections. This paper aims at discussing the issue of non compliance with standard precautions faced by health care organization and its significance in terms of morbidity and mortality. The issue of non compliance is analyzed by using system theory approach. The system consist of five components; input, throughput, output, feedback, and environment. The paper also highlights the factors contributing to non compliance with standard precautions. These factors are categorized as knowledge, practice and attitude towards standard precautions. The recommendations to improve compliance with standard precautions at individual and organizational level have also been discussed.

Keywords: Infection Control, Standard Precautions, Compliance

INTRODUCTION

Hospital environment has many microorganisms that can cause serious infections to healthcare workers and patients. The standard precautions are the basic measure to prevent and control the transmission of infection¹. Some of the common non-compliance practices are ; use of same needle or canulla for multiple pricks, not wearing gloves while suctioning, recapping needles, disposing sharps in dustbin, using unsterile equipment on different patients, improper handling and disposal of contaminated linens, and unavailability of supplies including gloves, masks, and gowns.

According to CDC² standard precautions are based on principle that all blood, body fluids, and non intact skin may contain transmissible infectious agents. Standard precaution includes preventive measures that apply to all patients, regardless of their infections status in any type of health care setting. These measures include hand hygiene, use of gloves, gowns, mask, eye protection, or face shields and safe infection practices. It also includes proper handling of equipments or items in the patient environment that are likely to be contaminated causing transmission of infectious agents. Non-compliance can be an intentional action in which people choose to adopt certain behavior and avoid another or it can be unintentional action whereby the people do not follow

certain behavior because they cannot understand its content³. Non compliance with the guidelines of standard precautions has increased the rate of hospital associated infections among patients as well as among health care providers. Emergence of infectious diseases and drug resistant organisms such as methicillin resistant staphylococcus and vancomycin resistant enterococci reminds health care workers that compliance with standard precaution is very significant to patient safety in terms of hospital associated infections⁴. The environment of hospital facilitates the survival and transmission of organisms from patients to patients, patients to health care worker and health care workers to patients. Some microorganism also originates from patient's own flora, especially in immune-compromised patients⁵.

Significance of Issue

Nosocomial infections are common cause of illness and death among hospitalized patients. The prevalence of nosocomial infection in Norway hospitals was found between 5.1% and 5.4%. The urinary tract infection accounted for 34%, followed by lower respiratory tract 29%, surgical sites 28% and septicemia between 8% and 9.2%. It was reported that prevalence of nosocomial infections varied between different medical specialties. The greatest prevalence was found in intensive care wards and the lowest prevalence was found in psychiatric wards⁶. Health care associated

infection is a major cause of mortality and morbidity globally. Ten percent of hospitalized patients develop health care associated infections, causing 5000 deaths annually⁷. Health care associated infections are a major risk to patient safety, contribute in patient's suffering, prolong hospital stay, and increase cost and mortality⁸.

Janjua et al⁹ highlighted the issue of needle stick injury and prevalence of HBV and HCV as a result of non compliance with safety precautions. The authors stated that prevalence of HBV and HCV is more than 10% and most of these infections are transmitted by unsafe injection practices. Knowledge and compliance towards standard precautions among doctors working at a tertiary care hospital was found suboptimal¹⁰.

Framework for Analysis

Organization plays a major role in assuring the compliance to standard precautions and other preventive measures. Compliance rates were found higher for health care workers who felt that the hospital had a strong commitment to safety than those who didn't felt a strong safety commitment¹¹. This issue is analyzed by using system theory approach. According to Samson¹² a system has five component; input, throughput, output, feedback, and environment.

The input is defined as the energizer and operating material of the system and consists of resources such as money, time, energy or raw material. In this issue the organization is a system which has so many inputs such as human, financial and material resources. There should be infection control department to minimize the infection rates within the system and prevent its internal and external customers. The organization should have well developed sterilization department which has all the necessary technology to sterilize the articles and equipment that can lead to infection. Washbasins and hand sanitizers should be made available to ensure hand hygiene. Hand rub has better microbiological efficacy, it consume less time for desired effects, more accessible from point of patient care, and has better skin tolerance¹³. All the medical and surgical supplies such as syringes and needles has to be provided in sufficient quantity so that they are not been reused. Information booklets for staff and patients on preventive measure from infection should be made available.

Throughput is a series of actions that converts the inputs into product or services that can be used by the system itself or by the environment¹². In this issue the recommended guidelines of standard precautions by

Centre of Disease Control (CDC) serve as a basis. System should develop policies related to infection control. A few examples are care intravenous line, policy for sharp disposal, policy for linen disposal, waste management and hand hygiene procedure etc. An organization must take measures to ensure the compliance with policies.

The environment has great impact on any organization. It can be favorable for compliance with standard precautions or act as a barrier in compliance to standard precautions. By its nature hospital environment is favorable for transmission of infection. It is very difficult to prevent immuno-compromised person in such an environment.

Output is the final outcome of system throughput and it can include the research reports, increased knowledge and skills¹². With all the throughput actions discussed, the output should be increase compliance with the guidelines of standard precautions and evident by decrease number of nosocomial infections and needle stick injuries.

Feedback is information that can be used to monitor and evaluate the performance of system and guide it for more effective performance¹². An organization has to develop system for monitoring and evaluating the incidence related to infection control. According to system theory the aim of feedback is enhancing the performance which is not evident from the statistics.

Knowledge, Practice, and Attitude Gap

The factors contributing to noncompliance can be categorized into knowledge, practice and attitude towards standard precautions.

Knowledge regarding the standard precaution varies in different health care workers and depends on individual and organizational factors. Knowledge about health care infections was found high among nurses and consistent with current scientific evidence and most of the nurses were aware of the fact that they can acquire the infections from patients. Nurses have a higher level of knowledge, higher perceived risk, and use appropriate infection control measures as compare to physicians¹⁴. This difference can be attributed to the fact that nurses are more involve in the activities regarding health care infections. The source of knowledge is very important in compliance issue. Ideally the basic source of knowledge should be in the curriculum and should be implemented properly. In a study it was found that 67.6% of respondents learned

about preventive measures through continuing education courses. Knowledge was also gained from colleagues and mass media¹⁵. From this fact one can assume the authenticity of information which is provided by colleagues who are not expert in this field. It is possible that colleague may transfer incorrect knowledge to other colleagues.

The practice of standard precaution by health care workers is not up to the mark generally. Hand washing is the leading measure for preventing the transmission of infection but health care workers compliance with optimal practices remains low in most settings. The practice of standard precautions varied with use of different equipments and in different medical specialties. It was found that only 38.4% nurses use all the barrier techniques of infection control routinely. It was observed that 99% of nurses always wore gloves and changing them after a surgical procedure, 98.2% washed their hands before and after surgical procedure, and 98.1 wore mask when in close contact with patient¹⁵.

Attitude is influenced by the individual's perceptions and beliefs. In general observation health care workers who value patients' and self safety as their priority are more compliant as compare to those who do not value safety. The perceptions of individual are also developed through an organizational culture. Organizational culture is the basic assumptions and values held by the member of that organization¹⁶. As discussed earlier that knowledge does not necessarily related to compliance, individual must have a positive attitude towards guidelines provided. At the same time it is the responsibility of organization to provide and maintained supportive environment that facilitate the compliance to preventive measures. Another perception leading to noncompliance found was that health care workers think that it is important to prevent cross infection from one patient to another rather than preventing infection of the initial patient. This perception of health care worker emphasize on control rather than prevention¹⁷.

Recommendations to Improve Compliance

In the light of above arguments it is suggested that interventions for increasing compliance to guidelines of standard precautions should be instituted at an individual and organizational level targeting the knowledge, practice and attitude. In order to provide safe and quality care to the clients it is very important to bring innovative change within the organization.

Organization change is very essential for adaptation and growth of an organization, although it may produce anxiety and fear¹⁶.

The foremost factor that can create greater impact is the knowledge about the infection control measures and related policies. Another issue is that most of the health care workers are not aware of possible means of infection transmission which results in limited compliance to guidelines of standard precautions. In his regard continuous education sessions, conferences, and lectures should be conducted. The nurses who had participated in an educational program related to standard precautions showed more compliance as compared to those who did not participated in such programs³.

To increase the level of knowledge among health care workers there is a need of curriculum revision. Textbooks which are a part of curriculum should be updated and revised by incorporating the current guidelines for infection control measures. It is suggested that a revision of current medical curriculum is required to mandate all students and hospital trainees to attend infection control course⁴.

Another strategy for improving the compliance rate is motivation of health care workers through incentives. Motivation is described as the factors that initiate and direct behavior. It energizes human behavior, directs behavior towards the accomplishment of objectives and sustains behavior overtime¹⁶. In this regard there is a need to develop such policy for motivation which remain consistent and ensure sustainability of practice.

Role modeling is an effective way of behavior change for a person. It is a responsibility of senior employees to guide their junior and help them to comply with the guidelines of standard precaution. A mentor is a wiser and more experienced person that guides and supports less experienced person¹⁶. The concept of mentorship has improved the performance of staff in the health care settings. It was found that compliance with hand hygiene is associated with awareness of being observed either by mentor or by mentee. The mentor at the same time can demonstrate the correct method of performing related skills¹⁸.

Change is not an easy process therefore the management of organization will face some challenges in implementation of the above mentioned strategies. The anticipated challenges are financial, human, and

material resources constraints. It is very difficult to meet the preferences and demands of every employee in an organization so strategy that satisfy maximum number of employee should be implemented. It is also assumed that employee may feel over burdened with strict policies related to standard precaution and additional responsibility in case of mentorship.

CONCLUSION

Standard precautions are measures to prevent the health care worker and patients from acquiring infections. Hospital associated infections are leading cause of morbidity and mortality among hospitalized patients, it prolong patient's stay, increase suffering, and put financial burden on the patient. Overall health care workers do not comply with the standard precautions in a required manner although they choose to implement some preventive measures satisfactorily. This behavior makes them vulnerable to infections so it needs to be changed. Several strategies are recommended at individual and organizational level to improve compliance with standard precautions such as, educational sessions, motivation, curriculum revision and role modeling. It is very important to target the gaps identified in the knowledge, practice, and attitude of health care workers regarding standard precautions.

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Conflict of Interest: There is no conflict of interest

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Ethical Clearance: The paper does not include any data related to human subjects that require ethical clearance.

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A Randomised Controlled Trial to Evaluate the effectiveness of Psychological Interventions on Emotional Distress among Women Undergoing Infertility Treatment

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ABSTRACT

The non fulfillment of parenting has been associated with emotional crisis such as depression, anxiety, marital problems and social isolation. Few randomized controlled trials have been conducted to assess the effect of counseling on distress related to infertility and its treatment. The aim of this study was therefore to evaluate the effectiveness of a psychological interventions on emotional distress among infertile women undergoing infertility treatment. The objective of the study was to assess the psychological status of women undergoing infertility treatment. To evaluate the effectiveness of psychological interventions program in the study group compared to control group.

The study was conducted in ART centre of KLEs Dr Prabhakar Kore Hospital and MRC, Belgaum. 460 (230 in Study & 230 in Control) Infertile women were selected by convenience sampling design and the Research Design adopted was a single blinded randomized controlled trial. The study result showed that Comparison of pre & post tests scores in Study & control Group for HAM - A showed that Paired 't' test indicated that there was reduction in anxiety level after the intervention and unpaired 't' test of post tests scores showed extremely statistically significant difference in between the groups. HAM - D showed that paired 't' test indicated that there was reduction in depression level after the intervention and unpaired 't' test post tests scores showed extremely statistically significant difference in between the groups. Rosenberg self esteem scale showed that paired 't' test indicated that there was an improvement in their self esteem after the intervention and unpaired 't' test post tests scores showed extremely statistically significant difference in between the groups. Marital Adjustment Inventory showed that paired 't' test indicated that there was an improvement in their marital adjustment status after the intervention and unpaired 't' test of post test showed extremely statistically significant difference in between the groups. This indicated that intervention given to study group was effective.

