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Personal and professional networking: A way forward in achieving quality nursing care

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Introduction

Health Care is a continuous process which has to be initiated, rendered, evaluated, improved and continuously monitored. Care is extended to include wellness, health promotion and disease prevention. Personnel interaction is extremely important in providing quality care. Health care today is provided by highly educated and sophisticatedly skilled individuals and these individuals cannot provide a total quality care without relying on teamwork. Interpersonal, interdepartmental, inter institutional communication and relationship in the health care profession play a tremendous role in shaping the process of care to ensure positive outcome in patients.

In today's health care profession quality is said to be the key for excellence in care; and it is not quality at any cost, it is quality at competitive cost. And quality can be achieved only by having vision, courage, determination and conviction. The basic and most essential key element for quality and excellence in patient care is net working: both personal and professional. Through a variety of techniques and for a multitude of reasons, health educators can enrich their professional endeavors by interacting and engaging in formal and informal networking with others.[1] To achieve evidence based nursing, professional net working need to be facilitated.[2]

What is networking?

Networking is "the process of establishing a mutually beneficial relationship with other professionals and clients".[1] It is a long term process of building linkages and maintaining relationships throughout professional life. Professional and personal relationships and contacts established by networking are some of the most effective methods for improving patient care.

Why is networking important?

Networking is essential to make a difference in patient care and it really influences health care agenda at local; national and international levels. Through networking, health professionals can offer each other assistance and support while establishing long-lasting mutually beneficial relationships.[1]

Net working is essential to:

- Provide unlimited contacts and linkages that can result in more evidence based clinical practice.[1]
- Collect, aggregate, organize, move and represent information in an economical, and efficient way that is useful for the users.
- Find and talk to the right people about information and advice on professional and patient care opportunities.
- Bring the effect of time to time cultural changes in the professional practice.[3]
- Successfully develop selected cadre of skills and knowledge essential for the changing health care needs of clients.
- Encourage nurses to improve patient care by encouraging them to use the most up to date methods in patient care.
- Bridge the gap between research and practice which is a serious obstacle to achieving excellence in patient care.
- Manage, analyze and utilize data vital for patient care and to make it accessible to health care providers when it is needed most.
- Support nurses who design, implement and manage information technology and systems that enhance patient care.
- Bring together diverse groups of nursing personnel to discuss issues and developments of common concern.[4]
- Share information on new tools, methodologies and technologies.
- Provide support for professional colleagues to overcome professional hurdles.[5]
- Facilitate feedback among professional colleagues.[4]
- Provide help and facilitation to experts to demonstrate their expertise.[6]
- Integrate best evidence into practice and promote research.[7]

The research that explored the relationship between collegial networking and faculty vitality revealed that respondents with collegial networks were more actively participating in several academic activities.[8] Another research conducted on the influence of colleagues on academic success of faculty identified that those faculty who got recognition for contribution and research frequently consulted colleagues.[9] International networking enhances progress in nursing education as well.[10] It is also important that educators give students the opportunity to improve their networking skills.[11] Professional networking is not constricted in the narrow space of nursing alone. Nursing personnel should reach out to all the components of health care providers and need to network with them, or else, as a group it is difficult to prove the importance in the health care delivery system.[12] Innovative professional organizations need to develop their work through deliberate development of networking techniques to move innovation into practice.[13] By collecting new types of data and providing it to the participants, in the health care system, nursing professionals may be able to improve the quality of care without improving the costs. There are three distinct trends; all of these involve networking and information sharing.[14]

- Healthcare researchers are producing information that promises to improve the quality of care. Networking has been identified as potential approach to encourage health-professionals to conduct practice-based research.

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- Policy makers are now informing consumers that they have an opportunity to use their buying power to produce a more responsive and effective health care system.
- Consumers themselves are using information to assume more direct responsibility for their own health.

Networking and evidence based health care

The consumers are looking forward for the best care most cost effectively. Effective integration of research evidence into every day clinical practice continues to be an important challenge.[7] Hence nurses as a professional group must engage in more and more evidence based practices rather than harping on traditional ways. Partly because of insufficient outcome research and partly because of insufficient professional networking, health care practices vary widely and inexplicably from region to region. Net working is an important aspect of incorporating evidence based practice in patient care.[15]

Networking and health care consumers

Another important group of people with whom we need to network are the patients and their families. Educated consumers of health care will become a driving force for improvements in the quality of health care. Patients and their families want to be active participants in their own care. Today's patients are coming to the hospitals armed with more information from web than the passive patients of the past. They tell us about new research findings and experimental treatments. The health care team members need to know hundreds of different diseases, whereas a patient need to know only one disease, hence it's amazing what patient can learn. Well informed patients and their families can significantly enhance the treatment and quality of care. Hence, networking with consumers of health care is essential for achieving quality care.

How to do networking

Networking doesn't mean only electronic and satellite media. In a caring profession professional colleagues are the best sources for networking, supported by electronic media.[16] Networking occurs in personal, professional or organizational frame work. The basic steps are:

1. Know your goals.
2. Identify the relevant people.
3. Contact the identified people individually.
4. Meet each person face to face or through media.
5. Be creative and open-minded.
6. Exchange drafts of information.
7. Follow up

Although networking is an easy skill to learn and maintain, it does require effort and perseverance to be successful. It can be a time consuming commitment. We need to get organized, set goals, take notes and keep records throughout the ongoing process.

Levels of professional networking

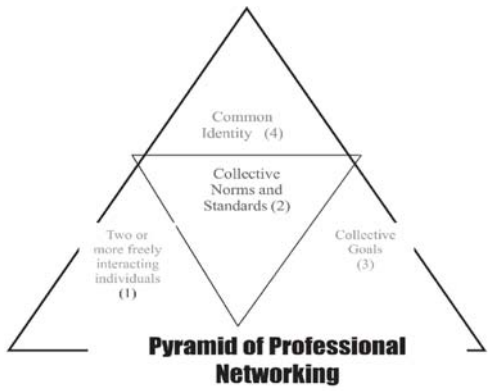
Professional networking maybe

- Institutional
- Local
- Regional
- National or
- *nternational*

Every effort should be taken to net work at all levels to develop as a full-fledged professional. Net working need to start at institutional level and then expand to other levels for better benefits.

Pyramid of Professional networking

Net working can never be a one way process. An effective net worker is an important part of many other peoples' professional life. We need to know how we can be of assistance to others, let them know, and be receptive when they contact us. We must be willing to take the initiative in establishing and maintaining relationships. Networking is the most effective way to stay cutting edge with our information and knowledge, remain visible and connected to our profession, promote quality patient care and keep our social skills sharp. And professional networking can make us excellent in our current jobs. Finally professional networking will bring us a common identity. The pyramid of professional networking shows how the interaction by few individuals will lead to a common identity.



Conclusion

Remember always
Professional networking:

- Takes time…we have to be patient and let it happen.
- Focuses on particular individuals and particular relationships.
- Produces bonds of reciprocal obligation through the exchange of favors.
- Calls for a significant but manageable up front investment.
- Requires you to cultivate a realistic awareness of power.
- Involves a variety of communication media
- Forces you to develop communication skills in each of these media.

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A study to determine the psychological consequences of Tsunami among Tsunami-affected people of Kollam district, Kerala

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Abstract

Introduction

The progress and development of a country depends upon the conditions of rural folks - Villages are primary units for the development of a nation. Tsunami is one of the natural calamity created lots of socio- psycho changes in rural folk, especially people living in coastal area. Many policies and programmes came to overcome this pathetic picture of people. In this context a study on psychological consequences after tsunami will give a greater insight into the effectiveness of various remedial measures taken by the government and existing scenario.

Objective

The objective of the study was to identify the psychological consequences of Tsunami among Tsunami-affected people of Kollam district, Kerala 3 years following the 2004 Indian Ocean Tsunami.

Methods

The study used a descriptive survey design with purposive sampling method to collect data on psychological consequences among 246 Tsunami-affected people by using self administered questionnaire.

Results

The percentages of affected people having psychological consequences varied from mild to severe levels. Most of the Tsunami-affected people would get easily irritated (12.6%), sad most of the time(21.5%), had guilty feelings as they could not save their loved ones' life (39% always & 34.6% occasionally), but only few (3.7%) opted suicide as a solution always. Psychological consequences significantly differed with variables like home structure before tsunami (p=0.018), present home structure(p=0.002), social participation after Tsunami(p=0.044), impact they had encountered(p=0.001), satisfaction with the mental health support they received after the Tsunami(p=0.001), loss of loved ones(p=0.011) and initiation of substance abuse (p=0.002).

Conclusion

This study provides an initial look into the psychological consequences of Tsunami affected people in the rehabilitation phase. The study findings indicate that psychological consequences persists in the affected people long after the disaster. Some of the people felt lots of difficulties at the time of rehabilitation. The facilities provided by the government through rehabilitation itself got greater influence on psychological consequences of Tsunami.

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Keywords

Sunami, Psychological Consequences, Tsunami affected people, Disaster.

Introduction

India has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena. About 60% of the landmass is prone to earthquakes of various intensities; over 40 million hectares is prone to floods; about 8% of the total area is prone to cyclones and 68% of the area is susceptible to drought. In the decade 1990-2000, an average of about 4344 people lost their lives and about 30 million people were affected by disasters every year. The loss in terms of private, community and public assets has been astronomical.

Tsunamis have the potential to cause an enormous impact upon the health of millions. The Tsunami, which affected South Asia on 26 December 2004, is known to have caused over 175,000 deaths worldwide and displaced millions of people from their homes and livelihoods. In the affected areas family and community structures, which are so vital for psychosocial wellbeing, have been drastically altered by the Tsunami[1]. The tsunami which swept across Asia on 26 December 2004 claimed the lives of 171 people in Kerala. Most regions along the Kerala coastal experienced the fall and rise in water levels but Alappad (131 deaths and population affected were 600000), in Kollam District and Arattupuzha, in Alapuzha District bore the burnt of the killer waves[2]. Alappadu Panchayat was badly affected by Tsunami in Kollam District of Kerala State.

According to the India Disasters Report , disasters affect over 63 million people every year[4]. A study showed that the prevalence rate for psychiatric disorders was found to be (27.2%) and for psychological symptoms was found to be (7.97%) at 6th and 9th month following the disaster[3]. Therefore, the magnitude of the problem is thus quite huge and psychosocial aspects of disasters that are so poorly recognized and many times overlooked , need special attention in all the parts of the world, because it ultimately affects one or the other part of nature in whole world. A study conducted at Orissa found that lower socioeconomic status, lower educational levels, unemployment, physical injury , degree of exposure, , death in the family, fear of imminent death during the event, hopelessness, increased stress before disaster and past psychiatric history were associated with adverse psychological sequel and Increased number of suicides were observed[6]. At the same time right knowledge about the situation and its consequences in the life of the common men will help the nurses to be prepared for when such unexpected

unfortunate things happen. A study showed that there should be a need for team preparation of nurses, as and when necessary they should be ready for responding to such incidents, without waiting for orders from higher authorities[8]. Therefore, identifying the psychological impact of Tsunami will help to explore the extent of the problem and its impact in order to plan intervention strategies for the community.

Methods

The study sample consisted of 246 adult people from both Tsunami affected and rehabilitated areas drawn by purposive sampling technique. Children below 16 years of age were excluded from the study. Alappadu panchayath, was the coastal area from which the Tsunami affected sample was taken for the study, whereas Kulashekarapuram and Clappana Panchayath area were the rehabilated settings from which the samples for the study were drawn. As the study aimed to find out the social consequences of the overall Tsunami affected population, the study did not use any screening method to select the sample other than the age factor.

A descriptive survey study design was used to determine the psychological consequences of Tsunami and find its relationship with selected variables. Data analysis was done by using descriptive and inferential statistics. Socio demographic data and psychological consequences were presented as frequency and percentage by descriptive analysis. Independent t – test(parametric) and Kruskal Wallis H Man Whitney U (Non-parametric) test were used to find the relationship between psychological consequences and selected demographic variables after establishing normality by Kolmogorov Smirnov test.

Measurements

The most important and crucial aspect of any investigation is the collection of appropriate information, which provides necessary data for the study. The investigator developed the tools to measure the variables under study. Research and non-research literature, books, manuals relevant to the specific topic was explored.

Content validity was established for Socio- demographic Performa and Psychological Consequences Rating Scale by 7 experts with sufficient orientation and experience in the area from the fields of psychiatric nursing, psychiatric medicine, psychology, psychiatric social work. The validators were given a table in which they were required to place every item under one of the following 3 categories: relevancy, accuracy and appropriateness and requested to state whether agree or disagree with items. Validators were also requested to mention such items which were either not well worded or difficult to understand. But there was 100% agreement in all the areas of items.

In order to ascertain the reliability of the Psychological Consequences Rating Scale, internal consistency as determined by Cronbach's Alpha method on the basis of responses given by a sample of 20 affected people in the same setting but different area called Cheriyazhikal . The reliability coefficient was found to be 0.92.

Description of the tool

The Socio demographic Proforma was constructed to cover in detail about the factors regarding social and demographic profile of the affected people in relation to the disaster. The Psychological Consequences Rating Scale was developed to collect the details regarding the sample's psychological consequences rated as never, occasionally and always. Scoring was given as 1 for never, 2 for occasionally and 3 for always. The total score was arbitrarily classified further into Mild: 24-36, Moderate 37-54, Severe: 55-72.

Results

Description of Socio-demographic characteristics

The result of the study with regard to socio-demographic characteristics showed that out of the total 246 sample, 130 (52.8%) were from coastal area and 116(47.2%) were from the rehabilitated area. Majority of the sample did not have past psychiatric illness (96.7%) and 194(78.9%) had got support from atleast one agency after the disaster. Majority of the people were at their residence (54.1%) and near the sea shore (33.7%) at the time of Tsunami and majority of the affected people had economical impact(47.2%). Majority of sample were not into any type of substance abuse (72%), 23.2% of sample had habits of substance abuse before tsunami and 4.9% started after tsunami.

Description of the Psychological Consequences

The psychological consequences of tsunami showed that out of the total sample 12.6% would always get easily irritated, 21.5% were sad most of the time, 18.7% exhibited feelings of tiredness, and 16.3% expressed fear to go near the sea. It can be observed from the data that majority (64.6%) considered their life as worthy, and only 3.7% of the sample thought of suicide as a solution. The study also showed that 3.3% of the sample had a specific plan for suicide and 43.1% had lost pleasure in activities which they enjoyed earlier. Majority of people had sleeplessness (40.2%), loss of appetite (30.5%) and physical complaints (51.2%). Physical complaints were present always in 26% of sample. Majority of the people had

Table 1: Psychological consequences (contd)

Sl. No.	Psychological consequences	Never		Occasionally		Always	
		Freq	%	Freq	%	Freq	%
1.	Unenthusiastic about future	149	60.6	69	28.0	28	9.8
2.	lost interest in surroundings	172	69.9	52	21.1	22	8.9
3.	Worry about dreadful						
	things may happen	97	39.4	116	47.2	33	13.4
4.	Feelings of tiredness	96	39.0	104	42.3	46	18.7
5.	Restlessness	91	37.0	115	46.7	40	16.3
6.	Slowed down in doing things	116	47.2	100	40.7	30	12.2
7.	feelings of needs help to get	172	69.9	68	27.6	6	2.4
	mobilized						
8.	Difficulty in concentrating	120	48.8	96	39.0	30	12.2
9.	Loss of pleasure	89	36.2	106	43.1	51	20.7

Table 1: Psychological consequences

Sl. No.	Psychological consequences	Never		Occasionally		Always	
		Freq	%	Freq	%	Freq	%
1.	Easily get irritated	84	34.1	131	53.3	31	12.6
2.	Cry easily	109	44.3	96	39.0	41	16.7
3.	Sad most of time	83	33.7	110	44.7	53	21.5
4.	Fearful dreams/nightmares	106	43.1	120	48.8	20	8.1
5.	Feelings of tiredness	96	39.0	104	42.3	46	18.7
6.	Restlessness	91	37.0	115	46.7	40	16.3
7.	Fear to go to the sea	150	61	56	22.8	40	16.3

Table 2: Physical complaints and problems of basic physiological needs of the affected people

Sl. No.	Psychological consequences	Never		Occasionally		Always	
		Freq	%	Freq	%	Freq	%
1.	Loss of sleep	111	45.1	99	40.2	36	14.6
2.	Loss of desire for food	147	59.8	75	30.5	24	9.8
3.	Physical complaints	56	22.8	126	51.2	64	26.0

Table 3: Guilty feelings and risk taking behavior of the affected people after Tsunami.

Sl. No.	Psychological consequences	Never		Occasionally		Always	
		Freq	%	Freq	%	Freq	%
1.	Past sins/mistakes are the	188	76.4	39	15.9	19	7.7
	reason for such incidence						
2.	Sense of guilt	65	26.4	85	34.6	96	39.0
3.	Increase in risk taking behavior	158	64.2	69	28.0	19	7.7

guilty feelings of not able to save their loved ones' lives (39% always & 34.6% occasionally) as shown in table .

Relationship between selected demographic variables and psychological consequences

Psychological consequences significantly differed with variables like home structure before tsunami ($p=0.018$),present home structure($p=0.002$), social participation after Tsunami($p=0.044$), impact they had encountered($p=0.001$), satisfaction with the mental health support they received after the Tsunami($p=0.001$), loss of loved ones($p=0.011$) and initiation of substance abuse ($p=0.002$).

Discussion

The results from this study depict the psychological consequences three years after the Tsunami disaster. Replicating findings can be identified from several previous studies and surveys. According to World Mental Health Survey (2000) across countries shows people with moderate and severe psychological consequences estimated to be 30% to 50% of tsunami-affected population. A study conducted on social factors and severe psychological distress in male survivors of the 2004 tsunami in South India: 43% of the population had clinically significant psychological distress and 31% of the population showed very high levels of psychological distress[9].

One of the salient finding was that, 96.7% of the sample did not have a past psychiatric illness, which can be due to the lack of psychiatric consultation facility in the pre disaster scenario or comparatively a psychological distress-free community which needs further research in the area.

Most notably it was found that 194 (78.9%) had received support from atleast one mental health agency after the disaster. Many agencies were present in the area after the disaster to provide rehabilitation services to the affected community. It was heartening to see the different religious, political and international bodies ready in rendering their help from short term to long term rehabilitation services to the affected people.

Unsurprisingly the data showed that majority (47.2%) had economical impact, which corroborate the data provided by various international agencies working in the area during the period 1980- 1999 which showed that losses in the least developed countries amounted to 13.3% compared to only 2.5% in the developed world, when measured as a fraction of GDP and economic impact may be one of the major deciding factor of psychological consequences.

In the aftermath of the Asian Tsunami, there is potentially a large, traumatized population in need of psychosocial support, but determining which individuals require psychological intervention and knowing how and when to treat them may be the key to positive long-term outcomes. So focus of this study was to look into these aspects at the rehabilitation phase.

Male survivors of the 2004 Tsunami had significant levels of severe psychological distress[9]. But it contradicts the results of this study as it was found that females had more psychological consequences compared to males.

In the present study there were only 4.9 % had initiated with substance abuse after Tsunami comparing to 23.2% before tsunami. But the trend here could also find a very less number of new cases, but increasing number of old users into abusers.

Analysis of data pertaining to psychological consequences, sheds light on the basic /primary factors of psychological disorders. In contrast to common research study results, which show the diagnosis directly, this study tried to explain the psychological factors which deviated the most, like sadness most of the time (21.5%), fear to go near the sea (16.3%), had a specific plan for suicide (3.3%), sleeplessness(40.2%), loss of appetite (30.5%) and physical complaints (51.2%) were occasionally present in majority of the sample. It may be one of the limitations of the study, but at the same time it is a unique try that gives details of the criteria of most of the

diagnostic tools.

Unsurprisingly, it can be observed from the data that majority considered their life as worthy (64.6%), only a few (3.7%) had thought about suicide as a solution always. This gives a positive sign as majority of the affected people 3 years after the drastic disaster in this particular area have a positive outlook for their future, but 3.7% of sample had thought about suicide which is an area of concern. A study done after the hurricane Katrina showed that suicide plans in a representative sample was about 5% vs 1% (5-8 months and 1 year after), but in the present study it was found to be at a little higher rate.[10] A study conducted at United States showed that suicide rates increased in the four years after floods by 13.8 percent, from 12.1 to 13.8 per 100,000 ($P<0.001$) and this study concludes the need of mental health services even after four years of disaster and this was found to be relevant to countries affected with multiple disasters[11]. The present study area was not affected with any natural disaster in the last few decades down the history. One limitation of the present study is that we did not have any data on suicidal rates in the area prior to the disaster.

Most notably it was found that people who lost family members reported significant severe psychological distress compared to those who did not. The psychological consequences significantly differed with various factors in the present study. A similar study conducted about the psychiatric sequel of the super-cyclone 1999 in Orissa showed that lower socioeconomic status, lower educational levels, unemployment, physical injury , degree of exposure, , death in the family, fear of imminent death during the event, hopelessness, increased stress before disaster and past psychiatric history were associated with adverse psychological sequel and increased number of suicides was observed[6]. Surprisingly, some other factors under study like education, occupation were not associated with psychological consequences.

Limitations

Limitations of the present study include the use of non-probability purposive sampling technique which would make it difficult to generalize the findings of the study. Those who were found to have psychological consequences (moderate & above) were not evaluated for further psychiatric morbidity and no intervention was planned for them because of time and economic constraints of the study.

In view of the findings reported, the following recommendations are made for future research: a similar study could be carried out with a larger representative sample, which could help in greater generalization. A comparative study can be done between affected people of rehabilitated and coastal area. Development of a disaster mental health team by mental health professionals including psychiatric nurses would be beneficial for the society.

Conclusion

One of the areas of concentration of psychiatric studies is disaster epidemiology. Mainly these data are useful for administrative and descriptive purpose than to plan for the preventive strategies even at global level since the psychological consequences following any disaster have a uniform pattern. Many studies were conducted to investigate the immediate effects of disasters. However very few studies were conducted regarding the long-term effect of Tsunami, inturn helping in delivering the effective continuation of psychological care even long after the disaster took place. The aim of the present study was to identify the psychological consequences after the Tsunami at the time of rehabilitation. Therefore, these findings are helpful for health administrators, policy makers, international and national voluntary organizations and mental health care providers in the designing a new strategy for the prevention of widespread problems or minimizing the impact by any type of disasters. Especially for the mental health care providers, it shows the need of incorporating psychosocial care with long-term rehabilitation measures. The curriculum for all mental health professionals, and even other health related professionals should be equipped with crisis intervention and other long term measures needed for managing such situations. For an effective nursing management involving planning and implementation of the care, incorporation of disaster management in curriculum is very essential. Development of a protocol for disaster management on psychosocial care for every hospital and community under the respective health care system would be very much helpful to the society.

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Effectiveness of workshop on hypertension among high school teachers of Nepal

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Abstract

Hypertension is the commonest disorder of cardiovascular system, posing a major public health challenge to the population in socio-economic and epidemiological transition. It is one of the major risk factors for cardiovascular mortality, which accounts for 20-50 per cent of all deaths.

Objectives

To identify the teachers who are at risk for developing hypertension, to determine the effectiveness of workshop on hypertension in terms of gain in knowledge scores, to find the correlation between knowledge score and risk score, and to find the association between risk status and selected demographic variables viz. marital status, educational qualification, type of family, income and domicile.

Material and methods

An evaluative study was conducted among 45 teachers of selected educational institutions of Pokhara, Kaski District, Nepal.

Results

Majority 24(53.33%) of the teachers were at moderate risk. None of them were at high risk. The median post-test knowledge score (29.00) was apparently higher than the median pre-test knowledge score (25.00).The median difference between the pre-test and post-test knowledge scores was found significantly different ($z = P < 0.05$). There was significant association between the hypertension risk status and marital status, educational qualification and type of family ($p<0.05$).

Conclusion

The workshop can be used as an educational method to improve the knowledge of the teachers on hypertension. The awareness of their risk status will give the teachers a hint that they need to take preventive measure to prevent the disease and its complication. Consequently, bringing awareness among people by giving them information on matters related to health becomes one of the important responsibilities of our profession.

Keywords

Effectiveness, Workshop, Teachers, Risk factors

Introduction

Hypertension is the primary and most common risk factor for heart disease, stroke and renal diseases. It is estimated that one in six people worldwide, or nearly one billion, are affected by high blood pressure, and further estimated that this number will be increased to 1.5 billion by 2025. The WHO also stated that high blood pressure is the most attributable cause of cardiovascular death.[1]

The prevalence of hypertension in India was 59.9 (males) and 69.9 (females) per 1000 in the urban population, 35.5 (males) and 35.9 (females) per 1000 respectively in the rural population.[2]

Department of Health Service Kathmandu, Nepal (2003-2004 annual report). The morbidity rate of hypertension was 62.98, eastern district 15.23, central district 17.31, western district 21.36, mid-western district 5.33 and far western 3.65.[3]

In order to reduce the incidence of mortality and morbidity rate of hypertension it is very important making the people aware of about hypertension and its preventive measures. Educating teachers on hypertension and its prevention would not only to educate the teachers but would serve as a means to educate the public at large. With the above background, this study was undertaken with the following objectives:

1. To identify the teachers who are at risk for developing hypertension.
2. To determine the effectiveness of workshop on hypertension in terms of gain in knowledge scores.
3. To find correlation between knowledge score and risk score.
4. To find association between risk status and selected demographic variables such as, marital status, educational qualification, type of family, income and domicile.

Material and methods

Type of study: An evaluative study.

Place of study: The present study was undertaken among the teachers of selected educational institutions of Pokhara, Kaski District Nepal.

Duration of the study: 1and ½ month, 15.12 07-31.01.08.

Study population: Forty-five teachers from selected high schools.

Study tool: Knowledge questionnaire on hypertension, risk assessment tool for hypertension.

Study design: Pre- experimental one group pre-test post-test design.

Methodology: After taking permission from the Principals of the schools and written consent from the participants was obtained the study was carried out. BP was taken by using a standardized sphagmomanometer, demographic proforma to collect identification data and the information on background, a risk assessment tool to identify the teachers at risk for hypertension, a structured knowledge questionnaire to determine the knowledge of teachers on hypertension and conducted a workshop on hypertension.

Statistical analysis: Data obtained was analyzed using SPSS-PC version 9.0.

Result

Out of 45 subjects majority 30 of teachers were within normal blood pressure range i.e. <120/80 mm Hg., 12 of the teachers

were within the pre-hypertension i.e.120-139/80-89 mm Hg., two subjects were within the stage 1 hypertension i.e. 140-159/90-99 mm Hg. and one of the teachers was within the stage 2 hypertension i.e. e" 160/100 mm Hg.

Table 1 shows that 91.1% of the teachers were of age 20-40 years; 53.3% were males, 57.8% were married; 71.2% above graduates, 68.9% belongs to nuclear family, 68.9% have an income of NRs. <10000 per month, 77.8% were of urban inhabitant, 82.2% were read health related information, 51.1% received health information from mass media and 75.6% were not going for regular health checkup.

The data presented in Fig 1 shows that the majority 24(53.33%) of the high school teachers were at moderate risk. None of them were at high risk.

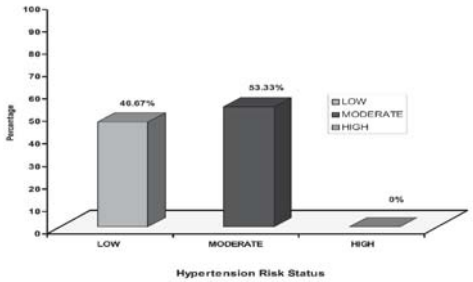
The data in table 2 shows that the median change is statistically significant at 0.05 [Z= -5.910, P < 0.01] level of significance.

Table 1: Sample characteristics (major findings)

Age	20-40 years	91.1%
Sex	males	53.3%
Marital status	married	57.8%
Education	≥ graduates	71.2%
Family type	nuclear	68.9%
Income/month of NRs	<10000	68.9%
Domicile	urban	77.8%
Health information	read	82.2%
Sources of information	mass media	51.1%
Regular health checkup	not going	75.6%

Risk status of Hypertension among teachers

Fig.1: A Bar diagram showing the risk status of hypertension among teachers



The findings show that there is a significant increase in knowledge after workshop.

The data presented in the table 3 shows that there is a significant association between the hypertension risk status and the variables like marital status [$c^2_{(1)}$ = 6.388, p<0.05], educational qualification [$c^2_{(1)}$ = 11.271, p<0.05] and type of family [$c^2_{(1)}$ = 5.107, p<0.05].

Discussion

The findings are supported by study conducted by Vatsa M. in 2001 who also found that workshop was the most effective strategy among the selected instructional teaching programs in neonatal nursing for B.Sc. nursing students.[4]

The present study findings reveal that those who are married had a higher risk of hypertension than those who are unmarried and it is contradicting the findings of an evaluative study by Lipowicz & Lopuszauska, found that those who are not married had a higher risk of hypertension when compared to married men[5].

The research finding is contradictory to the study done by R. Enrique et al. which shows that the highest prevalence of hypertension was seen in subjects with less education. [6]

A descriptive study was conducted among 200 high school teachers of Udupi District to find out the population at risk for hypertension and its relationship with personal factors. The study revealed that 119 (59.5%) teachers were in moderate risk category of hypertension. The chi-square computed showed a significant association between risk level of hypertension and selected group of factors as non-modifiable factors and among modifiable factors, dietary habits, physical illness and personality traits were found to be significant. The incidence of hypertension increased with age ($c^2_{(3)}$ = 11.89 p< 0.05). Men were at a higher risk for hypertension than

Table 2: Wilcoxon signed ranks between the pre-test and post-test knowledge scores of teachers on hypertension.
N = 45

		Mean ranks	Sum ranks	Z
Post-test	Negative ranks	0	0	0
Pre-test	Positive ranks	23.00	1035.00	-5.910

Z = 2.576, P< 0.01

Table 3: Chi-square values computed between the risk status and selected demographic variables
N= 45

Variables	Low riskstatus	Moderate risk status	df	chi-square	Remarks
Marital status					
Single	13	6	1	6.388*	S
Married	8	18			
Education Qualification					
< Graduate	11	2	1	11.271*	S
> Graduate	10	22			
Type of family					
Nuclear	11	20	1	5.107*	S
Joint	10	4			
Income per month in NC Rs.					
<16000	16	14	1	1.632	NS
> 16000	5	10			
Domicile					
Urban	17	18	1	0.231	NS
Rural	4	6			

$c^2_{(1)}$ = 3.841, p<0.05: S = Significant, NS = Not significant

women ($c^2_{(2)} = 11.05$ $p < 0.05$).[7]

A survey study conducted in Dhapakhel, Kathmandu (Nepal) in 2005 among 1114 adults aged between 18-97 years to estimate the prevalence, awareness, and control rates of hypertension. The result showed that the overall prevalence of hypertension was 19.7% (219/1114). The prevalence in men was 22.2% (120/541) and women 17.3% (99/573) respectively, which was statistically significant ($p < 0.05$). Prevalence of hypertension in age group of [3] 40 years was 36% (male: 40%, female: 33%). Awareness, treatment, and control rates were 41.1%, 26%, and 6%, respectively. It was concluded that prevalence of hypertension is 19.7% in a suburban adult population in Nepal when compared with study done two decades ago. Prevalence of hypertension is more common in males than in females. Awareness, treatment, and control rates are extremely low.[8]

Conclusions

The findings of this study reveal the need for motivating the high school teachers to take preventive measures. The workshop can be used as an educational method to improve the knowledge of the teachers on hypertension. The awareness of their risk status will give the teachers a hint that they need to take preventive measure to prevent the disease and its complication.

Consequently, bringing awareness among people by giving them information on matters related to health becomes one of the important responsibilities of our profession. The findings of the present research project reprove the significance of 'Health Education' through appropriate 'Health Awareness Programmes' by Health Care Professionals. As serendipitous outcome, through these preventive health activities, the social image and social status of Nursing Profession is expected to improve, as more usefulness a profession is, more desirable it is to people and more valued.

Recommendations

1. A similar study could be replicated with a control group using a larger sample and on a sample with different demographic characteristics.
2. A comparative study can be done with different groups of people from urban and rural areas.
3. A longitudinal study may be conducted to determine the effectiveness of the workshop in terms of gain in knowledge.
4. The research findings are published in important media, so as to reach to the administrative notice.
5. The similar research study may be organized involving greater population so as to make the generalization of the findings a possibility.

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Comparison of depressive feelings of elderly people living in institutionalized homes vs living with family members: A cross sectional study

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Introduction

"When we're young we have faith in what is seen, but when we're old we know that what is seen is traced in air and built on water" Maxwell Anderson

Discoveries in medical science and improved socio-economic conditions during the past few decades have increased the life span of man. The numbers and proportions of the elderly people are increasing in almost every country in the world.

The Indian aged population is currently the second largest in the world. The absolute number of the over 60 population in India will increase from 7.6 million in 2001 to 137 million by 2021. It has been estimated that from 5.4 % in 1951, the portion of 60+ people grew to 6.4 in 1981 and close to 8.1 in 2001. The decadal growth in the elderly population for the period 1991-2001 is close to 40%, more than double the rate of increase in the general population.

Many of the elderly in our country experience increasing isolation from family ties, personal and social relationships. Prevalence of mental morbidity among those 60+ was estimated to be 89 per 1000 population, about 4 million for the country as a whole. Depression is a complex syndrome that manifests itself in a variety of ways in older people. Therefore, consciousness screening and follow through on suspected depression can make the lives of many elderly individuals and their family members more fulfilling, and in many cases, suicide may be averted. Hence the researcher was keen in identifying the difference of depressive feelings among elderly who are in old age homes and also living with their family members.

Key words

Depressive feeling, Institutionalized homes/ old age home, living with family members, elderly.

Objectives of the study

1. Determine the level of depressive feelings among institutionalized elderly using Geriatric Depressive Scale.
2. Determine the level of depressive feelings among elderly living with their family members using Geriatric Depressive Scale.
3. Find the association between depressive feelings among elderly people and selected variables such as age, gender, education, occupation, marital status, income, type of family and health status in both the groups.
4. Compare the two groups on the level of depression and its association with the selected variables.

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Hypotheses

H1: There will be significant difference in the levels of depression in the elderly people living in old age homes and those living with family members.

H2: There will be significant association between depressions in elderly people and selected variables such as age, gender, education, occupation, income, marital status, type of family and major illnesses.

Research methodology

The researcher utilized a descriptive research design in order to assess the depressive feeling of elder from Prasanthi Nivas Old age home in Mangalore and elderly living in selected villages of Udupi district. A total of 100 samples (50 each) from both areas were drawn using purposive sampling. Data collection tool utilized was the GDS, following a structured interview schedule.

Findings and discussion

Sample characteristics

- of the elderly people from old age home were between the age group of 60-69 years whereas 56 % of the elderly livings with families were between the age group of 60-69 years.
- Majority of the elderly both from old age home (72%) and family (56%) respectively were females.
- Most of the elderly, 38 % from old age homes and 64 % from family were illiterate.
- 60% inmates of old age home and 58 % inmates from family were unemployed.
- 88% of elderly from old age home and 58 % of elderly living with family members had no source of income.
- 98 % of elderly from home old age home belonged to nuclear families whereas 62 % of the elderly livings with family are from joint families.
- Majority, 54% and 58% of elderly people from old age homes and families respectively had major illnesses.

