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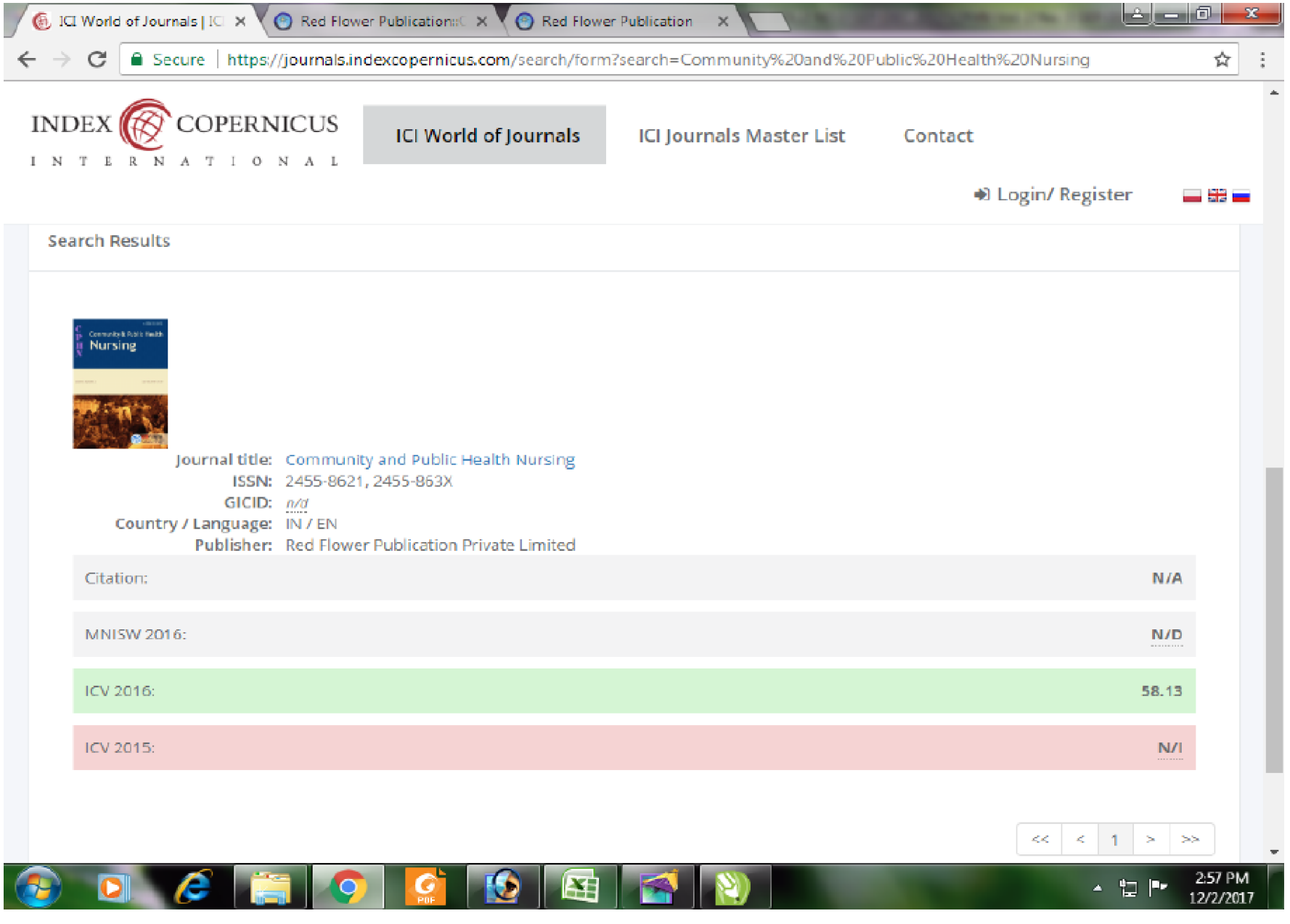
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Effectiveness of Laughter therapy on Physical Problems among Institutionalized Elderly

Soney M. Varghese

Abstract

Background: Estimates of health problems of the elderly in developing countries are required from time to time to predict trends in disease burden and plan health care for the elderly. Developing countries have a poor track record of equitable distribution of health care. Laughter therapy is effective in reducing physical problems and for improving health in older adults. Therefore, the investigator evaluated the effect of laughter therapy on physical health of institutionalized elderly. *Methodology:* Quantitative approach with experimental design was used. Hundred samples were collected conveniently based on inclusion criteria and divided them into experimental and control groups. Validity and reliability of tools were obtained. The assessment of physical problems in institutionalized elderly refers to a comprehensive assessment to determine the level of minor problems that older adults experience in each system. Laughter therapy is an easiest and effective method in reducing physical problems and enhances health. Experimental group alone received laughter therapy and post test was done after 8 weeks. After post test Laughter therapy were administered to control group also to avoid ethical issues. Data analysis were done by using both descriptive and inferential statistics. *Result:* Result indicated that the mean post test scores were significantly reduced than the mean pre- test score ($p<0.001$) in experimental group. The findings of the present study indicated that the Laughter therapy was highly significant to reduce physical problems among institutionalized elderly. *Conclusion:* Investigator concluded that laughter therapy reduce the physical problems and improve general health of elderly people.

Keywords: Elderly; Laughter Therapy; Physical Health.

Introduction

Ageing people require a wide range of preventive, promotive, curative and rehabilitative care. The care of old people requires just as much skill, tact, ingenuity and patience as the care of children and perhaps more because one must keep in mind that old people cannot be treated like children. A significant role of Nurse in Geriatric Nursing care area is genuine affection, gentleness, sympathy, providing support to utilize potentialities and maximizing quality of life in the elderly along with her generalist role in community setting. It is very important to improve the physical and mental health in institutionalized elderly, laughter therapy can be applied as an effective strategy for health promotion, and happiness in such age group. Therefore, investigator aimed to evaluate the effect of a 8-week laughter therapy program on physical health of institutionalized elderly.

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Methodology

Quantitative approach with experimental design was used. Hundred samples were collected conveniently based on inclusion criteria and divided them into experimental and control groups. Validity and reliability of tools were obtained. Ethical permission was obtained from the ethical committee of Malankara Orthodox Syrian Church Medical College Hospital, Kolanchery, Ernakulam, Kerala, India. Obtained permission from the concerned authorities of selected old age homes. Informed consent was obtained from the care takers

and samples and confidentiality of the results were assured. Those who fulfill the inclusion criteria, hundred samples were selected conveniently from the old age homes. After selecting the samples, divided them into experimental and control group with 50 samples in each group. The investigator visited the old age homes and met the care takers and explained about the study and period of data collection and sought their willingness to participate in the study.

Assessed the sample characteristics and the physical problems of the institutionalized elderly problems by using 3 point rating scale. The elderly in the experimental group received laughter therapy program consisting of forty minutes and two sessions per week for 8 weeks. Weekly follow up was carried out. The program included exercise, and structured teaching programme for the management of physical problems. The post test was carried out by the elderly after the intervention. The collected data were analyzed by using both descriptive and inferential statistics.

Results

Study findings are organized and presented under following sections:

Section A: Sample characteristics of institutionalized elderly.

Section B: Physical problems among the institutionalized elderly in control group.

Section C: Effectiveness of Laughter Therapy on physical problems among institutionalized elderly in experimental group.

Section – A: Sample characteristics of Institutionalized Elderly

With regard to age majority (44%) of the institutionalized elderly were between 60 and 70 years. Most (56%) of the institutionalized elderly persons were male. Majority (50%) only could read and write. Very few (10 to 14%) had completed 8 to 10 years of schooling. Regarding income 48%

Section B:

Table 1: Physical problem among the institutionalized elderly before & after in control group. (n = 50)

Physical problems	Pre Test		Post Test		Paired t Test
	Mean	SD	Mean	SD	1.769
MSK	5.12	0.746	5.18	0.744	-
CNS	1.74	0.664	1.74	0.664	1.429
Respiratory	4.80	0.495	4.84	0.548	1.000
CVS	4.42	1.162	4.46	1.199	1.000
Urinary	11.30	1.165	11.34	1.222	1.429
GI	13.52	2.636	13.50	2.628	-
Integumentary	3.22	1.345	3.22	1.345	-
Sleeping Problems	5.76	0.517	5.76	0.517	1.769

Table 1 shows the physical problems of the institutionalized elderly persons before and after intervention were the same in control group.

Section C: Effectiveness of Laughter therapy on physical problems among institutionalized elderly in experimental group.

Table 2: Effectiveness of Laughter therapy on Physical Problem among Institutionalized Elderly. (n =50)

Physical Problems	Pretest		Posttest		Paired 't' test	P value
	Mean	SD	Mean	SD		
MSK	5.16	0.766	3.48	0.839	14.964	.001
CNS	1.74	0.664	1.40	1.178	2.307	.001
Respiratory	4.82	0.523	3.22	0.679	13.582	.001
CVS	4.44	1.181	3.38	1.067	7.509	.001
Urinary	11.38	1.276	8.30	.909	20.808	.001
GI	13.50	2.628	10.56	2.062	20.827	.001
Integumentary	3.22	1.345	2.24	1.170	10.119	.001
Sleeping Problems	5.78	0.507	3.98	0.742	15.759	.001

Table 2 shows the mean difference of physical problems in pretest and posttest among those who received intervention and the mean difference was statistically significant at p value 0.001.

of the institutionalized elderly had no income (26%) had Rs. 2000/- as income. In relation to marital status, (46%) were unmarried, 50% were widow and widowers and only 4% were divorced. The physical health status, 62% had complaints of one or the other physical health problem. Most of institutionalized elderly (52%) were staying for less than a year and 1-3 years. Most (72%) of them came to old age home due to lack of care by family members. And 28% came to old age home due to conflicting relationship with family.

Section D: Comparison of Effectiveness of Laughter therapy on physical problems among elderly

Laughter therapy was effective in reducing physical problems among elderly.

Discussion

Investigator evaluated the effect of laughter therapy on the physical health of Institutionalized elderly. Compared the mean scores of physical health before and after in both the groups (Table 1 & 2). The results showed that the mean score of physical problems significantly decreased in the experimental group after the intervention, indicating the positive effect of intervention in this group (p=0.001). Findings were supported by the study conducted by Fariba Ghodsbin, MSc, Zahra Sharif Ahmadi, BS, Iran Jahanbin, MSc, and Farkhondeh Sharif, PhD on the Effects of Laughter Therapy on General Health of Elderly People Referring to Jahandidegan Community Center in Shiraz, Iran, 2014: Study results found a statistically significant correlation between laughter therapy program and factors such as general health (p=0.001), somatic symptoms (p=0.001), insomnia and anxiety (p=0.001). However, there was no statistically significant correlation among laughter therapy, social dysfunction (p=0.28) and depression (p=0.069).

Conclusion

To conclude institutionalized elderly are experiencing physical problems and laughter therapy is significantly effective in reducing physical problems among the institutionalized elderly.

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Organ Donation

K. Venugopal

Abstract

This chapter deals with the statement of the problem, objectives of the study, operational definitions of the study, assumptions, hypotheses and the conceptual framework. *Problem Statement:* "A study to assess the effectiveness of structural teaching program on the level of knowledge regarding organ donation among first year nursing students in MINS college, Latur"

Keywords: Research on Organ Donation.

Introduction

"Without the organ donors, there is no story, no hope, no transplant. But when There is an organ donor, life spring From death, Sorrow turn to hope and a Terrible loss become a gift "

- UNOS (United Network for Organ Sharing)

Organ donation is a noble act in which the body organs are transferred from one body to another. In most cases, the donor chooses to donate his body organs after his death. The purpose of body organ donation is to help someone in need of the donated organs. There are instances when few individuals lose their vital body organs due to some ailments. In such cases, organs are transmitted to the patient's body if the replacement for the failed body organ is available.

Body organ donation can save human life. Needless to say, saving human life is one of the most righteous acts that one can ever consider in his/her lifetime. Organ donation makes it possible for an individual to get involved in this selfless act of saving human life. Your eyes can make a person see the world and certain organs can make a person breathe and so on.

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While there are plenty of compelling reasons to donate organs, one of the reasons is self-satisfaction. The fact that you are involved in such a noble act is something that is worth appreciation. Being aware of the notion that your organ donation can save a life can make you feel good about yourself.