Keywords: Infertility, Psychological Interventions, Emotional Distress, Infertile Women

INTRODUCTION

10% - 15% of couples in reproductive age group are infertile. In addition infertility treatments are very prolonged, expensive, and no definite end point. Among infertile couples, wives experienced more emotional disturbances than their husbands. (Anderson et al, 2002). In Indian context, women are often dependent on husbands financially and emotionally. Women are blamed more than men. Hence women experience a sense of loss & diminished

self-esteem. Despite the fact that psychological factors play an important role in the pathogenesis of infertility, there is less information about effective psychiatric assessment and treatments for this population. To date only a few randomized controlled trials have been conducted to assess the effect of counseling on distress related to infertility and its treatment. There are several alternative therapies available like yoga, acupuncture, meditation, acupressure, and hypnosis. Counseling is also one of the therapy. No data exists on the

effectiveness of structured therapeutic psychological interventions that involves both individual and group counseling in Indian population for infertile women. The aim of this study was therefore to evaluate the effectiveness of psychological interventions on emotional distress among infertile women undergoing infertility treatment.

MATERIALS AND METHOD

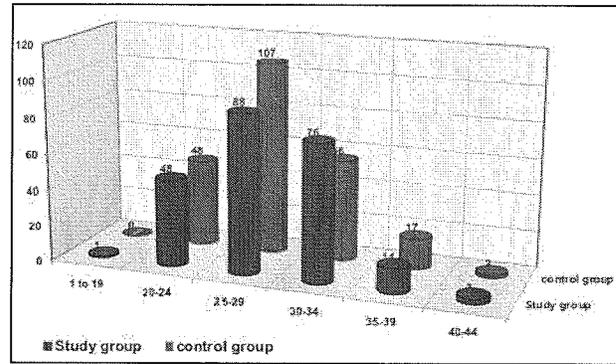
This study was conducted on 460 (230 in Study & 230 in Control) Infertile women those who attended Assisted Reproduction Centre(ARC) of KLE’s Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum from August 2008 to December 2009. The Research Design was a single blinded randomized controlled trial. The sampling design was convenience sampling. The randomization of the infertile women into study and control group was done by envelop method. Infertile Women in the age group of 19 – 45Years, who could speak and read either English, Kannada or Marathi, who were willing to participate in the study, who are undergoing treatment from one year were included. Infertile Women who were Clinically depressed or having other psychiatric illness including mental retardation, on psychotropic medication, participated in any other individual or group psychological treatment or relaxation techniques, secondary infertile were excluded. Informed written consent had been taken from the study subjects.

Instruments used in this study were HRSD – Hamilton rating scale for depression (17 Items), HAM-A- Hamilton rating scale for Anxiety (14 Items), RSES – Rosenberg Self – esteem scale (10 Items), MAI – Marital Adjustment inventory Dr. Har Mohan Singh (10 Items). Interventions were three individual counseling sessions followed by group counseling session with CD demonstration which included stress management, deep breathing, meditation, life style choices & importance of nutrition.

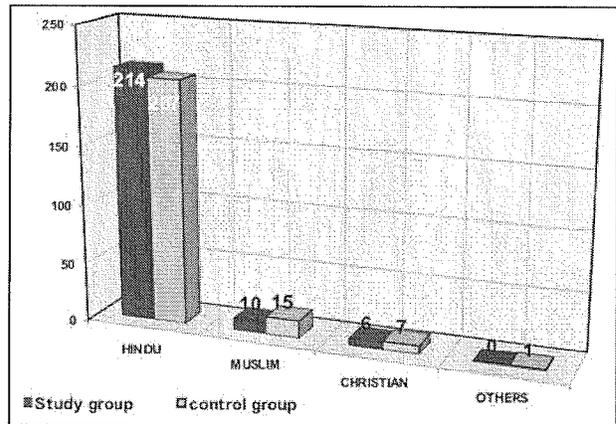
RESULTS

The findings of the study revealed that Frequency & Percentage Distribution Of Subjects According To Demographic Variables In Study And Control Group.

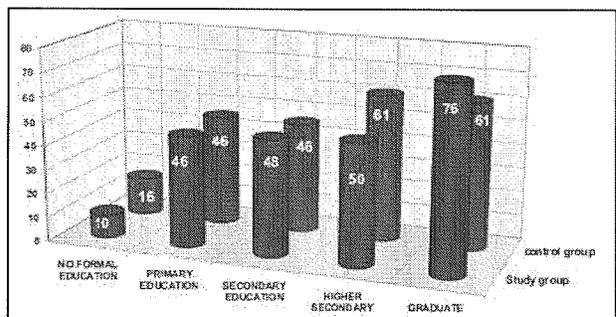
Revealed that there was no difference in demographic variables in both the groups.



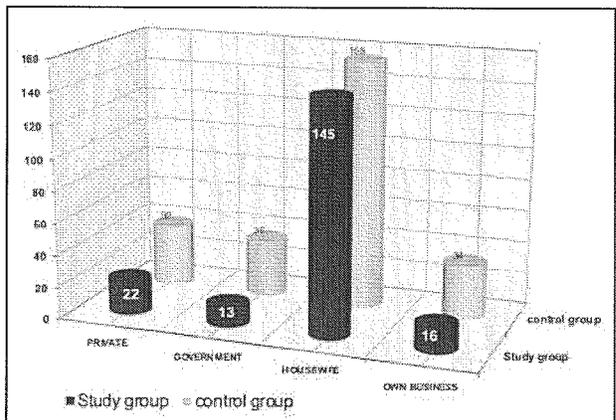
Graph 1. Age in study and Control Group



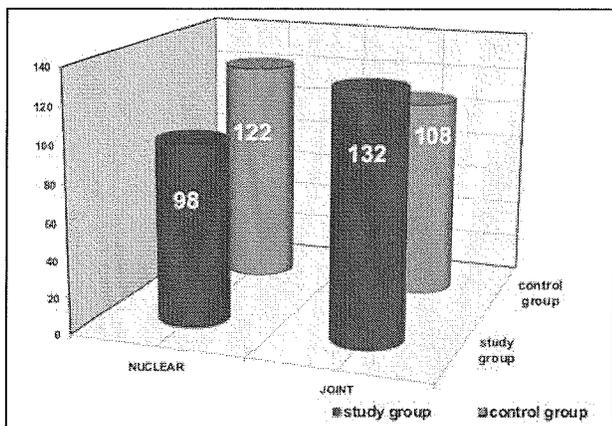
Graph 2. Religion in study and Control Group



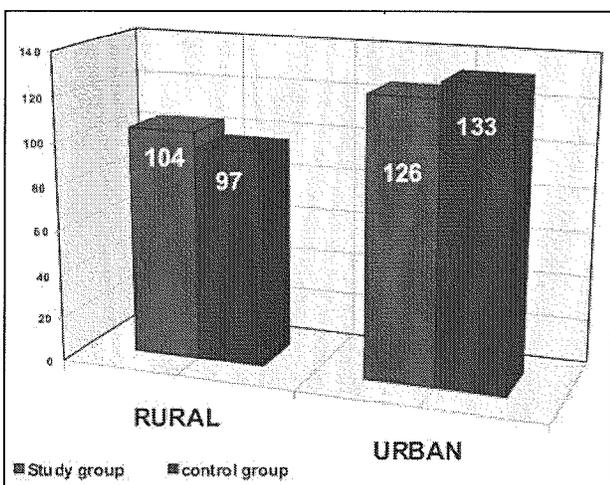
Graph 3. Literacy in study and Control Group



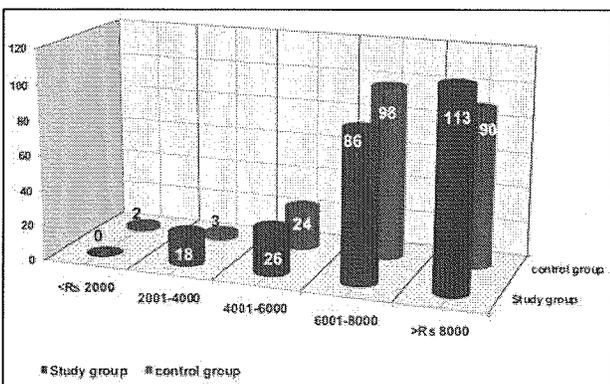
Graph 4. Occupation in study and Control Group



Graph 5. Type of family in study and Control Group



Graph 6. Place of residence in study and Control Group



Graph 7. Income in study and Control Group

Table 1 Psychosocial Stressors as per Domains

S. No	Variable	Study Group	Control Group
1	Personal Emotional Stressors	48.7%	51.8%
2	Family Interpersonal Stressors	31.9%	39.9%
3	Social Stressors	22.5%	41%

There was reduction in percentage in study group as compared to control group. This indicated that psychological interventions were effective.

HAM - D

Table 2. Comparison of pre & post tests scores in Study & control Group

HAM - D	Pre test Mean ± SD	Post test Mean ± SD	Paired 't' test
Study Group(n =230)	17.27±3.11	10.59±2.83	< 0.0001
Control Group(n=230)	17.28±2.78	15.18±4.27	< 0.0001
HAM - D	Study Group (n =230) Mean ± SD	Control Group (n=230) Mean ± SD	Unpaired 't' test
Pre test	17.90±3.17	17.36±2.81	0.0522
Post test	10.67±2.81	14.89±4.19	<0.0001

Paired 't' test indicated that there was reduction in depression level after the intervention. Unpaired 't' test post tests scores showed extremely statistically significant difference in between the groups.

HAM - A

Table 3. Comparison of pre & post tests scores in Study & control Group

HAM - A	Pre test Mean ± SD	Post test Mean ± SD	Paired 't' test
Study Group (n =230)	20.37 ± 4.47	13.45 ± 3.93	<0.0001
Control Group (n=230)	20.14 ± 4.81	20.69 ± 5.37	0.0082
HAM - A	Study Group (n =230) Mean ± SD	Control Group (n=230) Mean ± SD	Unpaired 't' test
Pre test	20.20 ± 4.72	20.75 ± 4.86	0.2131
Post test	13.40 ± 3.96	21.41 ± 5.20	<0.0001

Paired 't' test indicated that there was reduction in anxiety level after the intervention. Unpaired 't' test of post tests scores showed extremely statistically significant difference in between the groups. Rosenberg self esteem scale.

Table 4. Comparison of pre & post tests scores in Study & control Group

RSES	Pre test Mean ± SD	Post test Mean ± SD	Paired 't' test
Study Group (n =230)	17.91 ± 6.90	22.81 ± 6.19	<0.0001
Control Group (n=230)	17.20 ± 6.10	17.52 ± 6.23	0.0022
RSES	Study Group (n =230) Mean ± SD	Control Group (n=230) Mean ± SD	Unpaired 't' test
Pre test	17.37 ± 6.64	17.91 ± 6.35	0.3661
Post test	22.76 ± 6.06	17.73 ± 6.37	<0.0001

Paired 't' test indicated that there was an improvement in their self esteem after the intervention.

Unpaired 't' test post tests scores showed extremely statistically significant difference in between the groups.

Marital Adjustment Inventory

Table 5 .Comparison of pre & post tests scores in Study & control Group

MAI	Pre test Mean \pm SD	Post test Mean \pm SD	Paired 't' test
Study Group (n =230)	41.90 \pm 8.88	62.89 \pm 11.19	<0.0001
Control Group (n=230)	40.43 \pm 8.38	57.50 \pm 16.26	<0.0001
MAI	Study Group (n =230) Mean \pm SD	Control Group (n=230) Mean \pm SD	Unpaired 't' test
Pre test	42.30 \pm 8.46	41.08 \pm 8.51	0.1234
Post test	62.22 \pm 11.20	55.20 \pm 16.42	<0.0001

Paired 't' test indicated that there was an improvement in their marital adjustment status after the intervention. Unpaired 't' test of post test showed extremely statistically significant difference in between the groups. This indicated that intervention given to study group was effective.