The data showed that elderly people especially females are more affected than males. It is also observed that within their sixties itself they are left in old age homes as children dislike looking after old people and thinking that they are burden to them. On the other hand children go out for their livelihood and stay away from old parents which is yet one of the most devastated experience of parents having educated their children. Little or never made any saving for themselves and spent the rest of their bank balance for their children and made themselves poor and needy in old age- a common Indian scenario. The beauty of a beautiful joint family, where each individual look for in old age for support and care is almost fading today and henceforth you and I have to ponder whether we can expect a pleasant end days ahead.

Growing old is a lonely business anywhere yet the statistics indicate a growing need to cater to the special needs of the

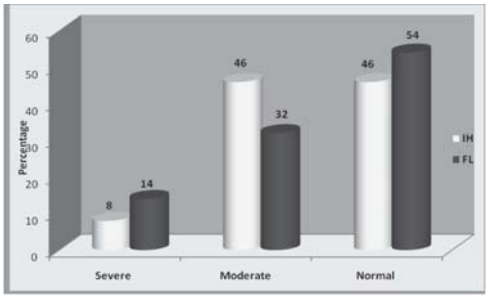
elderly in every state given the fact that so many of them have nobody to take care of them at home.

Depressive feelings among elderly (n=100)

*IH= Institutionalized homes' / old age home, FL= living with Family members

Major findings of the study revealed that four (8%) out of 50 elderly living in institutionalized homes had severe depression (GDS Score =21-30), 23, (46%) had moderate depression (Score=11-20) and 23 (46%) were found to be normal. Among the elderly people who lived with their family members, seven

Fig. 1: Bar diagram showing the comparison of percentage of depressive feelings among elderly people living in institutionalized homes and living with their family members.



(14%) out of 50 had severe depression, 16 (32%) had moderate depression and 27 (54%) were found to be normal. Data showed no significant difference in the levels of depression between the two groups of elderly people (Chi square (2 df)=-2.4, P= 0.3). There was no association between depression and selected variables except for age in the elderly people living with their family members (c^2 = 11.84, P< 0.05).

Other findings

During the process of data collection few information were obtained from the elderly people that gave a qualitative dimension to the above findings. They are as follows:

- Duration of stay in the old age home/ institutionalized homes: 28 % had been staying in institutionalized homes for more than 10 years, 34 % for 3-10 years and 38 % less than three years.
- It was observed that 8 % who had severe depression and referred to a consultant belonged to those who stayed less than 3 years.
- Reasons for joining old age home: 56 % of the unmarried elderly expressed that they joined the old age home as their parents are dead and that their brothers and sisters were not interested in looking after them. They also expressed that as long as they were working they were entertained but now that they are retired and are neglected.
- 36% of women who were widows expressed that after their spouse were dead, children showed no interest to look after them and hence they joined the old age home.
- Friends: 72 % of the elderly living in old age home express that they have no friends to come visit and talk to them.
- Experiences in old age home: 60 % of the elderly in old age home expressed that they are happy staying in old age home than at home.
- 12 % of elderly living with family members expressed that it is not worth living with all the health problems and they felt they are burden to the family though 80 % felt they were happy living with children.

Conclusion

Depression in elderly is one of the most common mental health problems that are often overlooked by health professionals and others. The findings clearly indicated that 54 % elderly people living in old age home and 46 % elderly living with their family members had moderate to severe depression. Thus it can be concluded that the elderly people need to be examined frequently for early identification and treatment of depression.

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Role of expectant fathers in maternal and newborn care in India

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Abstract

"Having a baby marks not just the creation of an individual life, but the birth of a family."
For thousands of years pregnancy, labour and delivery was considered as women's cup of soup. Women were kept informed about childbirth and baby care skills and acquiring this knowledge from mothers and grandmothers was a part of the socialization of young girls. Childbirth was seen as a normal event and babies were born at home, under the care of women, such as the local midwife, neighbours and other elderly women of the family.
Childbirth is something more than just a birth of a baby. It is also the birth of a woman and a mother; the birth of a man and a father; the birth of a relationship that will never, ever be the same. Every birth is unique, and each is a life experience, one that should be shared by husband and wife, mother and father, as they grow not only a baby, but also a family. With the growing need for family-centered care, involvement of prospective fathers in midwifery is extremely important for maximizing the life-long well-being and outcomes of the mother and the baby. Pregnancy and birth are the first major opportunities to engage fathers in appropriate care and upbringing of children.

Keywords

Family Centered Care, Expectant fathers, Maternal Care, Newborn Care.

Expectant fathers: Concerns and worries

Most men do not feel properly prepared for fatherhood. They often find their wife's pregnancy period very stressful and are more prone to depression after becoming a father than at other times in their lives. However, most expectant fathers are very keen to play a full role and are very open to advice and support about pregnancy, birth and parenthood if it is offered to them. It seems that expectant fathers' biggest worries about the birth are that something might be wrong with the baby, that something may go wrong during the birth, and that their wives will find it hard to cope with pain in labour. Their other concerns include:

- What can I do to help my wife through the pregnancy?
- What if I am not very good at looking after a baby?
- What will be expected of me as a father?
- What will be expected of me as a husband, once I become a dad?
- What will life with our new baby be like?
- What will happen to our relationship?
- How can I earn enough and still spend a lot of time with my baby?
- I don't know anything about looking after babies! Please give me lots of practical tips!

However, only few men express these worries and this makes it hard for professionals to recognise that expectant fathers also need support during pregnancy, labour and delivery. Although most first-time fathers are very keen to become a part of the childbirth process they tend to feel that it is right for their pregnant wife to be the centre of attention, so they take a 'back seat' in order to be supportive, or because they are not sure what else to do. They often hide feelings of isolation, fear, anger or detachment.

Expanded role of expectant fathers

Today in many of the developed countries, fathers have an expanded role in the birth process. They are expected to support the mother during labour and delivery, act as advocates for the mother, and fill gaps in care. Research shows that maternity services have a key role in encouraging men to expand their caring roles after the birth. The more training, support and information dads receive before, at, and after the birth, the more likely they are to be involved with caring for their children in the first year; and this in turn makes it more likely that they will remain involved throughout the child's life.

Involvement of expectant fathers: An Indian perspective

In India, fathers-to-be have been anxious figures hovering in the background as the wife, older female relatives and doctors manage the business of pregnancy, childbirth and caring for the newborn. According to the Indian culture, a woman moves to her parental home for delivery, she often stays on for a few months after the birth. This can leave the new father feeling rather lonely and deprived of the experience of bonding with his baby. Encouraging male responsibility has largely remained only an "idea". Unfortunately, the women have been at the receiving end of all experimentation of modern maternity services.
The male belief that childbirth and childcare is the exclusive domain of women has discouraged men participation. This has been further compounded by lack of acceptance of health care providers of the opposite sex. The attitude of health care providers can also be a barrier. Men made to feel unwelcome, there is lack of discretion/confidentiality and rules of counseling are misapplied. Insufficient quantity of appropriate and high quality IEC materials and low level of knowledge among men concerning maternal and child health issues and availability of services are some of the key issues which need to be addressed if men's involvement is to be worthwhile. The relationship between mens' self-interest and maternal health has largely been ignored. Men feel that maternal and child health does not concern them and have not yet realized its advantages. High cost of services, geographical distance and cultural barriers to accessibility and availability of maternal and child health also come into play. The male perspective has also been largely ignored by researchers.
Gender inequality is the root cause of men being invisible

from the maternity care scenario, which is further compounded by their palpable sense of masculinity. Equality between men and women is a matter for society at large, but it begins in the family. Men's attitudes and behaviours are strongly influenced by societal expectations about what it means to be a man. Culture is an important determinant of human behaviour. Gender inequality leads to different kinds of cultural expectations. It is taken for granted that change in the public sphere - economic growth, political transformation, and new means of communication and transport - will be reflected in changes in individual attitudes and behaviours. But this expectation does not extend to the private sphere, where basic issues of identity and family are involved. Society may change, but gender roles are not expected to change with it. This can be changed. With the correct timing and approach, informing men about maternity and child care leads to more support for safe pregnancy and delivery and breastfeeding. Research needs to go beyond estimations of incidence and prevalence and probe into power relations between partners, including the negotiation and decision - making process.

The involvement of men is thus essential both in the design and implementation of maternal and child health programmes, thereby ensuring that all pregnancy, labour, delivery and child care issues are a matter of family concern and responsibility.

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Osteoporosis: Preventive practices and risk assessment among South Indian Women

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Abstract

Background

Estimated 25 million Indians are affected by Osteoporosis.[1] It is eight times more common in women than in men.[2]

Objectives

To determine the preventive practice and assessing the risk status (KPR) on osteoporosis, find the association between selected variables and key variables, find the relationship between practice and risk status in each group of women; comparing the mean among the groups on same.

Methods

A cross-sectional survey on 110 women, selected by convenience sampling at Hiriadka, Karnataka. Demographic proforma, self reported practice scale and risk assessment tool were used.

Results

There was positive correlation between age and risk status ($p<0.05$) in group1, whereas in group 2 it was negatively correlated. Preventive practices and risk status was negatively correlated in both groups ($p<0.05$).

Keywords

Preventive Practice, Risk Status

Introduction

Aging, unhealthy life styles causes poor bone health and leads to a condition known as 'Osteoporosis', literally means 'Porous Bones'. It is defined as a crippling bone disease characterized by loss of bone tissue from the skeleton (systemic skeletal disorder), which in turn leads to an increase in bone fragility and propensity to fracture when the osteoporotic bone encounters a force greater than it can withstand (under minimal trauma). More than 200 million people (mainly, but not only, post-menopausal women) are thought to be affected worldwide per year. Osteoporosis is eight times more common in women than in men for several reasons.[2]

To plan for any awareness program or curative management in a particular area, knowing the status on Osteoporosis is important. In this study it was tried to assess in terms of knowledge, practice and risk assessment. The present study was conducted to determine the level of knowledge and preventive practice, assessing the risk status (KPR), find the association between selected variables and KPR, find the relationship between of knowledge, practice and risk status in each group of women; comparing the mean among the groups on same.

Material and methods

The study was conducted over a month period from 22.01.09 to 19.02.09 on 110 women residing in Bommarabettu Panchayat, Hiriadka, Udupi district, Karnataka, India. Sample was selected by convenience sampling from houses, anganwadi, schools, shops and beedi factory and was divided equally into two age groups i.e., 35-45 (Group1) and 46-55 (Group 2) years. Survey design was chosen as it helps to obtain information about distribution and interrelates of variables within a population[3]. Researchers wanted to describe the status of osteoporosis in regard to practice and risk among two age groups at a fixed point in time; cross sectional design was undertaken. Conceptual framework was made **b**ased on the Health Promotion Model by Nola J. Pender. The instruments used for data collection were demographic proforma, knowledge questionnaire; self reported practice scale (likert) and risk assessment tool. Instrument was prepared based on concept map on Osteoporosis. Content validity was ensured by giving to seven experts. Items had Content Validity Index (CVI) <0.7 were rejected or modified. Language validity was established by translation in Kannada and re-translation in English done by language experts. Measuring tape and weighing machine were calibrated. Pre testing was done by administering the tools to four women in Athrady area. Average time to complete data collection for each sample had taken 30 minutes. Instruments were simplified according to understanding level of participants. Reliability of the instruments was checked by administering to 20 samples. Intra class correlation coefficient was established for Practice Scale (0.94), Risk Assessment Tool (0.98), Measuring tape (0.99) and Weighing machine (0.99).

A pilot study was conducted on 20 samples at Udyavara. Women who fulfilled sampling criteria and residing under Bommarabettu Panchayat, Hiriadka, Udupi were interrogated to collect data for main study. Written informed consent was taken from participant and administrative permission from Panchayat was taken before data collection. Data were collected and analyzed based on the study objectives using descriptive and inferential statistics

Results

A total of 110 women, 55 in each group were covered in the study. In both groups (group 1, group 2) majority of participants were non vegetarian (81.8%, 69.1%), belonged to Hindu religion (98.2%, 94.5%), studied up to secondary education (67.3%, 70.9%) continuing sedentary (49.1%, 29.1%) or light work (41.8%, 60%). Most of them had more than one child (67.3%, 83.6%), did not have family history of osteoporosis (80%, 81.8%) and got no information (78.2%, 69.1%) related to this disease prior.

Practice was measured by using practice scale by the method of interview. Data collected were compiled and presented in Fig. 1; show that there is no one who had poor practice.

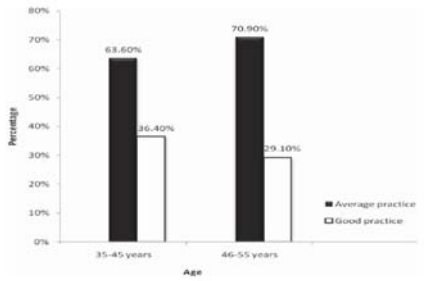
Table 1: Correlation between Practice and Risk Status in each group (N= 55+55)

		Group 1			Group 2		
	Test of significance	Mean	r or p	p-value	Mean	r or p	p- value
Practice-Risk status	Spearman's correlation	-	-0.375	0.005*	-	-0.537	0.000*

* $p < 0.05$

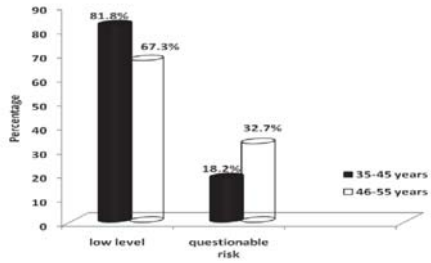
Average practice was found in majority in group2 (70.9%) though it was high in group 1 (63.6%) also. Good practice was found more in group 1 (36.4%) than group 2 (29.1%).
Risk status was assessed by using risk assessment tool. Data were compiled and presented in Fig. 2; show that 81.8% and 67.3% of women had low level of risk in group1 and group2 respectively. 32.7% of women in group 2 had questionable risk where as it was only 18.2% for women in group 1. No one fell under likelihood of risk.

Fig. 2: Bar Diagram Comparing Practice Scores



Practice scores (Kolmogorov-Smirnov value is 0.2 for both group) follow normality. So parametric statistical tests like Pearson's correlation, Independent t-test was done to establish association. Risk scores (Kolmogorov-Smirnov value is less than 0.05; 0.000 and 0.002 for group1 and group 2 respectively) not following normality. So non-parametric tests like

Fig. 3: Column Diagram comparing Risk Status



Spearman's correlation and Mann- Whitney U was computed to establish association.
There is positive correlation between age and risk status ($p<0.05$) in group1 i.e., as age increases risk of getting osteoporosis increases. In group 2 age and risk status ($p<0.05$) is negatively correlated i.e., as age increases risk of getting osteoporosis decreases.
Practice has significant association with obtained health information ($p<0.05$) in group1. Result infers that previously obtained health information increases osteoporosis preventive practices. Occupation ($p<0.05$) and practice are associated in group2. Thus it can be infer that osteoporosis preventive practices are dependent on occupation. There is significant association between occupation ($p<0.05$) and risk of getting osteoporosis in both the group. Occupation as sedentary type of work may increase the risk. In group 2 risk status is also associated with monthly income ($p<0.05$) as poor income may lead to less dietary calcium intake; family history of osteoporosis ($p<0.05$) is the hereditary factor of getting osteoporosis thus increases the risk.
Practice on osteoporosis prevention and risk status of getting osteoporosis is negatively correlated in both groups ($p<0.05$). It denotes that poor practice leads to risk of getting osteoporosis (Table 1). Practice and Risk status are not associated while comparing between groups ($p>0.05$)

Discussions

Findings of the study concluded that majority of women had average preventive practices (63.6%, 70.9%); still majority had low risk of getting osteoporosis (81.8%, 67.3%). Occupation has a significant role on risk status ($p<0.05$). Preventive practices and risk status is negatively correlated ($p<0.05$). It denotes that poor practice leads to risk of getting osteoporosis. Practice and Risk status are not associated with age group ($p>0.05$); thus it can be concluded that these three variables varies from person to person.
Limitations of the study were use of convenience sampling, generalization is limited to present study sample only; and practice scale was self reported, chance of not getting true data.
It is recommended that a similar study can be conducted on a large scale which may yield more reliable results. Also study can be conducted as "A diagnostic study of Osteoporosis by using Self Reported Practice Scale and Dual X-ray Scan".

Acknowledgement

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Level of adherence towards ART and the barriers encountered by HIV +ve clients in Madurai, South India

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Abstract

Around half of the people who acquire Human Immuno Deficiency Virus (HIV) become infected before they turn 25 and typically die of the life threatening illness called Acquired Immuno Deficiency Syndrome (AIDS) before 35th birthday. (UNAIDS, 2008).. WHO (2008) estimated that the deaths occurred by AIDS in 2007 were 2 million. Anti retroviral therapy has transformed HIV infection into a treatable, chronic condition (Melvin and Sherr, 2007).The online edition of the Lancet (2008) suggested that the continuous, regular ARV treatment reduces the rate of AIDS development and death in HIV positive patients by 28%. Non-adherence is a main if not the most important factor in treatment failure and the development of resistance. To make sure that HIV treatment works effectively it is important that the drugs are taken on time (Keystone Symposia, 2007) According to NACO (2009) the most common cause of ART failure is poor adherence. Adherence should be assessed and routinely reinforced by everyone in the clinical team (physician, Nurses, Counsellors, pharmacist, peer educators, NGO workers etc) to maintain optimum level of adherence

Objectives of the study

1. To assess the level of adherence towards ART by the HIV positive clients.
2. To assess the level of inhibition posed by barriers towards ART adherence among HIV clients.
3. To find out the correlation between level of adherence and barriers in taking ART (such as side effects, family, Transportation and Finance, workplace, society, health care providers).
4. To find out the association between level of adherence and demographic variables (such as age, sex, marital status, pregnancy, No.of children, Educational status, Occupation, Income, Domicile, Religion, Type of family, personal habits, distance, money required, HIV status of family members, disclosure status).
5. To find out the association between level of adherence and clinical profile (such as year and month of ART started, CD4 count, clinical stage, treatment, Regimen, other Treatment membership of voluntary organization, opportunistic infection, side effect).

Material and methods

The descriptive correlational research design was used for this study. Simple random sampling technique was adopted for this study and Using lot method the patients were selected from out patient register randomly. The total number of sample studied was 100. The target population of the study was all the patients who come to ART centre for Treatment. Semi structured interview schedule was prepared to fulfill the objectives. This tool had 5 sections. This was basically developed and modified from

1. ACTG adherence follow up questionnaire
2. MORISKY Barriers to adherence scale.

section I: Demographic Profile
Section II: Clinical Profile
Section III: Level of Adherence
Section IV: Barriers to Adherence.

Results and discussion

The level of adherence of HIV clients towards ART. Majority of the HIV clients (95%) had high adherence towards ART. No one had moderate adherence and only 5% had low adherence. High adherence may be due to Free ART, Educational Status, Family support, Increased knowledge towards ART adherence and Encouragement of health care providers.. With regard to level of inhibition posed by barriers towards ART adherence, all the clients (100%) expressed that side effects and health care providers were the least inhibitive barrier. Majority of them considered family and workplace (92%) as the highly inhibitive barrier.

The obtained 'r' value was 0.223 which was insignificant at 0.05. There was no relationship between the adherence and the barriers for taking ART as the obtained 'r' value was 0.223 which was insignificant at 0.05.. So though the barriers were more, they did not have an effect on level of adherence. Most of the clients showed high level of adherence irrespective of barriers.

Recommendations

On the basis of findings of the study the researcher makes the following recommendations:

- A longitudinal study can also be conducted to identify the level of adherence towards ART and the barriers encountered by the HIV clients.
- A comparative study of level of adherence between rural and urban can be undertaken.
- Qualitative approach can be used to study the adherence and the perception of health care providers to HIV client can be elicited.

Conclusions

This high level of adherence should be continued throughout by conduction of awareness program, reduction of social stigma, counseling, and encouragement of health care providers. The barriers may be reduced by availability of ART throughout life time, , counseling to family members, provision of ART drugs through PHC and subcentres, provision of loans through banks, improvement of the clients socio economic status and by creating an awareness to the public.

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A study to compare the effectiveness of normal saline vs tapwater in irrigation of chronic wounds

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Abstract

Objective

To compare the effects of Normal saline Vs Tap Water on infection, healing rate of chronic wounds.

Material and methods

This study used Randomized Controlled Trial in surgical OPD/ D7 Ward/AB6 Ward of All India institute Of Medical Sciences Hospital, included 31 subjects in Tap Water group, 30 subjects in Normal saline group. Subjects were randomly allocated to have the wound irrigated with either normal saline or tap water.

Results

The healing rate was assessed by percentage decrease in area at 2 weekly intervals. At the end of the5-6 weeks follow up the percentage decrease in saline group was 45.34%(mean size: 8.42±6.57) compared to 40.58 % (mean size of 5.36±7.89) in tap water group. There was no significant different between the groups. ($p > 0.05$) The overall post irrigation culture was 64.51% positive in saline group, 58.06% positive in tap water group with the p value of>0.05.

Conclusion

There was no significant difference between the wounds in term of wound infection and healing rate. Drinkable tap water appears to provide safe alternative to sterile Normal saline in irrigation of chronic wounds.

Keywords

Tap water, chronic wounds, Nrmal saline

Back ground of the study

Wound irrigation is a vital component of wound management. Various solutions have been recommended for cleansing wounds; however normal saline is favored, as it is an isotonic solution and doesn't interfere with the healing process.[1-4] Tap water is commonly used in community for cleansing wounds, because it is easily accessible, efficient and cost effective. However, there is an unresolved debate about its use in wound management circle. Limited research has been available to support or refute the use of this.[5-10]

Objectives

1. To compare the risk of infection in wounds cleansed with tap water and with normal saline.
2. To compare the rate of wound healing in both groups.
3. To study the pain and comfort of the patients in both groups.

Hypothesis

There will not be any significant difference between the wounds that are cleaned with the normal saline and those cleaned with tap water.

Material and methods

Study design:

Quantitative Approach-Randomized controlled trial.

Variables

Independent variables:

1. Irrigation of chronic wounds with tap water in intervention group
2. Irrigation of chronic wounds with normal saline in control group.

Dependant variables:

1. Infection rate
2. Rate of healing
3. Pain and comfort in both the groups

Setting

Surgical OPD and surgical wards of All India Institute of Medical Sciences Hospital, New Delhi.

Sample & sampling technique

Subjects with chronic wounds (which are not healed for four weeks) and fulfilled the inclusion criteria. Randomization was done with computer-generated table of random number method. This was generated on website www.randomization.comTotal of 43 patients in tap water group, and 39 patients in normal saline group were enrolled in the study. In that, 31 subjects in tap water group, and 30 subjects in normal saline group completed the minimum of 5-6 weeks follow up.

Inclusion criteria

Chronic wound in any part of the body which is not healed for 3 weeks, Immunized for tetanus within last five years.

Exclusion criteria

Serious medical disorder that impair healing, Malnutrition (BMI <15), Extreme obesity (BMI >36), Immuno compromised patients, Pressure ulcer –grade ,Diabetic foot ulcers with osteomyelitis

Data collection tool

The subject data sheet had been developed to assess the wound charecteristics and demographic variables and has been validated.Pain and comfort was assessed by using numerical rating scale.

Wound care procedure

Complete physical assessment had been done for each subject, Using wound assessment proforma did wound assessment for each subject. After the debridement wound dimension was measured by tracing a wound with acetate paper by using 0.5mm micro tip permanent marker.Wound swab had been taken for culture at 'zero' weeks & and end of the completion of follow up, and if the wound showed clinical sign of infection. Tap water had been sent for culture before introducing and at every 2 weeks interval. Throughout the study the tap water samples was fit for human consumption as per the microbiology report.Group A has been irrigated with sterile normal saline by using 50 ml syringe with18 gauge needle (expected pressure 8 pounds per square inch).Group B has been irrigated with tap water with the help of a PVC pipe for minimum of 10 minutes.Running the tap water for 5 minutes prior to use had been considered to clear any standing water from the system. After irrigation povidone iodine impregnated gauze was applied, secondary dressing were done with sterile/ clean gauze pads.

Ethical issues

Institutional ethical committee, All India Institute Of Medical Sciences, had approved the study.

Statistical methods

Descriptive and inferential statistical methods used. Data were summarized using means and standard deviation for all continuous variable (Age, wound size, biochemical parameters, pain, comfort score). The two groups were compared using student t test for independent groups and with Pearson's chi-square for all categorical variables.Linear trend in wound size were evaluated by using repeated measures of ANOVA.A probability of less than 0.05 was accepted as significant
Data were analyzed by using SPSS-12th version.
The table indicates that the mean duration of the ulcer was 49

Table 1: Demographic characteristics

Variables	Normal saline group	Tap water group	'P' -Value
Age (years)*	46.63±9.67	46.03±10.47	0.8
Male (%)**	24(80%)	24(77.4%)	0.8
Female (%)**	6(20%)	7(22.6%)	0.8

*Expressed in mean age ± SD
**Expressed in frequency (%)
The two groups did not differ in term of age, sex, mean duration.

Table 2: Biochemical parameters

Variables	Saline group	Tap water group	't' value	'p' value
Hb (gm%)	12.11±1.45	12.70±1.80	1.40	0.1
TLC	8398±2119	9116±2952	1.08	0.2
Bloodurea(mg)	28±12.59	33±17.77	1.3	0.1
Serum Creatinine(mg)	1.05±. 40	1.17±. 61	-.85	0.3
T.protein (gm)	7.56±. 56	7.95±. 69	2.3	.02*
B.sugar (gm)	123±37.25	120±27.90	0.30	0.7

*p' significant at <0.05 level
Both the groups were comparable in all biochemical parameters except total protein, which was significant at p' <0.05 level

Table 3: Wound characteristics:

Variables	Saline group	Tap water Group	t value	'P' value
Duration(Days)	49±16.83	50±24.47	-.03	0.9
Length (cm)	4.23±1.99	3.78±2.41	0.78	0.4
Width	4±2.30	2.94±1.64	2.08	0.04*

*Significant at <. 05 levels

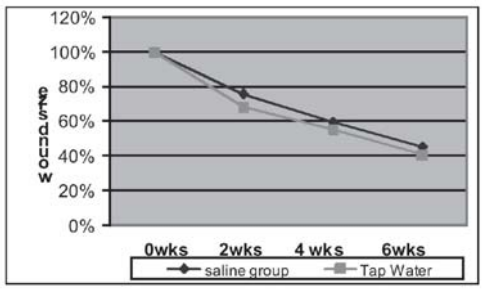
Objective1: To compare the rate of wound healing in both groups.

Rate of healing in both the groups

Weeks	Saline group (Wound size in cm)	Tap waterGroup (Wound size in cm)	'P' value
At '0' weeks	18.57±15	14.01±20.18	0.1
At '2' weeks	14.09±11.92	9.55±13.49	0.1
At '4' weeks	11.04±9.54	7.70±10.82	0.2
At'5-6'weeks	8.42±6.57	5.36±7.89	0.1

days in saline group, and 50 days in tap water group. There was no significant difference between the groups in terms of duration and wound length.However the groups were differed in wound width, which was 4 cm in saline group compare to 2.94 cm in tap water group. It was significant at 'p' <. 05 levels
The healing rate was assessed by percentage decrease in area at 2 weekly intervals. At the end of the follow up the percentage

Figure 1: Trend in wound size



decrease in saline group was 45.34% (mean size: 8.42±6.57) compared to 40.58 % (mean size of 5.36±7.89) in tap water group. At 2 weeks, 4 weeks interval also there were no significant different in percentage decrease in wound size in both the groups. (p value:0. 1)
In order to see the linear trend within the groups repeated measure of ANOVA was used. Within the groups wound size had reduced during follow up intervals. It was significant at p'<0.05 levels
The overall post irrigation culture was 64.51% positive in saline group, 58.06% positive in tap water group. There was no significant difference between the groups p value is 0.9.However in both the group wound infection rate was high, might be due to chronic nature of the wound.

Results

The study included subjects of age ranging from 30-70 years. Majority of the subjects were in age group of 30- 40 years.Among the subjects majority of them (46.7% in saline group, 67.7% in tap water group) were having venous ulcer

Objective: 2 To compare the risk of infection in wounds cleansed with tap water and with normal saline.

Comparison of wound infection rate in both groups

Wound culture	Saline group (n=30)	%	Tap Water Group. (n=31)	%
Pre irrigation culture positive	20	64.51%	18	58.06%
Post irrigation culture positive	18	58.06%	16	51.61%
Pre and post irrigation positive	14	46%	12	39.4%
Pre and post irrigation negative	6	20%	10	33%
Pre negative, post positive	4	13.3%	3	9.6%
Pre positive, post negative	6	20%	5	16.13%

* P value:0. 9

type of chronic wound.The healing rate was assessed by a percentage decrease in area at 2 weekly intervals. At the end of the 6 weeks follow up, there was no significant different between the groups. Pearson chi square=0.1.Percentage decrease in saline group was 45.34%, 40.58% in tap water group.The groups did not differ significantly in terms of wound infection, as post irrigation culture was positive in 58.06% of the subjects in saline group when compared to 51.61 % in tap water group. 'Pearson chi square' p=0.4.However there is increase rate of wound infection in both groups, it could be due to the chronic nature of the wounds.

Discussion

In present study 36.06% of subjects were in age group of 30-40 years and 29.50% of subjects belong to 50-60 years range. Various epidemiological studies on chronic wounds[10-11] also supports that the prevalence of venous ulcer and diabetic ulcers increases progressively with age. Since the removal of bacteria from the wound is considered to be primarily dependant on mechanical efforts[12-14] tap water has advantage over normal saline. High pressure iurrigation greater than 8PSI fluid pressure has been shown to be the more effective in removing bacteria, so the tap water can be safe alternative to clean the chronic wounds[15-17]. Studies supports that the tap water of drinking quality, which is treated with chlorine, can be use to irrigate the chronic wounds. In this study also tapwater has been treated with chlorine[18].

Conclusion

As there is no significant difference between the wound, which is treated either with normal saline or tap water in terms of wound infection, and rate of healing, study supports that properly treated, drinkable tap water appears to provide a safe alternative to normal saline for chronic wounds cleansing. The use of tap water has both practical and economical advantages.

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Knowledge, attitude and practices of dietary intake with the view to identify the factors influencing the dietary practices among high school students in Udupi district, Karnataka

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Abstract

Objectives

To assess the knowledge, attitude and practices regarding dietary intake and delineate the factors influencing dietary practices of the high school students of selected schools of Udupi district, Karnataka.

Methods

The study had adopted a Survey Approach which consisted of two phase. Descriptive survey design was used in the first phase to assess the knowledge, attitude and practice regarding dietary intake among 400 high school students from selected English medium schools. Exploratory survey design was used to delineate the factors influencing unhealthy dietary practices among those having unhealthy dietary practices i.e. 34 students.

Results

From the first phase of the study it was revealed that majority (69.5%) of the students had good knowledge, few (8.5%) had unhealthy dietary practices, only 22.8% had favourable attitude towards unhealthy dietary practice and for 82.5% of the students, parents were the influencing factor in their dietary intake. It was also found that physiological factors like taste, thirst, hunger and fullness of stomach influenced unhealthy dietary practices of 24(70.5%) of the students who belonged to the second phase of the study.

Keywords

Dietary intake; Udupi district; Unhealthy dietary practices; Factors influencing

Introduction

Dietary practices has become a major concern in today's world scenario as many diseases and problems like cardiovascular disease, obesity, poor academic performance among students, overweight, underweight, anemia etc. are commonly named. Among preventable causes of death, poor diet and physical inactivity account for an estimated 300,000 deaths per year globally. For proper growth and development and to prevent health problems such as obesity and anemia, young people should begin healthy eating early in life.[1]

Children when they are too young i.e. toddler and preschooler period, spend more time eating at home. Their food choices and food preferences are thus largely dependent on what their parents provide. As they grow older, many factors influence their dietary practices.[2] This can result in health problems, academics and behavioral problems.

A study was done by the Nutrition Foundation of India in Delhi. The growth rates of affluent Indian children are similar to averages in developed countries. The other side of this fact is that 29% of the 5000 children were found to be overweight and 6% among these were obese. The study investigator said that the variety of fast foods available in the market today has contributed to the obesity problem. This shift has resulted in the Indian urban affluent consuming more fats, oils, sugars, and western-style fast foods.[3]

Department of Community Based Medicine, Academic Unit of Psychiatry, University of Bristol, Bristol, UK conducted a study which showed that there is a standard deviation increase in 'junk food' intake at age $4^{1/2}$ years was associated with increased hyperactivity at age seven.[4]

An article on Jan 6, 2008 in Hindustan Times, stated that "diet has got an influence on violence" in respect to the Guragaon shooting incident. It points to the possibility that junk food consumption causes aggression. Junk food lacks basic vitamins and minerals necessary for the human body. If in addition, the child also eats a lot of sugar-laden goodies, she/he gets an added and unnecessary burst of energy. The net result is that the body is deprived of the basic nutrients and is also hyperactive because of all the sugar in the bloodstream. Hyperactivity and restlessness lead to impatience and a desire for instant gratification. When this desire is unfulfilled, it leads to frustration and anger, which may lead to violent behaviour.[5]

The Nutrition and Health survey in Taiwan Elementary School Children, 2001-2002, was carried out to evaluate the relationship between children's unhealthful eating patterns and overall school performance. Unfavorable overall school performance was positively associated with unhealthful eating patterns, which included high intake of low-quality foods (eg, sweets and fried foods) and low intake of dairy products and highly nutrient-dense foods (eg, vegetables, fruit, meat, fish, and eggs). [6]

Several studies done in India in cities showed that youngsters prefer to go out with their friends for meals. About 52 per cent children ate meals outside the home. It also showed that majority of adolescents like to eat meals outside home and prefer junk food over regular meals. [7]

The present study was conducted to assess the knowledge, attitude and practices of dietary intake of high school students with a view to identify the factors influencing the practices in selected high schools of Udupi district, Karnataka.

Material and methods

The study had adopted a Survey Approach which consisted of two phase. The design used for the first phase was descriptive

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survey design and the study sample consisted of 400 high school students from English medium school. Enumerative sampling technique was employed for the first phase. The design used for the second phase was exploratory survey design and study sample consisted of those having unhealthy dietary practices i.e. 34 students. Purposive sampling was used in the second phase of the study.

Tool description

Demographic Proforma

A tool was constructed to collect the sample characteristics. The tool consists of nine items like family and respondent identification, age, gender, grade, father and mother's occupation, leisure time activities, dietary habit, influencing factor and monthly family income. There was no scoring for the sample characteristics.

Knowledge Questionnaire on Nutrition

It consist of 25 multiple choice question on nutrition. Each right answer carried a score of 1 and each wrong answer carried a score as zero. Therefore, the maximum total score was 25 and minimum score was zero.

Practice Proforma

It consisted of 15 items of Likert type statements on healthy practices and unhealthy practice. The options of each of these statements were always, sometimes and never.

