



ORIGINAL ARTICLE

A Study to Assess the Effectiveness of Structured Teaching Program Regarding Selected Prenatal Hygiene among Antenatal Mothers Working in Selected Garment Factories at Anekal Taluk, Bangalore.

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Abstract

Prenatal hygiene is one of the most common problems in both developed and developing countries and lack of patience to practice prenatal hygiene is the most common cause. The most common aspects of prenatal hygiene are related to dental hygiene, breast hygiene, food hygiene and perineal hygiene. The significant lack of prenatal hygiene is leading to increase in the number of abortions, still births, infections etc., worldwide. Hence it is very essential for antenatal mothers to have in depth knowledge regarding prenatal hygiene to prevent complications. The pre-test mean knowledge scores obtained from the antenatal mothers was 14.61. After administering Structured Teaching Programme (STP), post-test mean knowledge scores increased to 27.35 with the table value 1.96 and found to be significant at the level of $p < 0.05$ which indicates that the developed STP helped in increasing the knowledge of the antenatal mothers. Hence the research hypothesis stating that there will be significant difference between the pre-test and post-test knowledge scores regarding selected prenatal hygiene among antenatal mothers was accepted. It has been found that educational status, income and gestational age had significant association with pre-test knowledge levels.

Keywords: Prenatal hygiene, Dental hygiene, Breast hygiene, Food hygiene, Perineal hygiene, Garment factories

Introduction

Prenatal hygiene refers to the set of practices associated with the preservation of antenatal mother's health and healthy living. Prenatal hygiene mainly involves perineal hygiene, dental hygiene, breast hygiene, rest & sleep, diet, health promoting etc. Prenatal hygiene will help to make antenatal mother feel comfortable with her own body and less anxious about the effects of external substances on her developing foetus.¹

The antenatal period is a time of physical and

psychological preparation for birth and parenthood. During this period, healthy women seek regular care and guidance. Regular prenatal visits ideally begin soon after the first missed menstrual period, offer opportunities to ensure the health of the expectant mother and her foetus.

Problem statement

A study to assess the effectiveness of structured teaching program regarding selected prenatal hygiene among antenatal mothers working in selected garment factories at Anekal taluk, Bangalore.

Objectives

- To assess the pre-test level of knowledge regarding selected prenatal hygiene among antenatal mothers.
- To assess the post-test level of knowledge regarding selected prenatal hygiene among antenatal mothers.
- To assess the effectiveness of structured teaching program regarding selected prenatal hygiene among antenatal mothers.
- To determine the association between the pre-test levels of knowledge regarding selected prenatal hygiene among antenatal mothers with their selected demographic variables.

Methodology

Research Approach: Evaluative approach

Study design: Pre-experimental research design that is one group pre-test and one group post-test was applied.

Sampling Technique

Simple random sampling technique was used to draw the sample. In this study, the investigator adopted lottery method to choose 60 antenatal mothers from the sampling frame for the main study.

Sample

The sample of the study comprised of 60 antenatal mothers working in CCL unit Madura, FCL unit Madura garment factories in Anekal taluk, Bangalore, located one kilometer away from our college. From each factory, 30 samples were taken.

Tool

In this present study, the instrument used by the researcher to collect the data was a structured interview schedule.

Data Collection Procedure

The formal permission was obtained from the Human Resource Manager of selected garment factories at Anekal taluk, Bangalore to conduct the main study (from 22.11.11 to 22.12.11). Sixty antenatal mothers were selected by simple random sampling technique. The antenatal mothers were assured of anonymity and confidentiality of the information provided by them and

written informed consent was obtained. The investigator conducted interview to collect data for assessing antenatal mother's knowledge regarding selected prenatal hygiene. The pre-test was conducted on 22-11-11 by conducting the structured interview schedule followed by structured teaching program in two sessions (22-11-11 and 23-11-11) on selected prenatal hygiene among antenatal mothers. On the 7th day (30-11-11), post test was conducted by using the same tool. Each subject took 45 minutes to complete the interview schedule.

Part I: Demographic Data

It consisted of 11 items for obtaining the information regarding age of the antenatal mothers, educational status, religion, type of family, marital status, income, type of work, habit, gestational age, number of children and number of family members of antenatal mothers.