DISCUSSIONS

The study results showed benefits with psychological interventions in infertile women in terms of reduction in depression, anxiety and improvement in self esteem and marital adjustment status.

In this study psychosocial stressors focused on insecurity about being divorced by husband. There was significant difference in both groups. Contrary to our study Boivin j have reported no effect from their intervention. However other two studies by Tuschen caffier et al & Domar et al reported a significant decrease in marital distress after a cognitive – behavioral & a support group intervention. Sundby et al found in their follow up study of 262 women 3% (n = 12) had discontinued the fertility treatment because of divorce. Several qualitative reports from Africa indicated that infertility is associated with marital instability, divorce, abandonment, stigmatization and abuse by Gerrits1997, Yebai,2000;Dyer et al.The results were consistent with the study done by McNaughton Cassill et al who concluded that couples undergoing IVF treatment participated brief support group sessions had significant reduction in anxiety and depression. Both men and women derived psychological benefit from the intervention.

The above results were contradictory to a study done by S. Fassino et al, studied the correlation of infertility with depression, anxiety and expressed emotional patterns using HAM – A and HAM-D and concluded that functional infertile subjects showed particular psychopathological and psychological features independent from the stress reactions. In this study also same scales were used and women derived psychological benefit from counseling sessions which was showed by reduction in anxiety and depression .Their study included infertile couples whereas we included only women since the stress levels are higher in women.

The results of the study conducted by Klerk et al studied the effectiveness of psychosocial counselling for first time IVF couples, done by a social worker for 3 sessions. Results did not support the implementation of counselling intervention because of the low response rate and little perceived need for counselling. Whereas our study showed benefit of counselling due to high response rate, no drop outs and well adherence to counselling sessions.

Similar study conducted by Terzioglu F to determine the effect of counseling on the success rates of ART and assessed the couples anxiety, depression and life satisfaction inventories. Pre and post test difference between the experimental and control group was significant (p < 0.05). This study demonstrated the importance of counseling role of a nurse in lowering the anxiety and depression levels of couples and ensuring the success of the treatment. In this study comparison of pre and post score self esteem and MAI showed statistically significant difference in between the scores and showed that there was an improvement in their marital adjustment and self esteem after the intervention (p< 0.0001)

Similar findings were reported in the study conducted by Domar AD et al. This study is significant support to our study in terms of outcome but the only difference was, Investigator used marital distress scale and only cognitive behavioral group sessions.

CONCLUSION

Fertility clinic nurses in India can provide therapeutic counseling along with routine nursing care, i.e. the basic nursing procedures like assisting physicians in investigation & treatment procedure. The nature of nursing puts nurses in a position of providing

continues client care including emotional support. Regulatory bodies for nurses also strive to make nursing relevant by emphasizing the expanded nursing roles in different nursing specializations including fertility nursing. This study has shown that psychological interventions such as individual & group counseling plays a major role in reducing distress in infertile women. Further it would help them to improve their mental status and positively manage stress, develop new coping skills.

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Conflict of Interest: Nil

Ethical Clearance: Was obtained from KLE University Ethical Clearance Committee.

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Knowledge of Mothers Regarding the Growth & Development of Infants

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ABSTRACT

The infant is a dynamic, ever-changing being who undergoes an orderly and predictable sequence of neurodevelopment and physical growth. Parents need to understand growth and development in order to monitor child's progress, to identify delays or abnormalities in development. With an aim of this the investigator undertook a study to assess the knowledge of mothers regarding the growth & development of infants in child care areas of selected hospital of Ludhiana, Punjab. Hundred mothers of infants were selected from various child care areas in selected hospital of Ludhiana by Non-Probability purposive sampling technique. A structured questionnaire was administered to assess the knowledge. Data was analyzed by descriptive and inferential statistics and presented through tables and figures. Study findings revealed that maximum number of mothers (53%) had average knowledge score regarding growth & development of infants. Mean percentage of knowledge score was highest in introduction (66%) and lowest in area of social development (31%). Variables i.e. Age, Education and income were found to be significantly related with knowledge of postnatal mothers none of the other variables were found significantly related with the knowledge of postnatal mothers. This study revealed that mothers of the infants needs to be given knowledge regarding Growth and development in order to prevent developmental delay and helping in early diagnosis and treatment.

Keywords: Growth, Development, Infants, Mothers, Knowledge

INTRODUCTION

"Infant" is derived from the Latin word, "infans," meaning "unable to speak". It is an exciting period of "firsts"—first smile, first successful grasp, first evidence of separation anxiety, first word, first step, first sentence¹. Infancy is period of life till 1 year of age. There are several neurodevelopmental and physical changes that takes place after the birth of a child, which are influenced by several intrinsic (child's physical characteristics, state of wellness or illness, temperament, and other genetically determined attributes) and extrinsic (the personalities and style of care giving by parents and siblings, the family's economic status with its impact on resources of time and money, and the cultural milieu into which the infant is born) factors. Mothers, however, play a significant role in promoting normal growth and development as well as detecting delay in the early stages.

Infants are usually seen at health care facilities for health maintenance at least six times during the first

year². Anticipatory guidance offered at these visits can help parents prepare for the rapid changes that mark the first year of life.

A study was conducted on the development status and service use among children in child welfare system. Children from 0-10 years were selected. Results indicated that younger children aged 0 to 2 and 3 to 5 years had higher rates, 33% and 36%, respectively, of developmental delay than school-aged children (13%). Despite their high prevalence of developmental delay, children aged 0 to 2 years were less likely to receive developmental services than preschool-aged children or school-aged children³.

A study was conducted Lesotho to compare mothers' understanding of two growth monitoring charts. 1221 mothers were enrolled. Mothers were assigned to one of the following chart groups: "road to health" growth surveillance (GS) or no chart (controls). The results that mothers' who received training on either chart markedly improved their understanding compared with the control group and

that the RTH group understood the chart better than the GS group did theirs. ⁴

Due to constant effort of the Health Ministry, Infant Mortality Rate (IMR) has dropped by 3 points from 47 to 44 infant deaths per 1000 live births during 2011. IMR for rural areas has dropped by 3 points from 51 to 48 infant deaths per 1000 live births while the urban rate now stands at 29 from the previous 31/1000. ⁵ But It is becoming increasingly essential to influence health agencies and practitioners to go beyond simply reducing morbidity and mortality, and instead to emphasize quality of life as a major health goal now. Early evaluation and intervention includes not only management and treatment for the individual child, but also provision of appropriate family and community-based support mechanisms. It is but a first step on the long road to ensuring the needed services that will enable every child to reach their best potential and to assume a productive role in society.

OBJECTIVES

1. To assess the knowledge of mothers regarding growth & development of infants.
2. To ascertain the relationship of knowledge of mothers with selected demographic variables like age, parity, education, occupation, type of family, family income per month, source of information and place of living
3. To assess the deficit areas of knowledge and prepare the guidelines for mothers regarding the growth & development of infants.

ASSUMPTION

Mothers do have the knowledge regarding growth & development of infants.

METHODOLOGY

An Exploratory research approach and a non-experimental research design were used to assess the knowledge of mothers regarding growth and development. The population of the study was the mothers of infants in the child care areas of selected hospital, Ludhiana, Punjab. Total sample was 100 mothers of infants selected from child care areas of CMC & Hospital, Ludhiana, Punjab. The purposive sampling technique was used. A structured questionnaire was used to assess the knowledge of mothers regarding growth and development of infants.

The data was collected by using personal profile and knowledge questionnaire which consists of questions regarding different aspects of maternal knowledge regarding growth and development of infants. This questionnaire consists of 40 multiple choice items, each item consist of one correct answer among the four choices and each correct answer carries one mark.

FINDINGS

Table 1: Percentage Distribution of Sample Characteristics N=100

Sample variables	n	Percentage
Age of mother (in years)		
≤ 25	12	12
26-30	71	71
31-35	17	17
>35	-	-
Parity		
First	2	2
Second	75	75
Third	19	19
Four or more	4	4
Education		
Illiterate	5	5
Primary-middle	10	10
Matric –senior secondary	44	44
Occupation		
Housewife	87	87
Service	13	13
Monthly Family income (Rs.)		
≤5,000	22	22
5001-10,000	23	23
10,001-15,000	38	38
> 15,000	17	17
Type of family		
Nuclear	44	44
Joint	56	56
Source of information		
T.V	22	22
Newspaper	14	14
Health worker	32	32
Family member	32	32
Place of living		
Urban	84	84
Rural	16	16

The data presented in the table 1 show that majority (71%) mothers were in the age group of 26-30 years, and majority (75%) mothers were second Para. 44% mothers were educated up to matric-senior secondary. Majority (87%) mothers were house wives and

majority (38%) mothers were from family of monthly income in the range of 10,000-15,000/- .Majority (56%) of mothers belonged to joint family. Health workers and family members were the source of information for majority of mothers. 84% mother's belonged to urban area.

SECTION-2

Objective-1: To assess the knowledge of mothers regarding the growth and development of infants.

Table 2: Percentage Distribution of Mothers Level of Knowledge Regarding Growth & Development of Infants N=100

Level of knowledge	Score	n	%
Excellent	≥26	2	2.0
Good	20-25	22	22.0
Average	14-19	53	53.0
Below average	≤ 13	23	23.0

Maximum score: 40
Minimum score = 0

Table -2 depicts that majority of mothers obtained average score (53%) followed by (23%) below average, (22%) good and (2%) excellent knowledge score respectively.

Thus it can be concluded that majority of mothers had average knowledge regarding growth and development of infants.

Objective 3: To assess the deficit areas of knowledge.

Table 3: Mean, Mean Percentage and Rank Order of Knowledge Score of Mothers Regarding Growth & Development of Infants According to Areas of Knowledge N= 100

Areas of knowledge	Knowledge score			Rank order
	Max score	Mean score	Mean %	
Introduction	05	3.31	66	1
Physical growth	14	7.33	52	2
Gross motor development	09	4.34	48	3
Fine motor development	04	1.60	40	5
Language development	04	1.77	44	4
Social development	04	1.25	31	6

Maximum score: 40
Minimum score: 0

Table -3 indicates that according to areas of knowledge of mothers regarding growth and development of infants, mean percentage of knowledge score were highest in 'introduction' i.e. (66%), followed by 52% in 'physical growth', 48% in

'gross motor development' 44% in language development and 40% in 'fine motor development' respectively and lowest i.e. (31%) in Social development.

It can be concluded that mothers had highest knowledge in the area of 'introduction' rank 1, followed by 'physical growth' rank 2, 'gross motor development' rank 3, 'language development' rank4 and 'fine motor development' rank 5. Mothers least knowledge score in the area of 'social development' rank 6.

Hence it can be inferred that there is a need for enhancement of knowledge of mothers by means of guidelines.

Objective: 2 To ascertain the relationship of knowledge with selected variables like age, parity, education, occupation of mother, family income (in Rs.), type of family, source of information, place of living.

Table 4: Mean Knowledge Score of Mothers Regarding Growth & Development According to Age of Mothers N=100

Age (in years)	n	Mean knowledge score		df (BG/WG)	F
		Mean	SD		
≤25	12	17.17	3.07	2/97	5.091*
26-30	71	19.96	2.94		
31-35	17	20	2.17		

Maximum score = 40
Minimum score = 0
* at p<0.05 level

Table 4 shows that mothers who belong to the age group of 31-35 years had highest (20) mean knowledge score followed by 19.96 in 26-30 years and least (17.17) in ≤25 years respectively. Based on F-test the calculated value was 5.091 at (2/97) degree of freedom and was statistically significant at p<0.05 level. Hence, it can be inferred that age has influence on knowledge.