A study by Stark, Reiley, Osiecki, and Cook (1984) suggested that positive attitudes of health professionals influenced the families toward organ donation. Bidigare and Oermann (1991) suggested that the nurse possessing positive attitudes and greater knowledge will be better able to provide comfort and support the donor's family in the decision-making process.

The purpose of this study was to explore the knowledge nurses possess and the attitudes they hold regarding organ donation.

Need For Study

"Don't take your organs to heaven with you. Heaven knows we need them here."

In the present study, an attempt had been made to probe this issue from the fresh students in nursing field because through them the message can reach the public through their direct contact with people in the out-patient department, admission wards and medical camps.

The first living organ donor in a successful transplant was Ronald Lee Herrick (1931-2010), who donated a kindly to his identical twin brothers in 1954. The lead surgeon, Joseph Murray donor, won the Nobel Prize in physiology or medicine 2010 for advances in organ transplantation.

The youngest organ donor was a baby with anencephaly, born in 2015, WHO lived for only 100 minutes and donated his kidneys to an adult with renal failure. The oldest known organdonor was a 107-year old Scottish woman, whose corneas were donated after her death in 2016. The oldest known organ donor for an internal organ was a 92 –year-old Texasman, whose family choose to donate his liver after he died of a brain hemorrhage.

In the year 2000 through the efforts of an NGO called MOHAN Foundation state of Tamil Nadu started an organ sharing network between a few hospitals. This NGO also set up similar sharing network in the state of Andhra Pradesh and these two states were at the forefront of deceased donation and transplantation program for many years. As a result, retrieval of 1033 organs and tissues were facilitated in these two states by the NGO.

The small success of Tamil Nadu model has been possible due to the coming together of both government and private hospitals, NGOs and the State Health department. Most of the deceased donation programs have been developed in southern states of India. The various such programs are as follows-

- Andhra Pradesh – Jeevandan program
- Karnataka – Zonal Coordination Committee of Karnataka for Transplantation
- Kerala – Mrithasanjeevani – The Kerala Network for Organ Sharing
- Maharashtra – Zonal Transplant Coordination Center in Mumbai
- Tamil Nadu – Cadaver Transplant Program.

Problem Statement

"A study to assess the effectiveness of structural teaching program on the level of knowledge regarding organ donation among first year nursing students in MINS College, Latur"

Objectives

1. To assess the level of knowledge on organ donation among first year basic Bsc nursing students before structured teaching module.
2. To find the effectiveness of structured teaching module regarding organ donation among first year basic Bsc nursing student (Experimental and control group) after post test.
3. To find the association between the post test level of knowledge on organ donation among first year basic Bsc nursing students (Experimental and control group)

Operational Definitions

Assess: It refers to estimate the quality of attitude and knowledge of first year Basic Bsc students in MINS College latur.

Effectiveness: It refers to desired changes brought about by the structured teaching programme on the knowledge and attitude of first year Basic Bsc students regarding organ donation in selected college.

Structured Teaching Program: It refers system of planned instruction desired to impart information in order to gain knowledge regarding organ donation of first year Basic Bsc students in MINS college latur.

Organ Donation: It refers to removal of specific tissues of the human body from a person who has recently died or from a living donor, for the purpose of transplanting them into other persons.

First Year Basic Bsc Students: It refers to the children who are studying first year Basic Bsc students with the age group of 17 – 19 years.

Mins College Latur: It refers adolescent those who are studying first year Basic Bsc students with the age group of 17 – 19 years.

Hypotheses

H_1: There is a significant change between pre-test and post-test knowledge levels of the patients after structural teaching program(treatment).

H_2: There is a significant association between pre-test knowledge on organ donation and selected demographical variables.

Methodology

Research Approach

In this present study experimental research approach was found to be suitable to evaluate the level of knowledge regarding organ donation among first year nursing students.

Research Design

In this study the quasi-experimental research design was used to answer the hypothesis and to find the relationship between the independent and the dependent variable.

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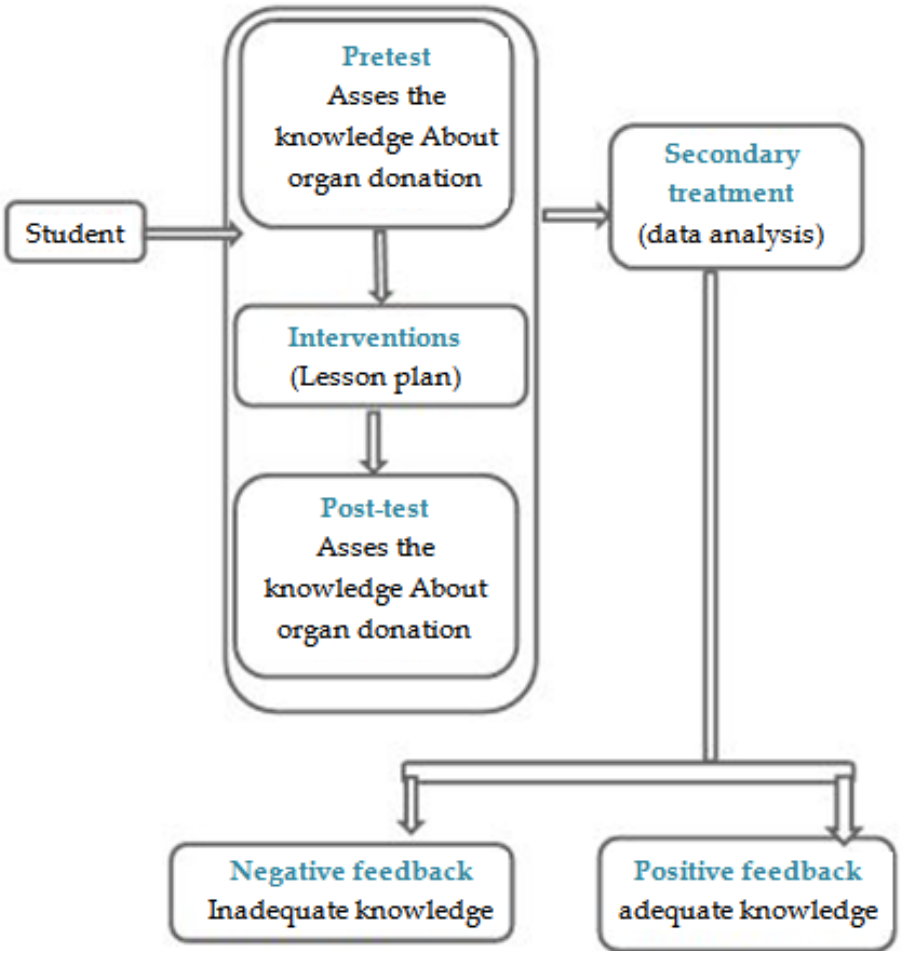
Conceptual Frame Work:



Research Setting

The setting is the location where a study is conducted. For the present study the setting was at MINS College of Nursing, Latur. The selection of the area was done on the basis of:

Level of knowledge	Pre-test score			Post-test score		
	Mean	SD	Mean %	Mean	SD	Mean %
Adequate	16.3	0.74	81.66	17.72	0.91	88.6
Moderate	12.85	1.16	64.28	13.66	0.47	68.33
Inadequate	8.4	0.48	42	0	0	0

- Geographical proximity
- Feasibility of conducting study
- Availability of sample

Variable

Independent variable

Independent variable is the variable that stands alive and is not dependent on another. It is the cause of the action. In this study it referred to Lesson plan.

Dependent variable

Dependent variable is the effect of the action of the independent variable and cannot exist by itself.In the present study it referred to the knowledge regarding organ donation among first year nursing students.

Demographic variable

In this present study it referred to the selected variables such as age in years, gender, religion, educational, family income, type of diet, weight.

Population

Population is an entire set of individuals having common observable characteristics. Population refers to the aggregate or totality of all objects, subjects or members that conform to a set of specification. In the present study the population comprised of first year nursing students.

Sample and Sampling Technique

Sample size

Sample refers to a subset of population that is selected to participate in a particular study. Sampling refers to the process of selecting a portion of population to represent the entire population. The sample of the study consisted of 50 first year nursing students experimental group consisting of 25 and control group having 25 samples.

Sampling technique

Sampling technique is the process of selecting a group of people or other elements with which to conduct a study. For selecting the sample of the present study, non-probability purposive sampling technique was used.

Assessment of Knowledge on Organ Donation among First Year Nursing Students after Implementation of STP

Results

Comparision Score Between Pretest and Posttest in Experimental Group

The data compares the score of adequate knowledge in pretest and posttest in experimental group, which is having mean is 16.03, SD is 0.74 and mean percentage is 81.66% in pretest. In posttest mean is 17.72 SD is 0.91 and mean percentage is 88.06%.

The data of moderate knowledge in pretest and posttest in experimental group, which is having mean is 12.85, SD is 1.16 and mean percentage is 64.28% in pretest. In posttest mean is 13.66 SD is 0.47 and mean percentage is 68.33%.

The data of inadequate knowledge in pretest and posttest in experimental group, which is having mean 8.4, SD 0.48 and mean % 42% in pretest. In posttest mean is 0 SD is 0 and mean percentage is 0%.

Findings, Discussion, Summary, Limitations, Implications and Recommendations

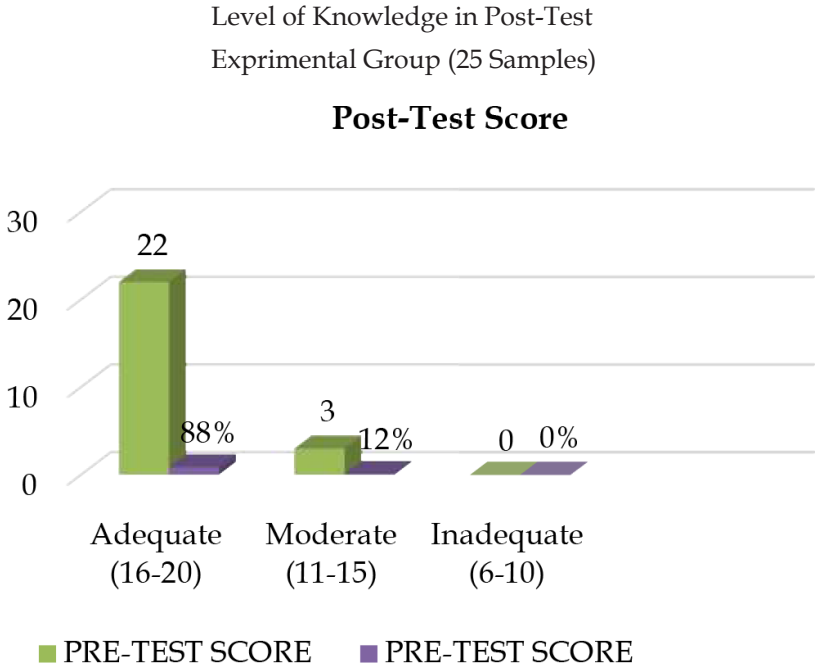
This chapter presents a summary of the study undertaken, including the conclusion from the findings, implications of study and recommendations for future research in field.

Major Findings of Study

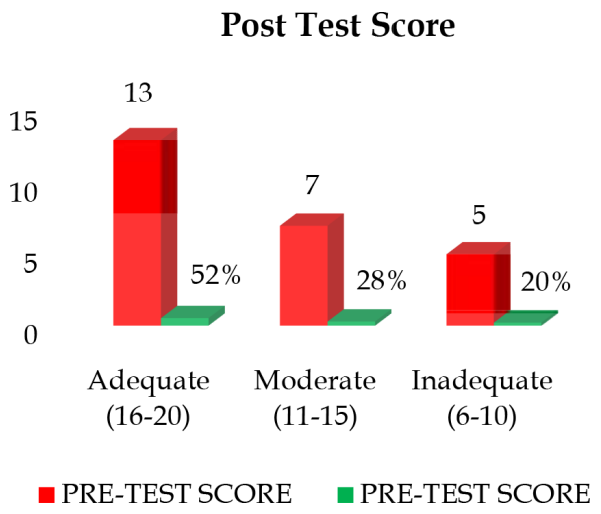
The following are major findings of study-

Section 1: Frequency and percentage distribution of sample characteristics-

Findings of section 1 shows that in samples 46% of the students were from 18-19 years of age group, 22% of them were 20-21 and 10% of age, 22-23. Among samples 56% were male and 46% were female students.



Level of Knowledge in Post-Test



Majority of sample, 98% were Hindu and 2% were Muslim, 09 of students belongs to family income up-to 1 Lakh, 16 having family income 1lakh to 2 Lakh and 10 from 2 Lakh to 3 Lakh, 15 students had family income more than 4 lakh. In all samples 60% students are vegetarian and 40% students had mixed diet.