Attitude scale

The attitude scale was developed based on the healthy and unhealthy dietary intake. It consists of 15 statements. The options on the scale were strongly agree, agree, undecided, disagree and strongly disagree. All the statements were negative statements which scored from 5 to 1.

Structured Questionnaire (open- ended type)

It consists of 5 questions regarding the unhealthy dietary practices and preferences of the students. Analysis is done based on descriptive analysis.

The data obtained were analyzed and interpreted based on the study objectives using descriptive statistics. Descriptive statistics were used to describe sample characteristics, knowledge of the sample, practices of sample, attitude of sample and factors contributing unhealthy dietary practices. The data was analyzed using SPSS (Ver. 11.5).

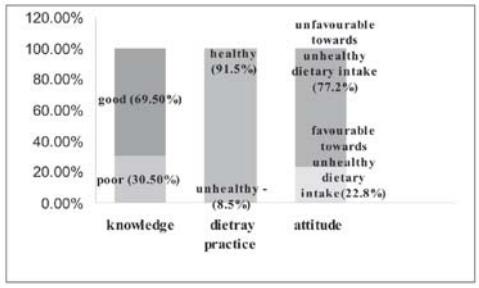
Results and discussion

Characteristics of students

Majority (57.3%) of the sample belongs to the age group of 15-17 years. Majority (53.8%) of the study sample were males. Majority (50.5%) of the sample belongs to class tenth. The father's occupation of majority (71.8%) of the sample belonged to professional group. Mothers of the majority (74.2%) of the sample are unemployed. The leisure activities of majority (41%) of the sample are reading/drawing/painting. The majority (54.5%) of the sample were non-vegetarian. For majority (82.5%) of the sample, parents influenced their dietary intake. The family income of majority (95.5%) of the sample is above Rs. 9000 per month

A study was conducted among 17-19 year old girls residing in and around Ernakulum district, Kerala. The food consumption pattern of the subjects revealed a habitual skipping of breakfast which in turn could result in impaired cognitive ability during the college hours. There was high intake of junk foods and carbonated beverages among the students.[8]

Fig. 1: Knowledge, attitude and practices regarding dietary intake of the students



A survey was conducted among Taiwanese elementary school children. They had poor to fair knowledge on nutrition; one-fourth of the children had unhealthy dietary practice.[9] This is in contrast with the present study as it was found that majority (69.5%) of the students had good knowledge on nutrition, only few (8.5%) had unhealthy dietary practices and 77.2% of the students had unfavourable attitude towards unhealthy dietary practices.

The findings of the study were in contrast to the many Indian studies and studies from other regions of the world as those studies showed that majority of the students had unhealthy dietary practices which includes frequent consumption of junk food, skipping the breakfast frequently, eating snacks between the meals, having food from the school canteen (always), eating food from outside, drinking carbonated drinks always.

Factors contributing to unhealthy dietary practices

It has been elicited from 34 students (with unhealthy dietary practices) as shown in table I that for majority (70.5%) of them, physiological factors like taste, thirst, hunger and fullness of stomach etc. influenced their unhealthy dietary practices. For 44.11% of them, advertisements played a vital role in their unhealthy dietary practices. Only 35.29% and 23.5% stated that friends and psychological factors like mood, temptation, feeling relaxed and fresh contributed to their unhealthy dietary practices.

Model developed from the second phase of the study

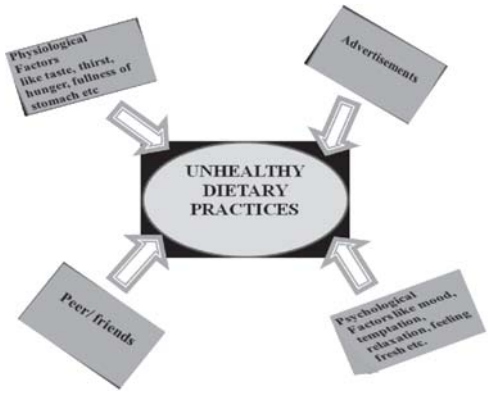
A study was conducted in America to elicit factors influencing food choices of adolescents through Focus-Group Discussions. The result showed the factors perceived as influencing food choices included hunger and food cravings, appeal of food,

Table 1: Frequency and distribution of factors influencing unhealthy dietary practices

(n=34)

Influencing factors	Frequency (f)	Percentage (%)
1. Peer/friends influence	12	35.29
2. Advertisement influence	15	44.11
3. Influence of Physiological f actors like taste, thirst, hunger, and fullness of stomach	24	70.5
4. Influence of Psychological factors like fresh mood, temptation, relaxation, and feeling	8	23.5

Figure 2: Model depicting factors influencing unhealthy dietary practices



time considerations of adolescents and parents, convenience of food, food availability, parental influence on eating behaviors (including eating habits at an the culture or religion of the family), benefits of foods (including health), situation-specific factors, mood, body image, habit, cost, media, and vegetarian beliefs. Major barriers to eating more fruits, vegetables, and dairy products and eating fewer high-fat foods included a lack of sense of urgency about personal health in relation to other concerns, and taste preferences for other foods. [10]

A cross-sectional survey carried out in Australia to examine associations between children's regular TV viewing habits and their food-related attitudes and behavior. it showed that heavier TV use and more frequent commercial TV viewing were independently associated with more positive attitudes toward junk food; heavier TV use was also independently associated with higher reported junk food consumption. [11]

Several studies showed that the various factors influencing eating pattern were hunger and food cravings, appeal of food, time considerations of adolescents and parents, convenience of food, food availability, parental influence on eating behaviors (the culture or religion of the family), benefits of foods (including health), situation-specific factors, mood, body image, habit, cost, media, and vegetarian beliefs. It is also seen that TV advertisements is associated with higher junk food consumption. Thus, in the present study, the factors influencing unhealthy dietary practices were quite similar i.e., taste, hunger, friends, advertisements, mood and temptation.

Summary and conclusion

The present study was carried out to assess the knowledge, attitude and practices of dietary intake of high school students with a view to identify the factors influencing the practices in selected high schools students. The students were selected from two English medium schools not providing mid-day meal. The children from 9th and 10th grades were selected for the study. The study approach used was survey and it was carried out in two phase. In the first phase the knowledge, dietary practices and attitude was assessed among 400 students. In the second phase the factors influencing unhealthy dietary practices was elicited from thirty four students who had unhealthy dietary practices.

From the first phase of the study it was revealed that majority (69.5%) of the students had good knowledge, few (8.5%) had unhealthy dietary practices, only 22.8% had favourable attitude towards unhealthy dietary practice and for 82.5% of the students, parents were the influencing factor in their dietary intake.

It was also found that physiological factors like taste, thirst, hunger and fullness of stomach influenced unhealthy dietary practices in 24(70.5%) of the students who belonged to the second phase of the study (n=34).

It can be inferred from the study that due to parental influence only few students had unhealthy dietary practices as compared to the other Indian studies where majority of the students had unhealthy dietary practices which included played a vital role in consumption of junk food, eating from outside, skipping breakfast etc. Physiological factors like taste, thirst, hunger and fullness of stomach played a vital in unhealthy dietary practices.

Though the monthly income of the family is above Rs. 9000 among 95.5% of the students, still they have adopted healthy dietary practices. This could be due cultural factors and the lifestyle of the family.

Therefore, in this part of the country the children are well aware of the healthy foods and due to parental influence they have adopted healthy dietary practices and have unfavaourable attitude towards unhealthy dietary practices.

The investigator concludes by saying that there is a contrast because other studies were done in major cities and there can be cultural differences in dietary practices from place to place which showed varied findings in this study as compared to other studies.

Acknowledgement

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Recognition of respiratory health problems among health care professionals exposed to fumigation- a descriptive survey

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Abstract

Out of the 115 health care professionals who were randomly selected, it was observed that most 95.7 % had been exposed directly or indirectly to fumigation. Majority 61 (53%) had been working in area for more than 5 years. Most 95.7% of these staff carried out fumigation as part of their responsibility in their respective unit. Majority, 60 (52.5%) had been exposed to fumigation more than 16 times and more. It was also noticed that majority, 60% of them had respiratory symptoms – cough was reported by 73.9 %, eye irritation 53%, nasal symptom 22.6%, wheezing 13.9%, Breathlessness 12.2 % and skin irritation 6.1%. Of these 60 % who had respiratory symptoms amazingly only 9.6% had reported to their physician for medical help. This clearly indicates that chemicals used for fumigation causes respiratory symptoms minor or major in nature. It is also noted that health problems are being neglected and not reported for early management or change.

Keywords

Nursing personnel, OT technician, Fumigation, respiratory symptoms.

Introduction

Today in the medical world infection control is one of the most important area of concern to reduce hospital acquired infection. In connection to this issue many pesticides are used which are chemicals formulated to kill or prevent reproduction in pest such as insects, rodents, weeds and microbes. However, the acute or chronic toxic properties of pesticides also pose risks to the health of people who are exposed. When any fumigation is initiated in the operation theatre, procedure room or the wards the individual is expected to seal the room and for every 1000 cu.ft of space place 500ml formaldehyde (40% solution) and 1000ml of water in an electric boiler is arranged. One switches on the boiler, leaves the room and seal the door for 24 hours.

The next day the door is opened and neutralizes any residual formaldehyde with ammonia by exposing 250ml of S.G 880 ammonia/ 1Lt of formaldehyde used. (Ref - Mackie and McCartney Practical Medical Microbiology 13th Edition). These sseveral sterilizing agents such as Formaldehyde, Chlorhexidine, Chloramine –T[3] and Glutaraldehyde have shown to give rise to occupational asthma. We understand that Glutaraldehyde is one of the best disinfectants for fibreoptic endoscopes. It is also used in the processing of X ray films. A number of studies have reported eye, nose, and respiratory symptoms in exposed workers. Glutaraldehyde is also a recognized skin sensitizer, indicating that it can induce a specific reaction in another organ. This contrasts with the effects on the eyes and throat when symptoms are common on first exposure and an irritant mechanism seems more likely[1]. Another chemical used is the formaldehyde which is described as a sporadic cause for occupational asthma[2]. Lysoformin 100 g solution contains: 6.0 g formaldehyde, 1.8 g glutaral. Lysoformin and Formalin +potassium permanganate are the common agents used for fumigation. When initially or repeatedly exposed to these agents the individual could experience respiratory symptoms which are generally neglected by the staff unless they experience a severe form of respiratory problems. Hence the investigators were inquisitive to recognize the respiratory symptoms related to chemicals used for fumigation in operation theaters, scopy rooms, post operative units and ICUs and recommend for a change based on the findings to improve the quality of life through protected environment for better health for professionals who are exposed directly or indirectly to chemicals used for fumigation.

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Research methodology

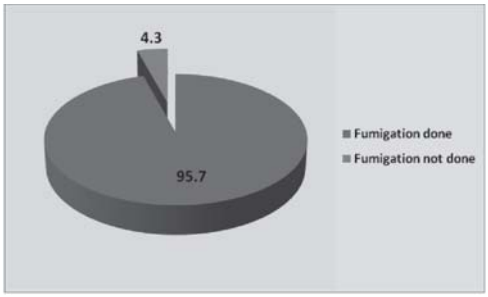
With prior administrative permission and also individual consent a total of 115 nurses and technicians working in the operation theatres, Intensive care units, post operative units, bronchoscopy room and also other procedure rooms in the wards were randomly selected for identifying the respiratory symptoms due to exposure to agents used during fumigation. Demographic data and also a structured questionnaire were prepared to survey for the respiratory symptoms experienced by them.

Findings and discussion

Data shows that majority of the Nurses and technicians 79 (68.7%) work in the operation theatre areas who invariably undertakes fumigation as one of their main responsibilities in controlling infection. Majority of the nurses and technicians, 61 (53%) have worked more than 5 years, 25 (21.7%) less than one year who are just novice in their practice yet exposed to some form of fumigation.

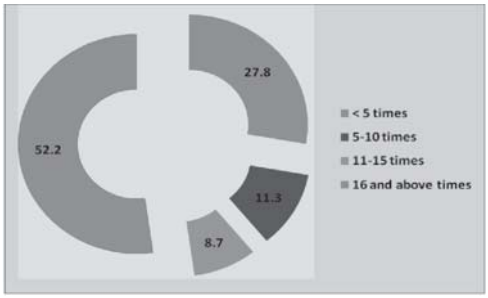
The data presented in fig: 1 indicates that 110 (95.7%) of the workers have carried out fumigation procedure in their work areas. In other words it means to recount that they are being exposed indirectly or directly to fumes of chemicals used to control infection. The findings also reveals that majority 95 (82.6%) are exposed to Lysoformin and 3(2.6) are exposed to Formalin +potassium permanganate and 14(12.2%) are exposed to both.

Fig 1: Fumigation carried out in their workplace



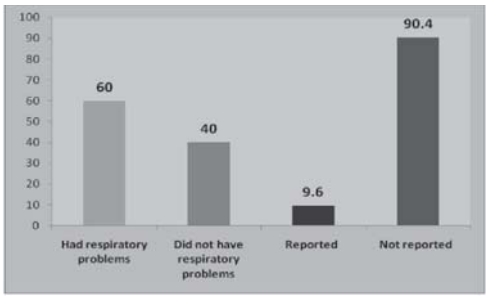
Data shown in fig:2 indicates that majority of the staff 60 (52.2%) have been exposed to fumigation more than 16 and above times, 10(8.75) eleven to fifteen times, 13 (11.3%) 5-10 times and most 32 (27.8%) had less than five times exposure to fumigation.

Fig. 2: Doughnut diagram showing the number of exposures to fumigation



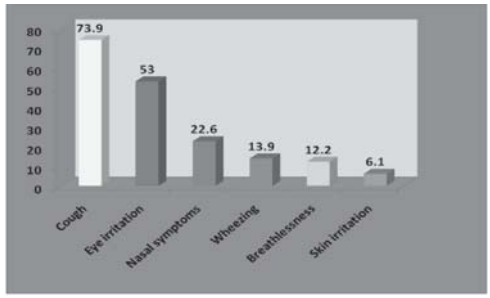
Data presented in fig:3 indicates that majority 60 % had respiratory problems after exposure to fumigation and only 9.6 % of them had reported to their physician regarding their health problems. Although the staff had Medicare and also are aware of their health problems yet they failed to report and get the right treatment at the right time nor brought to the notice of the administrator for further change.

Fig. 3: Bar diagram showing the presence of respiratory problems and physician notification



Data presented in fig:4 shows that majority, 73.9 % of the staff had cough, 53 % had eye irritation, 22.6 % experienced nasal symptoms, 13.9 % wheezing, 12.2% breatlessness and 6.1% had skin irritation after having been exposed to fumigation. In the subjective data, one of the staff expressed that she had headache after fumigation. Though large amount number of them were experiencing various symptoms after the fumigation, yet only 5 (4.3%) had asked for a change in their workplace which means to predict that the health care professional fails to understand their health problems and also are not assertive to pose for a change.

Fig 4: Bar diagram showing the health problems related to exposure to fumigation



Suggestions expressed by the staff-

1. New method of fumigation which are non toxic to be introduced which are less harmful, environmental and ozone friendly (1.73%)
2. Change to ultraviolet sterilization (1.73%)
3. Change to liquid fumigator (2.5%)
4. Lysoformin causes sticky feeling on walls and sleepers and whole environment (4.34%)
5. To provide a chart of complications, and contraindications and uses of lysoformin, it will help us (2.5%)
6. Provide a better option of fumigation that does not irritate eyes and also that avoids cough (8.7%)
7. Better provide non irritable solution for fumigation to avoid health problems (4.34%)
8. Please provide trigen fumigation which is better than lysoformin (2.6%)
9. Change to better substances than this (2.6%)
10. Change the chemical used for fumigation – lysoformin (1.73%)
11. Better to find solution to prevent respiratory irritations
12. Have classes for the medical professionals regarding safety practices after fumigation
13. Provide safety management class for fumigation and sterilization technique (1.73%)
14. Are there any better substances for fumigation? (5.2%)
15. I strongly oppose the use of lysoformin for fumigation because it harms the health of OT staff and we need non irritant solution for fumigation (1.73%)

Conclusion

Fumigants are broad spectrum pesticides that can act as respiratory poisons, anesthetics or narcotics, or enzyme poisons. They are chemically simple molecules, but they can exert potent and wide-ranging effects on the target organisms. Because of their gaseous nature and acute inhalation toxicity, fumigant products are labeled as Toxicity Category-1 with the signal word Danger, or Danger-Poison with the skull and crossbones symbol. All fumigants are highly toxic and require trained personnel for application. Anyone handling fumigants should be thoroughly familiar with application procedures,

safety equipment, first-aid treatment, and disposal procedures. At least two people should always be present when using fumigants and both should have the proper respiratory equipment for the particular fumigant being used to prevent from acquiring respiratory symptoms. When faced with the problems one needs to voice either for change of work place or change to non toxic chemicals for fumigation.

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A correlative study on dysmenorrhea among rural village women of Udupi district, Karnataka

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Abstract

Dysmennorhoea is a common menstrual problem affecting the women and disrupting their work .About 40-70% of women of reproductive age suffers with dysmenorrhoea and is associated with significant psychological, physical, behavioural and social distress. The present study aimed to find prevalence of dysmenorrhea among married and unmarried women, and to determine factors associated with dysmenorrhea.

Study design

A correlative survey design was used to identify the prevalence of dysmenorrhea and its relationship with selected factors among married (100) and unmarried (100) women aged 18-45 years.

Results

Prevalence of dysmenorrhea was high among unmarried women (64%) as compared to married women (31%). The chi- square computed was statistically significant ($\div 2$ (1) = 21.83, $p<0.05$). Moderate dysmenorrhea was reported among 85.9% of unmarried and 90.3% of married women. Stress and physical activity showed associated with dysmenorrhea.

Conclusions

Dysmenorrhea was more prevalent among unmarried women. Stress and physical activity were strongly associated with dysmenorrhea.

Introduction

The word 'Dysmenorrhea' is derived from the Greek, meaning difficult monthly flow. The word 'dysmenorrhea' has come to mean painful menstruation. Dysmenorrhea can be classified as either primary or secondary (D. Keith Edmonds 2007). Dysmenorrhea is a syndrome characterized by recurrent crampy lower abdominal pain often accompanied by nausea, vomiting, increased frequency of defecation, headaches and muscular cramps occurring during menses. Primary dysmenorrhea implies the absence of any pelvic abnormality. For many years controversy has surrounded the relative role of psychologic and biologic variables in its pathogenesis (Starfied B etal, 1980). Although reproductive health, in particular related to maternal health and reproductive tract infections (RTIs), is recognized as a health priority in developing countries, much less attention is paid to menstrual health and menstrual disorders (Harlow SD & Campbell OM, 2000). Recent review of menstrual disorders in developing countries, revealed high rates of menstrual morbidity in population-based studies (Harlow SD & Campbell OM. 2004). Reproductive health matter is a concern for all those who are interested in women's health. Even though menstruation is normal physiological process, many women experience menstrual dysfunction such as irregular cycles, premenstrual syndrome, menorrhagia (Park K.2007). Dysmenorrhea, or painful menses, is the most common gynaecological disorder in women of reproductive age (Anderch B & Milsom I 1982).

The prevalence of dysmenorrhea (painful menstrual cramps of uterine orgin) is difficult to determine because of different definition of the condition – prevalence estimates vary from 45% to 95%. However, dysmenorrhea seems to be the most common gynaecological condition in women regardless of age and nationality (Proctor M, & Farquhar C. 2004, Harlow SD 1996).

The present study is to describe the prevalence of dysmenorrhea in a population of women aged 18-45 years in Udupi District, India, the frequency of menstrual disorders and their impact of women's health status, i.e., social, physical, psychological and economic problems for women all around the world. A thorough understanding of the prevalence of dysmenorrhea in India and its severity is essential for the provision of effective heath care service for the women.

Conceptual framework

The conceptual framework for the study was developed based on "Fish bone Model"[Fig.1] ('cause and Effect Diagram', 1992).to identify the occurrence of dysmenorrhea and its relationship with selected factors among women. The present study aims to identify the risk factors of dysmenorrheal, and factors associated with dysmenorrhea, the multiple risk factors that predispose to dysmenorrhea are grouped as unmodifiable and controlled factors. Unmodifiable factors like age, age at menarche, and nulliparity, and the controllable factors include the life style, occupation, parity, poor dietary pattern, psychological factors, poor socio economic factors and BMI.

Fig.1:

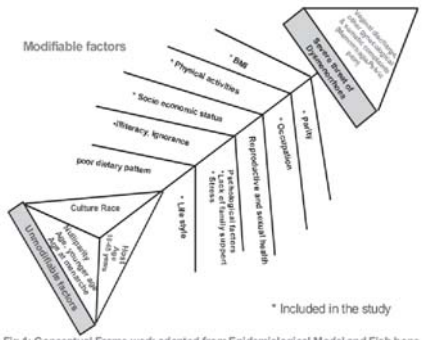

Fig 1: Conceptual Frame work adopted from Epidemiological Model and Fish bone model to identify the factors related to occurrence of dysmenorrhea

Material and methods

A community based correlative survey study was carried out in a sub center area of Thenkanidiyoor and Athrady in PHC in Udupi District, Karnataka during March to August 2007. The

Table 1: Association between Prevalence of Dysmenorrhea among Married and Unmarried women:

Dysmenorrhea	Unmarried (100) %	Married(100) %	Chi square	'P' value
Dysmenorrhea absent	36	69	21.83	0.001

Table 2: Severity to Dysmenorrhea among Unmarried and Married women

Dysmenorrhea	Unmarried (64)		Married (31)	
	Number	%	Number	%
Mild (1-8)	-	-	-	-
Moderate (9-16)	55	85.94%	28	90.32%
Severe (17-25)	9	14.06%	3	9.68%

Table 3: Association between severity of Dysmenorrhea and selected variables. N=200

Variables	Unmarried (100)		Married (100)	
	Number	P value	Number	P value
Age in years				
18-24	88		7	
25-31	10		38	
32-38	2	0.143	36	0.318
39-45	-		19	
Age at Menarche				
d"13 years	33		49	
14-16 years	67	0.998	51	0.806
Educational Status				
Below 10^{th}	18		58	
e"10^{th}	82	0.152	42	0.118
Occupation				
Unskilled	43		88	
Skilled	17	0.698	12	0.827
BMI				
<18	56		29	
18-22	36	0.997	45	0.699
e"23	8		26	
Menstrual flow				
Scanty	1		2	
Moderate	89	0.250	92	0.290
Heavy	10		6	
Physical activity				
Mild (1-12)	11		6	
Moderate (13-24)	70	0.383	67	0.062
Severe (25-38)	19		27	
Stress				
No stress	15		24	
Mild (1-20)	62		63	
Moderate (21-40)	17	0.000	8	0.006
Severe (41-60)	6		5	

sub centre Thenkanidiyoor is a rural area which covers 5,332 population with 2,524 males and 2,808 females and total 423 houses. The total population of Athrady rural area is 2,406 with 1,154 males and 1,252 female population and total 300 houses. The women selected were married (100) and unmarried (100) aged 18-45 years, who were co-operative and present during the door to door survey, were included in the study. A pre-tested questionnaire was used to collect information on socio-demographic profile, stress, physical activity and pain during dysmenorrhea. SPSS (version 10.0) package was used to analyse the data. Data was summarized using percentages. Chi-square test was used to test for associated factors with dysmenorrhea.

Results

Prevalence of dysmenorrhea

Table 1 shows prevalence of dysmenorrhea was high among unmarried women (64%) when compared to married women (31%). The Chi-square computed was statistically significant ($\div 2_{(1)} = 21.83$, $p<0.001$).

Severity of dysmenorrhea

Table 2 shows that out of 64 unmarried women 55(85.94%) had moderate dysmenorrhea and 9(14.06%) had severe dysmenorrhea, with regard to 31 married women having dysmenorrhea, 28(90.32%) had moderate and 3(9.68%) had severe dysmenorrhea. None of them had mild dysmenorrhea.

Association between dysmenorrhea and selected variables

Table 3 shows there was significant association between the level of stress and dysmenorrhea among married [$\div 2_{(4)} = 14.575$, $p<0.01$] and unmarried [$\div 2_{(4)} = 24.482$, $p<0.01$] women. Association was found between the level of physical activity and the dysmenorrhea among married [$\div 2_{(4)} = 8.966$ $p=0.062$] women at 0.062 level. However no association was found between dysmenorrhea and variables like age, age at menarche, menstrual flow, occupation and educational status. Stress and physical activity were the contributing factor for occurrence of dysmenorrhea in these selected subjects.

Discussion

The present study reveals that occurrence of dysmenorrhea was high among unmarried women (64%) when compared to married women (31%). This was similar to the findings of the study conducted in Goa, among 2262 women aged 18 to 45 years and it was found that more than half of the women reported dysmenorrhea, and 755 participants reported moderate to severe dysmenorrheoea (Patel V etal 2006). In Thiland study conducted among 789 women, it revealed that 84.2% reported dysmenorrhea, it supports the findings of the present study (Banikarim C & Chacko 2000).

The present study depict that out of 64 unmarried women 55(85.94%) had moderate dysmenorrhea and out of 31 married women 28(90.32%) had moderate dysmenorrhea. This observation was made among 996 nurses working in United States, longitudinal longitudinally in a representative, the prevalence of dysmenorrhea was mild (51% to 53%), moderate (22% to 20%) or severe dysmenorrhea (4% to 2%) is in conformity with results (Weissman et al 2004). The prevalence and severity of dysmenorrhoea were reduced ($P<0.05$) in women who were parous in 1986 and nulliparous in 1981; but was unchanged in women who were still nulliparous (Sundell G. & Andrsch B.1990).

The study also revealed that there was a significant association between stress and dysmenorrhea among the married and unmarried women, higher proportions of unmarried women with increased severity of stress had dysmenorrhea as compared to women with lower level of stress. This study is similar to the study conducted among 1160 Chinese women and found that risk of dysmenorrhea was greatest among women with both high stress and a history of dysmenorrhea compared to women with low stress and no history of dysmenorrhoea (Wang etal. 2004). A similar study was conducted in United States among 170 Air force Military women and study showed that life event stress was significantly associated with dysmenorrhea (Gordley L.B etal. 2000).

Conclusion

Dysmenorrhea was more prevalent among unmarried women. Stress and physical activity were strongly associated with dysmenorrhea. In summary, menstrual morbidities constitute an important unmet area of reproductive health services for women in developing countries and more attention should be given in inclusion of diagnosis and treatment of menstrual complaints within reproductive health care programs.

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Assessment of commitment and dedication to lifestyle self care management among patients with type 2 diabetes mellitus attending OPD at General Hospital, Nelamangala, Bangalore

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Introduction

Diabetes Mellitus (DM) is the most common endocrine disease and it is a major problem in medicine, not only for diabetic patients but also as a general health problem.[1] Patients' lack of knowledge about diabetes care can impede their ability to manage their disease. This is important as better patient self-management ability is related to improved diabetes control. It is also probable that there is substantial delay in diagnosis. In a study done in Bangalore, there was a ten-year difference in the age of diagnosis between the actively working and non-working respondents, a seven year gap between the highest educated and the least educated, and a four year lag between the highest and lowest socio-economic groups. Those with a late age at diagnosis also had multiple complications, implying delayed diagnosis of diabetes. [2]

The burgeoning load of diabetes is a real threat in India, underscored by the constraints of the health system in terms of manpower and capacity. Workable strategies for ensuring timely and appropriate management require extensive linkage and support for enhancing the availability of trained manpower, investigational facilities and drugs. Primary prevention through promotion of healthy lifestyles and risk reduction is recognized as the most cost-effective intervention in resource-poor settings. The health system needs to be geared to tackle these huge numbers, while ensuring health care that is universally accessible and of acceptable quality. Over the past few decades, diagnostic criteria, and management algorithms for diabetes have seen rapid revisions. These are reflections of not just the translation of basic research into diabetes practice guidelines, but also an increased realization of the morbidity potential of the disease and its complications.[3]

Need for the study

The World Health Organization has projected that global prevalence of type 2 DM will become more than double – from 135 million in 1995 to 300 million by 2025. Today, India has primary position in the global diabetes epidemiology map as it is the home of nearly 32 million diabetics which is the highest number in the world and this is expected to increase to 80 million by 2030.The National Urban Diabetes Survey in India has shown standardized prevalence of diabetes and impaired glucose tolerance to be 12.4%and 14% respectively with no gender difference. [4]

The global burden of diabetes was estimated to be 154 million in 2000, with a prevalence of 4.2% in the general adult population. There were an estimated 37.76 million diabetics in India in 2004; 21.4 million in urban areas and 16.36 million in rural areas. The estimates for disease burden due to diabetes vary from 23 million in 2000 to 41 million in 2007.[5] According to the recent World Diabetes Congress of the International Diabetic Congress Federation held at Montreal, another eight million cases would be added to the existing diabetes cases in India by 2010 which works to 7% of country's adult population. The Congress noted that by 2030, over 8.4 % of the country's population will suffer from diabetes, due to the increasing life expectancy and urbanization. The prevalence of DM in India is highest in Hyderabad 16.6 % and third highest in Bangalore 12.4 %. [6]

The awareness about the disease and its complications is also less than satisfactory among patients. Only 23% of self-reported diabetics, in a population based sample in Chennai, knew that diabetes could lead to foot problems, while only 5.8% knew that it could cause a heart attack. [7]

In the light of the aforementioned studies and with the personal experience of the investigator, it is found that awareness of diabetes in terms of management is widely spread across the universe through health care and powerful media as well. Thus, the knowledge of self care and life style modifications are attempted to reach the people but the strategy of observing knowledge in the form of practice demands rejuvenation. It can be attained through nursing practice, as nurses are accountable to go a step further to monitor the practice of imparted knowledge. When commitment lacks, knowledge proves meaningless. Therefore , the investigator has taken up this study to explore the extent of commitment and dedication among diabetics towards lifestyle self care management.

Statement of the problem

A study to assess commitment and dedication to lifestyle self care management among patients with type 2 diabetes mellitus attending OPD at General Hospital, Nelamangala, Bangalore.

Objectives of the study

1. Assess the attitude towards lifestyle self management among patients with DM.
2. Assess the commitment towards lifestyle self management among patients with DM.
3. Find out the correlation between attitude and commitment towards lifestyle self management among patients with DM.
4. Explore the association with the scores of attitude and commitment towards lifestyle self management among patients with DM with selected demographic variables.

Methodology

Research methodology

A descriptive survey was executed to describe the commitment and dedication to lifestyle self care management among type diabetic patients.

Population

All patients diagnosed to have type 2 DM.

Sample

A non - probability purposive sampling technique was used

to select the patients.

Sample size

he sample size adopted for the study was 100 patients fulfilling the sampling criteria. The inclusion criteria were type 2 diabetes mellitus male and female patients, and patients who are conscious and oriented. And the exclusion criteria were newly diagnosed diabetes mellitus patients and patients who cannot read/ write Kannada/ English.

Setting

This study was conducted in medical outpatients department at General Hospital, Nelamangala, Bangalore.

Table: 1: Percentage distribution of respondents by selected demographic variables

Characteristics	Category	Frequency	Percent
Age Group	Below 40 Years	6	6.0
	40 - 50 Years	27	27.0
	50 - 60 Years	28	28.0
	60 - 70 Years	34	34.0
	Above 70 Years	5	5.0
Gender	Male	41	41.0
	Female	59	59.0
Marital Status	Married	90	90.0
	Unmarried	3	3.0
	Widow/Widower	7	7.0
Education	No Formal Education	25	25.0
	Primary	28	28.0
	Secondary	18	18.0
	High School	22	22.0
	Graduate	7	7.0
Occupation	Unemployed	51	51.0
	Government	9	9.0
	Private	18	18.0
	Professional	9	9.0
	Others	13	13.0
Type of Family	Nuclear	54	54.0
	Joint	46	46.0
Duration of DM	Below 5 yrs	41	41.0
	5 – 10 yrs	32	32.0
	10 – 15 yrs	16	16.0
	Above 15 yrs	11	11.0
Positive Family History	Yes	41	41.0
	No	59	59.0
Affected Family Member	Father	19	19.0
	Father & Mother	3	3.0
	Mother	19	19.0
	None	59	59.0
Lifestyle Modification	Yes	88	88.0
	No	12	12.0
Information from	Friends/Relatives	86	86.0
	Health Care Providers	2	2.0
	None	12	12.0
Adherence to Treatment	Regular	83	83.0
	Irregular	17	17.0
Frequency of Follow up	1 Month	42	42.0
	2 Months	17	17.0
	3 Months	24	24.0
	6 Months	1	1.0
	9 Months	1	1.0
	1 Year	11	11.0
	2 Years	4	4.0
Belief of DM	Yes	37	37.0
	No	63	63.0
Description of belief of DM	Fate	2	2.0
	Heredity	15	15.0
	Side Effects	2	2.0
	Stress	12	12.0
	Sugar	6	3.0
	No belief	63	63.0

Tool

The tool for data collection comprised of two sections. Section - A consisted of demographic variables and Section - B encompassed modified commitment of lifestyle self management measurement tool developed by Virginie M Zoumenou.[8] The tool contains a total of 67 items. The items for diet and weight control difficulties assessment scale are 36. The responses were assessed using four point scale with 1 being 'strongly disagree' to 4 being 'strongly agree'. High mean scores indicate more dietary difficulties and weight control conditions. And the items for diet and weight control commitment assessment scale are 31. The responses was assessed using five point scale with 1 being 'not strongly at all' and 5 being ' super strongly'. Higher mean scores represent more commitment to dietary and weight control adherence.

Data collection procedure

Written permission was obtained from the higher authorities of the hospital. The respondents were selected using purposive sampling technique. The tool was distributed to the respondents and the completed self reports were collected in an average of thirty minutes. The data collection was done in the month of April 2010.

Findings

Description of the respondents

The demographic variables of the respondents are given in table.1.

Fig: 1: Percentage distribution of respondents by diet and weight control difficulties assessment by each aspects of attitude

Figure 1 depicts the assessment of difficulties of the respondents to diet and weight control. The percentage of respondents who disagreed, agreed and strongly agreed to the aspect of dietary attitude were 5, 86 and 9 respectively; to food and life conditions were 11, 87 and 2 respectively ; and to weight control attitude difficulties were 16, 80, and 4 respectively.

Fig: 2: Percentage distribution of respondents by each aspects of commitment

Figure 2 clearly states the commitment of respondents towards their life style. The percentage of respondents who were dedicated moderately, strongly, very strongly and superstrongly to diabetic diet were 24, 55 , 20 and 1 respectively. The percentage of respondents who were dedicated not strongly at all, moderately, strongly, very strongly and super strongly to weight control were 2, 28, 54, 15 and 1 respectively; and to social support and weight control were 4, 34, 48, 10 and 4 respectively.

Table 2 and 3 reveals the correlation between attitude with each aspect of commitment and commitment with each aspect of attitude. It was found over all there was no correlation except for attitude with one aspect of commitment.

Table 4 and 5 shows there is no association between attitude and commitment with selected demographic variables.

Discussion

Assessment of attitude towards lifestyle self management: It is evident from the findings that in an

Table: 2: Association between attitude with each aspects of commitment.