TABLE 5: Mean Knowledge Score of Mothers Regarding Growth & Development According to Education of Mothers N=100

Education level of mother	n	Mean knowledge score		df (BG/WG)	F
		Mean	SD		
Illiterate	5	18.60	2.30	3/96	0.006*
Primary-middle	10	17.40	3.47		
Matric-senior secondary	44	19.27	2.79		
Graduate and above	41	20.68	2.73		

Maximum score=40
Minimum score=0
* at p < 0.05 level

Table 5 reveals that mothers who were graduate or above, had highest (20.68) mean knowledge score followed by matric-senior Secondary 19.27, illiterate 18.60 and least (17.40) knowledge score in primary-middle. Based on F-test calculated value was 0.006 at (3/96) degree of freedom and was statistically significant at $p < 0.05$ level.

Hence, it can be concluded that education of mothers had influenced on knowledge of mothers regarding growth and development of infants.

TABLE 6: Mean Knowledge Score of Mothers Regarding Growth & Development According to Monthly Family Income N=100

Family income in Rs. (monthly)	n	Mean knowledge score		df (BG/WG)	F
		Mean	SD		
≤ 5,000	22	17.59	3.11	3/96	5.468*
5,001-10,000	23	19.83	2.46		
10,001-15,000	38	20.16	2.59		
≥ 15,001	17	20.82	3.14		

Maximum score=40

* at $P < 0.05$ level

Minimum score=0

Table 6 reveals that mothers whose family income was Rs. $\geq 15,001$ had highest (20.82) mean knowledge score, followed by (20.16) in Rs. 10,001-15,000/- and least (17.59) in the family income group $\leq 5,000$ /. Based on F-test the calculated value was 5.468 at (3/96) degree of freedom and was statistically significant at $p < 0.05$ level.

Thus it can be inferred that family income had impact on the knowledge of mothers regarding growth and development of infants.

CONCLUSIONS

Findings of the present study revealed that maximum number of mothers had average knowledge score regarding growth and development of infants. Mothers had excellent knowledge score in the area of 'introduction' followed by good knowledge score in the area of 'physical growth', average knowledge score in the area of gross motor development and 'language' development' and 'fine motor development'. Mothers had below average knowledge score in the area of 'social development'. Age, education and monthly family income had influence on the knowledge of mothers regarding growth and development of infants.

Parity, occupation, type of family, source of information and place of living had no influence on the knowledge of mothers regarding growth and development of infants.

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Ethical Clearance

Permission from Medical Superintendent, Christian Medical College and Hospital, Ludhiana was taken before starting the study. An informed verbal consent from mothers of infants was taken.

Conflict of Interest: There is no conflict of interest.

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Effectiveness of Psycho-Education on Care Givers Burden among Caregivers of Patients with Schizophrenia

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ABSTRACT

Background: The adverse consequences of psychiatric disorders for relatives have been studied since the early 1950s, when psychiatric institutions began discharging patients into the community. Despite the increased demands on family members to provide care for psychiatry patients. Psychological distress or burden of care givers often results in poor care provided to their relatives.

Most studies showed high burden and lack of knowledge, negative attitude in caregiver's leads to high relapse rate of schizophrenia.

Objective: To evaluate the effectiveness of the psycho-education on caregivers' burden among caregivers' of patients with schizophrenia.

Method: Caregivers' of patients with schizophrenia were assessed their burden by administering the Burden Assessment Schedule (BAS) (H.Sell, R.Thara, R.Padmavati, and S. Kumar 1998) and structured socio demographic data as a pre-test to both the study and control groups. The psycho-education was given to study group separately, the control group was remained only routine care. After one month posttest 1 and after two months posttest 2 were conducted for both the groups.

Results: 40 caregivers' of patients with schizophrenia were divided in to two groups, n= 20 for study group and n=20 for control group, were participated in the study. The results reveals that the mean scores of burden in both groups at pretest before the psycho-education were (83.42, SD=8.47, 82.83, SD=7.32). After the psycho-education to study group the mean scores of both groups were at post test-1 (48.50 SD=6.86, 79.92 SD=6.96) respectively. At posttest-2 mean scores of both the groups were (34.67 SD=1.68, 80.00 SD= 7.39) respectively. The scores of burden of caregivers' before and after psycho-education in study group were statistically different and comparisons with study and control group with respective burden scores of t-test in posttest-1 (t=-14.3825 at p<0.01), posttest-2 (t=-26.7371 at p<0.01), the paired t-test values in posttest-1 (paired t-test=25.7816 at p<0.01) posttest-2 (paired t-test=26.4821 at p<0.01) and chi-square values pretest (0.1732) posttest-1 (26.2857 at p<0.01) posttest-2 (40.0000, at p<0.01) were showed statistically significant relationship in psycho-education and burden level. The study group participants were found psycho-education as an interesting and very useful.

Conclusion: Psycho-education on schizophrenia reduces the burden level among care givers' of patients with schizophrenia. Therefore the psycho-education was targeting the caregivers of patients with schizophrenia should results in successful treatment, regular follow-ups and rehabilitation of their patients and also helps them to control and manages their stress and burnout.

Keywords: Psycho-Education, Care Givers, Burden, Schizophrenia, Burden Assessment Schedule

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INTRODUCTION

Schizophrenia is a disabling, chronic psychiatric disorder that poses various challenges in its management and consequences. The caregivers as a result of the shift of burden of care from hospital to families, and an society ¹. Burden of care is more defined by its impacts and consequences on care givers. In addition to the emotional psychological, physical and economic impact, the concept of burden of care involves subtle but distressing notions such as shame, embarrassment, feeling of guilt and self blame ^{1,3}. Most studies showed that high expressed emotions and burden in the caregivers leads to high relapse rate of schizophrenia. ^{2,4,5,12,13} The psycho education about this disorder help the caregivers to deal with the patients problems more effectively, reduce burden of caregivers and provides effective social support for caregivers. Long before schizophrenia is diagnosed, relatives of someone with the disorder may begin to feel stressed; prodromal, or early, signs of schizophrenia can emerge yearly before a diagnosis is made. These behavior changes can cause a lot of anxiety, worry, or guilt for a family member of someone with schizophrenia. Caregivers worry about prevent relapse and keeping their loved one healthy. Now a day's family has taken functions which were performed in the past by psychiatric institutions. This change highlights not only the relevance of emotions and affections within a family, but also the great amount of burden experience by these relatives while taking care of a psychotic patient as well. The past few decades have seen gradual change in the philosophy of management of schizophrenia with increasing attention to community care of the patient and the involvement of the family there has been much consideration on the family and the effects of a care giving role. ^{6,8,9} Early psychogenic models of the family members there is a progressive acceptance of an interactive model between family stress and patient functioning. The knowledge of family how to adjust to or cope with members illness may assists the nurse in understanding these needs of the family during a time of crises and facilitates adaptive responses in family members ¹⁰. The study reveals that to determine the relationship among knowledge, coping and burden among Korean family care givers of schizophrenia patients. A total of 57 family caregivers with schizophrenia patients participated in this study. The instruments, knowledge scale, coping scale and burden scale were used. The findings were analyzed and showed are the family knowledge, the more care givers use negative coping strategies which results in

care givers perception of subjective burden. The result supports that coping mediates the relationship between care givers knowledge and the impact of subjective outcome of care giving burden ⁷.

OBJECTIVE

To determine the effectiveness of the psycho-education on caregivers' burden among care givers of patients with schizophrenia and also find the association of level of caregivers' burden with selected background variables.

MATERIALS AND METHOD

This study was conducted at out- patients and in-patients caregivers of patients with schizophrenia at Shree psychiatric care centre, Dharwad, Karnataka. The caregivers of patients with schizophrenia were selected for conducting study.

Research design

Randomized controlled Trail-pre test post control group experimental research design.

Procedure of study

Caregivers' of patients with schizophrenia were selected initially considered for study. Out of 40 cases, by simple random sampling method divided into study group and control group and according to fixed criteria. After taking consent all the caregivers were systematically interviewed and the data was enter into a semi structured perform. The questionnaires included demographic data and Burden Assessment Schedule(BAS). The scale was constructed by H.Sell, R.Thara, R.Padmavati, and S.Kumar, in 1998, is a 20-item questioner representing 5 factors which reflect care givers main feelings about their care giving role. The 5 factors are 1). Impact on well being 2). impact on marital relationship (this factor can be elicited only if the care giver is the spouse of the patient) 3.) Appreciation for caring 4). Impact on relations with others 5.) Perceived severity of the diseases. The score was given with 3 point rating scale "not at all, some extent, very much" accordingly answer given by subjects as per instructions given in BAS. Psycho-education on schizophrenia content was planned and experts validation done with following content details. A. General information of schizophrenia a) Introduction b) signs and symptoms and course c) causes B. Management of schizophrenia a) Treatment and management of patient with schizophrenia b)

Management of stress and burnout of caregivers of patients with schizophrenia¹¹. The same contents were included in information Boucher to give to care givers. After the pre test same day study group care givers were taken separate room and implemented psycho education by using power point, charts with lecture cum discussion. The information brochures' were distributed to same sample by end of psycho-education and requested same person to come for next

fallow up with the patient. After one month post test 1 will be taken and reviewed the psycho-education. After two months post test 2 will be taken and given brief information on importance of psycho-education. The control group care givers were asses pre test on same day and subsequently re asses their burden after one month post test 1 and post test 2 after two month without giving any psycho-education and observed that they were only in routine interventions.

RESULTS

Table No 1: comparison of study and control groups with respect to burden scores (%) at pre test, post test 1, post test 2 and their reduction of burden by t-test.

Variable	Group	Mean	SD	t-value	p-value
Pre test	Study group	83.42	8.47	0.2327	0.8172
	Control group	82.83	7.32		
Posttest 1	Study group	48.50	6.86	-14.3825	0.0000**
	Control group	79.92	6.96		
Posttest 2	Study group	34.67	1.68	-26.7371	0.0000**
	Control group	80.00	7.39		

**p<0.01

Table No 2: Comparison of pretest, post test-1, and post-test-2 burden scores in study and control group by paired t-test.

Group	Test	Mean	Std.Dv.	Mean diff.	SD diff.	Paired t	p-value
Study	Pretest	83.42	8.47				
	Posttest 1	48.50	6.86	34.92	6.06	25.7816	0.0000**
	Pretest	83.42	8.47				
	Posttest 2	34.67	1.68	48.75	8.23	26.4821	0.0000**
Control	Pretest	82.83	7.32				
	Posttest 1	79.92	6.96	2.92	4.62	2.8258	0.0108*
	Pretest	82.83	7.32				
	Posttest 2	80.00	7.39	2.83	4.81	2.6355	0.0163*

*p<0.05, **p<0.01

Table No 3: Comparison of levels of burden at pre test, posttest-1, posttest-2 by chi-square test.

Levels of burden	Study group	%	Control group	%	Total	Chi-square	df	p-value
Pre test								
Low level	0	0.0	0	0.0	0	0.1732	1	0.6773
Average level	4	20.0	3	15.0	7			
High level	16	80.0	17	85.0	33			
Posttest 1								
Low level	12	60.0	0	0.0	12	26.2857	2	0.0000**
Average level	8	40.0	6	30.0	14			
High level	0	0.0	14	70.0	14			
Posttest 2								
Low level	20	100.0	0	0.0	20	40.0000	2	0.0000**
Average level	0	0.0	8	40.0	8			
High level	0	0.0	12	60.0	12			
Total	20	100.0	20	100.0	40			

**p<0.01

DISCUSSION

In the present study, all 40 caregivers selected for study. The 20 subjects were studied in study group and 20 subjects were studied in control group.