Part II: Structured Knowledge Questionnaire

The structured knowledge questionnaire to assess the knowledge regarding selected prenatal hygiene among antenatal mothers consisted of 30 multiple choice questions under five aspects such as 6 items on general knowledge of prenatal hygiene, 7 items on dental hygiene, 6 items on breast hygiene, 7 items on food hygiene, 4 items on perineal hygiene. Each question had four responses with one correct answer. Score 1 was given for each correct response in a single question and score 0 was given for wrong response.

The resulting scores were ranged as follows:

1. Adequate knowledge – above 71%
2. Moderate knowledge – 51- 70%
3. Inadequate knowledge - below 50%

Part III: Structured Teaching Programme (STP)

The STP was developed by the investigator after reviewing the literature and on obtaining expert opinions. The STP of 45 mins duration gave the basic information on selected prenatal hygiene like definition, aims, importance, dental hygiene, breast hygiene, food hygiene and perineal hygiene. The method of teaching adopted was lecture cum discussion. The visual aids were flashcards and white board charts.

Results

Table 1: Frequency and percentage distribution of demographic variables of antenatal mothers
(N = 60)

S. No	Demographic variables	Frequency	Percentage %
1.	Age in years		
	a. 20 – 25 yrs	48	80
	b. 26 – 30 yrs	10	16.7
	c. 31 – 35 yrs	2	03.3
	d. 35 - 40 yrs	-	-
2.	Educational status		
	a. Illiterate	6	10
	b. Primary level	10	16.7
	c. High school	20	33.3
	d. Higher secondary	20	33.3
	e. Graduation and above	4	06.7
3.	Religion		
	a. Hindu	51	85
	b. Muslim	3	05
	c. Christian	6	10
	d. Others	-	-
4.	Type of family		
	a. nuclear	23	38.3
	b. joint	25	41.7
	c. extended	12	20
5.	Marital status		
	a. single	-	-
	b. married	60	100
	c. divorced	-	-
	d. widower	-	-
6.	Income		
	a. 2001-3000	2	03.3
	b. 3001-4000	31	51.7
	c. 4001-5000	14	23.3
	d. Above 5000	13	21.7
7.	Type of work		
	a. Sedentary	28	46.7
	b. Moderate	24	40
	c. Heavy	8	13.3

8.	Habit		
	a. Alcohol consumption	-	-
	b. Pan and gutka chewing	-	-
	c. Smoking	60	100
	d. None		
9.	Gestational age		
	a. First trimester	18	30
	b. Second trimester	22	36.7
	c. Third trimester	20	33.3
10.	Number of children		
	a. None	21	35
	b. One	31	51.7
	c. Two	8	13.3
	d. Three and above	-	-
11.	Number of family members		
	a. Two	13	21.7
	b. Three	7	11.7
	c. Four	12	20
	d. Six and above	28	46.7

From the above table, it is evident that the maximum number of subjects 48 (80%) belonged to the age group of 21-25 years, 10 (16.7%) belonged to the age group of 26-30 years and 2 (3.3%) belonged to the age group of 31-35 years.

In relation to educational qualification, 6 (10%) subjects were illiterates, 10 (16.7%) subjects had primary level education, 20 (33.3%) subjects completed high school, 20 (33.3%) subjects were higher secondary and 4 (6.7%) subjects had qualification of graduation and above.

Regarding religion, 51 (85%) subjects were Hindus, 3 (5%) subjects belonged to the Muslim community and 6 (10%) subjects were Christians.

In relation to the type of family, 23 (38.3%) subjects were from nuclear families, 25 (41.7%) subjects were from joint and 12 (20%) subjects were from extended family.

In relation to marital status, 60 (100%) subjects were married. Regarding income, 2 (3.3%) subjects earned between 2001-3000, 31 (51.7%) subjects earned 3001-4000, 14 (23.3%) subjects earned 4001-5000 and 13 (21.7%) earned above 5000.

Regarding type of work, 28 (46.7%) subjects had sedentary, 24 (40%) subjects had moderate and 8 (21.7%) subjects had heavy work.