Variable	Category	Attitude			Chi-square Value
		Disagree	Agree	Strongly Agree	
Dedication to Diabetic Diet	Moderately	2	21	1	4.36 NS
	Strongly	1	52	2	
	Very Strongly	2	16	2	
	Super Strongly	0	1	0	
Dedication to Weight Control	Not Strongly at all	1	1	0	9.36 NS
	Moderately	1	25	2	
	Strongly	2	50	2	
	Very Strongly	1	13	1	
	Super Strongly	0	1	0	
Dedication to Social Support for Weight Control	Not Strongly at all	2	2	0	24.69 S
	Moderately	1	29	4	
	Strongly	2	46	0	
	Very Strongly	0	9	1	
	Super Strongly	0	4	0	

Table: 3: Association between commitment with each Aspect of attitude.

Variable	Category	Commitment				Chi-square Value
		Moderately	Strongly	Very Strongly	Super Strongly	
Dietary Attitude	Disagree	1	4	0	0	1.58 NS
	Agree	19	50	16	1	
	Strongly Agree	2	5	2	0	
Food and Life Conditions	Disagree	1	6	4	0	5.33 NS
	Agree	21	52	13	1	
	Strongly Agree	0	1	1	0	
Weight Control Attitude	Disagree	5	8	3	0	4.62 NS
	Agree	16	50	13	1	
	Strongly Agree	1	1	2	0	

average 90 % of respondents had self reported that they had difficulties to adhere to the dietary and weight control measures. The present study findings is supported with a study that was conducted to determine the points of shortage regarding knowledge and lifestyle pattern of adult diabetics towards diet regimen, weight control, exercise, complications prevention and self management. The findings were the respondents had low levels of self-care practices. [9] Further, the findings are supported by another study that was carried out to evaluate the life style adherence among type 2 diabetics. The results revealed that the respondents did not reach optimal levels, especially for diet, self-monitoring, drug purchasing and adherence to drug taking. [10]

Assessment of commitment towards lifestyle self management: The findings of the present study reveals in an average 29 % of the respondents self reported that they were dedicated moderately and 17 % were dedicated very strongly. This finding is supported with a study which indicated that only 30% of patients reported to be compliant with medications, 37% with dietary advice and 19 % with exercise. They have identiifed non- adherence was more in lower socio-economic group. [11]

Correlation of attitude and commitment: The present study findings revealed there was no correlation except with the aspect of dedication to social support for weight control. Therefore, the findings suggest that attitude and commitment are independent variables.

Association with demographic variables: There was no association with attitude and commitment to lifestyle self management with selected demographic variables.

Nursing implications

- The findings of this study enlarge significant implications in the context of expanded role of nurse through emphasizing and reinforcing the patients to comply with the lifestyle changes.
- The curriculum should encompass the self management skills and coping strategies to help patients adapt such skills to hike their quality of life.

Fig: 1: Percentage distribution of respondents by diet and weight control difficulties assessment by each aspects of attitude

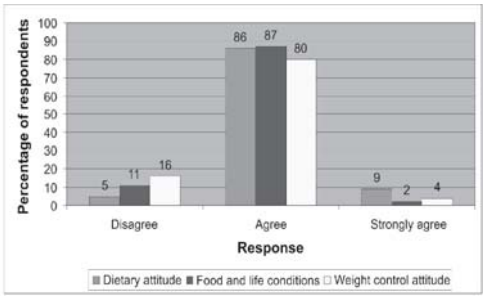

Fig: 2: Percentage distribution of respondents by each aspects of commitment

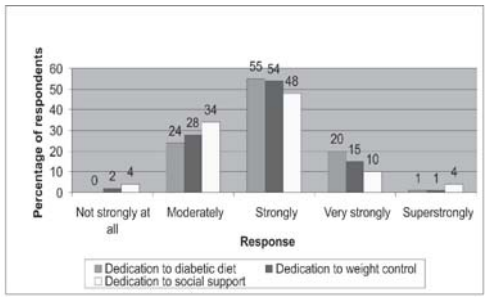

Table: 4: Association between attitude with selected demographic variables.

Variable	Category	Attitude			Chi-square Value
		Disagree	Agree	Strongly Agree	
Age	Below 40 Years	0	6	0	2.12 NS
	40 - 50 Years	2	24	1	
	50 - 60 Years	1	25	2	
	60 - 70 Years	2	30	2	
	Above 70 Years	0	5	0	
Gender	Male	3	36	2	0.79 NS
	Female	2	54	3	
Marital Status	Married	4	81	5	2.02 NS
	Unmarried	0	3	0	
	Widow/Widower	1	6	0	
Educational Qualification	No Formal	1	21	3	6.68 NS
	Education				
	Primary	2	25	1	
	Secondary	1	17	0	
	High School	0	21	1	
	Graduate	1	6	0	
Occupation	Unemployed	3	45	3	4.22 NS
	Government	1	8	0	
	Private	0	17	1	
	Professional	0	8	1	
	Others	1	12	0	
Type of Family	Nuclear	2	50	2	0.88 NS
	Joint	3	40	3	

Table: 5: Association between commitment with selected demographic variables.

Variable	Category	Commitment				Chi-square Value
		Moderately	Strongly	Very Strongly	Super Strongly	
Age	Below 40 Years	1	5	0	0	10.50 NS
	40 - 50 Years	8	14	5	0	
	50 - 60 Years	7	18	3	0	
	60 - 70 Years	5	18	10	1	
	Above 70 Years	1	4	0	0	
Gender	Male	9	24	8	0	0.79 NS
	Female	13	35	10	1	
Marital Status	Married	19	54	16	1	4.39 NS
	Unmarried	2	1	0	0	
	Widow/Widower	1	4	2	0	
Educational Qualification	No Formal Education	8	10	6	1	15.17 NS
	Primary	5	20	3	0	
	Secondary	5	12	1	0	
	High School	4	11	7	0	
	Graduate	0	6	1	0	
Occupation	Unemployed	11	30	9	1	12.55 NS
	Government	0	6	3	0	
	Private	5	10	3	0	
	Professional	0	8	1	0	
	Others	6	5	2	0	
Type of Family	Nuclear	10	32	11	1	1.87 NS
	Joint	12	27	7	0	

- Studies related to non- adherence issues can pave the way to explore resolutions and ultimately curtail the rate of complications.
- Further, the findings of this study contemplate in extending the accountability of supervised practice not only in hospital setting but also to be continued in the community as long as patient adheres to the changes.

Conclusion

Daily physical activities and healthy diets are playing an important role in prevention of diabetes mellitus. However, India will need to also plan for the care of the sizeable number of people with diabetes, in order to prevent and decrease morbidity due to complications. A health system strengthening approach with standards of care at all levels, nationally accepted management protocols and regulatory framework can help in tackling this challenge. This study concludes that respondents though they had knowledge regarding dietary restriction and weight control measures, they do find difficulties to adhere with it, which reflects the poor coping and adaptation towards lifestyle and self management practices. A study finding reveals multiple follow-up booster sessions proved more effective in maintaining lifestyle changes than one counselling session at the end of follow-up. Several behavioral techniques have also been used to improve patients' adherence. Although most of these were found effective in achieving short-term adherence to the dietary regimen the evidence is limited regarding specific strategies that are most helpful, in the context of a structured, tailored metabolic syndrome intervention, for the long-term maintenance of lifestyle changes.[12]

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A philosophy of education in nursing

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Importance of philosophy

Philosophy is not merely a set of theoretical principles, rather it is inherent in an individual's actions [1]. The way an individual pursues a particular activity, is reflective of his or her philosophy. This also holds true for the philosophy of education, particularly in nursing. Philosophy of an educator is depicted in his or her actions within and even outside the classroom.

The purpose of this article is to share with the readers, a particular philosophical approach to nursing education, based on author's experiences. This philosophical orientation to education will enable nursing educators to "learn to teach", since this is the most important job for an educator. The paper begins with a brief overview of the philosophy of education. It further presents the author's philosophy of teaching, effective learning, and certain traits of the educators. It then discusses the philosophical underpinnings of teaching and learning in nursing with reference to interactive teaching strategies, respect for the learners, struggle for learning, evaluation, and quality in nursing education. The paper then presents a vision for higher education in nursing, especially in developing countries. Finally, the paper concludes with a summarization of the notions discussed in the paper.

Philosophy of education

Education is a means to enhance an individual's inherent potentials. It provides the person with a particular approach to life. Though human beings are gifted with the power to think and imagine; however, education brings in creativity in an individual's thoughts and imaginations. Moreover, it quenches the thirst of curiosity. The purpose of education is not only to find the answers that the human mind searches for, but it is also meant to enable an individual to question whatever seems to be unusual [1].

Teaching

Teaching is an interactive process for which there are certain requisites. A teacher who possesses knowledge, skills and an ability to effectively convey his or her knowledge and skills to the learners; a learner who has the desire to learn and who comes with an inherent potential within himself or herself; and an environment that promotes learning [2]. A lag in any of the three requisites will lead to issues with the teaching process. My belief on the notion that all the learners have a potential to learn that can be built on, implies that teaching is not an act of filling the empty containers (learners) with knowledge, rather it's an act of nurturing and enhancing the skills that the learner is already equipped with [3].

Effective learning

Effective learning takes place when the learner not only becomes familiar with the learnt concepts, but is also able to apply those concepts well. Effectiveness of learning largely depends on the efficacy of teaching; however factors like learning environment, enthusiasm and interest of the learner, as well as learner's learning style also affect learning. Hence, in order to enhance an individual's learning, the learner should be passionate about the content being taught, the learning environment should be calm and free from interruptions, and the teaching learning methods should match with the learner's learning style [4].

Educators' Traits

Devotion

Teaching is an intense job that requires great deal of commitment and dedication. The educator's work does not finish at the end of a teaching session; there is a lot more that is expected of a teacher, to be done before and after the class. This implies that an educator has to be well prepared for the class, which requires much preparation before the class. Additionally, an educator is responsible to provide critical feedback on the students' work, so that they may improve. The author strongly believes that the educator is not only responsible for cognitive development of the learners, but he or she is also responsible for their moral and emotional development. This requires a great deal of work from the educator's side. With all these responsibilities, one of the moral responsibilities of a teacher is to reflect on the proceedings of the class, for continuous improvement. The educator is able to fulfill all these responsibilities effectively if he or she is completely devoted to the profession.

Self-Reflection

It is believed that self-reflection is extremely important for a teacher. This belief is based on the assumption that there are always chances of improvement with respect to the teaching learning process. Self-reflection provides the educator with an opportunity to reflect onto his or her current teaching practices, and to improve those if needed. For a teacher to become a reflective practitioner, it is important that the teacher is open minded enough to accept the fact that his or her existing practices may be erroneous and may need to be critically reflected upon.

Teaching and learning in nursing

Teaching and learning in nursing is somewhat different than the general education, due to the kind of learning which is required in nursing. For a nursing student, it is essential to acquire the scientific knowledge, the creative skills, and the professional values, all together. Therefore a nurse educator has to impart the knowledge, skills, and the values to the learners. This puts up a great deal of responsibility on the nurse educator because development of the above mentioned essentials, requires the use of different strategies. Hence, a nurse educator has to be knowledgeable, skillful, and should be able to instill the values of care and concern in the learners. Knowledge and skills alone, without values do not serve the

purpose. This belief of the author comes from her personal experience of being a student of some of the great teachers.

Interactive Teaching Learning Strategies

Teaching learning strategies employed in the classroom should be interactive. Whether the interaction is between the educator and the students, or it is among the students, it offers much more learning and generation of critical ideas than the individual learning. Interaction promotes ability in the students to either agree to or constructively critique the other's point of view. Thus it is a means to enhance students' self reliance. Moreover, in an interactive class, the students have an equal responsibility to prepare for the class as the teacher does; this instills a sense of responsibility in the students, and is a means to enhance their self-esteem. Incorporation of interactive teaching strategies becomes increasingly important in nursing education, whereby we aim at transforming our students into nursing professionals who can think critically, can present their point of view and can constructively critique other's, and who are responsible.

Respect for the Learners

Respect for the learners is one of the most important essentials of teaching learning process. This implies that the educator should respect the individuality of each student. Nowadays, students from diverse backgrounds come together to study in educational institutions, especially in nursing schools and colleges. I believe that an educator should respect the background and the culture that each student brings in the class. Educator's respect for the students' individuality positively influences the relationship between the educator and the student. The author's personal experience depicts that those educators who respect their students' uniqueness, are better able to make an impact for the students.

Struggle is Important for Learning

A certain level of struggle is important for learning [5]. By struggle, I mean the intense work done by the learner in order to learn. The author strongly believes that the rigorous work done by the students, in turn enhance their learning. It has been observed that in an effort to show compassion to their students, some teachers try to ease out the learning process to an extent, that the rigor of the process is lost [5]. It is important that learners should be dealt with care and compassion; however, they should not be stopped from struggling because struggle for learning results into their intellectual growth. Moreover, in a profession like nursing, struggle and hard work is required during the nurses' entire professional career; therefore, it is essential for the nursing students to have a flavor of this struggle in their student life so as to be prepared for the future professional challenges.

Evaluation

Evaluation is not to rank the students in order of their capabilities, neither it is to identify the best product for the job market. In its true sense, evaluation is a means to assess the depth of students' learning experience [6]. Thus, my philosophy of evaluation implies the use of such assessment methods that evaluate students' learning experience completely, rather than just assessing the cognitive experience through paper pencil tests. Evaluation in nursing education particularly requires the use of such methods that assess students' understanding and application of the phenomenon in practical setting. Also, some form of control should be given to the students in terms of evaluation, for instance in the form of peer or self evaluation. Evaluating oneself or the peers gives a sense of accountability to the students, as well as enhances their confidence.

Quality Nursing Education

Quality in education is achieved when the society's, employer's as well as learner's own expectations are met [8]. Similarly, for quality nursing education, input from the local public, hospital administration and from the nursing students is important. However, it is not always possible for the educator to meet all those expectations; infact, sometimes if those expectations are overemphasized then the quality of education might suffer. Hence, through the years of experience, the educator knows that what comprises quality education. Society's, employer's and learner's opinion is important to be considered; however, the educator has to make a critical and wise decision as to what will bring quality in education.

Higher education aims at producing change agents

Higher education is aimed at producing change agents. Graduates of higher education in nursing should be educated and trained in such a way that they should be able to bring about changes in the society, where necessary. Educators involved in higher education should try to include "social and national relevance" in the educational objectives and content [7]. This holds true, especially for higher education in nursing in developing countries. As in our context, double burden of diseases prevail, that is, communicable diseases and non-communicable diseases; therefore, it is essential that nurse educators emphasize on these contextual issues in higher education programs. Additionally, development of critical thinking skills and assertiveness should also be promoted by the nurse educators, in higher education, as these skills are essential to bring about change in the society.

Conclusion

In conclusion, nurse educator should appreciate the inherent potentials of the learners and try to flourish those potentials. He or she should also respect the individuality of each student, and must be compassionate towards the students; however he/ she should not forbid them to struggle, as struggle is important for learning. Nurse educators should also try to make teaching as much interactive as possible and should give the students some control over the teaching learning process. Finally, they must be reflective practitioners so as to ensure continuous improvement in their teaching. Continuous improvement in nursing education will help us achieve quality by producing clinicians and educators that meet the requirements of the health care system of developing world.

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Innovations and efficiency in nursing profession

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Nursing is a highly skilled profession and an integral part of medical sciences and services. It is a blend of science and technology with the art of caring and compassion. The unprecedented developments that are taking place in medical sciences; technology have made the profession of nursing to work in an environment that is constantly changing to provide the best possible care for patients. The complexity of technology has a bearing on the efficiency of nurses.

In the past, physicians, nurses and other health care providers had time to conduct round table discussions on the job. Today, the fast paced and complex health care arena requires a more formal educational and competency based teaching model.

Much has changed in the profession of nursing through the years, and change will continue.

Unfortunately, the system we have today is not helping nurses to acquire themselves at least basic knowledge and skill to use nursing technology efficiently. Further, although with the advent of Health University nursing education is finding its own identity and we are yet to structure and frame the up to date syllabus.

In the light of the above I would like to observe we do not give an opportunity for the nurses to refresh themselves and orient to the latest development. Therefore I strongly feel that the university and Councils should conduct refresher as well as orientation courses periodically and help nurses to familiarize and acquire the knowledge about innovations. VIZ, latest machines, techniques and skills in the stand.

In order to know the views of the practicing nurses about the innovation and issues involved, the author conducted a small empirical study. This paper is based on the findings.

Nursing education and research must become more internationally focused to disseminate information and benefit from the multicultural experience. The increase in lifesaving technology has extended both the length and quality of life for patients. So, keeping up with the latest in the medical and nursing sciences is essential.

Notwithstanding the significant developments in the field of nursing technology, many hospitals have not upgraded the same. Further, nursing curriculum also has to incorporate developments. As a result, the status-quo continues to prevail in the profession. It was in this background this paper is conceived.

Objectives

1. To understand the development of nursing technology during the last 25 years
2. To ascertain the latest trend in the technology by making a comparative analyses of it in 1980 and 2010
3. To understand the impact of latest nursing technology on the nursing profession.

The above objectives are intended to be realized by collecting primary data on the latest nursing technology from reputed sophisticated hospitals.

Methodology

This paper is based on both primary and secondary data. The primary data were collected from 100 serving nurses in the hospital of Bangalore. These nurses were chosen with purposive sampling method. In order to obtain comparative perspective it was decided to choose 50 nurses having more than 20 years of service. Similarly in order to seek the opinion of youngsters and another 50 nurses having less than 5 years of service were chosen. It is focused this exercise will help us to capture the development of the nursing technology during the last 25 years. The data were collected with the help of structured questionnaire simple statistical diagrams have been used to present the data cogently and subject them for simple statistical analysis.

Importance of the study

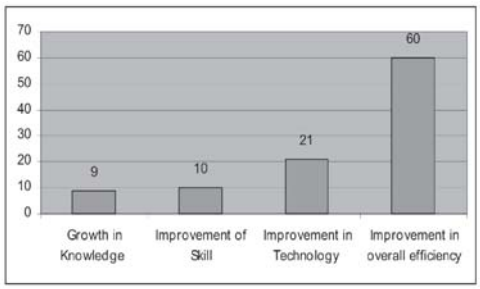
Nursing education is climbing new heights with each day. With the unprecedented increase in the number of patients the demand for nurses and their service is also on the rise. Technological inventions and innovations have dramatically changed the nature and quality of nursing sciences. Academicians in the field of nursing education are deeply involved in research and discussion on improving the technology as well as passing it to the practicing nurses. A micro study like the present one is hoped to contribute the necessary information to the larger pool.

One of the main object of this paper as stated earlier is to obtain a picture of developments in nursing knowledge and technology. This was the star question put to our respondents.

Table 1: What are the significant developments which have taken place in the profession?

Sl. No.	Responses	No.	%
1	Growth in Knowledge	09	09%
2	Improvement of Skill	10	10%
3	Improvement in Technology	21	21%
4	Improvement in overall efficiency	60	60%
	Total	100	100%

Graf 1:

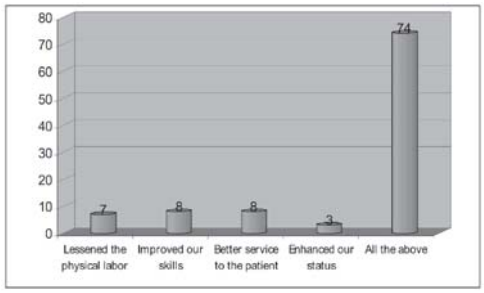


It is seen that an overwhelming percentage (81%) of the respondents have admitted that the last quarter of this century has witnessed significant development in nursing technology. They have cited new inventions in the area of infection control (IC), and Methicillin Resistant Staph Aureus (MRSA). Recording and monitoring it and computerized instruments. The remaining 20% of respondents have also acknowledged that the research in the area of this profession has enriched the knowledge and skill. In essence it could be safely stated that

Table 2: How has technology helped the profession?

Sl. No.	Responses	No.	%
1	Lessened the physical labor	07	07%
2	Improved our skills	08	08%
3	Better service to the patient	08	08%
4	Enhanced our status	03	03%
5	All the above	74	74%
	Total	100	100%

Graf 2:



technology has changed and replaced the equipments which once nursing used.

The author also wanted to know the impact of the technological innovations on nursing profession. The respondents were asked to identify the area of positive impact. An overwhelming majority of (74%) respondents have admitted with pleasure that the technological innovations have:

- Lessened the physical labor.
- Improved their skills.
- Enabled them to render better service to the patients.
- Reduced their anxiety.
- Enhanced their status.

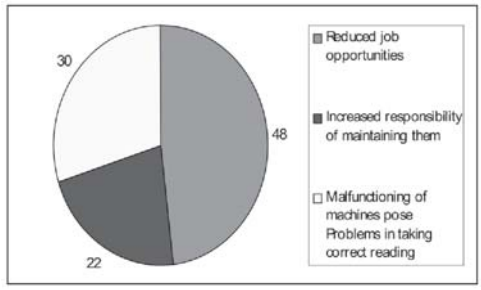
The respondents were also asked to identify and suggest areas which need improvement and also the necessity of introducing new technology. Majority of them have felt that the technology in areas like Orthopedics, Psychiatry, Neurology, Burns, Midwifery need to be improved

It is well known that revolution in the field of technology has

Table 3: Are there any adverse impact of technology on the Nursing profession?

Sl. No.	Responses	No.	%
1	Reduced job opportunities	48	48%
2	Increased responsibility of maintaining them	22	22%
3	Malfunctioning of machines pose Problems in taking correct reading	30	30%
	Total	100	100%

Graf 3:



become both a boon and curse in almost all the walks of life and profession. The area of nursing profession is not an exception. It is revealed from the above table that our respondents (48%) opine, that the latest nursing technology is robbing job opportunities and another 22 percent have felt that maintaining and keeping some machines in good condition has become an added responsibility for their profession. In addition to this defective machines giving out wrong reading pose problems to nurses in monitoring the condition progress of the patient. In addition they felt that, the instruments which emit lesser intensity radiation as hazardous to their health.

Conclusion

This small research helped the researcher to understand and compare the level of knowledge about the latest development in nursing technology among our respondents who belong to two different generations. It was found nurses belonging to younger generations found to have more knowledge about the latest technology when compared to older counterparts. Therefore the author wishes to suggest that the hospital authorities should make arrangement to hold capacity building program for the nurses periodically. Such program should focus on introducing and exposing nurses in the profession to the latest inventions and innovative. As an academician nursing councils of the entire states suit regularly update the syllabus by incorporating modern nursing technology.

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Normal saline instillation with suctioning and its effect on oxygen saturation, heart rate, and cardiac rhythm

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Abstract

Background

Although the researches indicated disadvantages of using normal saline (NS) before suctioning, it still used by nurses in many Iranian critical care units.

Aim

The purpose of this study was to determine the effect of NS instillation on multiple trauma patients' oxygen saturation, heart rate and cardiac rhythm.:

Setting and design

A cross-over design was used to allow sample to be as their own control. This study was approved by Kerman Medical University.

Methodology

50 multiple trauma patients who were admitted in intensive care unit and mechanically ventilated for at least 24 hours were randomly assigned to suctioning with or without NS. Surveyed parameters were measured and recorded at intervals of 1, 2, and 5 minute before and after suctioning by standard monitoring apparatus. EKG tapes recorded initiate 5 second before suctioning and continue during suctioning approximately 20 second.

Statistical anlysis

A Kolmogorov-Smirnov test indicated that the data were sampled from a population with normal distribution. The comparison between the two groups in three measured factors was done using a descriptive analysis, and independent t-test, and cross table with chi-square test.

Results

Oxygen saturation in both groups was changed. In group 2(with NS), there was a decrease in oxygen saturation, whereas in another group, except at interval of 1 minute, there was an increase in oxygen saturation. This difference was statistically significant. In both groups, heart rate was increased after suctioning at three intervals. In both group there was not found dangerous arrhythmia .

Conclusion

This study suggests that instillation of NS before suctioning can cause adverse effect on oxygen saturation but has no effect on heart rate and cardiac rhythm. It seems that Iranian nurses believed that using NS have positive effects on suctioning. Such an attitude could be changed by some educational programs by which nurses can improve their knowledge about disadvantages of using NS with suctioning; and become aware of the strategies they can use to qualify suctioning.

Keywords

Intubated patients, Normal saline instillation, Heart rate, Oxygen saturation, cardiac rhythm.

Key massage

Normal saline instillation before suctioning can be harmful.

Introduction

Our respiratory system provides us with the fundamental ability to breath: to inhale and exhale air from our lungs.When oxygen and carbon dioxide exchange is not maintained at an adequate level, respiratory insufficiency results.[1] In such patients, management of the airway to ensure optimal ventilation and oxygenation is necessary.[2] Although initial efforts should be directed toward improving oxygenation and ventilation without intubation of the patient , using artificial airways become inevitable whenever patient' respiratory system is not naturally able to provide adequate oxygenation and remove carbon dioxide.[3]

The maintenance of the airway [3, 4, 5] and removal of pulmonary secretions are accomplished by suctioning.[4, 3] Suctioning has been associated with potential complication such as: hypoxemia, cardiac dysrhythmia, cardiac arrest, respiratory arrest, bronchospasm, increased bronchial mucous production, increased intracranial pressure, patient's anxiety and fear, and death.[2] Eliminating the side effects of suctioning and facilitating the removal of secretions is of prim importance. To meet this need, nurses routinely instil 3 – 10 ml of NS solution into air way prior to suction. They do this for some reasons such as: facilitating the clearance of secretions, stimulating cough reflex, liquefying the secretions, and lubricating the suction catheter. Normal saline (NS) has been widely used in acute care settings during endotracheal and tracheostomy suctioning. [6] Lacking empirical evidence to support this practice, nurses may arbitrary decide when instillation of slain is appropriate. [7]

Several researches were done to examine NS instillation's effects on patients' hemodynamic and oxygenation. Akerman,[8] Akerman & Mick,[9] Ji et al.,[7] and Ridling et al., [10] found that instillation of NS before suctioning could have an effect on oxygen saturation. The others reported that NS may dislodge viable bacterial from a colonized endotracheal tube into the lower airway.[11] The research of Lerga et al.,[12] indicated that arterial oxygen pressure was significantly different between two groups of suctioning (with and without NS). Shorten et al., [13] reported that NS instillation has no effect on heart rate and blood pressure. Results of study of Akgul and Akyolcu [4] indicated that instillation of NS was associated with change in heart rate 4 to 5 minutes after suctioning.

Although the researches indicated disadvantages of using NS, it still used by nurses in many Iranian critical care units. It seems that it becomes like an attitude among Iranian nurses that using NS have positive effects on suctioning. Changing

this attitude needs more empirical research to emphasize on disadvantages of using NS with suctioning. This study thus was conducted to examine the effect of NS on multiple trauma patients' oxygen saturation, heart rate and cardiac rhythm in an ICU.

Subjects and method

A cross-over design was used to allow sample to be as their own control. This study was approved by Kerman Medical University and the head of Shahid Bahonar Hospital in Kerman. The sample was 50 multiple trauma patients who were admitted in intensive care unit and mechanically ventilated for at least 24 hours. The sample cases were randomly divided into two groups. Each group was its own control. The subjects were aged between 18 to 45 years. They had no history of heart and lung disease.

A component monitoring system (ER-630 S) was used to monitor oxygen saturation and heart rate. EKG tapes were read and interpreted by a cardiologist.

The sample were randomly assigned to suctioning without (group1) or with NS (group2). In both groups, patients were given oxygen %100 for 1 minute, and disconnected from ventilator. The suctioning then was done for 10 to 15 second (depend on patient's need). In group 2, 5 ml sterile NS solution was instilled in endotherachel tube exactly before suctioning. After suctioning, both groups were again given oxygen %100 for 1 minute. The time between two endotracheal suctioning was 2 hours. In case, patient needed suctioning earlier than 2 hours, he/she was dropped from study. The size of the suctioning catheter was half the diameter of the endotracheal tube. Actual catheter sizes were from 8F to 14F. Catheter depth was measured, and the catheter was inserted no more than 1 cm beyond the end of the endotracheal tube. Suction was set at 80 to 120 mm Hg. Patients received suctioning until the tube was clear. Suctioning was performed by staff nurses and researcher according to standard protocol. Surveyed parameters were measured and recorded at intervals of 1, 2, and 5 minute before and after suctioning by standard monitoring apparatus. EKG tapes recorded initiate 5 seconds before suctioning and continue during suctioning, approximately 20 seconds.

A Kolmogorov-Smirnov test indicated that the data were sampled from a population with normal distribution. The comparison between the two groups in three measured factors was done using a descriptive analysis, and independent t-test, and cross table with chi-square test.

Results

Of the patients included in this study, % 76 was men and %24 was women. The mean age of patients was 3o.7 years. Oxygen saturation in both groups was changed. In group 2(with NS), there was a decrease in oxygen saturation, whereas in another group, except at interval of 1 minute, there was an increase in oxygen saturation. This difference was statistically significant (table 1).

Table 1: Changes in mean oxygen saturation in two groups

Record Time	Suction with instillation NS	Suction without instillation NS	P</05 between two group
1 minute	-1.37	-0.7	0.008
2 minute	-0.28	+0.12	0.031
5 minute	-0.20	+0.26	0.008

In both groups, heart rate was increased after suctioning at three intervals. The amount of increase in group 2 was more than that in another group. However, the difference between two groups at three intervals was not significant (table 2).

In both group there was not found dangerous arrhythmia. In all cases, 29 tachycardia and 29 bradycardia occurred. In 56 cases, no change in cardiac rhythm was found. In group 1, 11 bradycardia and 16 tachycardia were found. In another group, 4 bradycardia and 13 tachycardia was seen (table 3). The incidence of bradycardia between two groups was statistically significant different (p=0.03).

Table 2 : Change in mean heart rate between two group

Record Time	Suction with instillation NS	Suction without instillation NS	P.value
1 minute	12.98	11.98	0.654
2 minute	7.82	6.26	0.426
5 minute	3.34	2.68	0.512

Table 3: Incidence of arrhythmia

Type of arrhythmia	Suction with instillation NS	Suction without NS	P value
Tachycardia	13	16	0.07
Bradycardia	4	11	0.03

Discussion

The purpose of this study was to determine the effect of NS instillation on multiple trauma patients' oxygen saturation, heart rate and cardiac rhythm .According to the findings, endotheracheal suctioning with instillation of 5 ml NS solution can cause more decrease in oxygen saturation than that in suctioning without NS instillation. Our finding is consistent with earlier studies.[8, 9, 10] Lerga et al., [12] also reported that arterial oxygen pressure and consequently oxygen saturated decreased after suctioning with NS. The decrease in oxygen saturation could be related to the instillation of NS in the endotracheal tube. It means that suctioning removes about 10.7% and 18.7% of secretions, so the rest of NS and mucus in the endotracheal tube may decrease the radius of the airway, resulted in an increase in airway resistance. The more airway resistance, the more effort patient needs to overcome this resistance in order to achieve adequate tidal volumes and oxygenation. This may lead to a decrease in oxygen that lung should accesses to it for gas exchange [14] and it can finally cause oxygen de-saturation.

Our finding also showed that in both groups there was an increase in heart rate. The amount of increase in group 2 (suctioning with NS) was more than that of in another group. However, heart rate was not significantly different between two groups at three intervals. This can be supported by the others, where they found no change in heart rate among two groups (with and without NS).[9, 13,15] Inconsistently, Akgul and Akyolcu [4] concluded that in suctioning using NS, there was an increase in heart rate; when NS was not used, there was no increase. They reported a statistically significant difference between two groups. They described that NS is a source of stress for patients and resulted in an increase in heart rate after the procedure.[4] Change in heart rate could be related to the method of suctioning. It means that if nurses perform

suctioning according to standard protocol, no change in heart rate would be occurred.

Based on the findings, the incidence of dysrhythmia was different between two groups. In the literature review, no previous study was found to support this finding. The incidence of dysrhythmia in group 1 was more than that of in group 2. This difference possibly is due to the time of suctioning which was different between two groups. Obviously, in group 1 the time of suctioning was more than that in group 2. In group1, when nurses did not use NS, the amount of secretions was less than that in routine suctioning (suctioning with NS). Therefore they increased time of suctioning to remove more secretions. The longer they suction, the more stimulation of vague nerve, and consequently the more incidence of dysrhythmia. Anyhow, they were not satisfied of doing suctioning without instillation of NS.

This study suggests that instillation of NS before suctioning can cause adverse effect on oxygen saturation but has no effect on heart rate and cardiac rhythm. As it said before, it seems that Iranian critical care nurses believed that using NS have positive effects on suctioning. Such a belief could be changed by some educational programs in which nurses can improve their knowledge about use of NS with suctioning, and its disadvantages. Probably the main cause of using NS with suctioning is loosening the secretions. Nurses should be aware of other strategies to loos secretions such as ensuring airway heat and humidity, paying attention to patient hydration status, using mucolytic therapy, and nebulizer treatment.[16]

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Child hood obesity: A global nutritional concern

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Introduction

Obesity is a major public health problem and is associated with many complications. The terms obesity and overweight are often used interchangeably, but they refer to different conditions. Over weight is an increase in body weight compared to the height compared with a reference standard whereas, obesity refers to the excess body fat[10]. Obesity is one of the major causes for chronic diseases in adults, which poses a threat to the global health. Child hood obesity is now becoming a global nutritional concern as the prevalence and its outcome has drawn the attention of the health sector. Healthy people 2010 agenda addresses the need to reduce the proportion of children and adolescents who are obese. The problem of child hood obesity has become one of the major concerns of India. The epidemic of obesity parallels with the problem of under nutrition and infections in India, there by creating a greater burden of nutrition related ill health among the children[5].

Definition

Childhood obesity is a condition where excess body fat negatively affects the child's health or well being19. According to Center for Disease Control obesity is defined as a body mass index of greater than the 95 th percentile with the BMI >30[5].

Prevalence

The prevalence of over weight among children between 6 to11 years of age increased from 4% to 10% in the past 30 years[13]. Research has shown that approximately 80 % of children who were over weight between the age of 10 to 15 years were obese adults at age of 25 years and 25 % of obese adults were obese as children, and from 1980 to 2006, in India obesity rates have increased in adolescents as well as elementary school children, i.e. between 6 to 11 years, doubled from 6.5 % (1980) to 17 % (2006) and in adolescents (12 to 19 years) it is 5 % (1980) to 17.6 % (2006) [5]. Study which was done in Delhi reveals that there was a difference among prevalence of over weight in school children which differed from urban (37.5 %) and rural (8 %). The obesity rates were higher in upper economic class (17.2 %) than in lower economic class (4.8 %)[1].

Risk factors

Childhood obesity is the result of an interaction between food, state of mind, family and the environment. Factors such as increased calorie intake, inactivity, low socio economic status and familial factors such as maternal obesity or obesity in one or both parents pose a risk to the children[18]. The common factors which contribute to child hood obesity are discussed below:

Dietary

According to Campbell[4] traditional micro nutrient rich foods are being replaced by energy dense processed foods (snacks) like burgers, pizza, noodles, cold drinks and fruit drinks, those has high in fat, sodium, sugar, and calories. Fats are consumed in the form of spreadable cheeses, butter and ice cream and the participants were unaware of the food portions and they were found to be using a "big cup" or "big plate" for food, and students reported that the plain drinking water does not give them energy to travel to school, which was the reason for drinking beverages. The children replacing their meals with snacks were significantly higher in obese and over weight[1].