Analysis and comparison of study and control group in the present study (table no-1) reveals at pre test burden level was in study group mean percentage (mean=83.42, SD=8.47) and control group mean percentage (Mean=82.83, SD=7.32). the mean percentages of the both the groups and t-test values ($t=0.2327$, $p=0.8172$) indicates that there is no significant relation between study and control groups burden level. At post test 1 after one month the burden level in study group mean percentage (mean =48.50, SD = 6.86) and control group mean percentage (mean = 79.92, SD =6.96). the mean percentages of both the groups and t - test value ($t = - 14.3282$, $p= 0.000$) indicates that there is a significantly reduced in burden level of study group comparison with control group at the level of $p < 0.01$ and shows the effectiveness of psycho-education. At post test 2 after two months mean percentages of burden level of study group is (mean =34.67, SD=1.68) and control group mean percentage is (mean = 80.00, SD = 7.39) the findings indicates that burden level in study group markedly reduced compare to control group. The statistical significant relationship found in t - test value ($t = - 26.7371$, $p = 0.000$) at level of $p < 0.01$ indicates that the effectiveness of psycho-education.

Analysis and comparison of pre test, post test 1 and post test 2 burden scores in study and control group by paired t- test (table no-2) reveals that mean differences of study group (mean diff.=34.92, SD diff.=6.06) and paired t-values (paired t-test =25.786) indicates effectiveness of psycho-education. Pre test and post test 2 burden level of study group mean differences (mean diff.=48.75, SD diff. =8.23) the paired t-test value (paired t-test = 26.4821) were indicates significantly reduced in burden level of study group in pre-test, post test 1, post test 2 scores at the level of $p < 0.01$. The control group pre-test, post test 1 mean differences (mean diff. = 2.92, SD diff.= 4.62) paired t-test value (paired t-test =2.8258, $p = 0.0108$ at $p < 0.05$) indicates that mildly reduced in there burden level compare to study group values. In pre-test and post-test 2 mean differences (mean diff. =2.83, SD diff = 4.81) and paired t-test values (pair t-test =26.6355, $p = 0.0163$ at $p < 0.05$) shows slightly reduced in their burden level compare to study group values it indicates that

statistically there is a significant relationship with psycho-education and burden level among care givers.

Analysis's and comparison of levels of burden at pre-test, post-test 1, post-test 2 by chi-square test (table no 3)reveals the pre-test values of study and control group highest members have high level of burden in both the groups (80%, and 85%) the obtained chi-square value ($\chi^2 = 0.1732$, $p = 0.6773$ at diff. = 1) indicated there is non significant relationship between both groups burden level. The post test 1 values of study group and control group burden level of a members, in study group is reduce to low level (60%) but in control group reduced in average level (30%) but majority were remaining high level burden (70%). The obtained chi-square value ($\chi^2 = 26.2857$ at diff.=2) indicates there is a significant relationship found in psycho-education and burden level among care givers of study and control group at $p < 0.01$. In post test 2 values of study and control group highest number of members have low level burden (100%) but in control group average level (40%) and high level (60%) indicates that control group members were majority remains in high level burden. The obtained chi-square value value ($\chi^2 = 40.000$, at diff.=2) shows there is a significant relationship found in psycho -education and burden level among caregivers.

Analysis and comparison of different demographic variables with respect to burden scores were significantly relationship found in relationship with patient, variable reveals high level burden in spouse (mean=92.62%, SD=3.31%) compared with other relations. In other demographical variables with respect burden scores were found non- significant relationship.

CONCLUSION

The results suggests that a psych-education to caregivers of patients with schizophrenia may have significant impact on reducing their burden level and also enhances their care giving roles effectively in real world settings.

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Ethical clearance: Obtained informed consent from each subjects for willingness to participate in the study.

Conflict of Interest: Nil

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Patient Satisfaction with Nursing Care in Public and Private Hospitals

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ABSTRACT

Patient satisfaction has become an important indicator to measure the quality of care rendered to the patients while in hospital. Patient satisfaction surveys can help identify ways of improving nursing and health care services. The present study was planned to assess the patient satisfaction with nursing care in selected public and private hospitals. It was found that mean patient satisfaction with nursing care score was significantly higher in private hospitals (80.83 15.88) as compared to public hospitals (64.88 21.36) ($P < 0.001$). Patient satisfaction with nursing was not different in selected medical, surgical, orthopedics and maternity unit; while it was significantly higher in all the units in private hospitals as compared to public hospitals ($p < 0.001$). Patient satisfaction in all the selected eight dimensions of nursing care score was significantly higher in private hospitals as compared to public hospitals ($P < 0.001$). However, communication and offering emotional support dimensions of nursing care had lowest score in both private and public hospitals. Therefore, it is recommended to plan and implement the training programs needed for nurses to improve their knowledge and skills of communication and use of emotional support measures for the patients.

Keywords: Patient Satisfaction, Nursing Care, Satisfaction With Nursing Care

INTRODUCTION

In today's fast-paced, complex and highly regulated health care environment, it is essential to achieve patients' recovery as rapidly as possible and so that ultimately with full satisfaction patients leave the hospital. Studies have shown that satisfaction with nursing care is the best indicator of patients' overall satisfaction with healthcare facilities.¹ Evaluating to what extent patients are satisfied with nursing care, is clinically relevant, as satisfied patients are more likely to comply with treatment, take an active role in their own care,² continue using health care services and stay within a health provider (where there are some choices).³ In addition, nursing professionals may benefit from satisfaction surveys that identify potential areas for service improvement and health expenditure may be optimized through patient-guided planning and evaluation.⁴

Patients' satisfaction with nursing services gained significant importance, owing to the nature of nursing. The nurses work more closely with the patients than any other health professional i.e. seven days a week and 24 hours a day.⁵ The patient, therefore, can judge the over all quality of hospital services on the basis of his perception to nursing care received.

Patients' satisfaction is an important measure of service quality in health care systems. Patients' perception to health care system seem to have been largely ignored by health care administrators in developing countries.⁶ Furthermore, in our scenario there is lack of empirical evidences on this subject of inquiry. Therefore, this study was planned to assess the patient satisfaction with nursing care.

OBJECTIVES

- To assess the overall patient satisfaction with nursing care.
- To compare the patient satisfaction with nursing care admitted in selected different general units i.e. medicine, surgery, orthopedics and maternity units.
- To determine the patient satisfaction with different dimensions of nursing care.

MATERIALS AND METHOD

Research design & setting: This comparative-descriptive study was conducted in two Public hospitals (ESI hospital and Civil hospital, Ludhiana)

and two Private hospitals i.e. CMCH and DMCH, Ludhiana.

Population, sample and sampling: The present study was conducted on 1200 indoor patients admitted four types of general wards (medical, surgical, orthopedics and maternity) of each selected hospital; equal number of patients were selected from each hospitals i.e. 300 and each ward i.e. 75.

Inclusion and exclusion criteria: Patients included who were of more than 18 years of age, conscious, had a stay of more than a week in hospital and were willing to participate in study. However, patients with sensory impairment, disoriented patients, patients with psychiatric illness and who were not willing to participate in study were excluded from study sample.

Tool and methods of data collection: Patients' Satisfaction with Nursing Care Questionnaire (PSNQ) was developed on basis of Watson (1979) eight dimensions of nursing care i.e. attentiveness, availability, emotional support, clinical and technical skills/ competences, interpersonal relationship, information and communication, knowledge and professionalism of nurses. A four point Likert's scale was developed consisting of four items under each dimension/ category of nursing care. Content validity of the tool was established by seeking the inputs from 5 experts form the field of nursing, healthcare administration, nursing administration and patient

satisfaction research. Reliability of the data collection tool (PSNQ) was computed on data collected form 50 patients using split half technique; PSNQ was found reliable ($r=0.89$). Data was collected through a formal interview with selected patients to know their satisfaction with nursing care using the developed PSNQ.

Ethical consideration: This was a non-experimental study; however, permission was obtained from Institutional Ethical Committee, competent authorities of the hospitals and departments. Furthermore, an informed consent was from each study subject and confidentiality of information and anonymity of subjects was ensured.

Methods of data analysis: Data was analyzed and presented using descriptive and inferential statistics.

RESULTS

Socio-demographic profile of patients

Majority of the patients were young, married, urban dwellers, Punjabis, Hindus/ Sikhs in region and very few of them were graduate and above educated or had a professional/ business as their occupation. The microscopic details of the socio-demographic characteristics of the patients may be perused from Table 1.

Table 1: Socio-demographic profile of patients N = 1200

Socio-demographic variables	Hospitals		Total	χ^2
	Government (n=600)	Private (n=600)		
	f (%)	f (%)	f (%)	
Age (in Years)*				
18 – 30	287 (47.8)	236 (39.3)	523 (43.6)	43.675 d.f. = 3 P = 0.000
31 – 45	188 (31.3)	136 (22.7)	324 (27.0)	
46 – 60	86 (14.3)	150 (25.0)	236 (19.7)	
> 60	39 (06.5)	78 (13.0)	117 (09.7)	
Gender				
Male	329 (54.8)	317 (52.8)	646 (53.8)	0.483 d.f = 1 P = 0.483
Female	271 (45.2)	283 (47.2)	554 (46.2)	
Marital Status				
Unmarried	86 (14.3)	68 (11.3)	154 (12.8)	6.706 d.f. = 3 P = 0.082
Married	495 (82.5)	507 (84.5)	1002 (83.5)	
Divorced/ Separated	08 (01.3)	04 (00.7)	12 (01.0)	
Widow/ widower	11 (01.8)	21 (03.5)	32 (02.7)	
Habitat				
Rural	223 (37.2)	230 (38.3)	453 (37.8)	6.11 d. f. = 2 P = 0.047
Urban	371 (61.8)	370 (61.7)	741 (61.8)	
Slum	06 (01.0)	00 (00.0)	06 (00.5)	

Table 1: Socio-demographic profile of patients N = 1200 (Contd.)

Socio-demographic variables	Hospitals		Total	χ^2
	Government (n=600)	Private (n=600)		
	f (%)	f (%)	f (%)	
Nativity				
Punjab	275 (45.8)	486 (81.0)	761 (63.4)	280.2 d. f. = 4 P = 0.000
Utter Pradesh	155 (25.8)	26 (04.3)	181 (15.1)	
Bihar	145 (24.2)	15 (02.5)	160 (13.3)	
Himachal Pradesh	09 (01.5)	34 (05.7)	43 (03.6)	
Others	16 (02.7)	39 (06.5)	55 (04.6)	
Religion				
Hindu	443 (73.8)	292 (48.7)	734 (61.2)	81.401 d. f. = 2 P = 0.000
Sikh	147 (24.5)	278 (46.3)	425 (35.4)	
Muslim/ Christian	10 (01.7)	30 (05.0)	40 (03.4)	
Educational Status				
Illiterate	230 (38.3)	123 (20.5)	353 (29.4)	119.3 d. f. = 6 P = 0.000
Primary	84 (14.0)	65 (10.8)	149 (12.4)	
Middle	116 (19.3)	68 (11.3)	184 (15.3)	
Matric	96 (16.0)	147 (24.5)	243 (20.2)	
10+2	48 (08.0)	93 (15.5)	141 (11.8)	
Graduate	18 (03.0)	75 (12.5)	93 (07.8)	
Postgraduate	08 (01.3)	29 (04.8)	37 (03.1)	
Occupation				
Non working	268 (44.7)	282 (47.0)	550 (45.8)	95.281 d. f. = 3 P = 0.000
Non-skilled	144 (40.7)	145 (24.2)	389 (32.4)	
Skilled	73 (12.2)	66 (11.0)	139 (11.6)	
Professional/ business	15 (02.5)	107 (17.8)	122 (10.2)	

* Mean age of government hospital patients= 35.43±13.50; * Mean age of private hospital patients = 40.77±16.25,

* Mean age of overall total patients = 38.10±15.17

Patient satisfaction with nursing care

As depicted in Table 2, it was found that mean patients satisfaction score was higher of the patients admitted in Private hospitals (80.83 ± 15.88) as compared to patients admitted in public hospitals 64.88 ± 21.36). This difference in satisfaction score was found statistically significant (p<0.001).