Regarding the habit, 60 (100%) subjects were not having any bad habit. In relation to the gestational age, 18 (30%) subjects belonged to the first trimester, 22 (36.7%) subjects belonged to the second trimester and 20 (33.3%) subjects belonged to the third trimester.

Regarding number of children, 21 (35%) subjects had no child, 31 (51.7%) subjects were having one child and 8 (13.3%) subjects were having two children.

In relation to the family members, 13 (21.7%) subjects were having two, 7 (11.7%) subjects were having three, 12 (20%) subjects were having four and 28 (46.7%) subjects were having six and above members in their family.

Table 2: Frequency and percentage distribution of pre-test and post-test level of knowledge scores of antenatal mothers (N = 60)

Level of Knowledge	Pre-test knowledge scores		Post-test knowledge scores	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Inadequate	32	53.4	0	0
Moderate	23	38.3	0	0
Adequate	5	8.3	100	100

The data presented in Table 2 and Figure shows that in the pre-test, majority of the antenatal mothers (53.4%) had inadequate knowledge regarding prenatal hygiene, but in post-test all the antenatal mothers in the sample had acquired adequate knowledge.

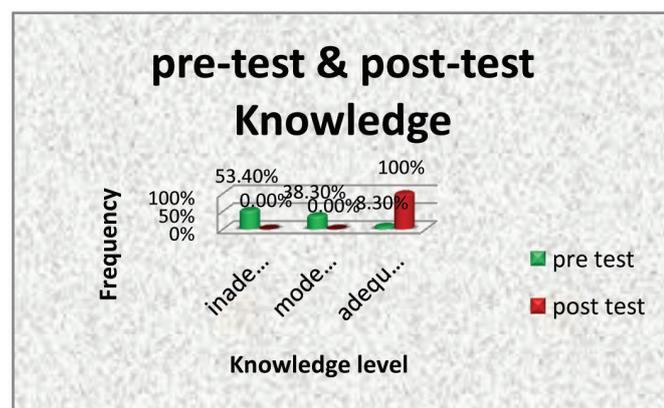


Table 3: Area wise mean and SD for the pre-test level of knowledge among antenatal mothers (N=30)

S. NO	Area wise	Max. score	Mean	Mean Percentage	Median	SD
1	General Knowledge	6	2.67	44.5	3	1.386
2	Dental hygiene	6	2.92	48.67	3	1.405
3	Breast hygiene	6	2.22	37	2	1.519
4	Food hygiene	7	4.35	62.14	4	1.176
5	Perineal hygiene	4	2.45	61.25	2	0.790

From the above study, it is evident that the maximum mean percentage obtained by the antenatal mothers was 62.25 with standard deviation of 1.1764, in the area of food hygiene knowledge regarding selected prenatal hygiene and the minimum mean percentage was 37 with the standard deviation of 1.5192 in the area of food hygiene among antenatal mothers.

Table 4: Area wise mean and SD for the post-test level of knowledge among antenatal mothers (N=30)

S. No.	Area wise	Max. score	Mean	Mean Percentage	Median	SD
1	General hygiene	6	5.72	95.33	6	0.49
2	Dental hygiene	7	6.03	86.14	6	0.758
3	Breast hygiene	6	5.48	91.33	6	0.676
4	Food hygiene	7	6.5	92.85	7	0.536
5	Perineal hygiene	4	3.62	90.5	4	0.490

From the above table, it is evident that the maximum mean percentage score obtained by the antenatal mothers for the post-test level of knowledge was 95.33% with standard deviation of 0.49 in the area of general hygiene, dental hygiene 86.14% with standard deviation 0.758, breast hygiene 91.33% with standard deviation of 0.676, food hygiene 92.85% with standard deviation 0.536 and in the area of perineal hygiene 90.5% with standard deviation 0.490.