Sedentary life style

Physical inactivity of children is also shown to be a serious cause. Many children fail to exercise because they spend time by watching television, playing video games and using computers. Increase in the energy intake with decrease in energy expenditure due to decreased physical activity or increased sedentary behaviors result in significant changes in the body weight. Due to intense academic competition to perform better at school, children are hardly seen at the play ground [2].

Environment

Environment plays major role in food pattern of the child. Home and school environment has turned to be toxic for the children[11]. In most houses food is prepared based on the choices of the child and parents do not have control over the child's food pattern. Parents tend to allow their children to consume foods that were low cost, convenient, and child's favorite rather than focus on healthy food[4].

Heredity

Heredity has recently been shown to influence fatness, regional fat distribution, and response to overfeeding. In addition, infants born to overweight mothers have been found to be less active and to gain more weight by age three months when compared with infants of normal weight mothers, suggesting a possible inborn drive to conserve energy[18].

Developmental factors

Various developmental factors affect the rate of obesity. One of the factors is lack of breast feeding. According to Sloan, Gildea, Stewart, Sneddon and Iwaniec early weaning is related to rapid weight gain in infancy which may have implications for childhood obesity[16].

Medical illness

Some of the medical illnesses such as injury to hypothalamus, Cushing syndrome, hypothyroidism, growth hormone deficiency and cerebral palsy contribute for child hood obesity[3].

Psychological Factors

Emotional factors such as stress, low self esteem, feeling bored, feeling nervous, feeling of depression and the child with antidepressants also could be the cause for child hood obesity. Researchers provided a depression questionnaire to 487 overweight/obese subjects and found that 7% of those with low depression symptoms were using antidepressants and had an average BMI score of 44.3, 27% of those with moderate depression symptoms were using antidepressants and had an average BMI score of 44.7, and 31% of those with major depression symptoms were using antidepressants and had an average BMI score of 44.2[19].

Socioeconomic status

The low cost of widely available energy dense but nutrient poor foods has affected the children belonging to the lower socioeconomic class[17].

Medication

Consumption of drug such as corticosteroids, estrogens and antiepileptics has been identified to promote obesity among children and adolescents[15].

Effects of obesity

Obesity affects the mental, physical and social health of a child. It reduces the life span of an individual. The first problems to occur in obese children are usually emotional or psychological. Childhood obesity however can also lead to life-threatening conditions including diabetes, high blood pressure, heart disease, sleep problems, cancer, and other disorders. Table 1 reveals the effect of obesity on health.

Table 1: Effect of obesity on health (Source: Wikepedia, 2010)

System	Condition
Endocrine	Impaired glucose tolerance
	Diabetes mellitus
	Metabolic syndrome
	Hyperandrogenism
	Effects on growth and puberty
Gastrointestinal	Nulliparity and nulligravidity
	Nonalcoholic fatty liver disease
	Cholelithiasis
Musculoskeletal	Slipped capital femoral epiphysis (SCFE)
	Tibia vara (Blount disease)
Psychosocial	Distorted peer relationships
	Poor self esteem
	Anxiety
	Depression
Cardiovascular	Decreased school attention
	Hypertension
	Hyperlipidemia
	Increased risk of coronary heart-
	disease as an adult
Respiratory	Obstructive sleep apnea
	Obesity hypoventilation syndrome
Neurological	Idiopathic intracranial hypertension
Skin	Furunculosis
	Intertrigo

Management

Pharmacological and non pharmacological measures are taken to treat child hood obesity.

Pharmacological management

Drugs are recommended to reduce the weight in children. It helps in preventing the absorption of fat in the intestine (eg., Orlistat) and decreasing the appetite (eg., Sibutramine). Hearnshaw and Matyka have reported that Sibutramine and Orlistat are beneficial in the reduction of BMI[8].

Non pharmacological management

Adoption of healthy behaviours and practices help in reducing the body weight among the obese children. The measures are aimed at reducing the energy intake and increasing the fat burning. Some of the measures used are given below:

Life style modification

Life style modification of the mothers help in managing and preventing childhood obesity. One of such life style changes is exclusive breast feeding for all new born infants up to six month. Several meta analysis have shown that breast feeding protects against obesity at later life[7]. Childhood obesity can be actively managed by the tips given in box 1.

Box 1:Tips to reduce weight

Tips to reduce weight

- Avoid high fat food
- Eat more fruits and vegetables
- Avoid frying the food instead grill or bake it
- Avoid drinks that are high in sugar
- Reduce soft drink intake
- Take healthy and nutritive breakfast
- Take meals at regular intervals
- Avoid eating while watching television or while doing home work
- Eat only when there is hunger
- Chew food well
- Encourage out door games such as foot ball, cricket etc
- Encourage walking or use of bicycle instead of driving
- Choose water over sugary beverages
- Include fruits and vegetables at each meal
- Spend one less hour / day in front of television or computer
- Play game with the parents at least three times a week

Diet therapy

Emphasis should be made on nutrition than dieting. The correct proportion of nutrients needs to be identified using the nutritional pyramid. Traditional diets such as fruits, vegetables and whole grain cereals should not be ignored. Obesity occurs less often in people who eat plenty of fiber. When people eat low-density foods that have lots of fiber, they feel full sooner, and consume fewer calories[6].

Physical activity

Increasing the physical activity in children will aid in burning

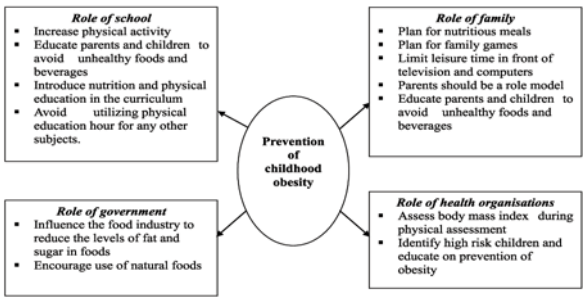
the fat tissues. Regular exercise decreases fatty tissue, reduces stress, strengthens heart, increases energy level and increases the bone density in obese children[14].

McBride has recommended that children who meet the definition of obesity be referred to intensive weight management programs which include counselling for weight loss, a physical activity program and behaviour management counselling[12].

Prevention

As child hood obesity is a public concern, it is important for the family, school, and government to take major role to prevent it. It is the responsibility of each parent to take active measures in preventing and treating childhood obesity as it is a threat for a healthy family. Children spend most of their essential time at school and the teachers play an important role in their life style modification. School creates a greater impact on the inculcation of values and behaviours and the personality development. Government has a greater role to play, as it has the control over all the other agencies. When Mrs. Obama, the first lady of the United States of America introduced "Let's Move" in February 2010, she outlined the campaign's central anti-obesity strategies. These include revamping the nutritional labeling of products by the US

Fig. 1: Role of various agencies in the prevention of childhood obesity



Department of Agriculture, improving the nutritional standards of school lunches, increasing opportunities for children to engage in physical activity and improving access to high quality foods throughout the country. Figure 1 depicts the contribution of each agency in the prevention of obesity among children.

Although government has an important role to play in the prevention of childhood obesity, it is solely the responsibility of the parent and the individual child himself or herself to take active measures to prevent it. Conscious effort must be taken by the parent to inculcate healthy behaviours and life style practices to enable the child to live a healthy life.

Role of a nurse

Nurse, as a part of the health organization has a major role to play in the prevention of childhood obesity. Whether in the hospital or in the community, educating the parents and older children on prevention of childhood obesity is one of the primary responsibility of the nurse. The nursing management of an obese child based on the nursing process approach is discussed below[9]:

Nursing management

1. Nursing diagnosis: Imbalanced nutrition: More than body requirement related to excessive intake of food

Outcome identification: Excess food intake is minimized as evidenced by taking a well planned diet according to the requirement

Nursing interventions

- Assess the dietary intake using 24 hours recall and food diary
- Assess the normal requirement of daily calories
- Plan a balanced diet according to the daily requirements
- Encourage intake of high fiber diet
- Encourage intake of more fluids
- Educate to avoid commercial foods
- nsist to avoid eating food while watching television

Evaluation: Child takes food according to the daily requirement.

2. Nursing diagnosis: Activity intolerance related to fatigue secondary to excessive weight

Outcome identification: Child performs the normal activities of daily living (ADL) as evidenced by verbalization of less fatigue while carrying out ADL

Nursing interventions

- Assess the ability to perform the ADL
- Assess the level of fatigue and the activities which contribute to the same
- Plan for physical activities at regular intervals
- Consider the child's preferences in selecting the activity
- Encourage to take periods of rest
- Provide incentives for active participation
- Encourage support and positive strokes by the parents and the family members

Evaluation: Child shows interest and enthusiasm in participating in the physical activities and needs less support from parents and others in carrying out the activities of daily living.

3. Nursing diagnosis: Disturbance of self image related to the physical appearance

Outcome identification: Self image is improved as evidenced active socialization

Nursing interventions

- Assess the child's perception about the self image
- Ensure support from family members and friends
- Provide guidelines to reduce weight
- Encourage use of dresses which will improve the appearance

Evaluation: Child engages in social activities and does not express negative feelings about his/her body image

4. Nursing diagnosis: Knowledge deficit regarding prevention of obesity related to lack of information

Outcome identification: Parents / child verbalise understanding of ways to prevent child hood obesity and take active measures to reduce weight

Nursing interventions

- Assess the parents'/child's knowledge about management of obesity
- Plan for regular physical activities to reduce weight
- Plan a balanced diet according to the child's requirement

and ensure strict adherence to it
- Monitor the weight daily
- Educate on avoiding foods which will contribute to weight gain

Evaluation: Parents/child understands the ways to reduce weight and takes active measures to prevent further weight gain

5. Nursing diagnosis: Risk for complications related to excess deposit of fat in the body

Outcome identification: Complications are prevented as evidenced by absence of signs and symptoms of complication Nursing interventions
- Assess the parents' / child's knowledge about complications related to obesity
- Monitor for signs and symptoms of complications such as obstructive sleep apnoea, diabetes mellitus, cardiovascular compromise and depression
- Provide supportive care in implementing the weight reducing program
- Appreciate and encourage weight loss
- Educate on early identification and prompt reporting of complications

Evaluation: Child does not manifest any signs or symptoms of complications

Conclusion

Because of the significant potential consequences of child hood obesity, effective strategies should be implemented to prevent and decrease child hood obesity and to ensure better quality of life for children. Health care providers must recognize the association between child hood obesity and adult hood obesity and work to break the cycle of obesity before it becomes the leading cause of mortality in India.

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IEC strategy in knowledge on protein energy malnutrition among mothers of underfive children in a South Indian Village

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A study was conducted to assess the effectiveness of IEC strategy in knowledge on PEM among mothers of under five children at selected Village in Kancheepuram District, South India.

A Nation's health depends on a healthy citizen. A healthy adult emerges from a healthy child. Nutrition is essential for the quality and strength of the child's foundations. In the new millennium, India faces the burden of diseases, in which PEM is a major nutritional problem. The proportion of underweight, stunting and wasting among under five children have been reported that was 47%, 45% and 16% respectively at the national level (NFHS III-2005).

In India PEM is associated with web of factors including insufficient food intake, low socio economic status, poor dietary habits, faulty weaning practices, frequent infections, ignorance, family size etc.. Gross malnutrition is said to kill around 5, 00,000 of our infants and children every year (WHO 2007).

Need for the study

There are 170 million underweight children globally, 3 million of whom die each year as a result of being under weight. In Tamil Nadu, 60 % of the under five children were affected with PEM (NFHS III - 2005). In community field experience, the researchers found that mothers of under five children had inadequate knowledge regarding balanced diet and weaning practices which stands the primary cause for PEM. So the investigators felt that there is a need to do the study to improve the knowledge with newer strategies. Hence the study was conducted by using IEC strategy.

Objectives of the study

The study was proposed to

1. assess the knowledge on PEM among mothers of under five children.
2. evaluate the effectiveness of IEC strategy in knowledge on PEM among mothers of under five children.
3. associate the selected demographic variables with knowledge on PEM before and after IEC strategy among mothers of under five children

Alternative hypothesis

There is a significant increase in knowledge of mothers of under five children after conduction of IEC strategy.

Null hypothesis

There is no difference in the level of knowledge of mothers of under five children after conduction of IEC strategy

Review of literature

The study was conducted on knowledge of malnutrition and Health care seeking attitude among mothers in rural area, Tamil Nadu, with the sample size of 34 mothers. The results had shown that the poor nutritional status was associated with socio economic status and educational status of the mother (Saito - 2009).

A research conducted on impact of nutrition education with food supplementations among mothers of malnourished children at a selected village in Dhaka. The results had shown that health education with food supplementation improved nutritional status of the malnourished children (Sarkar - 2007).

Method and materials

The study was conducted by using pre experimental one group study design. The study was carried out at Nayappakkam Village, Kancheepuram District in South India with the sample of 40 Mothers of under five children by using non probability purposive sampling technique. The inclusion criteria were mothers who have under five children in Nayapakkam village, who were willing to participate and who could understand Tamil or English. The exclusion criteria were mothers of children with chronic illnesses and chronic PEM as well as related complications.

Description of the tool

The tool consists of two parts, i.e. Part 1 -Related demographic variables which included age, educational status, occupation, monthly income, family size, dietary habits, utilization of health services & sources of health information, Part 2 - Structured interview tool on PEM which includes knowledge on general aspects, causes, signs & symptoms, management and preventive measures and Part 3 – IEC strategy which includes health education on PEM, nutrition exhibition on dietary management of PEM and cooking demonstration on nutritional bolus (50 gms of bolus that contains 20 gms rice, 10 gms soya, 5 gms ground nut, 5 gms bengal gram and 10 gms jaggery in powder form and is made as a ball with boiled water) which gives 250 kcal and 20gms protein .

The score interpretation of the knowledge tool part was $<$ 50 % considered as inadequate knowledge, 51 – 75 % is moderately adequate knowledge and $>$ 75 % is considered as adequate knowledge.

Content validity

Content validity was obtained from nursing and medical experts.

Reliability

Computed by split half method ($r = 0.9$)

Procedure for data collection

Prior to data collection, permission was taken from the Panchayat Leader and the informed consent was obtained from the Study participants. The pretest was conducted from 40 mothers of under five children before conducting heath

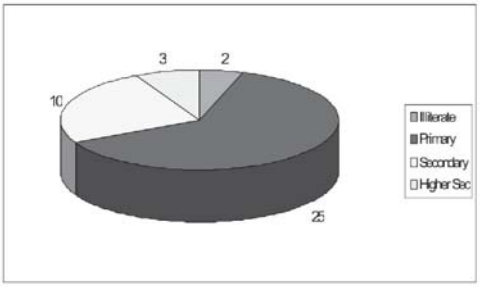
education, nutrition exhibition and cooking demonstration on nutritional bolus (50 gms of bolus that contains 20 gms rice, 10 gms soya, 5 gms ground nut, 5 gms bengal gram and 10 gms jaggery in powder form and is made as a ball with boiled water) which gives 250 kcal and 20gms protein. After one week the post test was conducted for the same.

Results

Most samples of the study were in the age group between 18 to 24 years. Majority of the mother were laborers having an average monthly income between Rs. 2000 to 3000. The effect of IEC strategy was assessed in terms of gained knowledge on PEM. The mean pretest knowledge score was 6.4 with S.D 0f 2.79 and the mean posttest knowledge score was 19.2 with S.D of 1.95.

Hence the nutrition exhibition was found to be effective with paired T-value at $P<0.001$ level. There is a significant association between the knowledge on PEM with age and educational status among mothers of under five children at $P<0.05$ level.

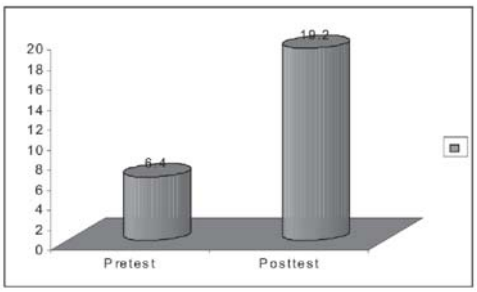
DISTRIBUTION OF EDUCATIONAL STATUS OF MOTHERS OF UNDER FIVE CHILDREN (n= 40)



Mean and standard deviation of pre test and post test (n= 40)

S.NO	KNOWLEDGE	MEAN	STANDARD DEVIATION
1	Pre Test	6.4	2.79
2	Post Test	19.2	1.95

MEAN KNOWLEDGE VALUE OF PRE TEST AND POST TEST (n= 40)



Conclusion

Hence the null hypothesis proposed for the study was rejected and retained the alternative hypothesis that the IEC strategy conducted by the researchers was effective in improving the knowledge of mothers of under five children residing in Nayapakkam Village, Kancheepuram District.

Recommendations

1. A similar study can be done on large number of samples as longitudinal prospective cohort study. Nutritional supplementation with different recipes can be tried depending on the cultural practices and seasonal food availability. Public Health Worker can try various ways in implementing IEC strategy.

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Risk factors for anemia among adolescent girls

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Abstract

Introduction

Adolescence is a crucial period of growth and development in girls and boys. During this period the risk of iron deficiency and anemia appears. In India iron deficiency anemia is a major public health problem affecting people from all walks of life (Dallman, Simes & Stekel, 1980).

Objective

to explore the factors influencing anemia among anemic adolescent girls.

Design

a qualitative analysis using grounded theory was carried out for the present study.

Setting

homes of the selected adolescent girls.

Instruments

a questionnaire on background information, record of investigations, nutritional assessment and a semi structured questionnaire for interviewing.

Participants

ten adolescent girls purposively selected; participated in the present study

Results

the age of the adolescent girls ranged from 12 to 15 years. They were studying in 8th, 9th or 10th standard. Calorie, iron & protein consumption was less compared to their requirement. Hemoglobin ranged from 7.2 to 8.2 gm/ dl.

Conclusion

adolescents perceived anemia as a major problem. Menstruation, worm infestation and dietary deficiency were found as the major cause; which was consistent with the literature. Therefore the study helps to conclude that health awareness programme for the adolescent girls and their society is essential in preventing anemia.

Key words

anemia, adolescent girls, hemoglobin, grounded theory & perceptions.

Introduction

Adolescence is a significance period of human growth and maturation, unique changes occur and many adult patterns are established during this period. After early childhood, during the adolescent period growth spurt occurs again. This complex changes from childhood to adulthood are particularly crucial for girls; during this period the risk of iron deficiency and anemia appears for both boys and girls. After which it subsides for boys but often continues for girls because of menstrual blood loss or diet. In India it is a major public health problem- affecting people from all walks of life (Dallman, Simes & Stekel, 1980).

Rajaratnam, Abel,Asokan &Jonathan (2000) conducted a study as part of a community trial in two blocks in Tamil nadu by selecting 155 and 161 adolescent girls in the age group of 13 to 19 years. Hemoglobin concentration was assessed by cyanmethhemoglobin method. Prevalence of anemia was 44.8% with severe anemia being 2.1%, moderate 6.3% and mild anemia 36.5%. There was a decrease in the prevalence as age increased. The prevalence of anemia was 40.7% in pre-menarcheal girls as compared to 45.2% in post- menarcheal girls.

The deaths of females related to diseases of blood and blood forming organs were 245 for every 10,000 population among 5 to 14 years and 487 among 15-24 years; as against 319 and 335 respectively in their male counter parts (1988). The percentage of deaths of females related to diseases of blood and blood forming organs were 6.9 percent and 13.7% in 5 to 14 years and 15 to 24 years respectively; whereas their male counter parts had the percentage of deaths as 8.7 and 9 respectively (Health Information of India, 1994).

Anemia was identified as a very common nutritional problem in four out of six studies in which it was assessed as 32 to 35%. Girls lose more iron through menstruation in adolescence whereas boys need more iron per kilogram weight gained as they develop muscle during adolescence (The World Health Report, 1988, p.82). The consequences of iron deficiency anemia are more serious for women and they can include reduced levels of energy and productivity, impaired immune function and increased maternal morbidity and mortality. Iron deficiency anemia can be due to lack of iron in the diet, poor absorption of iron from food, significant blood loss at delivery or because of hook worm infestation. Iron deficiency has a lower threshold and as a result is prevalent in 82 percent of 5-14 years olds. Anemia affects about half of the 5-14 year olds in certain regions of the world. The established and emerging market economics have the lowest prevalence of anemia followed by the Caribbean. In all other places, every third child is anemic. Measures that can improve the situations include Vitamin A, iron, iodine and folate supplementation or fortification, delaying child bearing and enhancing early childhood growth (The World Health Report, 1998, p. 82).

Purpose of the present study

The basic purpose of the study was to conduct interview and analyze the factors influencing anemia among adolescent girls.

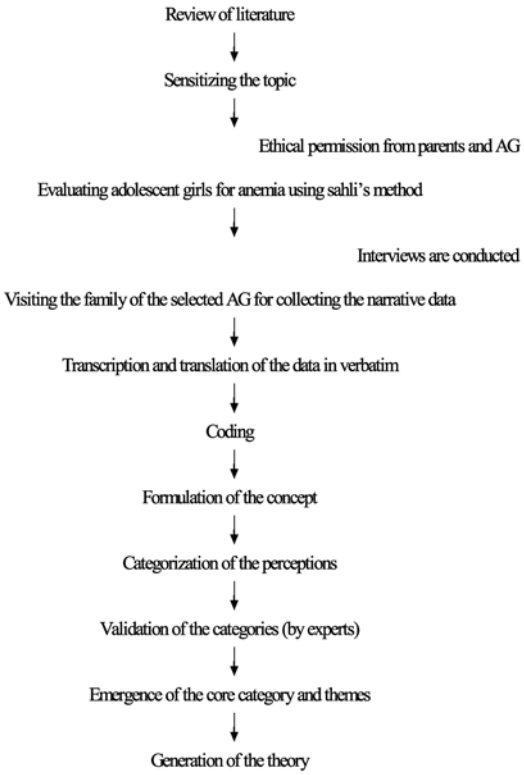
This will help in planning, implementing and evaluating health programmes related to anemia.

Method

Design

A qualitative approach of research was used. The verbatim translated were analyzed using grounded theory. The research design used is given in fig.1

Fig. 1: Research design



Setting

The study was carried out in the rural community. These adolescent girls belonged to the rural areas of Udupi District, Karnataka.

Population, sample:

In qualitative study, a small non- probability sample are used (Talbot, 1995). In this study a group of adolescent girls were screened for the level of hemoglobin percentage. Consent for the same was obtained from the adolescent girls and their parents. Researcher got herself trained in the method of assessing the hemoglobin. A total of 15 adolescent girls who had the least hemoglobin among the screened girls were identified. Once again consent was obtained from these adolescent girls and their parents for collecting data using in-depth interview.

In qualitative research the sample is considered as that part of reality that is observed and recorded (Brink &Wood, 1989). According to Glaser & Strauss (1967), in grounded theory, the researcher deliberately selects a sample of individuals who are theoretically representative of the culture, role or position needed for the study. The samples in this study were anemic adolescent girls, who were willing to participate in the study.

Sampling technique

The method of sampling in qualitative research should be both appropriate and adequate. Appropriateness refers to the degree to which the choice of sample or the information is appropriate in giving the information that fits the purpose of the study; adequacy, on the other hand, refers to the sufficiency & quality of the data collected (Glaser & Strauss, 1967).

Data collection tools & technique:

The pattern of field research is followed for data gathering in grounded theory; the researcher becomes immersed in that social- environment by living in the field. Chenitz & Swanson (1986) noted "the focus of observation is on the interaction since it is in both verbal and non verbal behavior that the symbolic meaning of the event is transmitted. The analysis of interaction includes participant's definition and shared meaning. Observation focuses on the interaction in a situation and analysis focuses on the symbolic meaning that is transmitted via action. Analysis focused on interaction, and their consequences (as cited by Munhall & Boyd, 1993, p.185). Qualitative research uses three major modes to gather data. They are the participant observation (experiencing), interviewing (enquiring) and studying materials prepared by others (examining) (Wolcott, 1994, p.10). In this study, interview was selected as the method of data collection. The data were collected from adolescent girls using an informal but semi structured interview technique. Selection and development of the tool were based on the literature review and the purpose of the study. The following tools were constructed to gather data from adolescent girls.

Tool-1- Background Information: This tool consisted of structures items to collect background data on name, age, standard of education and religion of the adolescent girls.

Tool-2- Record of investigations: This tool included physiological measurement that hemoglobin level, examination of blood slide for malarial parasite and microscopic examination of stool for ova & cyst.

Tool- 3- Nutritional assessment: This tool comprised the anthropometric measurement (weight & height) and total calorie, iron & protein intake.

Tool- 4- Semi structured questions for interviewing: this tool included a lead question and few other questions.

Data were collected by the researcher. As the adolescent girls were selected after the initial assessment of hemoglobin; their height, weight and the remaining data were collected before conducting the interview. The researcher asked different questions to the adolescent girls to elicit the information. A guide question was asked initially and several probing questions had to be asked to collect the required information. The guide question was "why do you think you have anemia? How do you perceive your anemia status?" The original data were in Kannada and the researcher is well versed in this language.

Validity & reliability

Researcher continually formulates hypotheses and rejects them if they don't seem accurate. Grounded theorist look for contradictory data by searching out and investigating unusual circumstances or occurrences. Data are compared and contrasted again and again, thus providing a check on their

validity. The multiple methods of data collection used in grounded theory prevent undue bias by increasing the wealth of information available to the researcher. The result obtained or substantive theory cannot be generalized to another setting, as the sampling is done by purposive sampling method. The data must be immediately recorded. The choice of data recording depends on the type of setting & the skills of the researcher. Researcher must be sensitive to the social environment; before he makes this choice (Munhall & Boyd, 1993, p.191).

In this study the validity of the tool and data collected were established by giving to experts in different fields of research. The measuring instruments were checked for their reliability after standardization. The reliability of hemoglobinometer was 0.99; weighing scale and measuring scales were one each.

Analysis and interpretation of data

There are various steps in analyzing the data in grounded theory. They are, coding, memoing, sorting, saturation, and discovery of a core variable (Munhall & Boyd, 1993, p.197). The data collected are presented in two sections: the first section deals with the background data and the second on the qualitative data.

Data presented in table 1 show that the hemoglobin level ranged from 7.2 to 8.2 g% in these anemic girls. Their calorie intake, protein intake and iron intakes were less for their age group. Only two of them had a positive test for stool for ova and cyst. All the adolescent girls had attained menarche, and none of them had a positive slide for malarial parasite.

Findings

The purpose of this study was to analyze the forces influencing anemia among adolescent girls. The data collected were translated, coded and categories were derived. There were total seven categories, which emerged from this data. This was given to three experts for their suggestions. With their suggestions few of the categories were modified. These categories are:

Excessive blood loss during menstrual cycle

One of the important causes for anemia is excessive blood loss during menstruation. The pattern of blood loss varies from individual to individual. Normally there will not be any passage of clots during menstrual cycle. If an adolescent girl passes clots or bleeds more than 5 days during menstrual cycle, there are chances fro her to develop anemia. The narratives of the different adolescent girls support this category.

Vidya "more blood lost during menstruation, more clots and more days of bleeding is the cause of anemia. I have irregular menstruation. I may have to use 4 to 6 cloths in a day. I have severe bleeding, during which I will not be able to go to school. First after three months of menarche, during menstruation I lost blood, it was clots and pieces; I was showed to doctors at Kota and Bramhavar. It did not stop……..after that many people said that my uterus has come down (astonished), treat fast that is better. Again we went to other doctors at Kota and treated for two months, now this month, I am waiting for my periods".

Ashwini, "I after three days also bleed more. I don't have regular bleeding. But even after the third day it (bleeding) will not stop. I pass clot till the third day. I change 4 to 5 cloths on the day and two cloths in the night. I was worried when my bleeding continued to the 15th day when I got my first periods. Doctors told it is normal and requires no treatment. In my house for all of us the same thing happened, ten and fifteen days the bleeding went on."

Monisha, "I lose more blood after the third day of menstruation, big clots are passed on few days, I change five cloths in the day and two cloths in the night".

Gayathri, "I have severe bleeding which lasts for six to eight days and I have to use four to six cloth napkins per day. But this may lead to anemia".

Elevation of body temperature

Pathologically elevation of body temperature will not cause anemia. The perceptions of the adolescent girls are in contrary to this. Fever is a symptom and four adolescent girls have perceived it as the cause of anemia, which are supported by the following narratives.

Ashwitha, "I had fever, doctors told to do checkup, then they said that I have less blood, so I think fever is the cause of anemia in me. I was asked to do the blood check up. After that the doctor told that I have that (tuberculosis) disease {softly, which came after the boil at the neck is healed. Doctor told to take treatment for 9 months. So I feel that this disease accompanied by fever must have caused anemia."

Alseefa "I had fever few days back and medicines were taken, I feel fever is the cause of anemia for me".

Reshma "I had fever 5 months back and that must have caused anemia"

Gayathri "I had fever but it has not caused anemia"

As fever is a symptom of illnesses; the underlying diseases must have caused reduction in anemia among the adolescent girls. But one of the adolescent girls never perceived it as the cause for anemia.

Dietary deficiency

When the iron content in the food is less, it will not help to

Table 1: background information of adolescent girls.

Sl.No	Name	Age (yr)	Edu	Religion	Hb g%	Wt. kg	Stool test	Calorie(Kcal)	Iron(mg)	Protein(gm)
1	A	15	10th	M	8.2	45	-	841	15.9	51.6
2	B	15	10th	H	8.2	30	-	1012	15.6	51
3	C	15	10th	H	7.6	32	-	1032	10.3	37.6
4	D	13	8th	C	7.6	45	-	980	13.7	42.8
5	E	12	8th	H	8.2	27	-	812	19.2	40
6	F	15	8th	H	8	32	+	912	14.8	40
7	G	14	10th	H	8.2	32	-	998	13.4	41
8	H	14	9th	H	7.8	24	+	812	17.2	40
9	I	13	8th	H	7.2	35	-	787	22	47
10	J	13	8th	H	8	45	-	929	18.2	42

replace the iron lost from the body, leading to anemia. The investigator has done 24 hour recall to strengthen this category. The total requirement of calorie per day for an average adolescent girl is 2200 Kcal, protein of 50gm and iron of 25-35 mg. it is evident from table 1 that all the adolescent girls consumed less of the required nutrients and calorie. The following narratives capture the phenomenon.

Esther "for me at home less vegetables are prepared, I don't eat much. I don't like it also, I eat less food too. I have good appetite, but I mostly eat fish, meat like that. I throw vegetables in the school if it is put in the lunch box."

Reshma "I take less food, even if I have good appetite. I take less green leafy vegetables, because less is cooked at home".

Vidya "I eat rice three times a day, more vegetables, eat fish and very less meat. Very less green leafy vegetables are cooked at home".

Sowmya "lack of nutritious food is the cause of anemia, I have good appetite, I like to eat potato and green leafy vegetables. I will not waste food. My mother cannot provide us with nutritious food".

Gayathri "sometimes I will not feel hungry. Only sometimes I will eat all the food served to me. I don't like green leaves. I like fish and pickle".

History of worm infestation

A common intestinal helminthes, which causes anemia, is hook worm. Hook worm sucks the blood of the hosts from intestine. In India children walk barefoot, which contributes to this cause. Following narratives helps us to understand this phenomenon.

Gayathri, "my blood is reduced; doctor said it may be because of worm. I have stomach pain on and off, some days it is severe. Doctor told that I have worm trouble and gave me medicine too. He said after worm trouble is cured I will treat you for anemia". Her stool test reveled that ova and cyst were present.

Alseefa "may be four years back I had worm trouble. Some treatment was given and the same did not reappear. I get stomach pain often; I must do a check up once more for the same".

Reshma, "I had worm trouble when I was in 6th standard. I get stomach pain now also. I will go for check up". Her stool test revealed that ova and cyst were present.

Vinutha, "I had worm trouble when I was three year old. That time worm was passed in the stool as per my mother's statement. Last year also I had the same problem, now I am treated for it".

Soumya, "I have worm trouble often, each time treatment is given, before 15 days; I have taken the treatment for the same."

Body Image

Adolescent girls are concerned about their body image. They would like to reduce the intake of food for maintaining their body image as per their desire. This is clear from some of the following narrations.

Alseefa, "my ideal weight is 40 kg; I am 45 kg, so my friends tease me. I take less food, throw lunch in the school. I want to reduce".

Vidya, "I hate myself if I become fat. So I don't eat all the types of fruits and sweets. I am 40 kg; which is ideal for my height, but some of my friends tell that I am too thin".

Ashwini, "my weight is 32 kg, it is ideal for my height. Some of my friends tease me saying I am too thin."

Taking action for illness

Taking relevant actions for illness helps in preventing the complications. Following narrations add clarity to this category.

Alseefa, "I had worm infestations; I have taken medicine for the same".

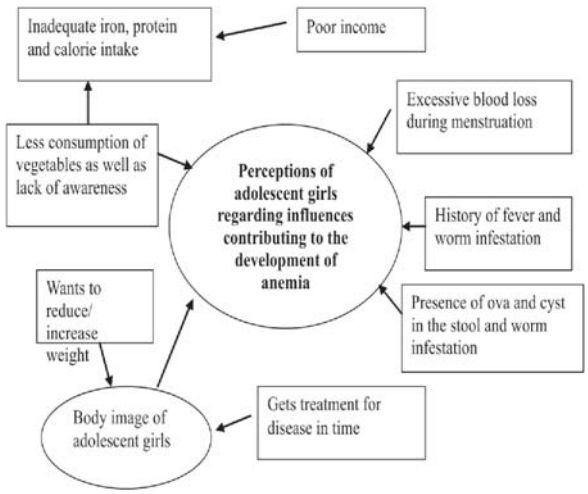
Ashwitha, "I had fever, parents took me to doctor. He gave medicine for 9 months. After completing this he gave medicine for another 6 months; I have taken all these medicine."

Sowmya, "I had chest pain; for that medicine was taken. It did not reappear. I had worm trouble also few years back, medicines given were taken".

Model developed form the data of the study

From the data analysis the core variable emerged was "perceptions of adolescent girls regarding influences contributing to the development of anemia". There were six categories derived from the data. Most of the adolescent girls had perceived one or the other as the cause for their anemia. The model emerged is presented in fig.2

Fig. 2: perceptions of anemic adolescent girls regarding influences of anemia



Conclusion

Interviews conducted with adolescent girls revealed the knowledge of causes of anemia among adolescent girls. Their knowledge about food containing iron was less. Thus it can be concluded that education on diet containing iron rich food should be emphasized. This was further supported by nutritional assessment. Therefore the teachers in the school, health workers in the primary health centers can be motivated to teach about his concepts to this group of population.

Limitations of the study

This study is limited to small sample who were selected purposively, hence generalization of the finding is limited to these sample. The result of the study is limited to only this group of adolescent girls, as culture, education and ethnicity has influence on the perceptions.

Recommendations for future study

A comparative study can be done between English medium and Kannada medium students. The similar study could be

replicated in different parts of the country to examine the cultural differences in perception of the causes of anemia.