Table 3 illustrated that; in private hospitals majority of the patients were highly satisfied (68.5%); while in public hospitals only less then half of the patients (48.0%) highly satisfied. Moderate level of patient satisfaction or dissatisfaction with nursing was significantly higher among patients in public hospitals as compared to private hospitals (p<0.001).

Table 2 Mean patients' satisfaction score with nursing care in selected hospitals N = 1200

Variables	Hospitals		Total	t- value
	Government	Private		
Mean ± SD	64.88 ± 21.36	80.83 ± 15.88	72.81 ± 20.52	14.724'
Mean percentage	67.6	84.2	75.8	

Max Score: 96, Minimum score: 0, Highly Satisfied: 65- 96, Moderately Satisfied: 33-64, Uncertain: 8-3, Dissatisfied: 0-7

Computed from primary data, * Significant (p value < 0.001), df = 1198

Table 3: Level of patients' satisfaction with nursing care

Level of satisfaction	Hospitals		Total	χ ²
	Government	Private		
Highly satisfied	288 (48.0)	411 (68.5)	699 (58.3)	76.046*
Moderately satisfied	263 (43.8)	185 (30.8)	448 (37.3)	
Uncertain/dissatisfied	49 (08.2)	04 (0.7)	53 (04.4)	
Total	600	600	N = 1200	

Computed from primary data, * Significant (p value < 0.001), df = 2

Figure in parentheses are percentage

As presented in Table 4, it was found that in all selected clinical specialties patients' satisfaction was significantly higher in private hospitals as compared to government hospitals (p<0.001. Among four selected clinical specialties the highest satisfaction was

observed in maternity unit in private as well as public hospital; however, it was not significantly different in all selected wards of either public or private hospital (p>0.05).

Table 4: Mean patients' satisfaction score with nursing care in selected clinical specialties N = 1200

Clinical specialties	Hospitals		Total Mean ±SD	t-test
	Government Mean ±SD	Private Mean ±SD		
Medical	63.26 ± 19.27	80.58 16.01	71.92 ± 19.70	8.431*
Surgical	67.55 ± 22.14	79.08 ± 15.90	73.31 ± 20.09	5.249*
Orthopedics	60.60 ± 22.12	81.01 16.89	70.80 ± 22.15	9.022*
Maternity	68.12 ± 21.07	82.67 14.58	75.39 ± 19.50	6.952*

Max Score: 96, Minimum score: 0, Highly Satisfied: 65- 96, Moderately Satisfied: 33-64, Uncertain: 8-3, Dissatisfied: 0-7

Computed from primary data,

* Significant (p value < 0.001), df = 1198

As depicted in Table 5, in all the dimensions of nursing care patient satisfaction score was significantly higher in private hospitals as compared to Public

hospitals (p<0.001). While in lowest satisfaction was found for communication of nurses in both public and private hospitals.

Table 5: Mean patients' satisfaction score with different dimensions of nursing care

Dimensions of nursing care	Hospitals				Total(Mean ±SD)	t-test
	Government		Private			
	(Mean ±SD)	Mean%	(Mean SD)	Mean%		
Attentiveness	8.51 ± 3.17	70.9	10.28 ± 2.16	85.7	9.35 2.88	10.977*
Availability	8.35 ± 3.27	69.6	10.29 ± 2.32	85.8	9.30 3.01	12.019*
Emotional support	7.29 ± 3.71	60.8	9.86 ± 2.62	82.2	8.58 ± 3.45	13.855*
Clinical skills	8.97 ± 2.77	74.6	10.34 ± 2.19	86.2	9.65 ± 2.59	9.535*
Interpersonal relationship	8.26 ± 3.67	68.8	10.39 ± 2.25	86.6	9.33 ± 3.22	12.129*
Communication	6.83 ± 3.45	56.9	9.22 ± 2.68	76.8	8.03 ± 3.31	13.427*
Professional knowledge	8.26 ± 3.06	68.8	10.08 ± 2.34	84.0	9.17 2.87	11.596*
Professionalism	8.51 ± 2.77	70.9	10.32 ± 2.15	86.0	9.44 2.63	12.352*

Computed from primary data, * Significant (p value < 0.001), df = 1198

Max Score: 12, Minimum score: 0, HS: 12, MS: 8, UC: 4: Dissatisfied: 0.

DISCUSSION

Patient satisfaction has become an important indicator to measure the quality of care rendered to the patients while in hospital. Patient satisfaction surveys can help identify ways of improving nursing and health care services.

It was found that mean patients satisfaction score was higher of the patients admitted in private hospitals (80.83 ± 15.88) as compared to patients admitted in public hospitals 64.88 ± 21.36 ($p < 0.001$). Similarly higher level of satisfaction was also significantly higher among patients in private hospitals as compared to their counterparts in public hospitals ($p < 0.001$). Similar findings reported by one Indian study (Sreenivas and Prasad (2003)⁷, where it was found that patients were more satisfied in corporate managed hospitals, followed by private hospitals, while there was least satisfaction among patients in government hospitals. Findings were further supported by Taner and Antony (2006)⁸ and Andaleeb (2000).⁹

In general patient satisfaction was higher in both private and public hospitals. Similarly other studies of patients' satisfaction with nursing care also have demonstrated high satisfaction. In Indian literature, patients' satisfaction with nursing care was reported as high as greater than ninety percent by Poonam Joshi (2002),¹⁰ Bhattacharya (2003),¹¹ Kapzawni (2004),¹² Shalini Kaushal (2005),¹³ Sushma Kumari (2005)¹⁴ and Achala (2007).¹⁵ Iyer A et al (1996)¹⁶ also found high level of satisfaction with care provided by doctors (88.6 percent) and nurses (91.9 percent). Explanation of high level of satisfaction among patients in government hospitals was provided by mentioning that only the poor come to public hospitals, besides, their own daily living conditions are several times worse than the general conditions existing in the public hospitals. As such they feel grateful to whatever care comes in their way. In present a large of patient (50%) received care from public hospitals were migrated people from low per capita income states such as UP, Bihar.

Furthermore, it was found that in all selected clinical specialties patients' satisfaction was significantly higher in private hospitals as compared to government hospitals ($p < 0.001$). Among four selected clinical specialties the highest satisfaction was observed in maternity unit in private as well as public hospital; however, it was not significantly different in all selected wards of either public or private hospital ($p > 0.05$).

In addition it was found that among all the dimensions of nursing care patient satisfaction score was significantly higher in private hospitals as compared to Public hospitals ($p < 0.001$). While in lowest satisfaction was found for communication of nurses in both public and private hospitals. Renzi C et al (2001)¹⁷ mentioned that improving the nurses' communication and interpersonal skills could increase patients' satisfaction which was likely to have a positive effect on treatment adherence and health outcome.

CONCLUSION

The overall patient satisfaction with nursing care was high in selected public as well as private hospitals. However, patient satisfaction with nursing care was high in all the dimensions of nursing care in private hospitals as compared to government hospitals. Furthermore it was found that patient satisfaction with nursing care in medical, surgical, orthopedic and maternity wards was not significantly different in selected public and private hospitals. However, it was found communication and emotional support dimension of nursing care needs improvement to further enhance patients' satisfaction with nursing care in selected public and private hospitals. Therefore, it is recommended to plan and implement the training programs needed for nurses to improve their knowledge and skills of communication and use of emotional support measures for the patients.

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Conflict of Interest: None

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A Study to Assess the effectiveness of Aromatherapy on Dysmenorrhea among Adolescent Girls in Selected Schools at Mysore

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ABSTRACT

Background: One of the major physiological changes that take place in adolescent girls is the onset of menarche. After that many girls faces problems of irregular menstruation, excessive bleeding & dysmenorrhea. In that dysmenorrhea is the most common problem experienced by most of the adolescent girls. Dysmenorrhea can be treated with a variety of drugs, including pain relievers, sedatives, antispasmodics, prostaglandin inhibitors, and oral contraceptives. However, these drugs can and do produce many unacceptable side effects. Aromatherapy is the therapeutic use of essential oils obtained from plants. When properly used, essential oils are very safe therapy for menstrual cramps without harmful side effect.

Method: In this study, a quasi experimental design was used and non probability convenience sampling technique was adopted to select 60 adolescent girls , both in experimental and control group. Pilot study was conducted, the tool and study design were found to be feasible. Data were collected using standardized numerical visual analogue scale. Aroma therapy was administered to the experimental group. The data were collected and analyzed using descriptive and inferential statistics.

Result: The result of the study revealed that the significance of difference between the mean pre test and post test pain score in experimental group which was statistically tested using repeated measures of ANOVA and was found to be highly significant at 0.05 level of significance ($p < .05$) and the significance of difference between the mean post test 1, 2, 3 pain scores between experimental and control group which was statistically tested using independent 't' test was found to be highly significant at 0.05 level of significance ($t(58) = 9.97, 6.56, 4.02; p < 0.05$). The result also shown that the pain scores of adolescent girls had no significant association with their selected personal variables except regularity of menstruation which is partially supported

Conclusion: Therefore, the study concluded that aromatherapy was effective method to reduce the dysmenorrhea of adolescent girls.

Keywords: Effectiveness, Aromatherapy, Dysmenorrhea, Adolescent Girls

INTRODUCTION

Adolescents are full of energy, have significant drive and new ideas. They are a positive force for a nation and are responsible for its future

productivity¹. The period of adolescence is transition from childhood to adult life along with pubertal development and sexual maturation. One of the major physiological changes that take place in adolescent girls is the onset of menarche.²

Dysmenorrhea is the most common gynecologic disorder among female adolescents, with a prevalence of 60% to 93%.¹ Various studies in India revealed that prevalence of dysmenorrhea varies from 33% to 79.67%. However, the true incidence and prevalence of dysmenorrhea are not clearly established in India.³ Dysmenorrhea can be treated with a variety of drugs, including pain relievers, sedatives, antispasmodics, prostaglandin inhibitors, and oral contraceptives. However, these drugs can and do produce many unacceptable side effects.³

Several complementary therapies have been used to treat menstrual pain, including acupuncture, yoga and meditation, herbal medicine, and spinal manipulation. Another natural remedy is aromatherapy. Aromatherapy is the therapeutic use of essential oils derived from plants. These oils can be absorbed into the body via the skin or the olfactory system. Essential oils, the pure essence of a plant, have been found to provide both psychological and physical benefits when used correctly and safely.⁴

OBJECTIVES

The objectives of the study are

1. To assess the pain scores of adolescent girls with dysmenorrhea among experimental and control group.
2. To determine the effectiveness of aromatherapy on dysmenorrhea among adolescent girls in terms of reduction in pain score.
3. To find the association of pain scores of adolescent girls with their selected personal variables

HYPOTHESES

The following hypotheses are formulated for the study and will be tested at 5% level of significance.

H₁: The mean post test pain scores of adolescent girls who have undergone aromatherapy will be significantly less than the mean pre test pain scores of adolescent girls.

H₂: The mean post test pain scores of adolescent girls in experimental group will be significantly less than mean post test pain scores of adolescent girls in control group.

H₃: The pain scores of adolescent girls will be significantly associated with their selected personal variables.

METHODOLOGY

Design/ research approach: The research design selected for the study was quasi- experimental nonequivalent control group pre test-post test design.

Sample size: Sixty (60) adolescent girls (13-18 years) with dysmenorrhea were selected with 30 girls each in experimental and control group .

Sampling technique: Non- probability convenience sampling technique was used in the present study.

Data collection technique: In this study personal variable proforma is used to assess the sample characteristics and numerical pain scale is used to assess pain among adolescent girls undergoing aromatherapy.

Data collection procedure : Aromatherapy was given to the girls in experimental group in the pattern of three cycles with a gap of 4 hours interval during the time of dysmenorrhea for duration of 10-15 minutes each cycle; and the pain was measured before and after 15 minutes of each cycle aroma therapy. Aromatherapy was not administered to the control group but the pain level was measured in the same pattern as the experimental group.