Section 2: Findings related to level of knowledge about organ donation in experimental and control group before and after structured teaching program.

Findings of section 2nd shows level of knowledge of students in both experimental and control group. 20% of students in experimental group has inadequate knowledge, 56% has moderate, and 24% has adequate knowledge.

In students of control group 20% has inadequate knowledge, 32% has moderate and 48% has adequate knowledge regarding organ donation.

The post test score of control group shows that 20% students has inadequate knowledge, 28% has moderate, and 52% has adequate knowledge. The mark increase in post test score of experimental group is seen as 0% students has inadequate knowledge, 12% has moderate, and 88% of students has adequate knowledge, which indicates that structured teaching program is effective in increasing knowledge level of samples related to organ donation.

The mean score obtained by the samples of experimental group pretest phase was 16.33 and post test phase it has increased to 17.72, which is more. In control group pretest mean is 16.50 and posttest mean is 17.38, which doesn't have large difference.

Also calculated't' Value is..... and corresponding p value is..... since p value is less than 0.05, null hypothesis is rejected research hypothesis accepted.

Section 3:- findings related to relationship between knowledge and selected demographic variables.

Section 4:- Findings of section 4 shows that there is no any association between age and level of knowledge of participants, as it revels that an increase in age wouldn't lead to increase in level of knowledge. The gender also does not show significant difference in level of knowledge

Conclusion

The conclusion drawn from the findings of study are as follows:-

The t test done to find effect of structured teaching program on knowledge among first year BSC nursing students of MINS College LATUR related to organ donation, revealed that there is highly significant gain in knowledge of students in posttest who had been supplemented with structured teaching programme on organ donation.

The correlation finding was done to find relationship of increase in knowledge level with demographic variables, by using calculating 'p' value.Educating students on organ donation by use of structured teaching programme has shown a significant effect in improving their knowledge.

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A Study to Assess the Effectiveness of Planned Teaching Program on Cyberbullying among Students of Gandhinagar, Gujarat

Vijesh Patel[1], Hari Mohan Singh[2]

Abstract

A comparative study was conducted to assess the effectiveness of planned teaching program on Cyberbullying among students in selected Secondary Schools and colleges of Gandhinagar, Gujarat. The study was conducted in partial fulfillment for the award of degree of B.Sc. Nursing at Apollo institute of Nursing, Gandhinagar. The main objective of the study was to evaluate the effectiveness of planned teaching program on Cyberbullying among students in selected Secondary Schools and colleges of Gandhinagar, Gujarat. The 'General system model' adopted from Ludwg Von Breatalanaffy was used as the conceptual framework. A quantitative approach with quasi experimental study design was used to achieve the objective of the study. The samples consisted of 96 students of selected school and colleges of Gandhinagar, each. The samples are divided into two groups, 48 students from secondary school and 48 students from college. The simple random. Sampling technique was used to collect the sample. A structured questionnaire was used to assess the knowledge of students of selected schools and colleges and the tool was found reliable. Data gathered was analyzed and interpreted using both experimental and inferential statistics. The mean on knowledge of Cyberbullying before the planned teaching program in pretest in school and college is 15.27 and 17.34 respectively whereas the mean of posttest, after the planned teaching program was 22.55 and 19.53 in school and college, respectively. The calculated "z" value was 12.72 and 3.83 for school and college respectively. Hence there is no evidence against null hypothesis. The result strongly suggests that students are acquainted well with Cyberbullying after the administration of planned teaching program. This study therefore, offers an encouraging solution towards improvement of student's knowledge in Cyberbullying.

Keywords: Cyberbullying; Planned Teaching Program; Effectiveness.

Introduction

Cyberbullying is defined as, using both information technology and communication technology beyond the limits in order to harm a person's reputation, state of mind or to humiliate a person [1].

In India, the survey indicated that 22% of children reported mean or unfriendly treatment, 29% were made fun of or tease and 25% were called mean names. The survey also found that 70% of children said that they know a lot or something about online bullying, while 79% were very or somewhat worried about the phenomenon, 77% reported being bullied online or offline. "India is one of the few countries where the rate of online and offline bullying were equal," the survey said [2].

Cyberbullying commonly occurs across a variety of venues and mediums in cyber space. In recent years, most of youth are have been drawn to social media such as Snapchat, Instagram, twitter and video sharing such as YouTube. This trend has lead to increased reports of Cyberbullying occurring in those environments. It also provides an environment in which hate and harm is expressed.

According to study of bullying a person, some of the methods of Cyberbullying can be simplest of all that is, sending text messages, or e-mail. Other methods can be of threat, gaming up on victim, defaming, sexual remarks, posting rumors, hate speech etc. Some other method can include making fake accounts, posting on social media, portraying or abusing someone. It involves abuse to personal information of a person such as photos, blogs

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etc. sending viruses to destroy the information of other person, abuse a person in chat room, sending images or text through mobile phone.

According to Global Youth Online behavior survey (2011), India ranks third (53%) on the list of top globally cyberbullied countries behind China (70%) and Singapore (58%) [3]. Over half of children in India have been bullied online, according to that survey conducted by Microsoft [4]. India today 2012 revealed that, the frequency of Cyberbullying in India is higher than that of western nations, including the USA (15%), Britain (11%) and France (5%) [5].

A new poll conducted by Global Research Company IPSOS finds that more than 3 out of 10 parents (32%) in India say their children have been victim of Cyberbullying. The finding also disclosed that 45% of Indian parents believed a child in their community was being cyberbullied, while a majority (53%) of parents online in India are aware of the issue [6].

According to National Crime Bureau, the total case registered under IT act 2000 was 966 in 2010 and 1791 in 2011 [7], 2876 in 2012 [8] and 4356 in 2013. A total of 4356 cases were registered under IT act during the year 2013 as compared to 2876 cases during the previous year (2012), thus, showing an increase of 51.5% in 2013 over 2012 [9].

Mom's Teams, an online source for sports, parents report that over 150000 kids Nationwide (India) are staying home from school because of bullying daily [10].

A study explores three dimensions of Cyberbullying viz. bullying, victimization and witnessing along with seven different activities, the percentage of students who committed Cyberbullying, the percentage of students who became cyber victims and the percentage of studetnts who witnessed Cyberbullying. The percentage of students who were victimized through flaming is 21.9% and 78.1% were not victimized and about 15.1% bullied through flaming and 84.9% were not suffered.

There are some negative effects that Cyberbullying can have on a person. Many people feel depressed, sad, angry, and frustrated. Cyberbullying do hurt physically and mentally both. It scares and takes away confidence. Those who are victimized by Cyberbullying also reveal that they are often afraid or embarrassed to go to school and college. Cyberbullied youth also report having suicidal thoughts and there have been number of examples where youth who were victimized ended up taking their own lives.

Methodology

The study was conducted in a selected Secondary School and College of Gandhinagar on the students between age group of 12-22 years. Quantitative approach was adopted for the study. A quasi-experimental correlation survey design was used with simple random sampling technique. The sample consisted of 48 students from school and college each. Administrative approval was taken from the Principal of the School and College selected. The students were given a questionnaire consisting of 30 questions with Section I and Section II. Section I consisted of five demographic variables. Section II consisted of questions related to Definition, Incidence, Types, Effects, Signs, Mediums, Prevention and Tips related to Cyberbullying. The data were collected on 21/03/2018. The purpose of the study was explained and informed consent was taken from all respondents.

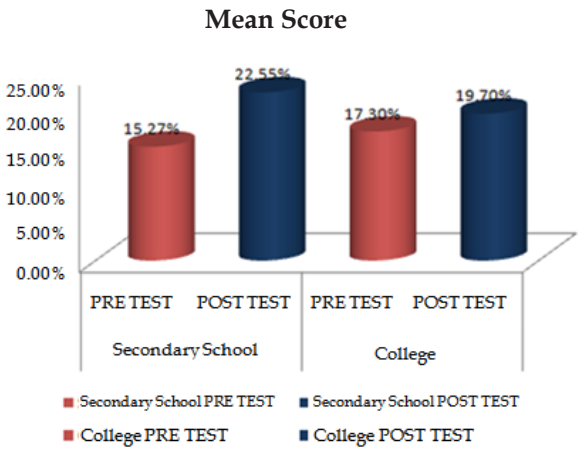
Results

Findings Related to Sample Characteristics

Table 1 depicts the demographic characteristics of the subjects in both - school and college where 100% students are from age group of 12-15 years in the school while 100% students are from the age group of 19-22 years in the college.

Findings Related to Knowledge regarding Cyberbullying

In Secondary School students, before planned teaching, majority of them - 85.42% had average knowledge, 6.25% of them had good knowledge



Graph 1:

Table 1: Frequency and percentage of samples by their characteristics

n^1=48

Characteristics	Secondary School		College	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Age (in years)				
12-15	48	100	0	0
16-18	0	0	0	0
19-22	0	0	48	100
Gender				
Male	33	31.68	6	12.5
Female	15	14.4	42	87.5
Educational qualification				
School	48	100	0	0
College	0	0	48	100
Other	0	0	0	0
Internet connection facility				
Yes	39	81.25	42	87.5
No	9	18.75	6	12.5
Knowledge regarding cyberbullying				
Yes	28	58.33	35	72.91
No	20	41.66	13	27.08

and 8.33% of them had poor knowledge regarding Cyberbullying. After planned teaching, majority of them - 85.42% had good knowledge and 14.58% of them had average knowledge and 0% of them had poor knowledge regarding Cyberbullying. This indicates that there is marked improvement in their knowledge regarding Cyberbullying.

In College students, before planned teaching, majority of them - 91.66% had average knowledge, 6.25% of them had good knowledge and 2.08% of them had poor knowledge regarding Cyberbullying. After planned teaching, majority of them - 50% had good knowledge and 43.75% of them had average knowledge and 6.25% of them had poor knowledge regarding Cyberbullying. This indicates that there is marked improvement in their knowledge regarding Cyberbullying.

Discussion

A study conducted in U.K. by Peter K [11]. Smith on impact of Cyberbullying in secondary school people in that they used a self report questionnaire including 92 students from 14 schools from which about 6.6% are often bullied, 15.6% only once or twice and 77.8% never. This is similar to the present study conducted in that secondary school students were made the subjects and also formulation of a self report questionnaire. However, that questionnaire was used to determine their vulnerability to cyberbullying, which is in contrast to the study conducted since the current study aimed to determine the subjects' knowledge related to cyberbullying.

A study on High School teachers' perception of Cyberbullying prevention and intervention strategies in Brigham Young University used a questionnaire that was administered to 66 school teachers. About 25% of teachers indicated that Cyberbullying does not have any long lasting negative effects, and that Cyberbullying prepares students for life and about 42% of teachers indicated that a formal bully prevention program that addressed Cyberbullying should be implemented. This is in contrast to the present study since the subjects were students and not teachers but the result favored the objectives and aims of the current study conducted.

A study done in Canada on Cyberbullying in high school in that they explored high school students' beliefs and behaviors associated with Cyberbullying. Data was collected from 12 students in 5 Canadian schools- over 40% would do nothing if they were cyberbullied and only about 1 in 10 would inform adults. Students were found to be reluctant to report Cyberbullying incidence to adults in schools for various reason. This in contrast to the content used to acquaint students with Cyberbullying prevention in the present study, however, equally favors the need of the current study undertaken.

A study conducted by Wong-Lo and Bullock (2011) in which a total of 137 participants (62 adolescents and 75 parents) responded to a survey [12,13]. Results indicated that 90% of the participants from the adolescent group had reported to have experienced Cyberbullying either as a victim or as a bystander. In addition, 70% of the victims have been cyberbullied 1 to 2 times within a month's time and 50% of the victims did not know the perpetrator. Secondly, 89% of parent participants indicated to be knowledgeable about the issues relating Cyberbullying and 89% reported to have had no knowledge if their child has or has not been a victim of Cyberbullying.

This is similar as well as in contrast to the present study because the subjects in the current study were from the adolescent group which is similar to that study, but in contrast since the adolescents were assessed for their experience with Cyberbullying, unlike the present study where they are assessed for their knowledge in Cyberbullying. Also, in the present study 65.62% subjects had knowledge regarding Cyberbullying, which is in contrast to the study as 90% subjects indicated to be knowledgeable about issues related to Cyberbullying.