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Study on birth spacing and its determinants among women of Kirtipur Municipality of Kathmandu District

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Abstract

Background

Birth spacing is a significant health-improving and life-sav-ing measure for mothers and children. Short birth spacing has an important public health impact. Adequate birth spacing could be logical alternative strategies for fertility control.

Objective

To assess the pattern of birth spacing and its determinants among women of Kirtipur Municipality of Kathmandu.

Design

Community based cross-sectional study

Material and methods

350 ever married women of reproductive age group from three wards of Kirtipur were selected by adopting proportionate random sampling technique. Data were collected through interview and analyzed using non-parametric tests and multinomial logistic regression.

Results

The mean birth interval is 4.05 years (3-5.83). Very few women (7.1%) had <2 years birth spacing, while 114 (24.3%) practiced birth spacing of >5 years. The average birth interval shows decreasing trend with increase in birth order. Birth interval is significantly associated with education, socio economic status, sex and number of children, abortions and child deaths, previous obstetric history and menopause. The important predictors were age of the couple, age at first sex and childbearing, education, economic status, current living children, ideal number of children and abortion.

Conclusion

Majority of the women practice optimum birth interval despite low literacy. The optimal birth spacing significantly increases with increase in educational attainment, improvement of socio economic status, decreased number of living children, presence of both sexes in the family, absence of abortions and child deaths and menopause. The important predictors found were age of the couple, age at first sex and childbearing, education, economic status, living children, ideal number of children and abortion.

Keywords

Birth spacing, unmet need, postpartum amenorrhea, postpartum abstinence.

Introduction

Birth spacing is a major determinant of fertility levels in high fertility populations. The birth interval has a significant effect on a child's future physical and mental capabilities as well as on the health of mothers. Lengthened birth intervals are associated with reductions in neonatal and perinatal deaths. Neonatal deaths constitute 40-60% of infant deaths in many developing countries where birth spacing has not been practiced by all.[1] A woman, who becomes pregnant too quickly following a previous birth, or induced abortion or miscarriage, faces higher risks of anaemia, premature rupture of membranes, abortion and death.[2]

For years, family planning programs have advocated two year birth intervals for infant and child health and survival. According to the new research by USAID, the optimal birth spacing initiative was created recommending 3 to 5 years as optimal birth spacing for additional gains to child health.[3] New studies show that children born 3-5 years after a previous birth are 2.5 times more likely to survive than children born before 2 years.[4] There is a high unmet need especially among rural and isolated populations. In Nepal, the unmet need is 24.6%.[5] Addressing the unmet need would help millions of women to achieve their family planning goals.

In spite of more investment, the decline in the fertility remained very low. NDHS 2006 data indicates MMR as 281 per 1,00,000 live births and IMR 48 per 1,000 live births.[5] Although, this is an improvement, the rates are much higher compared to developed countries. Still 55.6% of women have <36 months of birth spacing.

Recently, the topic of birth spacing and the role of timing births have received increased attention. Many studies found that children born 3 years or more after a previous birth are healthier at birth and more likely to survive at all stages of infancy and childhood through age 5.[6,7,8] The analysis of birth intervals is of interest since it can provide further insights into the mechanisms underlying fertility change and reduction of infant and child mortality. Lengthening the birth interval is potentially within the control of individuals and couples.

This study intends to find out birth spacing pattern and its determinants in a rural Nepal. It aims to provide policy makers and health personnel with greater understanding of current attitudes and practices of women regarding birth spacing.

Material and methods

A community based cross sectional study was done among 350 ever married women of reproductive age group (15-49 years) of Kirtipur Municipality having at least two live births. The study period extended from March to August 2009. Out of 19 wards, ward numbers 2, 11 and 16 were randomly selected. Simple random sampling was done using proportionate selection based on women's population in each ward. The sample size was calculated based on 55.6% prevalence of <3 years birth spacing[11] and allowing 10% permissible error and 10% non response rate. Data were collected by interview using pre designed semi structured questionnaire.

Mean, median and interquartile range were computed for

finding average values. Chi square test, Mann-Whitney U test and Kruskall-Wallis (H) test were used for analyzing the association between birth spacing and other variables. Multinomial logistic regression was applied to explore independent predictors. 95% confidence interval was considered for calculating the level of significance in which P value was taken as 0.05.

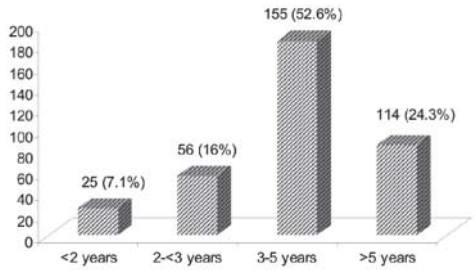
Results

Of 350 multiparous women, 30.3% was of age group 35-39 years. The mean age was 38.56 years. The median age at marriage was 20 years. The median age at first sex and at first childbearing were 20 and 21 years respectively. Nearly three fourth women (73.7%) had first child after 1 year of marriage. Each women had on average 2.42 (±0.752) pregnancies and 2.32 (±0.750) children. Majority (90.6%) had desire for two children. More than three fourth, i.e. 287 (82%) stated 3 to 5 years and 19 (5.5%) stated <5 years as the ideal birth interval. Majority were conscious about the risks of too short or long birth intervals.

Almost all (97.7%) had used at least one contraceptive method, the most common being Depo-Provera (77.19%), followed by pills (22.81%) and condom (12.28%). About one third (33%) used contraceptives for birth spacing, whereas 67% used for both spacing and as permanent method. About three fourth (72%) women were currently using contraceptives. Male sterilization was less common. This shows the reluctance of men towards family planning.

The overall median birth interval was 4.05 years. Most of the women (52.6%) had practiced optimal birth spacing. However, 114 (24.3%) practiced birth spacing of >5 years. The average birth intervals decreased with increase in birth order.

Fig. 1: Mean birth interval



The educational status of the couples was significantly and positively associated with mean birth spacing. Couples practicing <2 years mean birth interval were of higher age groups and vice versa.More working group women practice longer birth spacing than non-working group. However, no statistical significance was found.

Women who already had menopause had more proportion of short birth intervals than those who had not yet had menopause (P<0.05). Optimal birth spacing was more commonly found in women with both boys and girls (55.8%) followed by women with only boys (52.6%) and least in women with only girls (40%) (P<0.05). The mean birth intervals of women who previously delivered female child were shorter than of those who delivered male child (P<0.05). More than quarter (28.6%) who had given birth without menstruation had mean actual birth interval <2 years compared to 6.3% in women who had given birth after menstruation (P<0.05). Similarly, the optimum birth interval (3-5 years) was more frequently observed in women with no history of abortion (53.3%) compared to those who had history of abortion (35.7%) (P=0.010). The frequency of <2 years birth interval was about double in women with history of child death (17.4%) than in those without the history (6.4%) (P=0.006). Women who had antenatal check up done had longer subsequent birth intervals than those who had not done (P<0.05). The short birth intervals were common in women having home delivery. Significant positive association was found between birth spacing and trained health persons conducting deliveries.

The number of current living children was significantly and inversely associated with mean birth interval (P=0.001) (Table 4). Women having 3-5 years mean birth interval had on average 2.42 (±0.75) living children whereas women exercising <2 years birth interval had on average 2.44 (±1.36) children. The mean duration of postpartum lactation, postpartum amenorrhea and postpartum abstinence were positively associated with mean birth interval though showed insignificant relation.

The proportion of longer birth interval was seen more in women currently using contraceptives (P>0.05). The mean birth interval for women using Copper T was longest (71 months) followed by Norplant (24.41) and Depo-Provera (56.27). The birth interval for use of Depo-Provera was longer compared to that for other contraceptive use combined (P>0.05).

The independent predictors of birth spacing were found to be age of women, age at first sex and at childbearing, educational status, living children, abortion, desired and ideal number of children, age of the spouse, monthly expenditure and menopause.

Discussion

The study examined duration of birth interval and the associated factors. The median duration of birth interval was 49 months. It is higher than the national figure (33.6 months)[5] and the findings of the analyses of 55 countries (32 months).[9] It might be due to active involvement of "mother's group", NGOs in health training programmes, accessible health services

Table 1: Duration of mean birth interval in relation to educational status

Educational status	Categories	Mean birth interval (in years)				P-value[a]
		<2	2 –<3	3 – 5	>5	
Educational status of the respondent	Uneducated Educated	187	3224	9263	4668	0.001[b]
Educational status of the spouse	Uneducated Educated	619	947	22133	7107	0.006[b]

[a]Chi square test

[b]Significant at P<0.05

Table 2: Relationship of mean birth interval with reproductive characteristics

Reproductive characteristics	Categories	Mean birth interval (in years)				P-value[a]
		<2	2 –<3	3 – 5	>5	
Menopause	Not occurred	20	45	165	82	0.001[b]
	Occurred	5	11	19	3	
Sex of the living children	Only girls	3	7	22	23	0.001[b]
	Only boys	4	9	41	24	
	Both	18	40	121	38	
Child birth without menstruation	Absent	21	54	177	84	0.007[b]
	Present	4	2	7	1	
Abortion/ miscarriage	Absent	25	55	179	77	0.010[b]
	Present	0	1	5	8	
Child death	Absent	214	497	1759	823	0.006[b]
	Present	4	7	9	3	

[a]Chi square test
[b]Significant at P<0.05

Table 3: Duration of birth intervals in relation to reproductive characteristics

Reproductive characteristics	Number of women	Subsequent birth interval (in months)		P value[a]
		Mean	Std deviation	
Sex of the previous child (Male)	153	56.57	25.53	
Sex of the previous child (Female)	185	50.45	26.30	0.024[b]
ANC check up done	255	56.20	25.78	
ANC check up not done	83	44.08	25.08	<0.001[c]
Home	108	46.81	23.26	
Institutional	230	56.23	26.85	0.003[b]
Health person	231	56.20	26.80	
Non health person	231107	56.2046.79	26.8023.37	0.002[b]

[a]Mann-Whitney U test
[b]Significant at P<0.05
[c]Significant at P<0.001

Table 4. Relation of mean birth interval with obstetric history

Reproductive characteristics	Mean birth interval (in years)				P-value[a]
	<2	2 – <3	3 – 5	>5	
Number of living children	2.44±1.36	2.30±0.83	2.42±0.75	2.08±0.28	0.001[b]

[a]Kruskall-Wallis (H) test
[b]Significant at P<0.05

Table 5: Independent predictors of birth spacing

Effect	-2 Log Likelihood of Reduced Model	P-value[a]
Age of the respondent	542.26	<0.001[c]
Educational status of the women	540.66	<0.001[c]
Age of the women at first sex	530.82	0.001[b]
Number of currently living children	526.96	0.001[b]
Abortion/miscarriage	518.39	0.002[b]
Desired number of children	533.37	0.002[b]
Ideal number of children	524.07	0.004[b]
Age of the spouse	530.25	0.008[b]
Monthly expenditure	531.93	0.013[b]
Age at childbearing	529.25	0.018[b]

[a]Multinomial regression analysis
[b]Significant at P<0.05
[c]Significant at P<0.001

and availability of volunteers. The use of Depo-Provera injection might have increased birth interval >5 years (24.3%) due to irregular period and delayed return of fertility. The birth interval decreased with the successive birth order similar to the study of Suwal.[10] Long gap for first child might be due to young age at marriage, time taken for establishing intimate spousal relationship, spending more time in natal home before first child, or shy and modesty nature of women.

Most of the women (97.7%) had ever used at least one contraceptive method, compared to only 65% in Nepal.[5] Depo-Provera has been the most popular method (77.2%). On the other hand, less use of condom (12.3%) similar to the case of Nepal (22.2%)[6] and other countries[11,12,13] shows male reluctance in use of family planning.

The women's age is the significant predictor of birth interval as found in the study of Rasheed P and Al-Dabal BK.[14] Spousal age was also found to be the significant predictor as found by Maitra P and Pal S.[15] Significantly more educated women in the study practiced longer birth interval (e"3 years) than uneducated women whereas more illiterate women practiced <2 years birth interval similar to the other studies.[15,16,17]

The termination of a woman's fecundity is signified by menopause.[18] Statistically significant differences were observed between mean birth interval and menopause. The number of currently living children was significantly and positively associated with birth interval (P=0.001) similar to the study by Westoff CF[19]. It also came out to be the strong predictor. Significant difference was observed between sex of the living children and mean birth interval. The subsequent birth interval in case of women with previous female child was shorter than that in women with previous male child similar to other findings.[20,21]

Child death drives the parents to have next child soon to replace the lost one, thus shortens birth interval.[4] The death of the children was negatively associated with mean birth interval in the study similar to the study by Ballweg JA.[22] Desired and ideal number of children were identified as the significant predictors in the current study. However, ideal birth spacing showed no association with birth interval showing probable unmet need as in other studies.[4,5,23]

However, there is chance of recall bias on information like duration of breast feeding, postpartum amenorrhea and abstinence etc. There might have been response bias for information like postpartum abstinence, child deaths and abortions, income and expenses etc.

Conclusion

New studies show that 3-5 years birth intervals are better for infant as well as maternal survival and health compared to 2 years.[6,15] The findings of the study suggest that majority of the women practice optimum birth interval despite low literacy. The findings show that optimal birth spacing significantly increases with increase in educational attainment, improvement of socio economic status, decreased number of living children, presence of both sexes in the family, absence of abortions and child deaths, ANC check up during previous antenatal period, place of delivery of previous child, person conducting delivery of previous child and menopause. The important predictors found were age of the couple, age at first sex and childbearing, educational status, economic status, current and ideal number of children and abortion.

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Mobile based primary health care system for rural India

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Mobile technologies are increasingly growing in developing countries like India. There have been several new researches and developments in this space. Nowadays mobile is becoming an important ICT tool not only in urban regions but also in remote and rural areas. The rapid advancement in the technologies, ease of use and the falling costs of devices, make the mobile an appropriate and adaptable tool to bridge the digital divide. Mobile phone ownership in India is growing rapidly; six million new mobile subscriptions are added each month. By the end of 2010 half of the India's population will be covered by a mobile network. Many of these new "mobile citizens" live in poorer and more rural areas with scarce infrastructure and facilities, high illiteracy levels, low PC and internet penetration. The availability of low-cost mobile phones and the already broad coverage of GSM networks in India is a huge opportunity to provide services that would trigger development and improve people's lives. This article explores the present status of Mobile based Health Care systems in different countries, shortfalls in Primary Health Care Management in rural India, and the potential solution to fill it with the enabling of Mobile Web technologies for Primary Health Care management.

According to the ITU, the total number of mobile users worldwide as of late 2006 was about 2.7 billion and the number of Internet users was just above 1.1 billion. This means that at least there is 23.6% of world population (and at least 22.2% of developing countries' population) who already have mobile phones but are not yet using the Internet. Mobile services are quickly emerging as the new frontier in transforming government and making it even more accessible and citizen-centric by extending the benefits of remote delivery of government services and information to those who are unable or unwilling to access public services through the Internet or who simply prefer to use mobile devices. In theory, many government services can be now made available on a 24x7x365 basis at any place in the world covered by mobile networks, which today means almost everywhere. Approximately 50%–60% of government services including Primary Health Management can be delivered via mobile channel. Primary Health Care Services using Mobile Devices ensures improved access to primary healthcare and its gate-keeping function leads to less hospitalization, and less chance of patients being subjected to inappropriate health interventions.

Mobile technology for health care

Amongst the many ICT (Information communication technology) options available to govt. to improve the efficiency& effectiveness of its delivery process of primary health care, mobile & wireless technologies offer some exciting opportunities for a low cost, high reach service. There is strong evidence that mobile technologies could be instrumental in addressing slow response rates of govt. to citizen requests, poor access to services, particularly for low-income and marginalised populations in underserviced rural areas. In addition, mobile technologies offer significant opportunities for improving the back-office operations of govt. In addition, many primary healthcare clinics located in the rural areas do not have any electronic systems at all & continue to operate paper- based systems, resulting in patient records being kept by patients themselves. The impact of the use of multiple systems is that it is difficult& costly to develop a national overview of patient statistics. On a more basic level, it is extremely difficult for idividual institutions within the healthcare sector to share information between each other. One of the clearest examples of this is to be found in the sharing of patient laboratory results. Currently in most instances, this only takes place through manual exchange.

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Mobile technology for Health Care Systems in India

A number of Organisations have been working on various projects for enhancing the role of ICT in Health care. UK-based Loughborough University's engineers have entered upon a partnership with experts of India to develop a unique mobile phone health monitoring system. The system, which was first unveiled in 2005, uses a mobile phone to transmit a person's vital signs, including the complex electrocardiogram (ECG) heart signal, to a hospital or clinic anywhere in the world. Professor Bryan Woodward and Dr Fadlee Rasid from the Department of Electronic and Electrical Engineering at the Loughborough University have developed this mobile phone monitoring system.

Presently the system can transfer the signals pertaining to the ECG, blood pressure, oxygen saturation and blood glucose level. Now the UK-India Education and Research Initiative (UKIERI) has awarded Professor Woodward a grant to further develop this mobile phone monitoring system. They have tied up with the Indian Institute of Technology Delhi (IIT Delhi), the All India Institute of Medical Sciences and Aligarh Muslim University and London's Kingston University, to further develop the system.

The research team is aiming to miniaturize the system, through designing sensors and mini-processors that are small enough to be carried by patients, and at the same time procure biomedical data. The network of sensors would be linked through a modem to mobile networks and the Internet, and to a hospital computer. Then, doctors can use this device to remotely monitor patients suffering from chronic diseases, like heart disease and diabetes, which plagues millions across the world. The UK government will promote the device to

improve the efficiency of healthcare delivery. In India, the project will link clinics and regional hospitals in remote areas to centers of excellence.

Sehat Saathi, a rural telemedicine system is being developed at Media Lab Asia research hub at IIT Kanpur. It can be used to extend medical care to patients in the remote parts of the country. The model provides for front-end contact through a suitably trained non-medical professional; back end support from doctors, pathologists and other health professionals for diagnosis and treatment; use of digital technology to achieve objects; and dissemination of information on health and disease through digital means. Malaysia has taken up a project with AIIMS for use of handheld computers (palm-tops) for healthcare data collection and planning.

Primary health care in India

In India, although there are many reasons for poor PHC performance, accessibility is one of the major obstacles. The public health system is managed and overseen by District Health Officers. Although there are qualified doctors, PHCs have barely able to utilize due to non-usage of IT and Mobile access. The rural primary public health Infrastructure has recorded an impressive development during the last 50 years of independence. The network consists of 1,45,000 sub-centres, 23,109 primary health centres and 3222 community health centres, catering to a population of 5000, 30,000 and 1,00,000 respectively (and 3000, 20,000 and 80,000 population in tribal and desert areas). Each PHC is targeted to cover a population of approximately 25,000 and is charged with providing promotive, preventive, curative and rehabilitative care. This implies offering a wide range of services such as health education, promotion of nutrition, basic sanitation, the provision of mother and child family welfare services, immunization, disease control and appropriate treatment for illness and injury. The PHCs are hubs for 5-6 sub-centres that cover 3-4 villages and are operated by an Auxiliary Nurse Midwife (ANM). These facilities are a part of the three tier healthcare system; the PHCs act as referral centers for the Community Health Centres (CHCs), 30-bed hospitals and higher order public hospitals at the taluka and district levels.

Mobile based primary health care management system

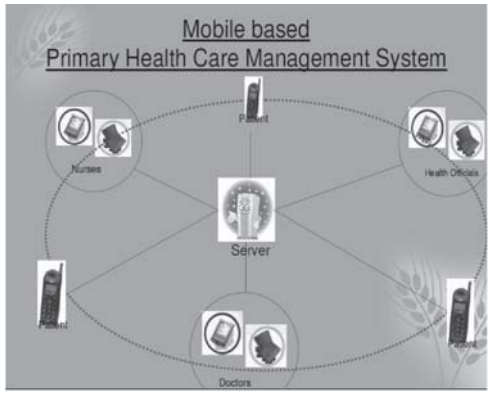
"Mobile based Primary Health Care Management System" has initiated for deployment in the PHCs for betterment of management of Primary Health Care specifically in the rural and urban slums of India. The system will capture of complete information related to an individual patient treated by a PHC. The Software components under development are Patient Database management, Interaction between doctor and a patient, capture of Medical data acquisition- such as ECG, images of heart & lung, eye etc and Scheduling management. The system involves the following:

(a) A Web based Information system for Management of Primary health care.
(b) SMS interface for integrating SMS messages from the patients using 2nd Generation mobile systems (GSM/ CDMA) with the Information system.
(c) WAP Gateway for Web access Applications using WML for integrating GPRS/3G/4GMobile devices of Doctors and Nurses with the Web server.
(d) It Supports to National and other Indian languages in mobiles by providing interface for translation.

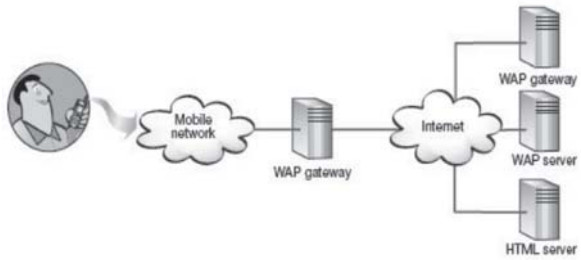
System overview

Primary Health Care management System with a Web interface is being developed in an Open source database. An SMS based interface to the Web is planned to be added for integrating with 2G (GSM/CDMA) telephones, since Mobiles have penetrated overwhelmingly in rural India. A WAP web Gate way being developed for integrating with a GPRS/3G mobile devices, which are expected to be used by Doctors and Health Assistants. In case of GPRS/3G systems, the Web request from the phone is first served by the WAP Gateway Server. The gateway server translates mobile phone requests (WAP) into HTTP requests and sends them to Web server. The Web server processes the request, and sends WML to gateway server, which in turn sends the WML to phone in the binary compressed WML format.

The Primary Health Care Server, having the information System can be



accessed through Mobiles with GPRS connectivity as shown below:



Health Information system in which each family has an up-to-date family folder is a valuable tool for maintaining, analyzing and interpreting the enormous data. The *Mobile based Primary health Care Management System* will seek to achieve:

(a) Increased quality of primary healthcare (PHC) services.
(b) Increased efficiency of service care with an adequate referral and remote consultation system.
(c) Improved epidemiological surveillance and control.
(d) Better pregnancy case registration and management.
(e) Reduction of maternal and perinatal mortality and morbidity.

Conclusion

The Primary Health Care strategy seems to be a right intervention in terms of basic preventive methods but it needs to be supported by other strategies as well to close the gaps. Primary health care is presented by the Alma-Ata declaration as essential health care based on practical, scientifically sound and socially acceptable methods and technology, which is universally accessible to individuals, family and the community through their full participation and at the cost they can afford. The Primary Health Care can be made transparent and easily accessible by the implementation of "Mobile based Primary Health Care Management System".

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Multidimensional role of forensic nursing

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Abstract

Forensic Nursing is a new, challenging and rapidly growing field of nursing which is a combination of medical training of a nurse, with the investigative powers of police detectives and legal training. A forensic nurse is a nurse with specialized training in tackling cases of sexual assaults, unnatural deaths, human rights abuse, child abuse, geriatric abuse, psychiatry, evidence collection, legal testimony and many more. In this paper author has tried to highlight different roles of forensic nursing.

Keywords

Forensic nursing, Clinical forensic nurse, Death investigator, sexual assault nurse examiner, forensic psychiatric nurse.

Introduction

Forensic medicine is the branch of science which deals with the medical aspects of law i.e. the application of medical knowledge in the administration of justice[1]. It almost entirely deals with crimes against the person in which medical examination and evidence are required. In fact in all cases of crime involving the person e.g. homicide, suicide, accident, assault, sexual offences, poisoning, drowning etc, the help of medical practitioner is sought by the police[2]. The health professional's expertise is in the application of science to a legal controversy and the proper interpretation of medical findings. Therefore, it is advisable that the health care providers should learn to look upon the cases from a medicolegal angle as well to avoid misinterpretation or omission of evidence which needless to say may result in gross miscarriage of justice[3]. But while dealing with life threatening situations, the medicolegal aspects should and must become a secondary concern. It is under these circumstances, that the role of forensic nursing becomes crucial, and an integrated approach of forensic nursing and clinical forensic medicine would help in addressing the Medicolegal perspectives on a much wider and better horizon .Integrated and interdisciplinary approach is the demand of the hour and therefore, forensic nursing must be complementary to clinical forensic medicine[4].

Forensic nursing is defined by the International Association of Forensic Nursing (IAFN) as "the application of Nursing science to public and legal proceedings, the application of forensic aspects of health care combined with bio-psychosocial education of the registered nurse in the scientific investigation and treatment of trauma and /or death of victims and perpetrators of abuse, violence, criminal activity and traumatic accidents"[5]

Forensic nurse is a nurse who is well versed with legal system and forensic science. She/he has a dual responsibility that of nursing and at the same time protecting the legal, civil and human rights of the victim of criminal offences. Nonetheless, she/he must also be aware of the constitutional and human rights of the perpetrators of crime and help protecting them also[3].

She/he is trained to deal with medicolegal cases, evidence collection, trace evidences and therefore, plays a crucial and a vital role in processing the information and material evidence from the victim and the suspected assailant. Subsequently she may be asked to appear in the court of law as an expert witness concerning the case which she may have processed[6]. Hence, the role of Forensic Nursing is really commendable and is the need of the hour. A motivated and skilled forensic nurse can prove to be an invaluable resource for the criminal justice system, hospital and the patients[2].

Different areas of expertise of forensic nurse

Clinical forensic nurse

Trauma is major public health problem. It is the new age epidemic growing exponentially at an alarming rate[4]. Trauma comprises a major share of medico legal cases, be it suicidal, homicidal, accidental or self inflicted [4]. Clinical forensic nurse can be asset in all such cases. She/he can play useful role in emergency management of the victims of assault[7] paying due attention to the Medicolegal aspects. The emergency room nurse is usually the first to handle the patient, talk to the family and deal with the lab specimens. She therefore has an important role to play in the pursuit of justice in the area of the crime and victimization[3]. She may also be called to the crime scene or to the accident site to collect evidence, take tissue and blood samples[8], all of which can go a long way in helping the legal authorities in the administration of justice.

Torture

Michel Toucalt writes "Torture is art of maintaining life in pain by subdividing it into a thousand deaths by achieving before life ceases the most exquisite agonies"[9]

Protection and safe guarding the human rights is now recognized as the legal and ethical responsibility of nurse. The forensic nurse especially can play a significant role in identifying, investigating[2], documenting and rehabilitating of victims of human rights abuse[10].

Death investigator

The role of death investigator is to represent and advocate for the deceased. The investigator therefore should possess scientific knowledge to properly interpret medical finding in order to give a concise, precise and an accurate opinion on the manner and the cause of death[11].

A forensic nurse, needless to say can be a great help and may assist a coroner or a medical examiner at the scene of crime[6].

Sexual assault nurse examiner

More than a million women are victim of violent crimes including rape and other sexual assaults each year[3].Many factors prevent women from reporting these crimes to the police and other legal authorities. Some factors being the

perceived stigma, public embarrassment, low conviction rates etc etc[3].

Health care professionals have come to play a central role in documenting its incidence, assessing its physical and psychological consequences and devising community based networks to help the survivor[12].

Trained forensic nurses can be a part of the Sexual Assault Response Team (SART) and would help by establishing relations with the victims[3], obtain history and detailed account of the sequence of events and conduct a thorough general physical, local pelvic examination and evidence collection[2, 8].

Since sexual assault results in a serious physical and emotional trauma and havoc[2], a forensic nurse can aid in stabilizing the victim's emotional state, educating the victim regarding sexually transmitted diseases, pregnancy risk and follow up care. She thus maintains a chain of evidence and collaborates with the law enforcement agencies in the administration of justice[8].

Forensic psychiatric nurse

Integrated approach of the psychiatric nurse and a forensic nurse in the management of mentally unstable/ unsound offenders, malingerers and substance abusers can prove to be a real asset in the administration of justice[13, 3]. Forensic nurses are trained to observe the suspected accused in a better manner without any prejudices whenever they take the plea of mental illness or unsound mind[7]. They can also help the courts in determining whether the offender is sane enough to stand the trial or not, besides providing care to the mentally ill offender[5]

Evidence collection

Evidence is the basis of conviction. The commonly encountered evidences are clothes or their fragments, buttons, hair, fibers, bullets, stains (blood, seminal, salivary etc) fragments of metal, glass, paint, debris under the nails and so on. Quite unfortunately much of the evidence is lost before we realize its importance. This is mainly because of the lack of proper forensic guidelines for the health care providers and nurses regarding the collection and preservation of evidence[4].

Here again the forensic nurse can play a vital role as far as evidence collection and preservation is concerned. She may even be called to the scene of crime or the accident site to collect tissue and blood samples and other trace evidences[8].

An important consideration here should be the proper, precise and accurate maintenance of the chain of custody of the evidence including its proper documentation, securing and handling of evidence failing which its admissibility is likely to be dismissed in the court of law[4].

Documentation

Documentation is the most important aspects of nursing. Medical records should be factual, accurate, precise, concise and legible[14] for it to be admissible as evidence in the court of law

Detailed, descriptive, relevant and clear documentation enhances its credibility in the legal arena because "if it is not documented it did not happen" is how the legal community views documentations[15].

Organ donation

Forensic nurse can play a large role in organ donation and organ retrieval where death is unnatural and legal agencies are involved. She can collect all the relevant information and evidence while dealing with organ procurement organizations and medical examiners for organ donation[16].

Thus forensic nursing, forensic medicine and criminal justice can work cohesively to ensure increased organ donation without compromising or jeopardizing the medicolegal aspects[16].

Forensic geriatric nurse

Provide care and investigate issue of abuse, neglect, or exploitation of the elderly population[5].

Forensic pediatric nurse

Provide care and investigate issue of abuse, neglect, or exploitation of children[5].

Forensic war/mass casualty

Provide care for casualties of war and victim of mass casualties paying due weight age to the medicolegal perspectives[5].

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Reflective thinking – a guide to paradigm shifting in RN –BSN nursing students

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Abstract

Engaging RN to BSN students in a paradigm shift by allowing them to retain pride in their basic nurse education while equipping them to reflect upon their practice as they collaborate with colleagues, mobilize and manage groups of co-workers, and strategize how to meet best practice goals is an overall aim of the RN to BSN program at Washington State University College of Nursing. Ethical comportment, as identified by Benner encompasses nursing practice identity, character, skilled know-how and self knowledge. Ethical comportment becomes the pathway to accomplish the paradigm shift goal. Students are introduced to reflective thinking through the use of case based dilemmas in an ethics course. Reflective thinking, in discussion groups with others, allows group members to understand the situation better instead of simply articulating standard ethical rules. Such thinking allows students to exercise their own clinical judgment and, at the same time, to critique their own practice. This approach has been used successfully in both in-class and online sections of the course. Students report a heightened sense of control as change agents when dealing with complex workplace and/or best practice issues by using reflective thinking in these situations.

Keywords

Carnegie Nursing Education Study, case based learning, ethical comportment, ethical decision making, evidence based practice, expert clinical judgment, online class discussion, paradigm shift, reflective thinking, RN to BSN nursing programs.

Reflective Thinking

a Guide to Paradigm Shifting In RN-BSN Nursing Students
Registered Nurse Students entering a RN to BSN program in colleges of nursing have special needs and challenges that must be successfully identified and addressed if they are to emerge as graduates who can embody the core values and goals articulated by the program. The RNB (Registered Nurse to Baccalaureate) faculty who teach in this program at Washington State University have worked together to identify some of the unique needs of these students and to focus the RNB curriculum toward addressing those needs. (1) This article chronicles the faculty's attempt to meet these challenges and illustrates the success of the approach that we have used in a required nursing ethics course in the program.
One issue, with which the faculty has struggled, is the issue of entering RNB students already having a valid nursing credential. They can all write "RN" after their names. An additional factor is that these students come with varying degrees of experience - - some having no practical nursing experience as RNs, while other may have 20+ years of registered nurse experience in a variety of clinical sites. Indeed, some students hold various nurse certification credentials. Many have long histories of productive employment as professional nurses, while others are more recent graduates of their programs.
A related corollary is that most RNB students are justifiably proud of both their basic nursing education and the experiences that they have had. Many of these nurses have grown considerably from the stage of beginning or novice nurse to expert status because of their rich grounding in clinical experiences. They embody the characteristics cited by Benner in her work regarding novice to expert practitioners. (2) These nurses correctly become resentful if their prior program or experience is characterized as substandard in any way. The faculty at our college have tried to engage these students in a "paradigm shift" through our teaching in order to promote students' ability to both hold onto their pride in their basic nursing education and prior career, and, at the same time, to start rethinking their role: deciding what it means to be a nursing change agent and leader in their respective spheres of practice when they graduate with their BSN degree. Accomplishing this task successfully, according to faculty teaching in the program, is an ethical imperative.

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What does paradigm shift mean in our particular situation?

A paradigm shift is defined (Encarta Word Dictionary) as: "a radical change in someone's basic assumptions or approach to something." Historically ADN graduates of community college programs lacked extensive clinical experience in community health nursing. (3) This segment of nursing education is the one where students learn how to manage groups of clients, whether the "group" is a family, another group or a community. Collaborating with others, strategizing how to best accomplish community goals and, often, coordinating care by mobilizing and managing groups of nurses and other health care workers, are hallmarks of this area of nursing.
However, many practicing nurses, whether ADN or BSN prepared, find themselves in an informal community health setting, if not an actual one as they practice. A nurse manager, a nursing supervisor or an OR circulating nurse, often embodies principles of community health nursing in a hospital setting, for instance. Whether or not these nurses have had formal community health nursing education, they learn experientially how to function under these conditions. ADN graduates accomplish this, often as well as the many BSN nurses who have had this content as part of their prior formal education.

So, simply teaching ADN graduates community health content in a BSN program does not, by itself, promote paradigm shifting thinking in these students. Although learning about community focused principles is important, and should certainly be part of the curriculum, a better conceptual understanding of what paradigm shift, in the context of our program, means was needed if our students were going to be ready to step into leadership roles in their respective careers. We wanted our graduates to think differently about themselves as BSN nurses while holding on to the pride they feel regarding their basic nursing education. We wanted them to think deeply about the core issues connected to the three apprenticeships needed for nurses to successfully transition into practice cited by Benner - - cognitive apprenticeship, practical apprenticeship and ethical comportment apprenticeship.(4) These apprenticeships apply broadly to every segment of nursing education, including, but not limited to community health nursing content.

Benner, in her critique of BSN education in the US, discusses the three apprenticeships in depth. Cognitive apprenticeship represents the theoretical knowledge base required for practice. It is typically the undergirding focus of classroom teaching. Associate Degree Nurse (ADN) graduates do not have as long an exposure to these knowledge based social sciences, basic sciences and humanities courses as do BSN students, due to the shorter length of the overall ADN program. However, the grounding of these nurses to theory based nursing concepts in their nursing courses is still considerable. They are usually able to demonstrate a good knowledge base for nursing at the beginning of, or shortly into, their RNB course work.

The second apprenticeship

the practical, deals with the clinical practicum where nursing theory learned in the cognitive apprenticeship is put into practice as students deal with clients. RNB students typically do well with this apprenticeship, due to extensive clinical practicum in their prior program as well as their experience as practicing nurses. The only exception is their lack of depthful practicum community health content.