Groups	Pre intervention	Intervention	Post intervention
Experimental Group	<p>Base line assessment of pain level of the adolescent girls under going aromatherapy by using numerical pain scale , soon after the onset of dysmenorrhea(O₁).</p> <p>2nd Assessment :4 hours after first cycle (O₃).</p> <p>3rd Assessment : 4 hours after second cycle (O₅).</p>	<p>Administration of aromatherapy for 10-15 minutes as per the plan below:</p> <p>1st cycle : soon after the onset of dysmenorrhea</p> <p>2nd cycle : 4 hours after first cycle</p> <p>3rd cycle : 4 hours after second cycle</p>	<p>Reassessing the pain level by using numerical pain scale</p> <p>First assessment :After 15 minutes of aromatherapy (O₂).</p> <p>Second assessment :After 15 minutes of aromatherapy (O₄)</p> <p>Third assessment :After 15 minutes of aromatherapy (O₆)</p>
Control group	<p>Base line assessment of pain level of the adolescent girls under going aromatherapy by using numerical pain scale, soon after the onset of dysmenorrhea(O₁).</p> <p>2nd Assessment: 4 hour after first cycle (O₃).</p> <p>3rd Assessment: 4hours after second cycle (O₅).</p>		<p>Reassessing the pain level by using numerical pain scale.</p> <p>First assessment :After 15 minutes of pretest (O₂).</p> <p>Second assessment :After 15 minutes of pretest (O₄)</p> <p>Third assessment :After 15 minutes of pretest (O₆)</p>

Fig. 1. Schematic representation of research design

FINDINGS

Section 1: Description of selected Personal variables of study subjects:

Table 1: Frequency and percentage distribution of adolescent girls in experimental and control group according to their selected personal variables n= 60

Sl. No	Selected personal variables	Experimental group		Control group	
		f	%	f	%
1	Age of the participant				
	a) 13-15 year	11	36.66%	14	46.66%
	b) 16- 18 years s	19	63.33%	16	53.33%
2	Age of onset of menarche				
	a) 12-13 years	15	50%	16	53.33%
	b) 14-15 years	15	50%	14	46.66%
3	Duration of dysmenorrhea				
	a) 1-24 hours	26	86.66%	30	100%
	b) 25-48 hours	4	13.33%	0	0
4	Family history of dysmenorrhea				
	a) Yes	20	66.66%	15	50%
	b) No	10	33.33%	15	50%
5	Frequency of menstruation				
	a) 22-28 days	12	40%	19	63.33%
	b) 29-35 days	18	60%	11	36.66%
6	Regularity of menstrual cycle				
	a) Regular	19	63.33%	14	46.66%
	b) Irregular	11	36.66%	16	53.33%

Section 2: Effectiveness of aromatherapy

1. Description of pain scores of adolescent girls in experimental and control group

The pretest1 score is ranged from 3-9 in both experimental and control group as against the possible range of 0-10. The mean pretest1 pain score in experimental group is 6.37 where as in control group 5.67 with a standard deviation of ± 1.426 in experimental group and ± 1.47 in control group. The pretest2 score is ranged from 2-6 in experimental group and 3-7 in control group as against the possible range of 0-10. The mean pretest2 pain score 4.07 in both experimental and control group with a standard deviation of ± 1.66 in experimental group and ± 1.55 in control group. The pretest3 score in the experimental group ranged from 1-5 in experimental group and 1-4 in control group as against the possible range of 0-10. The mean pretest3 pain score in experimental group is 3.17 and in control group is 2.17 with a standard deviation of ± 1.51 in experimental group and ± 1.913 in control group.

The posttest 1 score is ranged from 0-6 in experimental group and in control group is 4-9 against the possible range of 0-10. The mean posttest score in

experimental group is 2.50 where as in control group 5.73 with the standard deviation of ± 0.82 in experimental group and ± 1.574 in control group. The posttest 2 score is ranged from 0-4 in experimental group and in control group is 2-7 against the possible range of 0-10. The mean posttest score in experimental group is 1.57 where as in control group 3.97 with the standard deviation of ± 1.22 in experimental group and ± 1.582 in control group. The posttest 3 score is ranged from 0-2 in experimental group and in control group is 2-7 against the possible range of 0-10. The mean posttest score in experimental group is 5.53 where as in control group 2 with the standard deviation of ± 0.571 in experimental group and ± 1.912 in control group.

2. Reduction in pain scores: comparing pre test and post test scores

i) Significance of difference between pre test and post test pain scores of adolescent girls among experimental and control group

In order to establish the significance of difference between the mean pretest and post test level of pain scores repeated measures of ANNOVA was used. data found to significant at 0.05 level of significance. Hence the null hypothesis is rejected

Table No 2. Degree of freedom ,F value and calculated p value of pretest and post test pain levels of adolescent girls in experimental and control group N= 60

Source	1 st cycle			2 nd cycle			3 rd cycle		
	df	F value	Significance	df	F value	Significance	df	F value	Significance
Decrease in pain	1	192.28	.01*	1	182.64	.01*	1	192.28	.01*
Decrease in pain with respect to group	1	206.01	.01*	1	155.62	.01*	1	99.626	.01*

P<.05 ; *- significant

ii) Significance of difference between reduction in post test pain scores of adolescent girls among experimental and control group.

To find the significance of difference in mean pain among experimental and control group, the independent 't' test was computed and the obtained the value of post test 1 , t(58)= 9.97 ,post test 2 t(58)= 6.56 , post test 3 t(58)= 4.02 were found to be significant at 0.05 level of significance.

Hence these result does not support the null hypothesis and inferred that the mean post test pain scores of adolescent girls who have under gone aroma therapy is significantly less than mean post test pain scores of control group. It is inferred that aromatherapy is effective in decreasing the dysmenorrhea.

Section 3: Findings related to association of the pain scores of adolescent girls with their selected personal variables

The computed chi-square (χ^2) values for association of pre test pain score of adolescent girls with their selected personal variables were found to be not significant at 0.05 level of significance except for regularity of menstruation.

Hence it can be inferred that the pain scores of adolescent girls were not influenced by their personal variables, except regularity of menstruation.

CONCLUSION

An increasing number of women are resorting to aromatherapy to help them loosen up tight muscles, soothe apprehension and improve moods. Essential oils are seen as a great solution that helps to balance hormones, which is regarded as the source of all the symptoms. Even though there aren't enough studies yet to prove the effectiveness of aromatherapy, a lot of

women attest to its usefulness in the alleviation of PMS. The use of essential oils is widely accepted as beneficial for one's welfare.

The findings of the present study concluded that aromatherapy was effective in reducing the dysmenorrhea. The analysis of the findings revealed that, there was a significant reduction in the mean pain scores of samples undergoing aromatherapy in the experimental group compared to the control group. The pre test pain scores have no association with their selected personal variables.

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Conflict of Interest

Dysmenorrhea is a medical condition characterized by severe uterine pain during menstruation. While most women experience minor pain during menstruation, dysmenorrhea is diagnosed when the pain is so severe so as to limit normal activities, or require medication. In the present study, adolescent girls of selected schools of Mysore got reduction in pain scores after aromatherapy . Hence the study gave the evidence that use of aromatherapy can reduce the dysmenorrhea of adolescent girls, and nurses can improve their knowledge about the aromatherapy and will be able to apply it in their clinical setting to improve their standard of patient care.

Ethical Clearance: Ethical clearance was obtained from the ethical committee of the college.

Funding Sources: Not obtained any funds from any sources.

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Nursing Care Standards in PICU

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ABSTRACT

Pediatric critical care units are designed to care for children from infancy to adolescence. Caring for critically ill children with diverse nursing need is a challenge to the nurses working in Pediatric Intensive Care Unit (PICU). Nursing standards improve nursing care quality by focusing the nurse's efforts toward appropriate goals and heightening their motivation for goal achievement.

Keywords: Nursing Care Standard, PICU

INTRODUCTION

The Standards for Acute and Critical Care Nursing Practice describe the practice of the nurse who cares for an acutely or critically ill patient no matter where that patient is cared for within the healthcare environment.¹ A standard is a practice that enjoys general recognition and conformity among professionals or an authoritative statement by which quality of practice, service, or education can be judged. A nursing care statement is a descriptive statement of desired quality against which to evaluate nursing care.

Nursing care standards in PICU

Nurses practice in a complex, active environment and need to have timely information and resources in their work areas to assist them to provide quality patient care and participate in their professional nursing practice development. This requires knowledge on the part of nurses regarding age specific physical and psychosocial milestones to assess the child accurately and to provide optimal care.²⁻³

1. Nursing care standard for airway management³

1.1. Assessment

The nurse caring for acute and critically ill child collects relevant data

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a) Airway patency

- Any obstruction in the airway- absence of audible airway, any upper airway stridor, asynchronised chest, abnormal motion, pooling of secretion

b) Maintaining airway

- Ability to control secretions, any obstructive apneas, limited airflow, snoring respiration

c) Airway protection

- Cough, gag reflex, upper airway reflexes by suctioning catheters.

d) Parameters to check respiration

- Respiratory rate, pattern of respiration, signs & symptoms of respiratory distress, skin color, auscultation, accessory muscle usage, nasal flaring, O₂ saturation, ABG analysis, end tidal O₂ analysis.

1.2. Nursing Diagnoses

- a) Ineffective airway clearance related to poor coughing, ET intubation, pooling of secretion, trachea bronchial infection

- b) Ineffective breathing pattern related to trachea bronchial spasm, respiratory failure

1.3 Objective

The child's airway will be maintained as evidenced by

- Mobilization of secretion, free of secretion, relief from airway obstruction, maintaining O₂ saturation.

1.4 Intervention

- Assessing child's airway patency.
- Positioning the child – head tilt chin lift maneuver for non trauma child and jaw thrust maneuver for traumatized child
- Suctioning the airway- oro pharynx, naso pharynx
- Removal of foreign body – suctioning, megills forceps.
- Maintaining the airway patency- keep the airway insitu (nasopharyngeal, oropharyngeal, laryngeal mask, ET intubation)
- Administering humidified O₂- bag & mask ventilation 100%
- Provide chest physiotherapy, postural drainage.
- Keep bag & mask circuit always nearby.
- Assist and collect necessary equipments for intubation.
- Hyper oxygenation before intubation
- Select appropriate size of ET tube and suction catheter.
- Ongoing monitoring of respiratory status during intubation.
- Confirm the ET tube placement by auscultation (bilateral equal air entry, equal chest movement)
- Check ET cuff pressure (<30 mmHg)
- Monitor ABG value, SPO₂, respiration rate, vital parameters
- Each suction should not exceeded more than 10 sec & if needed instill normal saline if secretion is thick/humidification is low
- Check for any air leak from ET tube insertion site
- Administer tracheo bronchial dilators/ nebulizers as per order.
- Administer antibiotics to prevent ventilator assisted pneumonia (VAP)

1.5 Implementation

- Parents, family members and health care team members participates in rendering care & decision

making for the child's airway clearance & oxygenation

1.6 Evaluation

- Evaluating the child's airway by- assessment of bilateral equal air entry, SPO₂, ABG- normal, respiratory rate

2. Nursing care standards for intake and output

2.1 Assessment

The nurse caring for acute and critically ill child collects relevant health data regarding fluid intake, output, signs & symptoms of over hydration/ dehydration

a) General signs & symptoms of dehydration

- Sunken eyes, dry mucus membranes, reduced urine output, lethargy, sleepiness, confusion, inelastic skin, fever (infection) increased heart rate, low BP

b) Infant assessment

- Fontanel- depression H/O vomiting & diarrhea, floppy limbs, hypovolemia
- Risk factors - any h/o diuretics, gastro enteritis, poor feeding & intake of oral feeds

2.2 Nursing Diagnoses

- Fluid volume deficit related to profuse fluid loss secondary to vomiting, diarrhea
- High risk for fluid and electrolyte imbalance related to diarrhea

2.3 Objective

The child's fluid volume status will be maintained as evidenced by normotension, normal BP, heart rate, adequate urine output, absence of signs & symptoms of dehydration

2.4 Planning

- Assess the child fluid volume status
- If the child is in hypovolemic shock administer bolus of IV fluid as per doctors order (neonate -10 ml/kg and children -20ml/kg)
- Establish vascular access with large bore needle, if not assist for introsseous access

- Administer isotonic crystalloids as per order.
- Follow the guidelines to calculate the fluid
- In winter season =400ml+yesterdays urine output
- In summer season = 600 ml+ yesterdays urine output
- If severe hemorrhage and hemodynamically unstable transfuse blood & blood products
- Maintain strict Intake /Output chart.

a) Source of intake

- IV fluids, enteral / parental feeds, oral fluids
- Any liquid medication, any flush used to clear tube feeds
- Dilution of any drugs with normal saline / sterile water as infusion

b) Source of output

- Urine (urinary catheter),
- Stool - vomiting and diarrhoea
- Blood taken for investigation purpose, NG tube aspiration, stoma's fistula
- Wound drainage – chest, closed drainage, bile drain
- Child's body weight monitoring includes:
 - * Child's splint
 - * Nappy weight- (1gm of wet nappy = 1ml of urine)
- Use standard appropriate measuring apparatus to measure weight, urine, and fluids from the body.
- If the child underwent any surgery add the blood /fluid loss in theatre.
- Check for +ve /-ve balance of fluid at the end of the day closing the I/O chart

2.5 Implementation

The nurse who is caring the child keep mind the objective and involve parents and other health team members during implementation (to manage hypovolemia)

2.6 Evaluation

The nurse evaluates the child's fluid volume status with expected outcome and plan further intervention as it required.