Conclusion

The findings of the present study suggested that there is significant improvement in the knowledge of the students after the administration of the planned teaching program, which indicates that the teaching program was fairly effective in obtaining its objectives.

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Knowledge Regarding Osteoporosis and its Prevention among Women in Ernakulam District

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Abstract

Osteoporosis is a systematic skeletal disorders characterized by compromised bone strength predisposing to an increasing risk of bone fracture. This study was undertaken to assess the knowledge regarding osteoporosis and its prevention among 200 women attending selected OPD's of Medical College Hospital, Ernakulam district, Kerala. Quantitative approach and descriptive survey was used in the study. The data was tabulated and analyzed using differential and inferential statistics like frequency, percentage and chi-square test. The conclusion drawn from the study had shown that 54 % had average knowledge regarding prevention of osteoporosis among women. There is an immense need of creating awareness among women regarding prevention of osteoporosis in order to make positive lifestyle changes.

Keywords: knowledge; osteoporosis; women

Introduction

Osteoporosis is a systematic skeletal disorder characterized by compromised bone strength predisposing to an increasing risk of bone fracture. The rate of bone become progressively porous, brittle, fragile, and fracture easily under stress [1]. It is estimated that around 25 million people are affected with osteoporosis in world. Osteoporotic fractures in India occur commonly in both sexes, and may occur at younger age than elderly. The annual incidence rate of osteoporotic fracture in women is greater than combined incidence rate of heart attack, stroke and breast cancer. Osteoporosis is often called a silent epidemic because bone loss occurs without symptoms'. People may not know that a sudden strain, bump, or fall causes a hip fracture. A number of epidemiological studies in osteoporotic population have attempted to determine that some factors make individuals at risk of fractures. Skeletal fragility and falls are the two most important factors leading to osteoporotic fractures [2].

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Around the world, at least one in three women and one in five men over the age of 50 will suffer a fracture caused by weak bones, thirty-three per cent of older adults who suffer a hip fracture become physically impaired and lose their ability to live independently one year after the fracture. In India, based on 2001 census, approximately 163 million Indians are above the age of 60; this number is expected to increase to 230 million by 2015. The total affected population would be around 25 million [3].

Bone mass changes in a person's life time can be categorized into three phases: growth, consolidation and involution. Peak bone mass is accumulated in the growth phase, about 90% of ultimate bone mass is deposited in space. This is followed by consolidation which for 15 years. This starts between ages 35-40 years in both sexes, with acceleration of bone loss within a decade after menopause in women. The prevalence of osteoporosis and low bone mass is expected to increase worldwide with increased aging of the population. Across the globe, the number of individuals aged 50 years and greater is expected to increase nearly fivefold by the year 2050, from 323 million to 1.55 billion [4].

In addition to age the factors that place women at risk of skeletal fragility are early natural or surgical menopause, low levels of estrogen, low body weight and height, low levels of physical activity, smoking, alcohol abuse, and family history of osteoporosis and use of certain drugs. Some gynecological factors

are also been implemented in the pathogenesis of osteoporosis, including parity, breastfeeding, late menarche and menstrual irregularities [5].

During puberty and adolescence the skeleton takes up calcium rapidly and builds up its reserves. This intake of calcium into bone is largely depends on calcium and vitamin D, nutrition as well as exercise. The strength of the bone is built during two decades of life that from onset of adolescents to about age 30 years. After 35 years there is gradual progressive bone loss which continues throughout life and is accelerated at the menopausal women [6].

Hence the prevention for osteoporosis is to build strong bones and maximize peak bone mass before early adulthood. The international osteoporosis foundation 2016 day on May 23 is focusing a global campaign on interdisciplinary symposium on osteoporosis which emphasizing overall prevention of osteoporosis and to avoid long term damage [6].

Osteoporosis cases are increasing all over the world and because of its fracture morbidity and mortality in the women especially in post-menopausal become a global health problem. India is going to have the highest incidence of cases because of its growing elderly population. Recent Indian censes shows that there are 163 million people above 50 years of age and scientific reports suggest that 30% of women and 15% of men are suffering from osteoporosis [7].

According to International osteoporosis foundation, it is projected that more than 50% of all osteoporotic fracture will occur in Asia by the year 2050. Osteoporosis is particularly acute in rural areas. In Kerala the majority of the population lines in rural area have the risk of getting osteoporotic fracture. Osteoporosis is an important public concern. Osteoporosis is the third most common cause of hip fracture leading serious long term disability [8].

In India the prevalence of osteoporosis among women aged between 30-60 years was 30%. It is more frequently found in women than men at the ratio 4:1. One of every woman will experience fractures at some point during her life. The awareness of osteoporosis has grown worldwide in recent years. This silently progressing metabolic disease is widely prevalent in India. In Kerala the prevalence of osteoporosis was 62%. Osteoporotic fractures are common cause of morbidity and mortality in adult women [9].

A study was conducted to assess the knowledge, beliefs and preventive behaviors among 321 women. The result revealed that 86% of the participants had heard about osteoporosis but only 3.8% of them were following adequate exercises and intake of recommended 1200 mg of calcium per day. The believed that they were unlikely to develop osteoporosis is less serious than heart disease and breast cancer. Thus the study concluded that the majority of young women are at risk for developing pre mature osteoporosis and it is important to counsel them to prevent this silent thief [10].

None of the available treatment for osteoporosis gives complete cure to the disease. Therefore the prevention of osteoporosis is an important as its treatment. The most important preventive measures are lifestyle changes including exercise, regularly consuming balanced diet with adequate calcium and vitamin D, quitting cigarette smoking and alcohol intake. Educating women in their young adult hood through the health care services regarding preventive measures of osteoporosis is very important [11].

So the investigator found it relevant to assess the knowledge regarding osteoporosis and its preventive measures among women.

Review of literature

The study was conducted among peri and postmenopausal women regarding the prevalence and related risk factors of osteoporosis in India. The prevalence of low Bone Marrow Density was found in more than half of this population (53%). The mean age in group I (normal BMD) was found to be 50.56 ± 5.74 years as compared to 52.50 ± 5.94 in group II with low BMD (P=0.02). The two groups were similar with respect to parity, education, and socioeconomic status, family history of osteoporosis, hormone replacement therapy, and thyroid disorders. 46.8% of the women in group I and 33% of the women in group II had low physical activity and there was no statistically significant difference in sunlight exposure between the groups. Parity or the number of children and type of menopause was not seen to have much association with low BMD in our study. Lack of exercise and low calcium diet were significantly associated with low BMD. Multiple logistic regression analysis showed that age, exercise, menopause, and low calcium diet acted as significant predictors of low bone density [16].

A survey was conducted in China on prevalence of osteoporosis. The prevalence increased with age and varied dramatically based on local versus international diagnosis criteria. The overall prevalence of osteoporosis based on nationwide

surveys ranged from 6.6% to 19.3% (average =13.0%). The prevalence varied considerably across studies, and by regions, gender, and bone sites, but the urban to rural difference was small. In Hong Kong, the prevalence among women ≥50 years ranged from 34.1–37% in the spine; was 7% in the same aged men. In Taiwan, among those aged ≥50 years, average prevalence of osteoporosis was 11.4% in women and 1.6% in men [17].

A cross sectional study was conducted to evaluate the awareness, perception, sources of information, and knowledge of osteoporosisamong Turkish women in 2012. A total of 768 women mean age 53.6±8.2 (40–70) were randomly selected and interviewed during their visits to primary care centers in three rural towns in West Anatolia. A structured questionnaire was administered by trained nurses. Chi-squared test was performed in age and educational level groups for revealing factors influencing the awareness, perception, and knowledge sources of osteoporosis. One-way analysis of variance (ANOVA) analysis was carried out in calculating the difference of knowledge scores among groups. Of the women, 60.8% had heard of and 44.9% had the correct definition for osteoporosis. Awareness and accurate definition of osteoporosis was high in younger and high educated women (p<0.001). Television was the main source of knowledge with the rate of 55%, doctors and nurses/midwives were the second and third sources, respectively. Osteoporosis knowledge was low with a mean score of 5.52 out of 20. Younger and more educated women had higher knowledge scores. Low calcium in diet and menopause were the first two risk factors chosen for osteoporosis. Knowledge about osteoporosis among rural Turkish women is low, and majority of women are unaware of the risk factors and consequences of osteoporosis. An Appropriate educational program should be planned according to community needs, and the target of these programs should be less educated and older women [18].

Materials and Methods

The study was undertaken at selected OPD's of Medical College Hospital, Ernakulam district, Kerala. Quantitative approach and descriptive survey was used in the study. 200 women aged between 40-60 years attending in selected OPD's of Medical College Hospital were selected by non-probability convenient sampling method. After obtaining informed consent, tools were administered to women those who met the sampling criteria. Data were collected using demographic proforma and structured knowledge questionnaire regarding osteoporosis and its prevention.

Results

The data was tabulated and analyzed using differential and inferential statistics like frequency, percentage and chi-square test.

Section A: Distribution of sample characteristics.

Table 1 showed that, majority subjects 31.5% were in the age group between 40-45 years, 51% were Christians, 82% were house wife. 50% had only educationupto SSLC, 53.5% belongs to nuclear family, 90.5% were married and 40% (80) hadmonthly income less than 10000.

Section B: Assess the level of knowledge regarding osteoporosis and its prevention among women.

Table 1: Distribution of sample characteristics (n=200)

SI. No	Demographic variables	Frequency (f)	Percentage (%)
1	*Age*		
	40 – 45	63	31.5
	46 – 50	64	32.0
	51 – 55	32	16.0
	56 – 60	41	20.5
2	*Religion*		
	Christian	102	51.0
	Hindu	82	41.0
	Muslim	16	8.0
3	*Occupation*		
	Professional	6	0.03
	Non- Professional	30	15.0
	House wife	164	82.0
4	*Level of education*		
	Illiterate	0	0
	1st to 7th standard	30	15.0
	8th to 10th standard	100	50.0
	PUC	49	24.5
	Diploma / Graduates	21	10.5
	Postgraduates	0	0
5	*Type of family*		
	Joint family	93	46.5
	Nuclear family	107	53.5
6	*Marital status*		
	Married	181	90.5
	Unmarried	19	9.5
7	*Monthly income*		
	Below10000	80	40.0
	10000 – 20000	69	34.5
	Above 20000	51	25.5

Table 2: Frequency and percentage distribution of the women knowledge regarding osteoporosisand its prevention (n=200)

Level of knowledge		Frequency (f)	Percentage (%)
Poor	(0-10)	65	33
Average	(11-20)	109	54
Good	(21-30)	26	13

Table 2 revealed that, 13% had good knowledge, 54% had average knowledge and 33% had poor knowledge about osteoporosis and its prevention. In this, the data was non-normal, so the median [12] and inter quartile ranges Q1 and Q3 [8,17] respectively.

Section C: Association between knowledge with selected demographic variables.

Table 3 showed that, chi-square test was used to identify association between knowledge and selected demographic variables. Result showed that education, monthly income and occupation were significantly associated with knowledge score ($p<0.05$). Hence, the research hypothesis stated was accepted with regard to these variables.

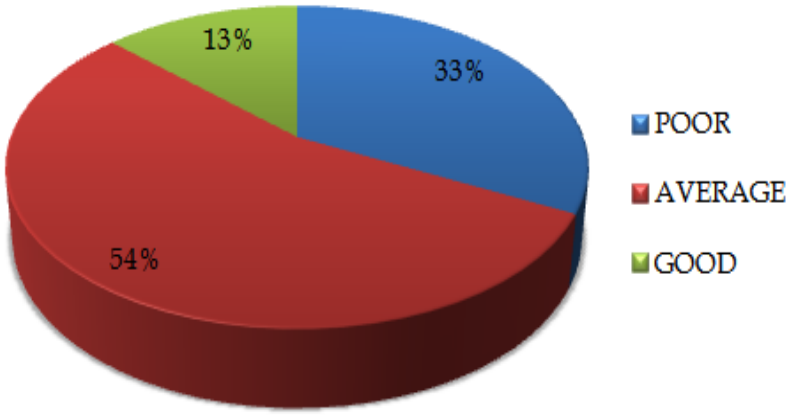

Fig. 1: Pie chart showing the percentage of knowledge of the samples (n=200)

Table 3: Association between knowledge with selected demographic variables

Selected demographic variables	Knowledge regarding osteoporosis			chi square/ fisher	'p' value
	poor	average	good		
Age					
40-45	18	33	12	3.45	0.75
46-50	22	35	7		
51-55	12	17	3		
56-60	13	24	4		
Religion					
Christian	30	58	14	1.83	0.77
Hindu	28	42	11		
Muslim	7	8	1		
Occupation					
Employed	5	24	7	7.27	0.026*
House wife	60	85	19		
Education					
SSLC	52	67	11	16.67	0.002*
PUC	10	31	8		
Diploma/Graduates	3	11	7		
Marital Status					
Married	56	100	25	2.59	0.27
Unmarried	9	9	1		
Monthly Income					
<10000	17	53	10	13.18	0.01*
10000-20000	25	31	13		
>20000	23	23	3		

*significant ($p<0.05$)

Discussion

- *Major findings related to the socio demographic variables of women between the age group of 40-60 years*

Out of 200 women, majority were in the age group between 40-45 years (31.5%), 51% were Christians, 82% were unemployed. 65% had only primary education, 53.5% belongs to nuclear family, 90.5% were married and 40% (80) hadmonthly income less than 10000.