That leaves the third apprenticeship – the one dealing with **ethical comportment**

to be explored as a way to introduce a paradigm shift into the RNB student's thinking. . Benner describes this apprenticeship in the following way:

The third apprenticeship is the ethical:

the instantiation of the responsibilities, concerns, and commitments of the profession that show up in what we call the professional's formation of a nursing practice identity, character, skilled know-how, and knowledge, as well as everyday "ethical comportment" as a professional nurse." (4, 2008:17; 474)

Benner goes on to suggest that the three apprenticeships described above should not be thought of as three separate learning packets or modules; rather, she advocates full integration of these concepts in each course if possible. In particular the apprenticeships should be intertwined in **practicum courses**

since, if they are separated for learning or analytical purposes, it becomes more difficult to reintegrate them when they are not present in the integrity of each learning situation. (4)

How to incorporate ethical comportment into our student's learning became our focus as we tried to meet the paradigm shift criteria described above. Benner urges faculty to always be thinking about how to create the conditions whereby "students and faculty (can be) seriously engaged in learning to do good practice." This charge is, at its heart, an ethical comportment issue.

After extensive conversations about our experiences in teaching these students and review of available literature on the subject of changing the thinking of students to expand their already established core values about good nursing practice, we determined that several things were necessary to enable students to meet the paradigm shift thinking goal that we had set. Our purpose became that of consistently engaging with our students in learning to do good practice in every situation. By using "good nursing practice" as our referent point, we reasoned that we could enable students to hold onto the best of their prior ADN education and their experience as nurses, and, at the same time, think critically about how to function as a BSN prepared nurse leader and change agent.

First: we needed to work together as faculty to solidify our thinking about what we were currently doing to foster the achievement of competencies by students in our various courses. We already had a Document: Essentials of Baccalaureate Education in Nursing from the AACN (5) and a Critical Thinking Rubric from our University. (6) Additionally, our College has a Mission and Goals Statement and our various courses all have course objectives. However, we felt it also important to dialogue with each other regarding what we were doing in our individual courses that fostered the engagement of ourselves and our students in the serious learning of how to do good nursing practice. Obviously, this task is different in an RNB program from a standard BSN program, because the students are different. We began to share our insights with one another at our RNB faculty meetings, as well as informally between faculty who taught different sections of the same course. This sharing was facilitated by the Assistant Dean of the RNB program. We learned a great deal from each other in this way.

Second: it was determined that a change in the way students think about the knowledge they are receiving in the program was needed. Students enter an RNB program with the basic language of nursing already mastered. They are also familiar, to some degree, with the cultural aspects of the nursing profession. They know how to "go along to get along". A basic problem with individuals already socialized into a particular way of thinking about something - - be it nursing or how to drive a car - - is that often, having mastered the "right" way of thinking about something, individuals don't thoughtfully consider that thing again. In driving a car, we all become automatically involved in driving – to the extent that we do not usually think about what we are doing. We often do not consider whether or not we are driving safely even though we assume that we are doing that. We trust that we are observing good driving practice because we have done it for a long time.

This example holds true when we considered our students thinking about good nursing practice. If students are already familiar with their profession, having been socialized to it earlier, there must be some motivation to encourage them to think about it again in a critical way. Even though the nursing that they may have practiced for years is adequate, is it really "good nursing practice" as described by Benner? Does the

practice of our RNB students embody a strong nursing practice identity, character, skilled know-how, knowledge and ethical comportment?

In thinking about this issue (of thinking) we encountered the work of a number of philosophical thinkers. One of them, Heidegger, speaks directly to the issue of thinking in the "Memorial Address." (7)

In this speech, Heidegger identifies two specific kinds of thinking: Calculative Thinking and Reflective (or Meditative) Thinking ? Calculative thinking means thinking with an agenda. It is specific thinking designed to identify the correct or "right" way to meet a goal. It is called "calculative" because that is what it does. It calculates how to better, more economically or more efficiently accomplish goals, produce results, and get things done Once a goal is established, calculative thinking moves ahead to single-mindedly meet that goal. "It never stops, never collects itself." (7, Memorial Address; 46)

Meditative or Reflective Thinking is the second kind of thinking identified in the Memorial Address. Reflective Thinking means thinking about something with no specific agenda except to know and understand the object of one's thought better. Heidegger uses the term, "dwelling" to describe reflective thought. It is in reflective thinking that the meaning of one's encounter with the object of one's thought becomes clearer. To state it another way, the meaning of the encounter between thinker and thought about entity gains clarity as the thinker dwells on the work of thinking about the entity without a specific agenda to modify or change the entity in some way.

With the advent of technology, more and more thought has become calculative. As treatment modalities are identified, for instance, the best way to evaluate them is often through thinking about how well they work. "How well they work" becomes the goal; calculative thinking helps nurses identify whether or not modality X produces the best result. Most evidence based nursing practice is calculative in nature because calculative thinking products are evidence of the effectiveness of specific nursing interventions. Nurses are encouraged to use evidence based interventions to guide their nursing practice. (8) Students are urged to hold to this standard, whether in ADN or BSN programs of nursing. Abandoning evidence based practice completely would, without question, relegate nursing to the long ago days when nurses functioned as "hand maidens to the physician" - - often prohibited from thinking independently at all. Evidence based practice, nursing theory and calculative thinking are useful tools for achieving much of the progress seen in nursing and health care today. It is a good thing.

However, the function that nurses fulfill with and for their clients – the only function that they define and control independently from other health care workers is that of client advocacy. (9) Many times, health care professionals advocate for clients by providing them with the best evidence based modality for whatever health problem they might have. But, nurses also know that, oftentimes, evidence based modalities do not, simply by themselves, produce the feeling of well being or sense of good quality of life that clients hope for. Hence, calculative thinking, by itself, does not always solve the client's problem completely. What is needed in situations like this, if one is to function as a client advocate, is to expand the range of treatment modalities beyond the scope of evidence based treatment protocols. (10) Put another way, evidence based treatments should not be abandoned; they should be built upon or expanded by the advocate. This is done by encouraging nurses to modify existing protocols or add other options that emerge as the nurse and the client get to reflectively know and understand one another. The same reflective process can be used when RNB students think about the profession of nursing as a culture. Understanding the core values and sociology of the nursing culture reflectively allow students to seriously rethink their role within the larger profession. By using this process of reflection, faculty can act as advocates for RNB students in effecting the paradigm shift thinking described earlier.

Reflective nursing practice springs from a combination of experience, expert clinical judgment and reflective thinking ?. Polkinghorne (11) describes functioning in this way as a kind of "phronesis" or practical wisdom. Phronesis, as a term, was first discussed by Aristotle in his famous "Nichomachean Ethics". Polkinghorne describes phronesis as contrasted with **"techne" (technology) in the following way:**

" Techne" is the kind of reasoning that develops plans - - - Once a plan has been developed through techne, it can be used repeatedly on the same type of material and will consistently produce the same outcome. " (11;115)

Whereas, - - -"Phronesis" is concerned with actions that relate to human beings. Its product is knowledge about actions that in and of themselves are expressions of the good life; it is not knowledge about things that stand alone." (11;116)

Put another way, techne (the technically based side of nursing practice) reasoning consists of scientifically validated or evidence based knowledge, while phronesis, as reasoning, calls upon the practitioner's self knowledge, intuition, experience and expert clinical judgment to advocate for his or her client regarding quality of life matters.

It is apparent that both techne and phronesis are important in quality nursing practice. Identifying appropriate nursing practice roles for each encounter with clients requires deliberative thinking about what kind of reasoning is called for in each specific situation. Clinical decisions usually call for careful application of both kinds of reasoning. Good nursing practice, at its core, is involved with treating people as holistic beings with life stories. Nursing is more than technical actions performed upon bodies with a particular medical diagnosis. When the characteristics of calculative thinking are considered, they match most closely with the "techne" aspect of nursing practice. Similarly, phronesis matches best with the qualities of reflective thinking.

Ethical comportment (the third apprenticeship cited by Benner) is all about rethinking how one practices as a nurse and interacts with one's fellow workers. (4) How to encourage students in our program to think reflectively about what they were doing as they interacted with clients and nurse colleagues in a variety of clinical settings became an important part of our faculty discussion of "how to do good nursing practice". Moreover, with RNB students, it seemed important to find a way to "turn" their thinking from the automatic "right" answers garnered from their previous education and practice. Certainly their prior knowledge was not necessarily wrong. What we wanted to do, as faculty, was to encourage them to reflectively think again about previous assumptions they had made; to re-examine them to determine their validity and reliability in a variety of new circumstances.

A case based curriculum which makes liberal use of storytelling or "narrative pedagogy" was used in several courses as a way to accomplish this goal. (12) One of the required courses in the RNB curriculum, "Analysis of Health Care Ethics" will be used to illustrate how students were encouraged to re-examine

their previous assumptions about ethical comportment in nursing in a reflective way. (13)

First: the need to establish a baseline of common understanding of ethical terms and concepts was made explicit to students. Without a common language of what terms like "moral theory"," ethical dilemma", or "ethical comportment", it would be impossible to identify and address ethical situations. Students needed to learn the basic definitions and concepts pertinent to the study of nursing ethics so that everyone had a common understanding of these terms. This common language provided a foundation for the discussion that followed.

Second: Students were introduced to the idea of calculative thinking and reflective thinking. Calculative thinking is the thinking that uses evidence based practice. That kind of thinking is what undergirds medical goals of treatment and the treatment plans needed to successfully implement those goals. But, in nearly every ethical situation that deals with an individual patient and their family, a more reflective approach is a better way to begin to understand the moral dimensions of the situation. When analyzing an ethical case study, most nurses often say something like, "What you need to do is to get to know the patient, his/her family and friends, and the health care workers who are involved better. Once you do that, the "right" thing to do will emerge." Following that excellent advice means using reflective thinking. Most students are unaware that these two different modalities of thinking exist. Simply understanding that another way of thinking exists is surprising to them. Further understanding that reflective thinking can be used to address ethical situations is welcome news.

Third: The idea of using case based stories to illustrate ethical problems and issues was addressed. This teaching-learning strategy, called Narrative Pedagogy: described by Diekelmann and her associates, (12) draws upon the power of stories to situate ethical problems in the real world that the nurse inhabits. Narrative Pedagogy was introduced to students as a safe way for them to discuss ethical issues that they may have encountered. Students were often reluctant to share their own stories; however they were invited to do so if and when they felt comfortable. Many students chose to email their "ethical story" to the instructor requesting that the story be shared with others by the instructor with themselves remaining anonymous.

The instructor used a variety of case studies both to illustrate how ethical discernment occurs in nursing situations and also as a back up when no student stories were forthcoming. The case studies were taken from textbooks, periodicals such as The Hastings Center Report, or from the instructor's own considerable experience. They dealt with a range of topics - - patient autonomy and medical beneficence, decisional capacity and decision making, abuse of power, substandard nursing practice, horizontal and lateral violence and workplace safety. In each case, the case study was read while the students listened. If possible the case study was also given to students before the class convened, but reading it aloud again was important because it captured the students' attention. Once the story was shared with students, the following points were highlighted in the discussion led by the instructor:

1. "Are there parts of this case study that are unclear? Is there anything about this story that you don't understand?" The purpose of these questions is to make sure that everyone has a common understanding of the facts of the case.
2. "What does this situation remind you of? Is there anything that has happened to you as a nurse or in your general experience that "feels" like this?" These questions attempt to turn the thinking of the students to a more reflective mode. This is done through linking the situation being discussed to the student's own "experiential library" of prior events that have given meaning to his or her life. The purpose is to guide the thinking of students toward an appreciation of the meaning of the situation. This step did not attempt to judge right or wrong action. It was geared toward understanding the situation better and appreciating how it feels, nothing more.
3. Deconstruction of the story could then begin. A moral dilemma is, by definition, a situation for which there is no clear cut "right" answer. Students were encouraged to share their ideas of what the moral dilemma was by exploring what they thought the situation meant to each of the players. Why each individual in the story was acting the way that they were was addressed. Students were guided away from easy assumptions such as "bad guys and good guys", "what the rules say", or "whatever is legal is moral and whatever is illegal is immoral." They were encouraged to delve into what they perceived as the meaning of the situation, to express their feelings about what they found and to respectfully listen to the thoughts and ideas of others about the same situation.
4. Finally, in these situation, the ethical response to the situation begins to emerge. The response happens, not as a result of "groupthink" or "decision by committee", but rather as a genuine reflection upon the problem combined with the students' experience as expert clinicians. It happens as result of using phronesis, or practical wisdom, combined with the wisdom of others to discern and finally to ethically respond to the situation. (13)

The steps described above may lead readers to think that this process is easy and formulaic. It is neither. Each situation is different, as is each group of students. Some students do not like to talk in class. Others want "the right answer" and are uncomfortable with any ambiguity. Ambiguity is part and parcel of reflective thinking and also of ethical decision making. Still others become threatened if everyone does not agree with their point of view. Finally, some students become anxious because this kind of discussion is a fairly radical approach from many content heavy nursing courses. It takes patience and a willingness to give up some assumed power as instructor to engage students in learning about ethics in this way. (4)

Another assumption that readers may make about the process described above is that it only lends itself to situations in which an instructor is teaching a group of students in a classroom. That assumption is incorrect. Our program offers students a variety of options that they may use to complete their degree. They may take courses in the classroom setting. However, they may also take every course online, if they so choose. A third option for them is to take "hybrid" courses – a combination of classroom and asynchronous learning combined in one course. (14) For asynchronous students, narrative pedagogy works well in a discussion forum setting. It involves persistence and attention to each student posting by the instructor to move the discussion forward, but, if students are told to connect the case study to their experiential

library and then speculate on the most ethical response (including providing rationale for their opinion), their postings provide the instructor with ample material to generate and enrich further discussion.

We have found our students to be enthusiastic about their RN to BSN program. Nearly every student reports that the course described above has provided them with a new way of thinking about nursing and has empowered them to think of themselves as leaders and agents of change within their profession (14) Most importantly, reflective thinking can give any nurse an opportunity to perceive workplace issues through a different lens than the calculative one which often emphasizes completing the job assigned and "being a good team member" – i.e. following the rules without question. Understanding that there is another way to think about what one is doing as a nurse often restores a sense of control to nurses who may have previously perceived themselves as little more than "worker bees."

To summarize: we have found that reflective thinking does engage both students and teachers into paradigm shift thinking. For faculty, it opens a new opportunity to teach outside the box of standard facts, concepts, and right and wrong information. While requiring faculty to give up some of their power as "guardians of the truth", it also permits them to better understand the world of their students and the practice world that those students inhabit.

For students, reflective thinking opens a new avenue of being able to practice and also, at the same time, to think about, or contemplate their practice. Many students say things like, "I have wondered about that for years" or "I always thought it was strange that we did things this way" or "I never had any idea what to do about a colleague's substandard practice." (13) Comments like this are the best reward of teaching in this way because it provides anecdotal evidence that students are embracing and learning from the ideals of our program while holding onto the quality of their previous education and life experience.

In summary, reflective thinking has enabled both students and faculty in our RN to BSN program the opportunity to shift their thinking into a new paradigm. Through honoring their prior education and experience as skilled clinicians and encouraging them to think reflectively about their practice, we have been able to preserve their pride in being a nurse and also motivate them to join with us as we "seriously engage in learning to do good practice."

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Effectiveness of an informational booklet on care of attempted suicide patients

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Abstract

Nurse's attitude towards attempted suicide patient is a key factor in determining the effectiveness of the care they provide. Many studies explored the nurse's attitude towards attempted suicide patients. the effectiveness of an informational booklet was tested in terms of increase in Knowledge and change in attitude of nurses. Structured knowledge questionnaire was used to assess the knowledge of staff nurses and suicide attitude scale was used to assess the attitude. There was a significant improvement in knowledge and attitude in the post-test. The median post-test knowledge score was (15) apparently higher than the median pre-test knowledge score (10). Majority of the nurses possess a favorable attitude towards the attempted suicide patients. The median post test attitude score was higher than the median pretest attitude score. There was a positive co-relation between the pretest knowledge score and pretest attitude scores (r=0.434). Both the knowledge and attitude are not having any association with any of the demographic variables. This is a preliminary intervention for improving the knowledge and attitude of towards the attempted suicide patients.

Keywords

attempted suicide, attitude, informational booklet, knowledge.

Introduction

Mankind marches ahead in its quest for growth and development; the changing social economic and health patterns of societies are a living testimony to this growth and development. Suicide, an index of disturbed society, is one of the leading causes of morbidity, mortality, socio economic loses and diminished quality of life. Each year, approximately one million people die by suicide around the world. In many countries, suicide is a leading cause of death, particularly among young people, ie among 15-19 year-old.[1] Suicide attempts occur much more frequently but no reliable data exist to confirm the true extent of the problem. [2] Worldwide, suicide rate is 14.5 per 100,000; the average suicide rate in India is as high as 148 - 158 per 100,000 populations. Nearly 14 people attempt suicide per hour in India. This is 8-20 times more than the completed suicide, and the rate being 244-610/Lakh. It is more in second & third decades of age. The population increase in the last decade was 25%, the suicide rate increased by 60%.[3]

Nursing is a profession where people, nurses and patients are constantly interacting. Thus, nursing can readily lend itself to the rapid formation of attitude towards those who come in contact with it. These reactions are between the nurses who provide care and the patients who require care. Nurses practicing in various settings are continuously communicating with people who engage in suicidal behavior and therefore continue to have a key role in working with such individuals. The researches show that both doctors and nurses hold negative attitude towards clients who have attempted suicide, attitude that result in a tendency to give significantly different care to other clients in the intensive care unit. Attitude of nursing personnel's who had attempted suicide were found to be negative and the training programme on suicide prevention is effective to enhance the attitude to attempted suicide patients among nursing personnel.[4&5]

The study aimed to determine the effectiveness of informational booklet in improving knowledge and attitude of staff nurses towards attempted suicide patients. The study also intent to find the relationship between the knowledge and attitude scores with the selected demographic variables. A study of staff nurse's knowledge and attitude is important because they provide the primary care to these patients. The potential but largely unexplored factor that may contribute to the knowledge and care provide to the patients is their attitude towards these patients.

Methodology

Design

The research design selected for this study was one group pre-test post-test design. Research approach used in this study is evaluative approach. The pre-test data were collected on the first day of the study and the informational booklet was given to the sample on the same day. Post-test was carried out on the 8th day of the pre-test. The study was conducted in Medical wards and Emergency department of KMC Hospital, Attavar; Mangalore, Karnataka. It is a 500 bedded multi-specialty hospital under Manipal University.

Sample

In the present study, the population was Staff nurses working in emergency department and medical wards of the selected hospital. A total of 35 staff nurses working in the emergency department and medical wards were participated in the study. Convenience sampling was used for selecting the sample.

Data collection instruments

The technique used for data collection was questionnaire method. Three tools were used in this study. Data collection instruments include three tools:

- Tool I- Background information
- Tool II- Knowledge questionnaire on care of attempted suicide patients
- Tool III- Suicide attitude scale

Knowledge questionnaire – Knowledge questionnaire on care of attempted suicide patients was developed by the researcher. It contains 20 items, which cover different areas: epidemiology of suicide, etiology, assessment and care of attempted suicide patients and suicide prevention. The purpose of the tool was to assess the Staff nurse's knowledge about

suicide and care of attempted suicide patients. Each item carries one mark for the right answer and zero for the wrong answer. Maximum score was 20 and the scores were graded into three groups as follows: Good knowledge (16-20 score), average knowledge (11-15 score) and poor knowledge (0-10 score). Suicide attitude scale – Suicide Attitude Scale contained 30 items. The items were developed based on the standardized scale – Domino's Suicide Attitude Questionnaire. It contained items from various aspects about suicide: stigma about suicide, normality of suicidal ideation, acceptability of suicide, right to die, cry for help, impulsivity, nurse's perception about the suicidal client etc. Each item has scoring that varying from strongly agree to strongly disagree. Each grade has different scores vary from 1-5. Out of 30 items 11 items scores reversely i.e. from 5-1. The maximum score was 150 and the minimum score was 30. The total scores were graded into three categories i.e. 101-150 – more favorable attitude, 51- 100 - favorable, and <50 - less favorable attitude.

Educational intervention – informational booklet

Intervention was given in the form of booklet which includes the information about suicide and the care of attempted suicide patients. The informational booklet was entitled "Care of Attempted Suicide Patients". The main aim of the booklet was to improve the knowledge of staff nurses about suicide and care of attempted suicide patients. The booklet content was divided under five sections. 1. Terminologies, myths and misconceptions 2. Prevalence of suicide in India and world 3. Risk factors 4. Nursing care of attempted suicide patients 5. Suicide prevention.

Procedure

On the first day the background information sheet, the knowledge questionnaire and attitude scales were completed by the participants. Booklet was given to them on the first day. Post test was conducted on the 8th day.

Data analysis

SPSS 11.5 version used for the data analysis. Frequency and percentage was used to describe the demographic characteristics of the participants. As the data did not follow the normal distribution as proved by Shapiro- Wilk test, non-parametric test were used for the analysis. The significant difference between pre-test attitude and post-test attitude was computed using Wilcoxon Signed rank test. Spearman rho' correlation was found out to describe the relationship between the pre-test knowledge score and the pre-test attitude score.

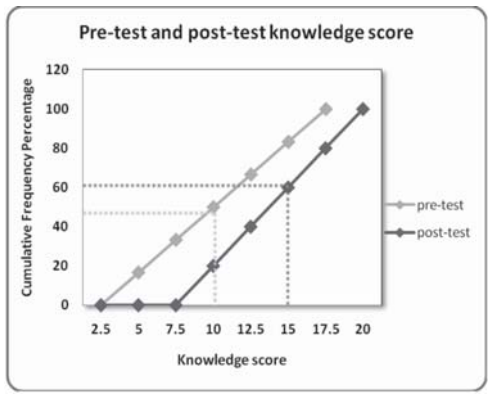
Results

Majority 32(91.4%) were females, 15 (42.9%) had clinical experience more than 5yrs and 24 (68.6%) had not undergone any training programme on care of attempted suicide patients. Majority 26 (74.1 %) (Medical ward -16 & Medical special ward-10) were working in medical wards. 16 (45.7%) had come across with patients who had attempted suicide.

The pre-test and post-test knowledge scores on care of the attempted suicide patients were computed using descriptive statistics. During pre- test majority 17 (48.6%) had poor knowledge. In the post-test 16(45.7%) had good knowledge and 16 (45.7%) had average knowledge. Only 3 samples scored poor knowledge in the post-test. (Fig:1)

The significant difference between pre-test knowledge and post-test knowledge was computed using Wilcoxon Signed rank test. The Z score is 5.183 and the p value is <0.001 which was significant at 0.05 level of significance. This show a significant increase in the post-test knowledge score..

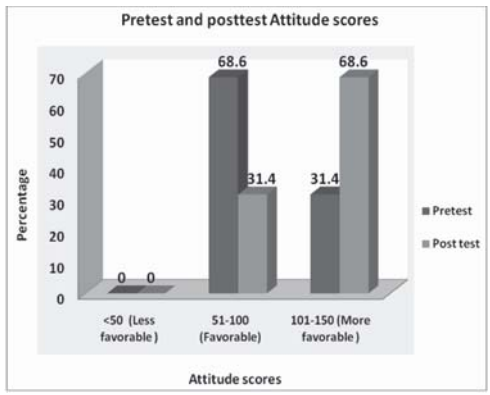
Fig. 1: Ogive showing the pre-test and post-test knowledge scores of staff nurses



The mean attitude score of pre-test is 95.66 with the standard deviation of 8.731 and the mean attitude score of post-test is 103.66 with a standard deviation of 9.184. The median attitude score for the pre-test was 97 and post-test was 104. The range of attitude score in pre-test is 37 and post-test is 44. It is evident that there is change or improvement in the attitude scores in the post-test. (Fig. 2)

The significant difference between pre-test attitude and post-test attitude was computed using Wilcoxon Signed rank test. The Z score was -4.380 and p value was < 0.001 which was significant at 0. 05 level of significance. This show a significant increase in the post-test attitude score.

Fig. 2: Bar graph showing the percentage distribution of pre-test and post-test attitude scores of staff nurses



The associations between pre-test knowledge score and pre-test attitude score with selected variables were tested using Chi –Square test. There was no significant association between pre-test knowledge score and attitude score and selected variables.

Spearman rho' correlation was found out to describe the relationship between the pre-test knowledge score and the pre-test attitude score. There was a positive correlation between the pre-test knowledge score and the pre-test attitude score. The correlation coefficient was 0.434 which was significant at the 0.01 level.

Discussions

The study aimed to determine the effectiveness of informational booklet in improving the knowledge and attitude of staff nurses towards attempted suicide patients. The present study support the findings of the study**,** an information booklet on an ethnic minority increase the knowledge base of junior doctors where significant improvement of knowledge was reported. In the present study also, the final result showed that there was a significant improvement in the post-test knowledge score after the administration of informational booklet. [9]

A study was conducted with a purpose to investigate the attitudes towards attempted suicide patients among registered nurses involved in the somatic care of such patients. The attitudes were measured on a newly constructed scale, the Understanding of Suicide Attempt Patients Scale (USP-Scale). The nurses working in the general area had negative attitude towards the attempted suicide patients. This study also suggests the need for further training in sociology; Nurse's 'negative attitudes' may to some extent be a result of lack of knowledge and uncertainty rather than a hostile attitude. This contradicts the findings of the present study. In the present study, none of the staff's possess less favorable attitude, all of the staffs possessed favorable or more favorable attitude towards the attempted suicide patient.[10]

In another study, the Nursing personnel (N = 317) working at a general hospital attended a 6-hour training programme on suicide prevention. During the programme they answered anonymously pre- and post-training the Suicide Behavior Attitude Questionnaire (SBAQ), which comprises 21 visual analogue scale items. The results indicated there were positive changes in the attitudes and these gains were significantly maintained at the 6-month follow-up evaluation. Because attitudes influence the effectiveness of health care personnel interventions, this findings may have important implications for the development of suicide prevention programs. This study supports the findings of the present study, where after the administration of informational booklet, there was significant improvement in the post-test attitude score.[11]

The present study contradicts the findings of the study, Critical care nurses' and doctors' attitudes to parasuicide patients where the study results showed that the nurses' and doctors' attitudes to parasuicide patients were generally negative. Whereas in the present study, most of the staff possess a favorable attitude towards the attempted suicide patients.[12]

Based on the research findings required changes has to be made in the field of nursing education, in-service training, practice area etc. As this area lacks with evidence based studies, many more initiatives are required to elicit the hidden factors and to deal with those factors. Educating the staff nurses about these reasons while addressing biological, personal, and social factors that contribute to their care delivery can improve understanding of suicidal behavior and patient involvement in and adherence to the treatment process.

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Effectiveness of structured teaching programme on knowledge regarding bronchial asthma and its management among mothers of asthmatic children

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Abstract

Background and objectives

Bronchial asthma is one of the most prevalent disorders of childhood which has a lasting impact on the growth and development of children. In a developing country like India, it has resulted in a spiraling rise in health care costs for children. So it is imperative that mothers of asthmatic children have adequate knowledge regarding asthma and its management so that they are able to take preventive steps.

Objectives of the study

1. To assess the pretest knowledge on bronchial asthma and its management among mothers of asthmatic children.
2. To assess the posttest knowledge on bronchial asthma and its management among mothers of asthmatic children.
3. To assess the effectiveness of structured teaching programme on bronchial asthma and its management among mothers of asthmatic children.
4. To associate pretest knowledge on bronchial asthma and its management among mothers of asthmatic children with their selected demographic variable

Methodology

A quantitative approach was used to assess the effectiveness of structured teaching programme on knowledge regarding bronchial asthma and its management among mothers of asthmatic children. The research design for the study was quasi experimental one group pretest posttest design. Samples of 60 mothers of asthmatic children were selected for the study using non probability convenient sampling technique. A structured knowledge questionnaire was used to collect the data from the mothers before and after the administration of the structured teaching program on knowledge regarding bronchial asthma and its management among mothers of asthmatic children. The tool for the data collected was validated by the experts and reliability was established using split half method. Pilot study was conducted to determine the feasibility of the study following which the main study was done. Ethical and legal parameters were taken into consideration throughout the study.
The data collected were tabulated and analyzed using frequency distribution, percentage, mean, standard deviation, chi-square test and paired't' test.

Major findings of the study

- Majority 34(56.67%) of mothers were between 21-25 years, 51 (85%) were Hindus, 40(80%) were married, 35(58.33%) were general nurses, 37(61.66%) were Hindus, 22(36.67%) had primary education,40(66.67%) had monthly income between Rs 1501-3000, 28(46.67%) were employed in private sector, 38(63.3%) belonged to nuclear family, 31(51.67%) lived in rural areas,30(50%) had children with duration of illness less than 1 year, 49(81.67%) had no family history of asthma and 43(68.3%) had no previous exposure to knowledge.
- The findings reveals that, in the pretest 36(60%) had moderate knowledge and 24(40%) had inadequate knowledge regarding Bronchial Asthma and its Management.
- The findings reveals that, in the post test majority of them 56(93.33%) had adequate knowledge, 4(6.67%) had moderate knowledge and none of them had inadequate knowledge regarding Bronchial Asthma and its Management.
- The findings depict that, the enhancement between pretest and posttest was 10.03 and obtained paired't' test value was 6.56, it was highly significant at 5% level $p < 0.001$. This showed the effectiveness of Structured Teaching Programme. Hence, research hypothesis (H_1) stated that there will be a significant difference in the pretest and posttest knowledge score of mothers on bronchial asthma and its management.
- The association of demographic variables with pretest level of knowledge by using chi-square test revealed that there was statistically significant association with level of education, monthly income, occupation and duration of illness of child at $p < 0.05$. Hence the research hypothesis (H_2) stated that there will be significant association between selected demographic variables with pretest knowledge score of mothers was accepted.

Conclusion

The present study attempted to assess the effectiveness of Structured Teaching Programme on Knowledge Regarding Bronchial Asthma and Its Management among Mothers of Asthmatic Children found that the developed STPwas effective in improving the knowledge of mothers on bronchial asthma and its management.

Introduction

"But I dream, oh, I dream what our life would be
If I never had heard of the word asthma".
—Betsy Koch, mother of a 3 year old with asthma

Childhood is considered to be the most precious gift from god. A child is carefree, happy and is untouched by the worries of everyday life. Seeing a child play in the green grass evokes a feeling of nostalgia among all of us. But all is not so happy in the lives of every child. Playing in the grass can be a distant dream for many children because even this small game can threaten their life by causing devastating respiratory disorder, which is medically known as bronchial asthma.
Asthma is the most prevalent chronic pulmonary disorder

afflicting children. The prevalence of diagnosed asthma has been growing worldwide over the past 20 years. Of greater concern is that both asthma morbidity and mortality appear to be increasing. This increase is particularly seen in lower socioeconomic groups.

The prevalence and incidence of asthma are very high in the Western world. There is widespread concern that the prevalence of asthma is still rising in developed countries, but the economic and humanitarian effects of asthma are probably greater in the developing world, where the prevalence is also rising. Primary prevention strategies to combat the asthma epidemic are therefore urgently sought, but they must be based on a sound understanding of the various determinants of the onset of asthma.

In India, prevalence of asthma in school going children has been reported between 4-20% in difference geographic regions. The prevalence has increased by two folds in the last two decades. Children with asthma suffer a high number of school absences, endure a high and increasing rate of disability and incur substantial health care costs. It is responsible for significant social, economic and psychological impact on the family.

Education of parents is an important aspect of asthma treatment. A description of the pathogenesis of asthma in simple language should be made. Also it needs to be emphasized that there is a wide spectrum of severity of asthma and that most children with asthma can lead active and normal life.

Material and methods

In view of the nature of the problem selected for the study and objectives to be accomplished a quantitative approach was used for the present study.

The research design selected for this study was quasi experimental one group pre and posttest design. In this investigator introduces base measures before and after treatment. In the present study the base measures were knowledge questionnaire and treatment is Structured Teaching Programme (STP) on knowledge regarding bronchial asthma and its management among mothers of asthmatic children. The design adopted for the present study can be represented as

The dependent variable of the present study is Knowledge scores of the mothers on bronchial asthma and its management and the independent variable is the structured teaching programme on knowledge regarding bronchial asthma and its management.

Demographic profile of mothers including the age, religion, education, monthly income, occupation, type of family, place of residence, duration of illness of child, family history of asthma and exposure to previous information.

The present study was conducted at a selected hospital in Bangalore. The total population of the present study comprised of all mothers of asthmatic children admitted in the selected hospital.The sample size of the present study consists of 60 mothers of asthmatic children admitted in the selected hospital selected using non probability convenience sampling.

Ethical consideration

1. The study was approved by the research committee.
2. Formal permission was obtained from the medical superintendent of theconcerned hospital.
3. Informed consent was obtained from the study samples.
4. The subjects were informed that the confidentiality of the data will be maintained.
5. The subjects were informed that their participation was on voluntary basis and can withdraw from the study at any time.
6. No ethical issues arouse during the study.

Results

1. Frequency and percentage distribution of mothers according to demographic variables

Out of 60 samples age, majority 34(56.7%) were 21-25 years. Majority of the samples were Hindus 51(85%). In context of education 22(36.7%) subjects were having primary education. With regard to monthly income, majority of samples, 40(66.7%) had income between Rs1501-3000.Majority of the samples 30(50%) had children with duration of illness less than 1 year. In context family history of asthma, majority 49(81.67%) had no family history of asthma. With regard to exposure to previous information, a majority of samples, 41(68.3%) had no previous.

Frequency and percentage distribution regarding knowledge on bronchial asthma and its management among mothers of asthmatic children before and after STP.

Table 1: 2. Assessment of Knowledgeon bronchial asthma and its management among mothers of asthmatic children before Administering Structured Teaching Programme.

Level of knowledge	Pre test	
	Frequency	Percentage (%)
Adequate (>75%)	-	-
Moderate (51-75%)	36	60
Inadequate (<50%)	24	40

The above table shows in the pre-test, 36(60%) had moderate knowledge and 24(40%) had inadequate knowledge.

Table 2: Assessment of Knowledge on bronchial asthma and its management among mothers of asthmatic children after STP.

Level of knowledge	Post test	
	Frequency	Percentage
Adequate (>75%)	56	93.33%
Moderate (51-75%)	4	6.67%
Inadequate (<50%)	-	-

In the post test, majority of them had 56(93.33%) had adequate knowledge, 4(6.67%) had moderate knowledge and none of them had inadequate knowledge.

Fig. 1:

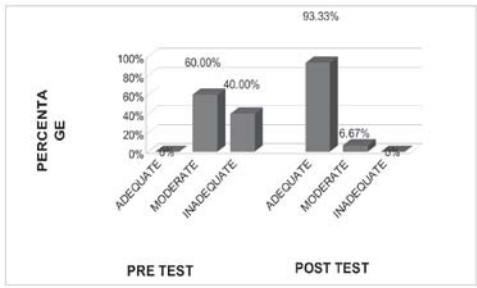

Table 3: Effectiveness of stp Mean and SD of knowledge scores before and after STP and statistical significance.