3. Standards for ventilator settings

3.1 Assessment

Assess for age of the child, weight, diagnosis, current mode of ventilation, to which mode it needs to be changed, blood gas analysis for the present mode of ventilation.

3.2 Diagnoses

Impaired gas exchange related to disease condition or inadequate ventilator settings

3.3 Objective

Child maintains normal blood gas values as evidenced by ph 7.35 – 7.45, pCO₂ 35 – 45mmHg and paO₂ of > 93mmHg

3.4 Intervention

- Assess the initial settings based on the child's age, weight and severity of disease
- Choose the mode of ventilation based on the child's condition and diagnosis
- Assess arterial blood gas
 - If paO₂ needs to be increased change the parameters as follows – increase PIP, increase rate, increase fraction of inspired air, increase PEEP and increase inspiratory time.
 - If paO₂ needs to be decreased, decrease PIP, decrease fraction of inspired air, decrease PEEP, decrease inspiratory time.
 - If paCO₂ needs to be increased, decrease PIP, decrease rate, decrease expiratory time.
 - If paCO₂ needs to be decreased, increase PIP, decrease PEEP, increase rate, increase expiratory time.
- Monitor non – invasively respiratory status (e.g. Pulse oximetry to check saturation)
- If child is on volume ventilator, assess the oxygenation and if needed to;
 - Increase alveolar ventilation by increase respiratory rate or tidal volume

- Increase oxygenation by increase fraction of inspired oxygen, PEEP, tidal volume
- If child is on pressure ventilation, assess the oxygenation and if needed to;
- Increase alveolar ventilation , increase respiratory rate, increase PIP, increase inspiratory time, decrease PEEP
- Increase oxygenation, increase fraction of inspired oxygen, increase MAP

3.5 Implementation

Depending upon child's condition, performed the planned action

3.6 Evaluation

Child maintains normal gas exchange as evidenced by normal blood gas values.

4. Standard for weaning the child from ventilator

4.1 Assessment

Assessment should reveal

- Child tries to breath spontaneously
- Clear chest x-ray
- Reduced ventilatory support needed
- Normal arterial blood gas analysis with minimum supports
- No ionotropic support needed
- No change in mental status
- No respiratory/cardiovascular complications

4.2 Diagnoses

Readiness for enhanced breathing pattern related to good prognosis of the disease

4.3 Objective

- Child maintains normal respiratory function with no ventilator support as evidenced by normal breathing pattern, no signs of distress, and no other complications.

4.4 Intervention

- Assess the respiratory status, cardiovascular stability of the child

- Perform an x-ray if needed
- Monitor the ongoing ventilator settings with low PEEP and fraction of inspired oxygen
- Perform blood gas analysis
- Monitor vital signs closely q1h after weaning
- Provide humidified oxygen
- Assess complications present with the child which does not allow easy weaning.

4.5 Implementation

Depending upon child's condition, performed the planned action

4.6 Evaluation

Child breathes normally without ventilator support as evidenced by normal ABG values

5. Standards on medication administration

5.1 Assessment

- Assess for the heart rate, BP and respiration, GCS
- Check the order in chart
- Check the chart for any adverse drug reactions which previously recorded
- Check the IV site for pain, swelling and discoloration

5.2 Nursing diagnoses

Risk for complication related to the side effects of the drug

5.3 Objective

The child will remain free from complications

5.4 Plan of action

- Check the written order for medication with medication card
- Calculate the correct dosage of drug
- Follow all the six rights of medication
- Explain the procedure to child/ parent
- Assess for any discomfort or extravasations
- Documents the time, drug, dosage, site, route,

name of the nurse/ doctor and condition during and after procedure

- Labels the remaining medicine if it has been taken from multi dose vial and if needed replace in refrigerator

5.5 Implementation

Implement the interventions

5.6 Evaluation

- Evaluate for any side effects or adverse drug reactions and progress of the child

6 Standards on infection control

6.1 Assessment

- Assess the infection control practices
- Assess the knowledge of the health personnel regarding infection control

6.2 Nursing diagnoses

Risk for infection related to hospitalization/lack of preventive measures

6.3 Objective

- The child remain free from infection

6.4 Intervention

a) Hand hygiene

- Hands should be disinfected with an alcohol-based hand rub (or washed with plain or antimicrobial soap and water) before and after each patient encounter or an encounter with the patient's immediate environment.
- Hands and other body surfaces should be washed with soap (antimicrobial preferred, but plain is acceptable)
- Barrier precautions to prevent skin and mucous membrane exposure
- Gloves should be worn for contact with blood, all body fluids, secretions and excretions, mucous membranes, non-intact skin and items or surfaces contaminated with body fluids.
- Fluid-impermeable gowns or aprons should be worn during procedures that are likely to generate splashes of blood or other body fluids.

b) Respiratory hygiene

- Use tissues to contain respiratory tract secretions and dispose of them in the nearest waste receptacle after use
- Do suction when necessary
- Perform hand hygiene after having contact with respiratory tract secretions and contaminated objects
- If tolerated and feasible, consider providing a size appropriate mask for the patient to wear to prevent respiratory droplet disposal
- Mouth to mouth resuscitation should be avoided

c) General hygiene measures

- Control visitors, allow only one person with child
- Clean the floor at least 4 times a day
- Use antiseptic solution if any blood or body spillage
- Change curtains in PICU once in a two weeks
- Do high dusting once in a week
- Clean instruments and monitors (pulse oximeter, infusion pump etc) with any alcohol solution
- Give mouth care Q4 H
- Segregate and dispose waste appropriately
- Change IV cannula and IV tubings once in 3 days

6.5 Implementation

- Implement the interventions

6.6 Evaluation

- Evaluate the child for any nosocomial infections
 - Temperature
 - Monitor culture and sensitivity test
 - Monitor lab results

7 Standards on care of lines & tubings

7.1 Assessment

- Assess the lines site for redness, swelling, blisters & leakage

- Assess for the labeling over the tubing for a due date
- Check the right fluid, fluid rate and patency
- Hospital should have an adequate policy on infection control measures
- Make sure that the catheter & dressing should not get wet. If it is wet, change the dressing immediately
- PICC & central line should be wrapped with plastic paper / water proof material

7.2 Intervention

a) Intravenous Lines

- Follows strict hand washing technique / use of hand rub before & after touching the lines
- Make sure that the line is patent before giving IV injections/administration of fluids.
- No ionotropes, lipid, amino acid, soda bicarbonate should go in peripheral lines.
- Label the date & time of line started over the adhesive tape.
- Put a tag mentioning date, time for IV tubings
- Change the IV line & IV tubings once in three days
- Change the splint if it gets soiled.
- Used syringes & IV tubings should be disposed properly.
- Clean the IV cannula bung/cap with sterile spirit cotton before giving injections
- IV Bung/cap should not be placed over the bed linen or kept inside the hands

b) Central Line, PICC (Peripherally Inserted Central Catheter) Lines

- Assess the central line frequently for redness, swelling, infiltration & bleeding around the site frequently
- Follows strict hand washing technique / use of hand rub before & after touching the lines
- Make sure that the line is patent before giving injections
- Central line, PICC line should be flushed with heparin saline if it is not on continuous infusion
- Inspect dressing in each shift.
- Change the central line dressing once in seven days.

c) Indwelling Catheter

- Monitor vital signs for signs of infection
- Provide catheter care once in eight hours.
- Empty the urobag if its 3/4th full
- Change the urobag once in seven days
- Change the catheter once in fourteen days.
- Do not pull on the catheter
- Secure the catheter with adequate dressing that it should not be moved.
- Make sure that child is on antibiotics.

8 Standards on assessing and monitoring ⁴

General Observations

- Assess comfort of the child
- Assess synchrony between the child and the ventilator

8.1 Airway monitoring

- Perform auscultation to note the symmetry of breath sounds
- Evaluate quality of breath sounds ; Note adventitious /absence of breath sounds
- Note volume and quantity of secretions
- Note presence of crepitus, inspiratory crackles, or points of tenderness
- Provide additional ventilator support as indicated by signs of hypoxia, hypercarbia, and hemodynamic instability
- Continuous pulse-oximetry to monitor oxygenation (re site q 2-4 hours)
- Monitor gastric insufflations and remove air from stomach as indicated.

- Verify placement of artificial airway by chest radiograph, auscultation of breath sounds across the lung fields, checking end tidal CO₂ monitoring and verify distance marking on the tube
- Ensure adequate humidification of ventilation circuit
- Suctioning of the endo-tracheal tube should occur when there is evidence of increased airway secretions
- Monitor pH and pCO₂ through periodic sampling of arterial or capillary blood gases

8.3 Hemodynamic monitoring

- Maintain optimal cardiovascular status of patient; hourly assessment of vital signs and perfusion
- Ensure continuous ECG monitoring with alarms limits set to appropriate limits per age.
- Monitor and optimize perfusion.
- Calculation and monitoring of all fluid intakes. Fluid restriction may be implemented to reduce fluid retention
- Monitor urine output. Goal should be > 1mL/kg/hour of urine output.
- Monitor fluid and electrolyte status through routine evaluation of lab results.
- Optimize nutrition through early initiation of feeding via NG

8.4 Monitoring the skin integrity

- Assess skin integrity every 2 – 4 hours (attention to bony prominences, areas of nose and mouth in contact with ETT).
- Keep skin clean and dry.
- Reposition the child every 1 – 2 hours (including reposition of head) as tolerated.
- Maintenance of oral hygiene
- Brush teeth, gums and tongue at least twice a day
- Moisturize lips every 2-4 hrs

8.5 Pain monitoring

- Assess the patient's pain and sedation level every 1 – 4 hours

- Check the level of pain by using the Wong – Baker visual analogue pain scale.
- Titrate pain and sedation medications as per protocol

- Provide non-invasive comfort measures like

*Parental presence

*Favourite blanket or toy

*Ear plugs to reduce noise levels

*Dim lights

*Distraction techniques

CONCLUSION

Nursing in intensive care unit is concerned with provision of life support, monitoring children with critical illness, their response to interventions and prevention of complications particularly noso-comial infection. Clinical nursing standards advocates a framework of guidelines for nursing practice within the PICU to provide the highest standard of nursing care to critically ill children.

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