A descriptive study was conducted in USA to assess the prevalence of osteoporosis risk factors among 10,514 menopausal women. The prevalence of osteoporosis risk factors was 67.6%. The most common risk factors were physical inactivity (53.6%), and low calcium intake (30.1%). There was correlation between the menopausal symptoms degree of severity and the risk of sufferings from osteoporosis. The researcher recommended to the prevent risk factors through educating the people regarding prevention of osteoporosis [12].

- *Major findings of levels of knowledge regarding osteoporosis and its prevention.*

Knowledge regarding osteoporosis and its prevention among 200 women revealed that about 13% had good knowledge, 54% had average knowledge and 33% had poor knowledge.

A descriptive study was conducted to establish the level of knowledge about osteoporosis prevention among 292 women aged 51-83 years. Women had the basic exercise knowledge (M = 9.97) and low knowledge concerning risk factors, screening and treatment of osteoporosis (M = 7.87). The calcium knowledge remained on an average level (M = 14.03). Better educated women, city inhabitants as well as women having very good or good social and welfare conditions showed a significantly higher level of knowledge about osteoporosis prevention. Even women undergoing bone densitometry examination present insufficient knowledge about osteoporosis prevention [13].

Another study was conducted to assess the knowledge and practices regarding osteoporosis and its prevention among 100 women attending orthopedic OPD at GGS Medical Hospital, Faridkot, Punjab. The findings revealed that majority (83%) had average knowledge regarding osteoporosis and its prevention. In preventive practices, majority (74%) had inadequate physical activity. All most (100%) were taking moderate diet. Regarding medical checkup and follow up majority (98%) had inadequate medical checkup and follow up. The study concluded that majority of women had some knowledge regarding osteoporosis and they were not taking appropriate preventable measures to prevent osteoporosis [14].

- *Major findings related to knowledge score and selected demographic variables.*

Chi-square test was used to find the association between knowledge score and selected demographic variables. There was significant association between knowledge score with education, occupation and monthly income at $p<0.05$.

An experimental study was done in Jordan among 148 adolescent female students regarding effectiveness of knowledge of osteoporosis. The study used a pretest – post test quasi experimental design. The result revealed that there was a significant increase in overall mean post test score (29.8) regarding osteoporosis knowledge (mean score pre test = 24.1 and post test = 29.8, $p<0.001$). Thus the study concluded that further research towards the follow up of attained knowledge is greatly needed to prevent the occurrence of osteoporosis [15].

Acknowledgement: Nil

Conclusion

In the community, women had some knowledge regarding osteoporosis and its prevention. Women should take appropriate measures to prevent osteoporosis and its complications. A series of health educational sections in community can prevent the occurrence of osteoporosis to a great extent by changing their lifestyle practices.

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Prevalence of Malnutrition among Tribal Women

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Abstract

Introduction: A healthy citizen contributes to the development of a country. Tribes are considered as the primitive groups who are back ward and have a shyness to contact with the community for their health services. So there is a need to look into their health status. *Aims:* the study aimed to assess the prevalence of malnutrition and associated barriers among tribal women of Kasaragod district, Kerala *Settings and Design:* the tribal settlements of Karadukka block panchayaths of Kasaragod district was selected randomly as the setting and the design adopted was a mixed method design (Explanatory design; follow up explanations model (QUAN→qual)) *Methods and Material:* a descriptive survey was undertaken among 445 tribal women in the reproductive age group from the selected tribal settlements and bio physiological measurements like weight in Kilogram, Height in Metre was collected using calibrated weighing machine, measuring tape and BMI was classified as underweight, normal and overweight. An unstructured interview was done for collecting data on associated barriers. Analysis was done using spss 16 and Strauss and Corbins grounded theory analysis approach. *Statistical analysis used:* frequency and percentage distribution was done for identifying the prevalence of malnutrition and Strauss and Corbins grounded theory analysis approach for associated barriers. *Results:* the study found that majority (54%) of participants had normal Body Mass Index, but 24% had severe thinness and 18% had mild thinness. *Conclusions:* Among tribal women majority have malnutrition which is an indicator of the health status. In order to provide them with good health status Government and health professionals have to identify the causes and interfere in that through various promotive and therapeutic activities.

Keywords: Malnutrition; Tribal Women; Prevalence; Associated Barriers.

Introduction

"Healthy citizens are the greatest asset any country can have"- Winston Churchill

A healthy citizen contributes to the development of a country. Tribes are considered as the primitive groups who are back ward and have a shyness to contact with the community for their rights and services. Health care system should take efforts to reduce the health problems among tribes and reduce their vulnerability to become a backward group. The statistics shows that tribal population contributes to an important portion of the population both in India and Kerala. According to 2011 census report there are 10, 42, 81,034 scheduled tribes in India and in Kerala there are 4, 84,839 scheduled tribes which includes 246636 females. Among 13, 02,600 populations in Kasaragod district, there are 29,283 scheduled tribes (Census of India, 2011) Reviews show that studies had been conducted in many parts of India to identify the health problems among tribal women. Birdi, Joshi, Kotian, Shah (2014) conducted a study to identify the malnutrition among different age groups in Melghat, tribal region of Maharashtra. They also explored the possible causes of malnutrition among the tribes. The study included 10 village blocks which was randomly assigned. The study found that among the age group of 20-45 years women 52.1% were normal weight, 27.8% were having mild thinness, 11.2% with moderate thinness and 8.9% with severe thinness. Qualitative exploration through participatory action research found that lack of knowledge regarding signs and

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symptoms of malnutrition, lack of agricultural practices, unavailability of foods in markets, lack of healthy and balanced diet, scarcity of water and affordability of nutritious foods are the causes of malnutrition among the population.Jerath etal. (2013) conducted a cross sectional study to assess the nutritional status among tribal women (n=750) in reproductive age group of Madhyapradesh. Nutritional status was assessed using BMI. It was found that 42.4% had malnutrition, in which 7.4% had severe malnutrition. Bakeera, Wamala, Galea, State, Peterson, and Pariyo (2009) explored the community perceptions and facilitating factors and common barriers in utilizing health care services in Uganda. There were total of nine focus groups, three from each village and in a focus group there were less than 15 members. Voice recordings were taken and field briefs were conducted on the same day itself. Barriers identified through analysis were service acceptability depended on health worker attitudes and practices, ill treatment of women in hospitals, local illness and treatment perceptions, fear and stigma to use some health services, perception that steps in health seeking behaviour could delay accessing appropriate treatment, not knowing about health care choices. The facilitators identified were accessibility, adequacy of services, affordability and ownership of material, human and social services. Bredesen (2013) had done a descriptive qualitative study to explore the perceptions of women in utilization of health care services during pregnancy and child birth in Laxman Jhula, village of Uttaranchal. The study was conducted among 10 women of 18-35 years who had child birth in past one year and purposive sampling was done to recruit the samples. Data collection was done through semi structured interview and collected the demographic details and perception regarding utilization of health services. The interview was audio recorded and notes were taken and each interview lasted for 60-90 minutes. An inductive analysis was done and categories and themes were developed. The perceptions for poor utilization of health care identified through analysis were lack of education regarding importance of health care, distance, cost and transportation, natural process of child birth, religious and cultural beliefs and family influences.

All these reviews show that malnutrition is a common problem among the women in reproductive age group. Hence, the researcher was interested to study the prevalence of malnutrition among tribal women and associated barriers.

The aim of the study was to determine BMI among the tribal women and associated barriers for malnutrition which would provide an insight to their health status and make the policy makers for devoting to reduce the mortality and morbidity issues. The objectives of the study were to identify the prevalence of malnutrition and explore factors contributing to that among tribal women of Kasaragod district.

Subject and Methods

The study has adopted a mixed method approach and descriptive survey design to identify the prevalence of malnutrition (phase1) and grounded theory design to explore associated barriers for malnutrition (phase2) among tribal women. Cluster sampling in phase1 and purposive sampling in phase 2 was used for selecting the settings and samples. The tribal settlements of Karadukka block panchayath of Kasaragod district was selected randomly as the setting. The tribal women of age group 18- 45 years residing in the tribal settlements of Kasaragod district was the population under study and the sample included 445 tribal women (phase1) and 8 tribal women (phase2) until data saturation residing in the tribal settlements of Karadukka block panchayath of Kasaragod district.

The minimum sample size needed for the study was calculated using the formula:

$$\frac{[Z_{1-\alpha}]^2 P (1-P)}{d^2}$$

$Z_{1-\alpha}$=1.96

P (proportion of samples who are assumed to have malnutrition) (taken from the pilot study) =0.6

d (confidence interval) =0.05

The estimated sample size was 367; however it was decided to select 440 on the basis of 20% assumed attrition.

The data collection tools used were background information, Calibrated weighing machine to measure the weight in Kg, a measuring tape to measure the height in metres and Unstructured interview to assess associated barriers. The measured weight and height were recorded with calculated BMI. Tool-1: back ground information included two sections; section A: demographic proforma consisted of items like age, marital status, age of marriage, years of marital life, number of pregnancies, age of first pregnancy, number of deliveries, number of children, type of family, educational status, occupation, category of tribe, yearly family income, personal habits and section B: physiological parameter which included weight

in Kg, height in meter and BMI in kg/mt^2. Tool-2: was calibrated weighing machine and a measuring tape. Tool-3: Unstructured interview schedule on associated barriers was prepared by the researcher with a broad question and further questions were asked from the responses to broad question. Content validity and laungage validity of tool 1 was established. The reliability of tool 2 was done using interrater reliability and was found to be 1. Administrative permission was taken from Dean Manipal College of Nursing, Manipal, Institutional Ethics Committee, Kasturba Hospital, Manipal and from the tribal department Kasaragod and Trivandrum. Informed consent was taken from the participants and confidentiality of the information was assured. Data collection was done for the willing participants who met the eligibility criteria were asked to assemble in the community hall in their respective colony. The participants were interviewed to obtain the demographic data. Weight and height was recorded. The data were analyzed using descriptive statistics using Statistical Package for Social Science Version 16 (SPSS 16). Descriptive statistics; Frequency and percentage distribution was used to describe the sample characteristics, and malnutrition (phase 1). Strauss and Corbin's approach of open coding, axial coding and selective coding was done and the core category was evolved (phase 2).

Results

Among the 445 tribal women participated in the study most (41.6%) of the participants were in the age group of 36-45 years and considering the occupation most (51.5%) are unemployed. Majority (80.7%) of the participants were married and most (59.6%) of them married at the age of 18-25 years. Most (35.5%) of them become pregnant 1-2 times and majority (87.2%) become pregnant at the age of 18-25 years. Most (38.4%) of them had undergone 1-2 deliveries and 40.2% of them have 1-2 children. Most (77.3%) of them had a yearly family income less than 6000 and 38.9%had high school education. The tribal women were included in mavilan (53.7%) and malavettuvan (46.3%) subcaste of ST group. Most (45.4%) of them were having bad habit of pan chewing.

Prevalence of malnutrition

The Body Mass Index among tribal women was assessed using formula weight in kg/height in metre [2]. According to the score, the Body Mass Index was categorized into underweight, severe thinness, moderate thinness, mild thinness, and normal BMI. Majority (54%) of participants had normal Body Mass Index, but 24% had severe thinness and 18% had mild thinness (Figure 1).