S.No	Aspects of knowledge	Maximum score	Pre Test		Post Test		Paired t test
			Mean	SD	Mean	SD	
1.	General knowledge on Bronchial Asthma	11	8.2	0.87	10.63	0.73	5.59S
2.	Signs and symptoms of Bronchial Asthma	10	3.36	1.28	6.41	1.04	8.71S
3.	Management of Bronchial Asthma	6	2.36	1.35	4.58	0.82	1.87NS
4.	Complications of Bronchial Asthma	3	1.21	1.16	2.72	1.032	1.59-NS
							6.56-S

Note: S- Significant at 5% level for 59 df (i.e. P<0.05)
NS- Not significant

Table 4: Association between knowledge with selected demographic variables of mothers.

SI. No	Demographic variables	Sample (n)		Knowledge level of Respondents				Chi-square÷^{2} - value
		No.(60)	%	<Median	e" Median			
				No.(24)	%	No.(36)	%	
1.	Age (years)<20	2	3.3	2	8.4	0	0	4.85,df=3,NS
	21-25	34	56.7	12	50	22	61.1	
	25-30	23	38.3	10	41.6	13	36.1	
	31 and above	1	1.67	0	0	1	2.8	
2.	ReligionHindu	51	85	21	87.5	30	83.3	2.27,df=2,NS
	Muslim	8	13.3	2	8.3	6	16.7	
	Christian	1	1.67	1	4.2	0	0	
	Others	0	0					
3.	Education							9.49df=3,S
	Primary	14	23.3	4	16.7	10	27.7	
	Secondary	22	36.7	9	37.5	13	36.1	
	Higher secondary	20	33.3	10	41.6	10	27.8	
	College	4	6.7	1	4.2	3	8.4	
4.	Monthly income							8.15 df=3,S
	<1500	9	15	7	29.2	2	5.6	
	15O1-3000	40	66.7	15	62.5	25	69.4	
	3001-5000	8	13.3	2	8.3	6	16.7	
	5001 and above	3	5	0	0	3	8.3	
5.	Occupation							10.2,df=3,S
	Unemployed	19	31.7	11	45.8	8		
	Private	28	46.7	8	33.4	20		
	Coolie	10	16.7	2	8.3	8		
	Government	3	5	3	12.5	0		

The results of Chi-square analysis indicated that there was significant association between knowledge scores with education, family income, occupation, and duration of illness of child at p<0.05.

Discussion

The first objective was to assess the pretest knowledge regarding bronchial asthma and its management among mothers of asthmatic children

Thepre-test Mean score in all aspects of knowledge was 15.15 with SD 3.17. The level of knowledge distribution shows that majority of subjects 60 %(36) had moderate knowledge and 40(24%) had inadequate knowledge. This denotes that mothers need to be educated on bronchial asthma and its management in children. The findings of the present study is consistent with an interventional study which tested the effectiveness of monthly asthma educational programme among mothers and found that mothers who received educational programme were better able to identify signs of asthma early and had more adherence to treatment than mothers who did not receive any educational programme.

The second objective was to assess the posttest knowledge regarding bronchial asthma and its management among mothers of asthmatic children.

The overall mean knowledge score obtained by the subjects was 25.18 and with SD 1.72 in the post test. The level of knowledge distribution shows that majority of the subjects 56(93.33%) had adequate knowledge, 4(6.67%) had moderate knowledge and none of them had inadequate knowledge. The findings of the present study are consistent with an evaluative study of asthma education package designed specifically for mothers of asthmatic children. The study concluded that after a period of 14 weeks of classes, the children whose mothers attended the classes had a 39% decline in hospitalization due to asthma attacks

The third objective was to assess the effectiveness of Structured Teaching Programme on knowledge regarding bronchial asthma and its management among mothers of asthmatic children.

The overall mean knowledge score (25.18%) obtained by the subjects in the post test was higher than the mean knowledge scores (15.15%) in the pretest and with the improvement mean score of 10.03. There was significant difference between the pre and posttest knowledge score with the't' value of 6.56 and found to be significant at p< 0.05 level. This indicates

that the structured teaching programme was effective in improving the knowledge on bronchial asthma and its management among mothers of asthmatic children. Hence the research hypothesis H_1 stated that there is a significant difference between the pre and posttest knowledge scores of subjects on knowledge on Bronchial Asthma and its Management among motherswas accepted. The finding of the present study is supported by a study on the effectiveness of an OPD based asthma education programme. 160 mothers who attended asthma clinic were given a pretest questionnaire (mean score 11.6) after which they were given an educational programme on bronchial asthma for 45 minutes. The post test score (mean score 27.18) showed that there was considerable improvement (15.58) after the educational programme.

The fourth objective was to associate the pretest knowledge score with selected demographic variables of the subjects.

The association of the pretest knowledge score of the subjects with selected demographic variables such as education, family income, occupation, and duration of illness of child evidenced that there was statistically significant association at $p < 0.05$ level. Hence the research hypothesis H_2 stated that there will be significant association between the pretest knowledge score with selected demographic variables was accepted. The findings of the present study is consistent with a study on the relation between the duration of illness of child with improved perception on asthma among their mothers which found that mothers whose children had asthma showed improved understanding about the disease and its management.

Acknowledgments

My note of special thanks to God almighty for being my candle in the hours of darkness, my parents Mr. Venugopal and Mrs. Padmini for paying my huge bills to complete the study, my principal Mr. Dinesh for tolerating my late submissions, my guide and my pillar of support, Mrs. B Uma Maheswari and lastly my bunch of great buddies- Jubin, Vishwas, Jisha and Anoop who tolerated all my mood swings. And thanks to anyone I have missed out here.

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Effectiveness of acupressure on achievement stress among high school students

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Abstract

Acupressure has been found to be effective in a number of conditions. This study aims at determining the effectiveness of acupressure on achievement stress among high school students. A quasi experimental pretest posttest control group design was used. Statistical analysis of data revealed that acupressure was effective in reducing achievement stress among students within the study group ($t = 13.498$, $p < 0.001$) and among students between the two study groups ($F = 74.836$, $p < .001$).

KEY WORDS: Acupressure, Achievement Stress, Effectiveness.

Background and need

Stress is an inevitable part of life. A certain amount of stress is normal and necessary for survival.[1] There are numerous circumstances that children are faced with on a daily basis that can cause considerable stress and anxiety.[2] Stress helps children develop the skills they need to cope with and adapt to new and potentially threatening situations throughout life. The beneficial aspects of stress diminish when it is severe enough to over-whelm a child's ability to cope effectively.[1]

Intensive and prolonged stress can lead to a variety of short and long-term negative health effects. It can disrupt early brain development and compromise functioning of the nervous and immune systems. In addition, childhood stress can lead to health problems later in life including alcoholism, depression, eating disorders, heart disease, cancer and other chronic diseases. [1]

Acupressure is a form of complementary therapy which has been proved to be effective in a number of medical and psychological conditions. This study will help to determine the effectiveness of acupressure on achievement stress among high school students. Acupressure if effective is a cheap, easily self administrable technique, will provide students a measure to develop positive potentials to control and manage their stress in present and in future also.

Purpose of the study

The purpose of the study was to determine the level of achievement stress among high school students. The study also aimed at evaluating the effect of acupressure on their stress by teaching them acupressure on specific points so that it will help them to be capable enough to cope with stress in a better way in future also.

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Objectives of the study

The objectives of the study were to:

- termine the levels of achievement stress among high school students in terms of scores obtained in subset 2 of Bist Battery of Stress Scale (BBSS).
- find association between levels of achievement stress and selected variables.
- determine the effects of acupressure on the levels of achievement stress in terms of reductions in stress scores as obtained by the subset 2 of BBSS.

Hypotheses

The following hypotheses were tested at 0.01/0.05 level of significance:

H_1: There will be a significant association between levels of achievement stress and selected variables.

H_2: There will be a significant difference between pre-test and post test level of achievement stress among the high school students as obtained by BBSS in the intervention group.

H_3: There will be a significant difference in the post test achievement stress scores of the high school students of intervention group and control group.

Methods and procedure

Design and sample

The study was conducted in Jan-Feb 2010 in selected ICSE/ CBSE school selected by convenient sampling in Udupi district, Karnataka state. A quasi experimental pretest post test control group design was used. Ninety five high school students (47 in intervention group and 48 in control group) staying in hostel, aged 13-16 years of age, from selected ICSE/CBSE schools were selected by purposive sampling, enrolled in the pretest. These students could understand, read and write Hindi and they agreed to participate in the study. There was an attrition rate of 8.42% which rendered the final posttest sample size to be 87.

Assessment instruments

Instruments used were a background proforma and subset 2 of Bist Battery of Stress Scale (BBSS: standardized tool by Abha Rani, 1971 obtained from the National Psychology Corporation of India, Agra.).

Background proforma included 17 items concerning about the age, gender, type of family, size of family, incidence of failure in examination, number of siblings, relationship with friends, understanding with parents, discrimination done by teachers, presence of chronic illness in the family, experience of stressful situation, education of parents and occupation of parents. Content validity of the demographic tool was

established by giving it to five experts. All items received 100% agreement with suggestions of change in order of the items. Hence all items were retained after recommended change in order of items.

The *BBSS* has thirteen subsets concerning with various types of stress. The subset 2: achievement stress scale was used in the study. It is a questionnaire of 52 multiple response questions that measure achievement stress among students. Each item in the scale has maximum score of 4 and a minimum of 0. The maximum score is 208.

Pretesting of the tools was done by administering the tools to 13 high school students. The items were found to be clear and the average time taken by the participants to complete both the questionnaires was 1.00 hours.

Ethical permissions

Administrative permission was taken from the Dean, MCON and Principals of selected schools in Udupi district. Oral permissions were taken from the students to participate in the study after explaining about the acupressure and demonstrating the process of acupressure

Acupressure training

The researcher did training in acupressure for a month and was certified to practice and teach acupressure for the study.

Intervention

The intervention to intervention group included 15 days of self administering acupressure sessions once daily on selected points. Acupressure was applied for duration of 5 minutes on each Neiguan point, then 5 minutes of bilateral application of pressure on Yangbai point, and 5 minutes on Yintang point. Thus the total duration of session was 20 minutes. Selection of acupoints was done after consultation with the experts in the field.

Pilot study

A pilot study was conducted on 10 students each in intervention and control group. The participants had similar characteristics to that of the study population. The study was found to be feasible.

Data collection

On 24th of January 2010 a meeting was organized for the researcher and the hostel students. The researcher was introduced to the students and the aim and objectives of the study were explained to the students. Students were explained about acupressure, its known effects, possible side effects and demonstrated the procedure for locating and applying pressure on selected points in the study. The students were informed of the duration of the study and were invited to participate in the study from 25th January 2010 to 8th February 2010. Oral consent of the students was taken for participation in the study. These students were assigned to the intervention group.

Pretest data on background characteristics and subset 2 of BBSS, was collected from the above intervention group on the first day, 24th January 2010 (n=47). Acupressure session for 20 minutes daily was given to the students from 25th January to 8th February 2010. On 8th February, the last day, after the acupressure session, post test data was collected using the subset 2 of BBSS (n=45, 3 students were not present during the post test) just after the acupressure session.

Data was collected from 48 students from another school which constituted the control group on 26th January 2010 (n=50) and on 13th February 2010 (n=42, 6 students were not present during the post test due to local transport strike.). No intervention was carried out in the control group.

Statistical analysis was done using software SPSS 11.5 version. Paired *t* test and ANCOVA [analysis of covariance test, this test allows to minimize the effect of covariate (pretest scores), hence gives a more precise treatment effect] were used to find the effectiveness of acupressure.

Results

In the study most of the students in intervention group [21(44.7%)] and in control group [29(60.4%)] were in the age group of 14 years. Also the number of females was more both in intervention group [24 (51.1%)] and in control group [25 (52.1%)].

Background characteristics

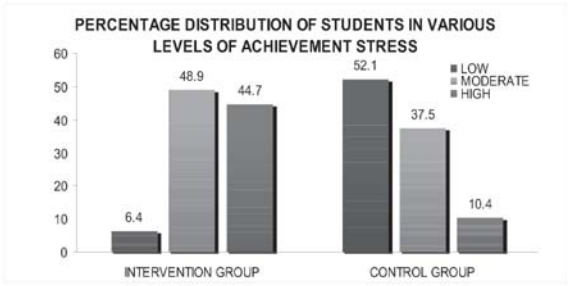
Levels of physical stress

The percentiles, P_{30} of pretest achievement stress scores was 99.4 and P_{70} was 118.6. Based on the guidelines given in the manual provided with the standardized tool, the students were categorized into low (P_{30} or below), medium (P_{31} to P_{69}) and high stress (P_{70} and above) levels shown in fig 2.

Figure 2 shows that most of students in intervention group [23(48.9%)] were in moderate achievement stress while in control group majority [25(52.1%)] were in low achievement stress.

Association between achievement stress and various variables

Fig.2: Bar diagram showing the percentage distribution of students in each level of achievement stress in intervention and control groups before intervention.



The results of Chi Square test and Fisher Exact test shown in table 2 revealed that achievement stress was significantly associated with age in years of students, incidence of failure in examination, number of siblings of students, education of father, and education of mother.

Mean and SD of pretest and post achievement stress scores

The stress scores of all the students in intervention and control group were assessed before and after the intervention using BBSS scale. In the achievement stress scale the mean pretest score of intervention group was 119.57 (SD=16.79) which was reduced to 98.29 (SD=17.26) during the post test where as the mean scores of students in control group during pretest

Table 1: Percentage distribution of students according to background characteristics. n=95

Variables	Categories	Intervention group (n=47)	Control group (n=48)
Number of siblings:	One	23.4	16.7
	Two	36.2	56.3
	Three	40.4	27.1
Type of family:	Nuclear	72.8	58.3
	Joint	27.7	41.6
Size of family:	Four	21.3	56.3
	Five to eight	53.2	31.3
	Nine	25.5	10.13
Frequency of understanding with parents	Never/sometimes	8.5	22.9
	Often	12.8	25
	Always	78.1	52.1
Belief about discrimination done by teachers	Many teachers do	2.1	4.2
	Few teachers do	53.2	16.7
	Except one all do	8.5	6.3
	None does	36.2	72.9
Help from friends	Always	53.2	52.1
	Often	12.8	27.1
	Sometimes	34	20.8
Chronic illness in family	Yes	29.9	22.9
	No	70.2	77.1
Quarrel in family	Yes	12.8	4.2
	No	87.2	95.8
Experience of stressful situation	Yes	83	75
	No	17	25
Education of father	Till PUC	42.6	18.8
	Graduation	38.3	54.2
	Postgraduate or others	19.1	9.3
Education of mother	Till PUC	78.7	35.3
	Graduation	14.9	43.8
	Postgraduate or others	6.4	6.2
Occupation of father	Domestic worker	4.3	0
	Semiskilled worker	2.1	2.1
	Clerical or skilled worker	74.4	37.5
	High administrative job	10.6	47.9
	Others/ father expired	8.5	12.5
Occupation of mother	Unemployed/housewife	59.6	72.9
	Semiskilled worker	4.3	0
	Clerical or skilled worker	34	14.6
	High administrative job	2.1	12.5

Table 2: Test for association between achievement stress and various stressors. n=95

Stress	variables	Test used	Test value	*p* value
Achievement stress	Age in years	Fisher exact	9.61	0.043
	Incidence of failure in examination in previous year or same year	Chi Square test	14.73	<0.01
	Number of siblings	Fisher exact	12.08	0.014
	Education of father	Chi square test	6.503	0.039
	Education of mother	Chi square test	9.947	0.01

was 98.28 (SD=16.97) and during posttest it was 98.90 (SD=16.22).

Effectiveness of achievement stress on achievement stress among high school students

To determine the effectiveness of acupressure on achievement stress among students within the intervention group, mean differences of the pretest and posttest scores were obtained for analysis. As the mean difference of achievement scores follow normality, Paired *t* test was used for the purpose. Also to determine the effectiveness of acupressure on physical stress among students between the study groups ANCOVA was used. The results of tests are shown in table 3.

The statistical results in table 3 revealed that the achievement stress scores of students before intervention were significantly different from that of post-intervention. The results also revealed that the reduction of achievement stress scores of students in intervention group was significantly greater than the reduction of scores of students in control group. This result inferred that acupressure was effective in reducing achievement stress of students.

Table 3: Test for effectiveness of acupressure within and between the study groups. n=87

Objective	Test used	Test value	*p* value
Effectiveness of acupressure on achievement stress within the intervention group	Paired *t*-test	*t*=13.498	<0.001
Effectiveness of acupressure on achievement stress between the intervention and control group	ANCOVA	F=74.836	<0.001

Conclusion

It was concluded that acupressure was effective in reducing achievement stress of high school students. Also achievement stress was associated with the age of students, failure in examination, number of siblings, and education of parents.

Discussion

Present study showed that most of the high school children have moderate levels of stress and that acupressure is effective in reducing achievement stress among the students. The researcher could not find major studies that examined the use of acupressure specifically on achievement stress among high school students but there are studies investigating the effects of acupressure on stress, anxiety and other signs of stress. One such study was conducted in California to evaluate the effectiveness of acupressure on preprocedural anxiety among 52 children (8-17years of age) who were scheduled to receive general anesthesia for GI endoscopy. They were randomly assigned to Extra-1 point bead intervention and non intervention group. A BIS monitor was applied to all children before intervention and anxiety was assess using Stait Trait Anxiety Inventory. The results showed that there was significant reduction in the Stait Trait anxiety levels in the intervention group after the intervention (F=6.1, p=0.017) than the non-intervention group. Thus this study proved that acupressure decreased pre procedural anxiety among children.[3]

The present study can however be limited for the small number of students, a non randomized sampling technique which limits the generability of the study and for the limitation of the study to Udupi district of Karnataka state. Also the researcher had no control over the school events like examinations, unit tests that occurred between the pretest and posttest.

Acupressure can help the students to better cope with daily life stress and prevent lack of concentration, depression and poor performance in school. Students can be taught about the acupressure technique not only for stress but also for some other health problems like dysmenorrhea, headache, vomiting etc.[4]

Implications to Nursing Practice:

Nurses working in the pediatric clinical settings as well as at primary health centres, adolescent clinics and school clinics can prepare children to cope with their daily stressors. This will help the students to better cope with daily life stress and prevent lack of concentration, depression and poor **performance in school.**

Implication to Nursing Education:

Many nursing students also are incapacitated by stress and it causes poor productivity that affects quality of nursing care. So teaching about acupressure technique to nursing students will enhance their coping abilities against daily stress and enhance the quality of nursing care.

Nursing students could utilize the opportunity and could teach the adolescents about this approach to cope up with daily stress.

Implication to Nursing Research:

Problems of adolescents, their common stressors, and incidence studies have been documented often but the related non pharmacologic coping strategic measures like acupressure, aroma therapy, relaxation techniques; mind body therapies, yoga etc. are not explored in detail among adolescents. Similarly various research have been undertaken to determine the effects of acupressure on stress and symptoms of renal patients, dysmenorrhea, hyperemesis gravidrum, labour management but not much in the field of combating with daily life stress. So there is a great need for research in the area of adolescent stress and measure to cope with them.

Implications to Nursing Administration:

A nurse as an administrator has the responsibility of the health and wellbeing of clients as well as his/her subordinates. Many a time nurses are under stress due to daily life demands which affect the delivery of their responsibilities. By practicing various acupressure techniques which are easy and self administrable, nurses can get rid of their occupational stress and improve the quality of care. The knowledge of various acupressure techniques and their health benefits can definitely help the administrators to inculcate and promote the practice for physical and mental well being of self, patients, and health care team members.

The following recommendations were made based on the findings of the study:

- A similar study can be undertaken with a large number of samples or multiple centers.
- A similar study can be undertaken using a true experimental design.
- A comparative study can be undertaken to assess the effectiveness of acupressure in various acupoints on stress.
- A study can be conducted among nurses about their awareness of complementary therapies in reducing stress.
- Longitudinal study can be conducted to assess the long term effects of acupressure on adolescents.
- A study can be conducted among adolescents to determine the effectiveness of acupressure on other kinds of stress.

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A study to determine the prevalence and knowledge of low back pain among students of selected nursing institutions in Udupi and Dakshina Kannada District, Karnataka

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Abstract

Study Design

Survey approach and explorative survey design was used to study the prevalence of Low Back Pain among student nurses.

Objectives

To determine the prevalence of low back pain among students of selected nursing institutions.

Summary of background data

Low back pain has been considered a wide spread public health concern. Early identification of workers at high risk for disability would facilitate intervention strategies.

Methods

Questionnaires on knowledge, disability and pain & selected factors were distributed to 284 undergraduate nursing students who have reported to have Low Back Pain out of 829 students.

Results

Prevalence of LBP was 34.25% & was more in 21-24year age group. Majority of the students had moderate amount of pain. Around 60.91 % of the students were underweight. About 56.6% of the students reported that LBP has affected their academic performance in classes occasionally and 31% of the students reported that few occasions they were absent due to LBP. Majority of the students possess average amount of knowledge regarding LBP. There is significant association between LBP and age group, gender, year of study and BMI.

Conclusions

There is an urgent need for health promotion programs to increase awareness and reduce risks of Low Back Pain in nursing profession.

Keywords

Prevalence, Low back Pain, undergraduate nursing students, knolwdge,

Introduction

Back pain and injury are major problem for direct care providers and can lead to disability. Low back pain is one of the foremost causes of disability, decreased ability for physical activity and economic loss in the industrialized world. The introduction of a fully integrated intervention model for occupational back pain can be shown to be not only cost beneficial for the workers' compensation boards and insurers but will significantly reduce days lost to work by injured workers.

The aim of the study was to determine the prevalence and knowledge of Low Back Pain (LBP) among students of selected nursing institutions in Udupi and Dakshina Kannada district, Karnataka State India.

Material and methods

A survey approach was adopted using explorative survey design. The study was conducted in eight selected nursing institutions of Udupi and Dakshina Kannada District. The population of the study comprised of the third year and fourth year Under Graduate Nursing Students of selected institutions. Sample consisted of 829 Under Graduate Nursing students, among them 284 students reported to have Low Back Pain. The sampling technique selected for the study was purposive sampling method. Selection of subjects was done according to the sample criteria.

Data collection tools consisted of Demographic Proforma, Pain assessment questionnaire, structured knowledge questionnaire on LBP, Modified Oswestry Low Back Pain Questionnaire {ODI version 2.1a}. Apart from the personal information it included physical measurements such as calibrated weighing machine, to measure weight and inch tape to measure height of the participants. The tools were given to 7 experts for content validity.

Reliability of demographic proforma, Pain assessment questionnaire, structured knowledge questionnaire on LBP, was established by administering the tools to 36 (fourth year) and 30 (third year) students. Split half technique was used to establish the reliability of structured knowledge questionnaire and the reliability coefficient was 0.83. Reliability of the Modified Oswestry Low Back Pain Questionnaire {ODI version 2.1a} was computed by using Pearson's product moment formulae (test retest) and the tool was found to be reliable (r=0.80). Pilot study was conducted among 86 students and the study was found to be feasible.

An informed consent was taken from the participants as well as Tool I A: Demographic Proforma was administered. By using the instruments height and weight were measured. Participants were given formal information on inclusion and exclusion criteria to move to next stage of the study, as per the tool. Further whoever identified as having LBP were taken for the main study. Participants were administered with the Section B of Tool I: Pain assessment questionnaire, Tool II: Structured knowledge questionnaire, Tool III: Modified Oswestry Low Back Pain Questionnaire {ODI version 2.1a}.

Analysis

The data obtained were analyzed using both descriptive and inferential statistics. Demographic proforma, pain assessment questionnaire were presented in frequency and percentage. Association between the demographic variables and Low Back Pain were summarized in chi square. Null hypothesis was formulated based on the objectives.

Results

Results of the study revealed that the Prevalence of back pain among Under Graduate Nursing students of selected nursing institutions was found to be 34.25%. Most of Under Graduate Nursing students 774 (93.3%) were in age group of 20-23years. Vast majority 705 (84.9%) were females. Out of 829 students majority 450 (54.2%) of them belonged to fourth year. BMI of vast majority [LBP 173(61%) and without LBP 363(67%)] of students with were within normal limits. Most [90(32%) of students with LBP and 152(28%) students without LBP] were severely underweight.

Regarding Pain and selected factors, Most 138 (48.6%) of the students suffered with moderate amount of pain. Out of 284 Under Graduate students, majority 150 (52.8%) developed LBP in a period less than 3 months. Most 272 (97.77%) of

Table 1: Frequency and percentage distribution of Under Graduate Nursing students on selected demographic variables. n=829

Sl.No	Sample characteristics	Frequency	Percentage (%)
1.	Age group		
	17-19	46	5.5
	20-23	774	93.3
	<=24	9	1.1
2.	Gender		
	Male	124	14.9
	Female	705	84.9
3.	Year of study		
	third year BSc Nursing	378	44.5

Table 2: Frequency and percentage distribution of Under Graduate student with LBP on selected variables. n=284

Sl No	Variables	Frequency	Percentage(%)
1	Severity of pain		
	Mild	124	43.7
	Moderate	138	48.6
	Severe	22	7.7
2	Length of Symptoms (total)		
	Less than 3 months	150	52.8
	3 to 6 months	24	8.5
	6 months to 12 months	39	13.7
	>1 to 4 years	58	20.4
	>4 years	12	4.2
3	Frequency of Symptoms		
	Once	5	1.76
	Occasional	17	6
	Frequent	200	70.4
	Regular	53	18.7
	Always	9	3.2
4	LBP and its effect on academic performance		
	Unable to perform well	6	2.1
	Affects occasionally	160	56.6
	Most of time affects	23	8.1
	There is no effect	95	33.5
5	LBP and its affect on attendance in class		
	Never absent	183	64.4
	Only a few occasions	88	31.0
	Most of the time	11	3.9
	Almost all the time	1	0.4
6	What effect has Low Back Pain had on your life?		
	None	75	26.5
	Minor effect	162	57.2
	Moderate effect	40	14.1
	Significant effect	5	1.8
7	Treatments received		
	Acupuncture	1	.4
	Dietary therapy	3	1.2
	Drugs/medicines	52	21
	Physical therapy	24	9.7
	Others (specify here):	-	-
	No treatment received	166	66.9
8	Results of treatments		
	Complete	13	.8
	Occasional moderate pain	104	9.8
	Moderate pain	4	78.2
	Occasional severe pain	11	3.0
	Chronic extreme	0	8.3

them developed LBP after joining the degree course and 12 (4.2%) members had LBP previously before joining the course. Vast majority 200 (70.4%) of the students reported to have frequent symptoms related to LBP, and around 53 (18.7%) reported that they are affected regularly due to LBP.

Majority 160 (56.6%) of students reported that LBP has affected their academic performance occasionally, and around 95 (33.5%) of students expressed that LBP has not affected their academic performance at all. Majority 183 (64.4%) of students never became absent for the class due to LBP. Among others, most 88 (31%) of students reported that due to LBP they were absent for only few occasions. Majority 162 (57.2%) students reported that LBP had minor effect on their life. And among others, 75 (26.5%) of the students have told to have no effect on the life. Majority 166(66.9%) of students have reported to have not received any treatments for LBP, and most 52 (21%) of the students reported to have taken drugs for their LBP. Students even reported to have used hot water bags, back belts, rest, yoga, back massage and pain balm applications for their LBP. Regarding the results of pain level after taking treatments, vast majority 104 (78.2%) have reported to have moderate pain.

Regarding the description of knowledge on LBP, Vast majority 210 (73.9%) of the students had average knowledge most 58 (20.4%) had good knowledge, and 16 (5.6%) had poor knowledge on LBP

About the description on disability, Majority 172 (64.7%) had minimal disability, 82 (30.8%) had moderate disability, 8 (3%) had severe disability and around 3 (1.1%) were crippled.

Association between LBP and selected variables showed that, there is significant association between Low Back Pain and gender, educational status and Body Mass Index. For LBP and age, there was no association found. Hypothesis was tested at 0.05 level of significance.

Discussion

The present study revealed the prevalence of LBP among Under Graduate students among the selected institution was 34.25% .The above result also justifies a study done to investigate the epidemiology of Musculo Skeletal Symptoms (MSS) among 202 Korean nursing students, which revealed the prevalence of LBP to be (39.1%). A study was conducted to investigate the prevalence of Musculo Skeletal Disorders (MSD) among 260 rural Australian nursing students. Results revealed that a high proportion of students reported an MSD at some body site (80.0%), with Low Back Pain being the most common condition (59.2%). [20]

In the present study most of 88 (31%) students reported that due to LBP they were absent for few occasions. These results support a study which was conducted in Mazandaran University of Medical Sciences, Iran, to identify the prevalence and risk factors for Low Back Pain (LBP) revealed that absence from work because of LBP was reported by 33.7% of nurses. [44]A study which was conducted to determine the predictors of incident Low Back Pain in nurses, revealed that, 322 (38%) developed Low Back Pain during follow up (mean 18.6 months), including 93 (11%) whose pain led to absence from work.[11]

Present study shows that there is association between LBP and BMI of the students. Most 82(34%) of the students with LBP were found to be underweight. This supports the study done in Denmark on Body weight and Low Back Pain, systematic review of the epidemiologic literature. In this study 32% of all the studies report a statistically significant positive weak association between body weight and LBP. Due to lack of evidence, body weight should be considered a possible weak risk indicator, but there is insufficient data to assess if it is a true cause of LBP.[13]

A similar study aimed at determining the epidemiology of back injury in university hospital nurses from review of workers' compensation records and a case-control survey, Multivariate logistic modelling showed that prior nonback injury and being overweight has found to be statistically significant, which contradicts the present study.[21]

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Quality clinical learning environment

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Abstract

Clinical learning Environment is the place where student Nurses learn to integrate the Theory and Practice. Important people responsible for the Clinical learning Environment are staff Nurses and Midwives, Ward supervisors and Lecturers. There are positive factors which facilitate Learning and Negative factors which inhibit Learning . The teacher should posses certain good characteristics to make the Clinical Learning Environment more fruitful and has a good role in changing the student Nurse/Midwife to a competent, caring Nurse/Midwife. To make a positive Leaning Environment there should be commitment and support from staff nurses, Supervisors and Lecturers. This article conveys the importance of Quality Clinical learning Environment which in turn helps our students to be more competent so that our dream to become Independent Nurse/Midwifery practitioners comes true.

Keywords

Clinical Learning Environment, Supernumerary status, Preceptor ship, Professional accountability, Good clinical teachers, Competent nurse/Midwife.

Aim

To discuss the creation and maintenance of a Quality Clinical Learning Environment.

Clinical learning environment

- he place where student Nurses learn to integrate the theory and practice.
- A place where the students are facilitated to develop the clinical Skills, Knowledge, Attitudes, behaviors and competence to become safe, caring, competent decision makers willing to accept personal and professional accountability for evidence based Nursing midwifery care.

Importance of the clinical learning environment

- It is complex environment
- The Clinical Learning Environment is the most influential in the development of Midwifery/Nursing skills knowledge and professional socialization.

Responsibility for the clinical learning environment

- Staff Nurses/Midwives
- Ward supervisors
- Lecturers

Factors influencing clinical learning environment

- Dynamic, democratic structures and processes.
- Ward/Unit areas where staffs are valued highly motivated and deliver quality patient/client care.
- Supportive relationships, good staff morale and a team spirit.
- Good communication and interpersonal relations between registered nurse/midwife and student.
- Acceptance of the student as a learner who can contribute to the delivery of quality patient care.

Chapman (2000) discussed the characteristics of "good" clinical teachers as identified in their study. They described the following characteristics.

- Supportive
- Encouraging
- Resourceful
- Confident
- Approachable
- Friendly
- Available
- Helpful Understanding, welcoming having the students interests at heart.

Tips for a good clinical learning environment

1. Preparing for the day

Table 1: Research on student's perception of the clinical learning environment has provided insight into factors which facilitate and inhibit learning during clinical practice.

SL.No	Facilitating Factors	Inhibiting Factors
1.	An empowering clinical Nurse/Midwife	Hierarchical structure Rigid ward routine
2.	Positive Ward Climate	Lack of team spirit and commitment to teaching
3.	Team work oriented to continuity of care	Task allocation
4.	Supportive, positive relationships, atmosphere of trust	Student feeling that supervisors do not relay on him or her
5.	Student involved and participating as an active member of the team	Student not being accepted as active participant in client care.
6.	Student and registered nurse/midwife working together	Inadequate supervision of student.Little opportunity to observe or work with registered nurse/midwives.

a. Pre planning: Preparation of the clinic setting is essential. All members of the practice setting must be aware of the student's arrival and expected length of stay both in terms of daily schedule and length of calendar time to be spent in the setting.
b. Review of the students leaning objectives, past experience, orientation to all the staff.
c. The lecturer needs to communicate clearly to the student the expectations with regard to numbers and types of patient to be cared for, amount of time available to spend with each patient.
d. Thinking ahead about other activities that will be helpful to the student's progress.
e. As a role model and focus on the student by stating such plans as ," keep 3 questions you have during the day and we will address them for 20 minutes at the end of the day or when we have a break.

2. Use of other resources
a. Books
b. Policies and guidelines
c. Online resources
d. Ward rounds

3. Trimming time off teaching activities
a. Realistic about the amount you attempt to teach. Small bits are fine
b. Give feedback daily
c. Keeping it short and directed to the care provided that day

4. Evaluating the teaching day
a. Thinking briefly about what was seen, what got done, how the student felt about it.
b. Why things worked or did not.

Creating and maintaining a positive clinical learning environment

- Commitment from Clinical Nurse Supervisors essential and vital
- Support from Lecturers and staff Nurses.
- Careful consideration while assigning student to the care of patient.
- Routine Audit of the Clinical Learning Environment.
- Key issues in the Learning Environment.

Orton and her colleagues identify six key issues which characterize a good ward learning climate.

- Orientation to the placement
- Theory and Practice
- Supernumerary and behavior
- The preceptor ship
- Progressive assessment

A. Orientation to the placement: Students are welcomed to the ward and have a named preceptor. Included within their orientation programme are written details of the ward's philosophy.
B. Theory and Practice: There is a good relationship between the college and the clinical placement: what is learned in college is relevant to practice. Students are well supported and have adequate opportunity to participate in care which incorporates relevant research.
C. Supernumerary status: Staff and students have common understanding of the student role. Students have opportunities to negotiate aspects of their placements and are not used merely as a pair of hands.
D. Staff attitudes and behavior: Placement staff is approachable and supportive and are well informed and positive about the course. Staffing levels are adequate, morale is high and the ratio of students to staff is appropriate. Students are encouraged to work with the ward team, encouraged to ask questions, and given adequate feedback on their performance.
E. The preceptor: The student has sustained exposure to a named preceptor. The preceptor is supportive, identified learning opportunities for the student and is able to respond to differing learning style of individual student.
F. Progressive assessment: The requirements of placement assessment are agreed by the student and preceptor and progress is regularly reviewed. The student succeeds in achieving the agreed learning outcomes.

Conclusion

"We Learn …
10% of what we read
20 % of what we hear
30% of what we see
50% of what we see and hear
70% of what we discuss
80% of what we experience
95% of what we teach others".
(William Glasser)

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