Associated factors of malutrition

Barriers of health care utilisation was analysed using Strauss and Corbin's Approach of grounded theory analysis. Eight tribal women who had poor health care utilization were interviewed and the interview was audio recorded and narrative notes was taken during the interview with the consent of the participants. The recordings were transcribed into local language and then were translated to English. The coding was done by repeatedly reading the translated statements. On the basis of Strauss and Corbin's approach open coding, axial coding and selective coding was done and the core

n=445

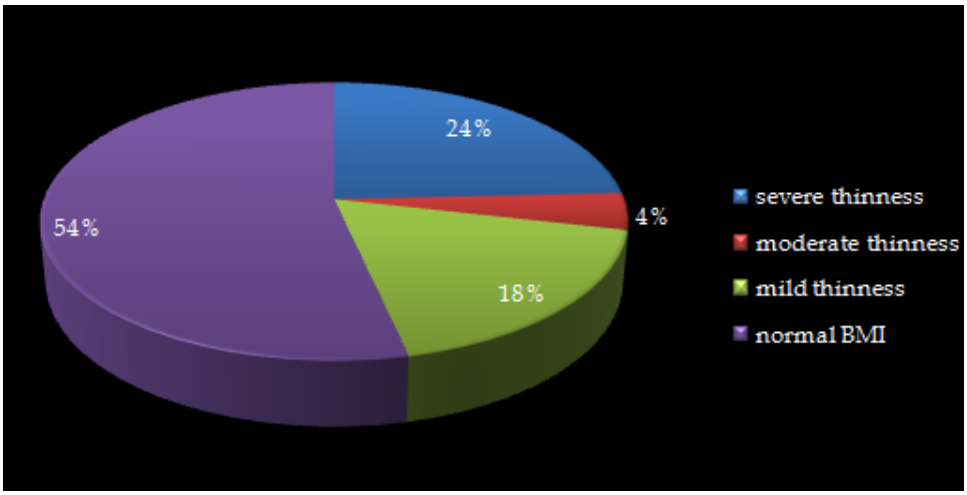

Fig. 1: Pie diagram showing percentage distribution of malnutrition among tribal women

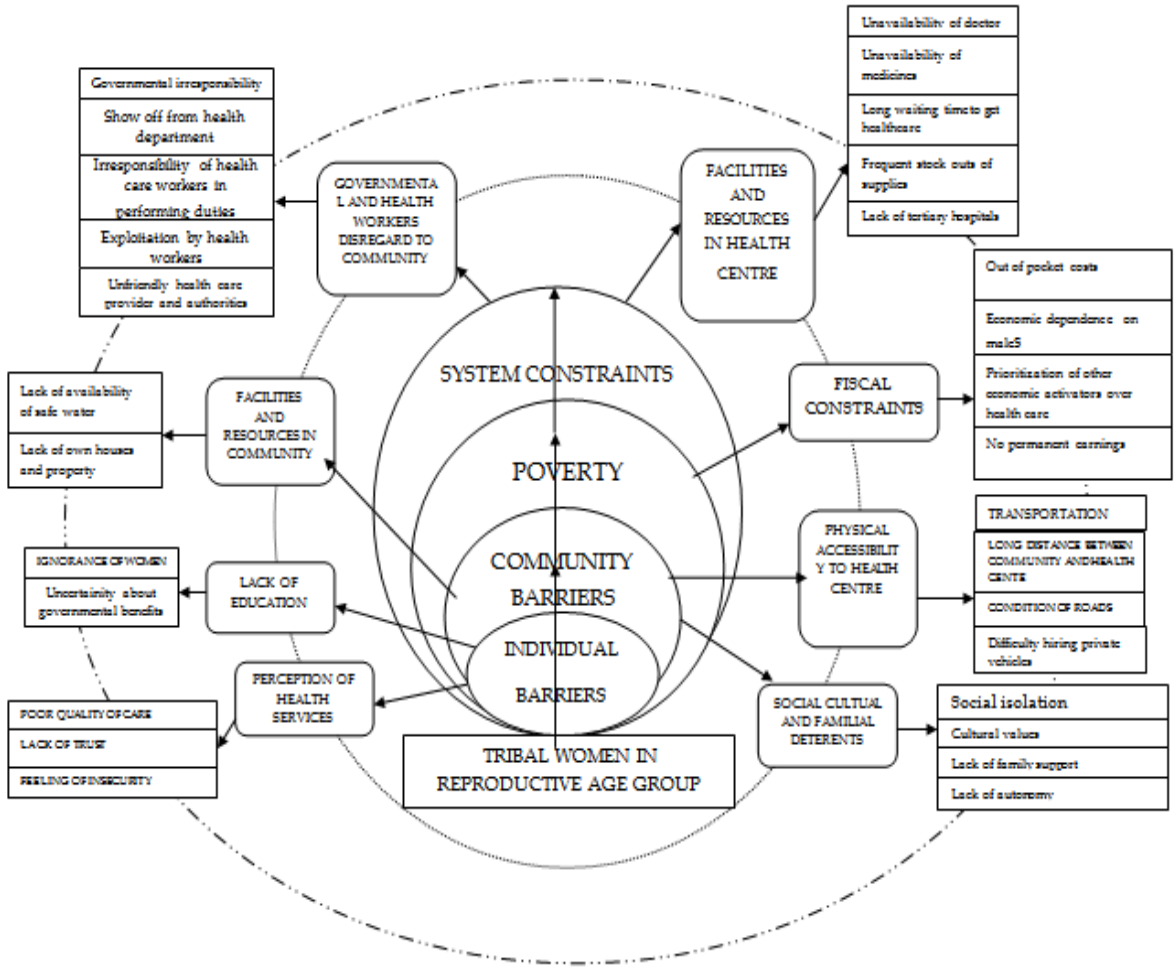

Fig. 2: schematic representation for associated barriers for healthy living among tribal women

category was evolved. According to the concept by reading the translated narrations word by word, from the raw data open coding was done in which 29 subcategories were formed. The subcategories were linked and compared to form eight categories i.e. axial coding. A core category/theme (selective coding) of the research was arrived from the categories. The core category derived was "individual and community barriers for health care utilization add on to poverty and system constraints". The categories, subcategories and core category emerged was given for validation to three experts and by incorporating the suggestions and modifications the schematic conceptual description was developed (Figure 2).

Discussion

The present study showed that Majority (54%) of participants had normal Body Mass Index, but 24% had severe thinness and 18% had mild thinness. The findings of the above study was similar to a study conducted in Melghat, Maharashtra to identify the malnutrition among different age groups. The study found that among the age group of 20-45 years women 52.1% were normal weight, 27.8% were having mild thinness, 11.2 with moderate thinness and 8.9 with severe thinness. (Birdi, Joshi, Kotian, Shah, 2014). The findings of a cross sectional descriptive survey to assess the nutritional status of women in reproductive age group of Rakhaine ethnic community of Bangladesh supports the findings of present study. The study found that 69% of women had no malnutrition, 20% were underweight and 11% were overweight. (Hooque et al., 2015).

The present study found that Perception regarding health services, Lack of education, difficulty in Physical accessibility to health centers, inadequate Facilities and resources in community, Social, cultural and familial deterrents, Fiscal

constraints, Governmental and health worker's disregard to community and inadequate facilities and resources in health centre was main barriers for healthy living among tribal women. The findings were supported by the study conducted to determine the utilization of maternal health services in India. In this study researcher found the causes for non utilization as perceived by the women were women consider it as non necessary, non customary, costly, inconvenience, poor quality of service, lack of time, lack of knowledge, lack of family support and no female providers. (Shah, 2011) Ganle, Parker, Fitzpatrick, and Otupiri (2014) had analyzed the health system barriers to accessibility and utilization of maternal health care services in Ghana qualitatively. The themes generated were limited and unequal distribution of skilled maternity services, women's experiences of intimidation in health care facilities, unfriendly health care providers, cultural insensitivity, long waiting time, limited birth choices, poor care quality, lack of privacy at health care facilities, transportation difficulties which are similar to the findings of the present study. The themes derived from a descriptive qualitative study to explore the perceptions of women in utilization of health care services during pregnancy and child birth in Laxman Jhula, village of Uttaranchal were lack of education regarding importance of health care, distance, cost and transportation, natural process of child birth, religious and cultural beliefs and family influences which supports the findings of the present study. (Bredesen, 2013).

Conclusion

Tribal women belong to a minority community and the study among them has found that majority have malnutrition which is an indicator of the health status. The study also found that the barriers for health problems in reproductive age group. In order to provide them with good health status and to improve their access to health Government and health professionals have to interfere in the problems of tribal group. Various promotive and therapeutic activities should be undertaken by the health department to reduce the prevalence of malnutrition and thus to improve the living condition of the tribal women.

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Conflicting Interest (If present, give more details): NIL

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Effectiveness of Planned Teaching Programme on Knowledge Regarding Lower Urinary Tract Infection among Adult Females

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Abstract

Background: Good health is the fundamental right of every human being and it is essential to lead a successful life. Women's health in India can be examined in terms of multiple indicators, which vary by geography, socioeconomicstanding and culture. To adequately improve the health of women in India multiple dimensions of wellbeing must be analyzed in relation with global health averages and also in comparison to men in India. Currently, women in India face a multitude of health problems, which ultimately affect the aggregate economy's output. Urinary tract infections are a serious health problem affecting millions of people each year. Women are especially prone to Urinary Tract Infections for reasons that are not yet well understood. One woman in five develops a Urinary Tract Infection during her lifetime. *Objective:* To assess the pretest and posttest knowledge regarding Lower Urinary Tract Infection among adult females. To evaluate the effectiveness of Planned Teaching Programme on knowledge regarding Lower Urinary Tract Infection among adult females. To associate the knowledge score with selected demographic variables. *Methodology:* This study was based on quantitative approach. The research design used in this study was pre experimental one group pretest and posttest design. The sampling technique used in the study was non probability convenient sampling and the sample size of 60 adult female (18-60 year). *Result:* The analysis reveals that posttest mean knowledge score was higher 25.75 with SD of ± 1.94 when compared with pretest mean knowledge score value which was 10.86 with SD of ±4.17. The calculated t value 29.06 is greater than table value 2.00 at 0.05 level of significance. Thus the H_1 is accepted and H_0 is rejected. *Conclusion:* the study concluded that planned teaching programme was effective in improving the knowledge regarding Lower Urinary Tract Infection among adult female. Only age was associated with the knowledge of adult female regarding Lower Urinary Tract Infection.

Keywords: Assess; Effectiveness; Knowledge; Lower Urinary Tract Infection; Adult Fmale.

Introduction

Good health is the fundamental right of every human being and it is essential to lead a successful life. The preamble to the WHO constitution also affirms that, one of the fundamental rights of every human being is to enjoy "The highest attainable standard of health". Moreover, emphasis is based on health promotion and preventive health care [1].

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Women's health in India can be examined in terms of multiple indicators, which vary by geography, socioeconomic standing and culture. To adequately improve the health of women in India multiple dimensions of wellbeing must be analyzed in relation with global health averages and also in comparison to men in India. Health is an important factor that contributes to human wellbeing and economic growth. Currently, women in India face a multitude of health problems, which ultimately affect the aggregate economy's output [2].

Urinary tract infections are a serious health problem affecting millions of people each year. Infections of the urinary tract are the second most common type of infection in the body. Urinary tract infections account for about 8.3 million doctor visits each year. Women are especially prone to Urinary Tract Infections for reasons that are not yet well understood. One woman in five develops a Urinary Tract Infection during her lifetime. Urinary Tract

Infections in men are not as common as in women but can be very serious when they do occur [3].

Urinary tract infections are one of the most common infections causing morbidity in community and health care setup. Women in reproductive age group (15-49 yrs) are more prone to Urinary Tract Infection [4].

Prevention of urinary tract infection is therefore the key aspect to render good health among women in the country.

Background and Need of the study

Today, Infections of the urinary tract (UTI) are the second most common infectious disease in women after gastrointestinal disorders [5].

More than 1, 00,000 people are hospitalized annually because of urinary tract infection and it is an important cause of morbidity and mortality in Indian subjects. Young age and female sex are the two important factors that contribute to the development of urinary tract infection [6].

According to Indian study Urinary Tract Infection, commonly known as Urinary Tract Infection, affects as many as 50% women at least once during their lifetime. All individuals are susceptible to Urinary Tract Infection (UTI); however the prevalence of infection differs with age, sex and certain predisposing factors [7].

A study was conducted to find out the knowledge on urinary tract infection among 200 women in Poraiyur village, Tamil Nadu by using Quasi-experimental research design. Result of the study showed that 176 (88%) women had inadequate knowledge and 24 (12%) women had moderate knowledge. Data suggested that awareness programme about the urinary tract infection should be given to women in order to avoid complication during their old age [8].

Women share a greater portion of population. Urinary tract infection is common among women due to shorter urethra, unsanitary pads during menstruation, practicing improper anal washing technique, having vaginal discharge, using bad toilets, using diaphragm and having gynecological morbidity. Thus the investigator felt that risk of Lower Urinary Tract Infection to adult females is very high and common and the educational intervention will improve their knowledge hence the investigator planned to conduct Planned Teaching Programme on Lower Urinary Tract Infection among adult females.

Objectives

- To assess the pre test and post test knowledge regarding Lower Urinary Tract Infection among adult females.
- To evaluate the effectiveness of Planned Teaching Programme on knowledge regarding Lower Urinary Tract Infection among adult females.
- To associate the knowledge score with selected demographic variables.

Operational definition

Assess: In this study assess means, the organized systematic continuous process of collecting data from adult female regarding Lower Urinary Tract Infection.

Effectiveness: In this study effectiveness means, the desired change brought about by the planned teaching programme on knowledge regarding Lower Urinary Tract Infection.

Planned teaching programme: In this study planned teaching programme means, systematically providing information regarding Lower Urinary Tract Infection among adult female

Knowledge: In this study knowledge means, responses obtained from the adult females regarding their knowledge on Lower Urinary Tract Infection.

Lower Urinary Tract Infection: In this study the Lower Urinary tract infection means, infection of urethra and bladder among the adult females.

Adult Females: In this study adult female means the female who are between the age group of 18 year to 60 years.

Delimitation: Present study is delimited to adult females residing in selected areas of the city.

Hypothesis: Is tested at 0.05 level of significance

H_0: there will be no significant difference between pre and posttest level of knowledge score regarding Lower Urinary Tract Infection among adult females.

H_1: there will be significant difference between pre and posttest knowledge score regarding Lower Urinary Tract Infection among adult females.

Conceptual framework

The conceptual framework selected for the study was based on Ersestine Wiedenbanch's "Prespective Theory" [9].

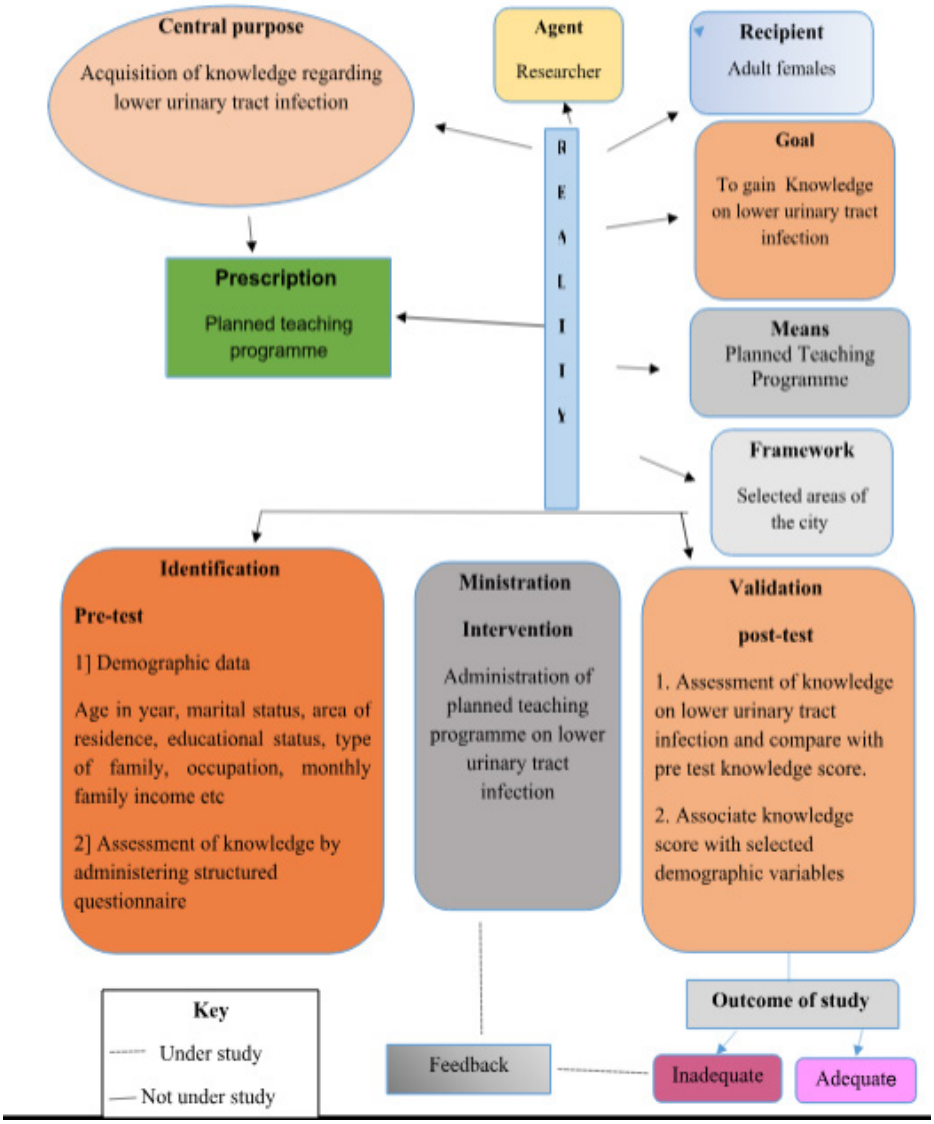

Fig. 1: Conceptual framework based on modified Widenbench Perception Theory

Review of literature

In the present study the literature reviewed has been organized into the following categories:

1. Literature related to Urinary Tract Infection.
2. Literature related to adult females knowledge regarding Lower Urinary Tract Infection.
3. Literature related to effectiveness of planned teaching programme.

Methodology

Research approach: Quantative research approach

Research Design: Pre-Experimental one group pretest posttest design

Setting of the study: Selected areas of the Nagpur

Variables

- *Independent variables:* Planned Teaching Programme on knowledge regarding Lower Urinary Tract Infection.
- *Dependent variables:* Knowledge regarding Lower Urinary Tract Infection among adult females.
- *Demographic variable:* Age, Marital Status, Area of Residence, Educational Status, Type of Family, Occupation, Monthly Family Income of females, awareness of lower urinary tract infection and source of information.

Population

Target population: all adult females residing in selected areas.

Accessible population: adult female residing in selected areas of the city who were available at the time of data collection and who were fulfilling the inclusive criteria.

Sample Size: 60

Sampling technique: Non-Probability; Convenient Sampling Technique.

Sampling criteria:

Inclusive criteria: Inclusive criteria was, Females who are;

1. Between the age group of 18 year to 60 years.
2. Able to read & write
3. Willing to participate in study.
4. Available at the time of data collection

Exclusive criteria: Exclusive criteria was, Females who are;

1. Less than 18 yr and above 60 yr of age
2. Health professionals

Tool and technique of data collection

The tools used in this study consist of two sections:

Section-I

A - Semi structured questionnaire on demographic Variable.

B - Semi structured questionnaire on medical data

Section II: Self structured Knowledge Questionnaires

Self structured questionnaire on knowledge regarding Lower Urinary Tract Infection consist of 30 questions.

- Planned teaching programme

Validity: For the content and construct validity the tool was determine by 27 experts; including medical surgical nursing specialist, MD Medicine, statistician etc.

Reliability: Karl Pearson correlation coefficient formula was used for reliability. The correlation coefficient 'r' of the questionnaire was 0.855, which is more than 0.8. Hence the questionnaire was found to be reliable.

Pilot study: Permission was taken from concern authority. Pilot study was conducted from 04-12-17 to 12-12-2017 for a period of 7 days. A sample of 6 adult females was selected from the residential area. The pilot study was feasible in terms of time, money, material and resources.

Data collection: The main study data was gathered from 14 December 2017 to 13 January 2018. Permission was obtained from the Sarpanch of concerned gram panchayat. The samples were approached in small groups on a daily basis. Before giving the questionnaire self introduction was given by the investigator and the purpose of the study mentioned. Consent of the samples were taken. The pre-test questionnaires were distributed and collected back after 40 minutes. After collecting the Pre-test score, the investigator administrated the treatment (planned teaching programme on lower urinary tract infection). After 7 days posttest was taken on the same subjects.

Result

The analysis and interpretation is given in the following section:

Section I: Description of adult females with regards to demographic variables

After the analysis of demographic variable of the sample the majority of sample 65% were 18-27 yrs of age, 55% were unmarried, their area of residence was equal 50% from urban and 50% from rural, 63% were graduates, 51.7% belongs to joint family, majority was student, 40% were having monthly family income more than 20,000rs, and 50% samples were already aware of lower urinary tract infection by mass media and medical booklets.

Section II: Description on pretest and posttest knowledge of adult females regarding lower urinary tract infection.

Section III: Description on the effectiveness of planned teaching programme on knowledge of adult females regarding lower urinary tract infection.

Section IV: Description on association on knowledge score with selected demographic variables.

Analysis revels that there is association of knowledge score with age. While none of the other demographic variable were associated with knowledge score.

Table 1: Table showing frequency and percentage wise distribution of adult females according to their demographic characteristics.

n=60

Sr .no	Demographic Variables		Frequency (f)	Percentage (%)
1.	Age (in years)	18-27 yrs	39	65
		28-37 yrs	8	13.3
		38-47 yrs	11	18.3
		48 yrs	2	3.3
2.	Marital status	Married	21	35
		Unmarried	33	55
		Divorced	4	6.7
		Separated	1	1.7
		Widow	1	1.7
3.	Area of residence	Rural	30	50
		Urban Slum	0	0
		Urban	30	50
4.	Educational Status	Primary	4	6.7
		Secondary	10	16.7
		Graduation	38	63.3
		PG	7	11.7
		Other	1	1.7
5.	Type of family	Nuclear	21	35
		Joint	31	51.7
		Extended	8	13.3
6.	Occupational Status	Govt .Service	3	5
		Private Service	13	21.7
		Homemaker	18	30
		Self Employed	4	6.7
		Other	22	36.7
7.	Monthly Family Income(Rs)	10000>Rs	8	13.3
		10001-15000 Rs	14	23.3
		15001-20000 Rs	14	23.3
		20000<Rs	24	40
8.	Aware of lower urinary tract infection	Yes	30	50
		No	30	50

n=30

9.	Source of information	Family	6	20
		Friends	4	13.4
		Relatives	2	6.6
		Health Workers	5	16.6
		Mass Media	6	20
		Other	7	23.4

Table 2: Table showing comparison of pretest and posttest grading score

n=60

Grading	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Excellent	2	3.33%	49	81.67%
Very Good	1	1.67%	11	18.33%
Good	11	18.33%	0	0%
Average	40	66.67%	0	0%
Poor	6	10%	0	0%

Table 3: Table showing effectiveness of planned teaching programme in knowledge score of pretest and post test of adult females regarding lower urinary tract infection

n=60

Test	Mean	SD	Mean Difference	Calculated t-value	DF	Table value	p-value
Pre Test	10.86	4.17	14.88	29.06	59	2.00	0.0001 Highly significant
Post Test	25.75	1.94					

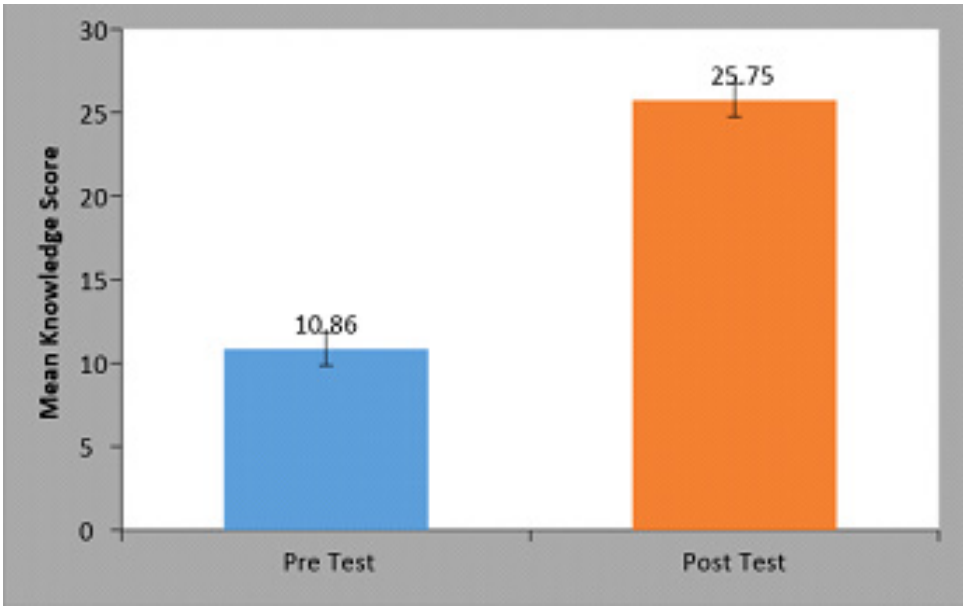

Fig. 2: Bar diagram representing effectiveness of planned teaching programme in knowledge score of pretest and post test of adult females regarding lower urinary tract infection

Discussion

Vijay Purbia, Himanshu Vyas, Maneesh Kumar Sharma, Devashri Rathore. Have conducted a study on the effectiveness of planned teaching program on knowledge of staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter. The sample consisting of 90 staff nurses was selected by using simple random sampling. The tool comprised of structured self-administered questionnaire. The mean score of post-test knowledge 21.53 (71.76%) was apparently higher than the mean score of pre-test knowledge 13.51 (45.03%), suggesting that the planned teaching programme was effective in increasing the knowledge of the staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter. The mean difference 8.02 between pre-test and post-test knowledge score of the staff nurses was found to be significant [10].

In above study it is shown that planned teaching programme was effective in increasing the knowledge of staff nurses. In present study also planned teaching programme was effective in improving the knowledge of adult female regarding lower urinary tract infection

Sirjana Adhikari, Rojana Dhakal. (2015) Have conducted a descriptive research for the study and data was collected through direct face to face interview schedule. Most of the respondents 102 (41.46%) were in between the age group of 22 - 25 years and the mean age was 23.5 years. Most of respondents 174 (70.73%) were lived in urban region. Majority of respondents 201 (81.70%) follows the Hindu religion. Majority of respondents 221(89.84%) had got formal education. One hundred and fifty nine (64.63%) of women had no information about Urinary tract infection. Regarding knowledge on urinary tract infection 60 (24.39%) had poor knowledge, 160 (65.05%) had average knowledge and 26 (10.56%) of respondents had good level of knowledge. Statistically significant relationship was found on level of knowledge with age of women ($\chi 2 = 8.53$) [11].

Above study reveals that age was associated with the level of knowledge. In present study also association was found between age of the women and knowledge score.

Conclusion

The study reveals mean pretest knowledge score was 10.86 and the mean posttest knowledge score was 25.75. The calculated t value 29.06 is greater than tabulated value 2.00 at 0.05 level of significance. Hence, it is statistically interpreted that planned teaching program on knowledge regarding lower urinary tract infection was effective. Thus the H_1 is accepted and H_0 is rejected. Analysis also reveals that there is association of knowledge score with age of adult females while none of the other demographic variables were associated with knowledge score.

Implication of the study

The findings of this study have implications for nursing practice, nursing education, nursing administration, and nursing research

Nursing practice

- Health care services are an essential component of community health care nursing, the role of the personnel is to conduct the project and participate in national programs to update the knowledge regarding lower urinary tract infection among adult females.
- It will also help the nurses to keep update knowledge regarding various aspects of Lower Urinary Tract Infection.
- When professional liability is recognized, it defines the parameters of the profession and the standards of professional conduct. Nurses should therefore enhance their professional knowledge.
- The planned teaching program can be used for imparting knowledge regarding various aspects of Lower Urinary Tract Infection to health team members.
- Planned teaching program would serve as a ready reference material for the health team members. The information is particularly useful for the nurses for educating the adult females and other health team members the benefits of Lower Urinary Tract Infection.

Nursing education

- Nurse who are up to date with the knowledge regarding lower urinary tract infection are the better person to impart their knowledge to the nursing student which will ultimately update the knowledge regarding lower urinary tract infection.
- Now a days, much emphasis is given on comprehensive care in the nursing curriculum. So this study can be used by nursing teachers as an informative illustration for nursing students.
- Planned teaching program could help educators to use it as a tool for teaching.
- Students must be given clinical field assignment, in which they must be given opportunity to interact with people and create awareness regarding lower urinary tract infection.
- Teacher training programs must also include the topic of lower urinary tract infection.

Nursing administration

- Findings of the study can be used by the nursing administrator in creating policies and plans for providing education to the staff nurses and health professionals.
- It would help the nursing administrators to be plan and organize in giving continuing education to the nurses and to others for applying and updating the knowledge regarding lower urinary tract infection.
- In-service education must be conducted for the nurses to create awareness regarding lower urinary tract infection.
- The result of the study contributes to the body of knowledge of nursing.

Nursing research

- The findings of the study have added to the existing body of the knowledge on lower urinary tract infection which will enhance the knowledge and would help to keep it updated.
- Other researchers may utilize the suggestions and recommendations for conducting further study.
- The tool and technique used has added to the body of knowledge and can be used for further references.

Limitations

- The study was conducted only on adult females.
- The sample size was small to generalize the findings of the study.
- The study was limited to measure the knowledge of adult females residing in selected areas of the city.
- The tool for data collection was prepared by investigator herself. Standardized tool was not used

Recommendations

- A similar study can be replicated on a larger population for a generalization of findings.
- A study may be conducted to evaluate the effectiveness of planned teaching program versus information booklet on lower urinary tract infection.
- A comparative study can be done to assess the knowledge of lower urinary tract infection in rural and urban areas.
- A descriptive study can be conducted on the awareness of lower urinary tract infection among adult females.
- A similar study can be carried out to evaluate the effectiveness of video assisted teaching program on lower urinary tract infection.

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Nipah Virus: Everything about the Virus that's Taking Lives in Kerala!

M. Muthu Priya[1], M. Hemamalini[2]

Abstract

Kerala has been on high alert due to mysterious deaths of peoples because of an unidentified viral attack. Out of these, three were reported to be caused by Nipah Virus (NiV). As per the National Institute of Virology, Pune, Nipah Virus is the sole cause of these three deaths. The Nipah virus (NiV) has claimed ten lives, including a nurse who left a heartbreaking note to her family, in Kerala. Around two more have been confirmed to have contracted the disease, and 40 others have been quarantined. An unheard virus, NiV is yet to be understood by many. Here is what the virus is all about.

Keywords: Niphavirus; Virology; Quarantine; Transmission; Infection.

Introduction

A newly emerging zoonosis infection Nipah virus (NiV) which causes severe disease affecting both animals and humans. Fruit bats are the natural host for this virus that belongs to Pteropodidae Family, Pteropus genus [1].

Incidence

In 1998, Kampung Sungai Nipah, Malaysia, NiV was first identified during an outbreak of disease. During that incidence, pigs were the intermediate hosts. Later, in subsequent NiV outbreak, no other intermediate hosts was reported. In India, the first outbreak occured in the state of West Bengal and fruit bats was identified as solely hosts. Human-to-human transmission has also been documented, including in a hospital setting in India [1]. In Bangladesh in 2004, humans became infected with NiV as a result of consuming date palm sap that had been contaminated by infected fruit bats.

Incubation

The incubation period for Nipha virus is about 5 to 14 days and symptoms will be visible after this period.

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Mode of Transmission

Consuming partially-eaten fruits by bats those are infected and partially-cooked meat of infected animals can also trigger the virus. Drinking juices like date palm sap, toddy, juice can also cause the infection [2] the virus spreads directly from human-to-human by close contact with people's secretions and excretions.

Signs and Symptoms

The symptom is usually asymptomatic and the infection may leads toeven acute respiratory syndrome and fatal encephalitis.

The symptoms of Nipah Virus are

- Fever,
- sore throat,
- severe headache
- confusion,
- disorientation,
- nausea,
- persistent drowsiness
- stomach pain,
- muscle pain (myalgia),
- vomiting,
- fatigue and
- blurred vision

It may also leads to coma in 24-48 hours.

These symptoms can last up to 7-10 days.

Prevention

Non-vaccination efforts will perhaps play an important role in controlling NiV disease. Prevention is better than cure.

- Regular handwashing with soap
- Have a safe protected physical contact with infected people
- Consuming partly eaten fruits or unpasteurized fruit juices to be avoided
- Pet animals to be protected
- Boil and eat freshly collected date palm juice
- Wash and peel fruits before consuming
- Maintain personal hygiene
- Wash, peel and cook all fruit thoroughly before eating
- Households should be covered properly
- Use NH 95-grade and higher masks [2]

While transporting the dead body of the person after death contracting Nipah fever. cover the person's face. relatives should try refrain from hugging or kissing the dead person and should take utmost care while bathing the body before cremation or burial.

Treatment

Must watch out for respiratory illness during the early stages [3]. Currently, no drug available for humans or animals. Intensive supportive care for people suffering from severe respiratory and neurologic complications [2]. Tackling risk factors may be more effective than vaccines themselves.

Vaccination

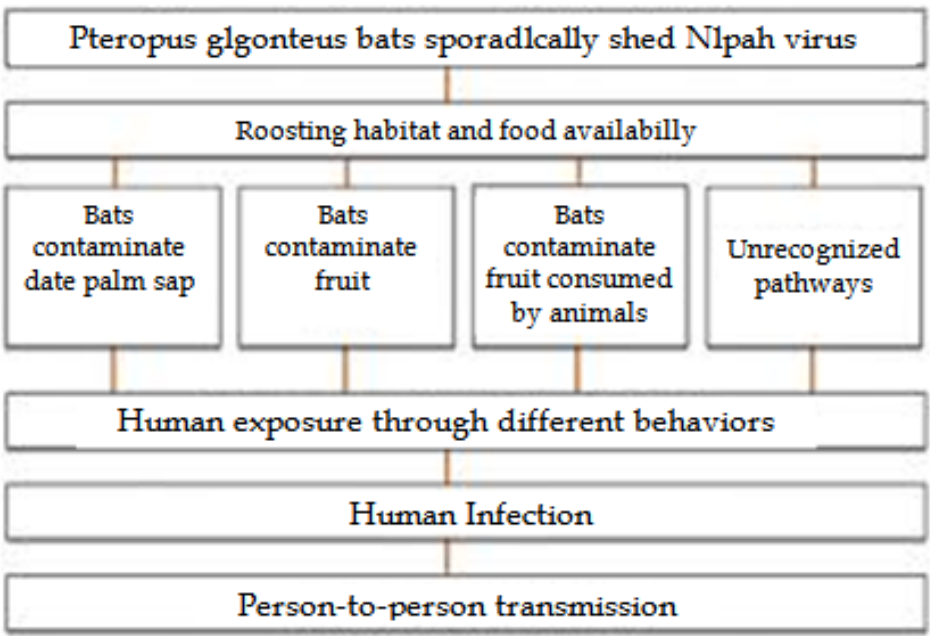
Vaccine has been on trail by WHO. The vaccine in form of recombinant sub-unit formulation has proven successful in (animals) cats. Canarypox vectored Nipah F and G vaccine has appeared promising for preventing infection in swine and also has potential vaccine for humans.

Why are Bats Suddenly Turning Dangerous?

As per the WHO, "There is always a strong evidence that emergence of bat-related viral infection communicable to humans and animals has been due to the inavailablity of natural habitats of bats. Because of human activity, the flying fox habitat is destroyed, bats become stressed and hungry, their immune system gets weaker, their viral load goes up and a lot of virus spills out in their urine and saliva." This proves that ultimately, what is at blame is human activity only.

Conclusion

Over the last two decades, research has provided insight into the mechanisms of pathogenesis and transmission of NiV. The advancement of this understanding, and, more importantly, practical



applications of it in the form of vaccines for NiV entering human clinical trials, prevention of infection through modifying risk factors and in the development of therapeutics and techniques capable of treating infected patients to reduce morbidity and mortality in the forth coming decades.

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References

List references in alphabetical order. Each listed reference should be cited in text (not in alphabetic order), and each text citation should be listed in the References section. Identify references in text, tables, and legends by Arabic numerals in square bracket (e.g. [10]). Please refer to ICMJE Guidelines (http://www.nlm.nih.gov/bsd/uniform_ requirements.html) for more examples.

Standard journal article

[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006; 35: 540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003; 61: 347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone iodine antisepsis. State of the art. Dermatology 1997; 195 Suppl 2: 3-9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000; 71: 1792-801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O,

Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

Reference from electronic media

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/HSQ20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

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