Table 5: Association between pre-test knowledge score with demographic variables of antenatal mothers (N=60)

S. No	Demographic Variables	Knowledge		χ^2	Significance P
		Below median (14)	Above median		
1	Age in years	17	31	2.170	9.488
	a. 20 – 25 yrs	6	4		
	b. 26 – 30 yrs	1	1		
	c. 31 – 35 yrs	-	-		
2	Educational status	6	-	13.106	5.99*
	a. Illiterate	3	7		
	b. Primary level	10	12		
	c. High school	4	16		
	d. Higher secondary	1	1		
3	Religion	20	31	5.874	9.488
	a. Hindu	3	-		
	b. Muslim	1	5		
	c. Christian	-	-		
4	Type of family	9	14	0.369	5.99
	a. Nuclear	11	14		
	b. Joint	4	8		
5	Marital status	-	-	0.0	-
	a. Single	24	36		
	b. Married	-	-		
	c. Divorced	-	-		
6	Income in rupees	2	-	13.726	7.815*
	a. 2001-3000	18	14		
	b. 3001-4000	1	12		
	c. 4001-5000	3	10		
7	Type of work	13	14	1.664	5.99
	a. Sedentary	9	16		
	b. Moderate	2	6		
8	Habit	-	-	0.0	-
	a. Alcohol consumption	-	-		
	b. Pan and gutka chewing	-	-		
	c. Smoking	24	36		
9	Gestational age	10	8	8.942	5.99*
	a. First trimester	11	10		
	b. Second trimester	3	18		
10	Number of children	10	12	2.250	5.99
	a. None	13	18		
	b. One	1	6		
	c. Two	-	-		
11	Number of family members	7	6	4.158	7.815
	a. Two	5	3		
	b. Three	4	8		
	c. Four	8	19		

NS- Not significant; * = significant; - = neutral.

From the above table, it is evident that the obtained chi-square values showed significance in areas of educational status 5.99, income 7.815 and in area of gestational age 5.99. The other demographic variables were non-significant. Hence it is evident that there was a significant association found between the three selected demographic variables such as educational status, income and gestational age of the antenatal mothers with selected prenatal hygiene in the pretest knowledge score at the level of $p < 0.05$. Hence the research hypothesis was accepted.

Findings of the Study

Findings related to demographic variables

Maximum number of subjects 48 (80%) belonged to the age group of 21-25 years. Most of the subjects had primary level and high school education 20 (33.3%). Majority of subjects belonged to Hindu religion 51 (85%), maximum number of subjects 25 (41.7%) were living in joint families, and all the subjects 60 (100%) were married. Most of the subjects 31 (51.7%) were having an income of 3001-4000, maximum subjects 28 (46.7%) had sedentary type of work, maximum number of 60 (100%) subjects did not have any bad habit. Most of the subjects 22 (36.7%) belonged to the second trimester, maximum number of subjects 31 (51.7%) were having one child and majority of subjects 28 (46.7%) were having six and above members in their families.

Findings related to pre- and post-test knowledge regarding selected prenatal hygiene among antenatal mothers

The overall knowledge score obtained by the subjects was 14.61 with standard deviation of 6.276 in the pre-test and the overall knowledge score obtained was 27.35 with standard deviation of 2.95 in the post-test.

Findings related to effectiveness of structured teaching programme

The mean pre-test score of 14.61 was increased to 27.35 after STP. The obtained 't' value for knowledge was greater than table value and found to be significant at the level of $p < 0.05$. Hence the research hypothesis stating that there will be significant difference between pre- and post-test knowledge among antenatal mothers regarding selected prenatal hygiene was accepted.

Findings related to association between the pre-test knowledge scores with selected demographic variables

Findings revealed that there was a statistically significant

association between knowledge score and education, income, gestational age of the subject at the level of $p < 0.05$. There was no significant association between knowledge score and other demographic variables, such as age, religion, type of family, marital status, type of work, habit, number of children and number of family members in pre-test. Hence the research hypothesis stating that there will be significant association between the pre-test knowledge score with selected demographic variables was accepted.

Discussion

The present study was designed to assess the effectiveness of STP regarding selected prenatal hygiene among antenatal mothers who were working in select garment factories at Anekal taluk, Bangalore. The data findings have been organized in discussion based on the study objectives.

Section I: Demographic variables of antenatal mothers

Pertaining to age, the findings of the present study revealed that the majority of subjects 48 (80%) belonged to the age group of 21-25 years. In relation to educational qualification, 20 (33.33%) subjects had high school education and 20 (33.33%) subjects had higher secondary. Regarding religion, 51 (85%) subjects belonged to Hinduism. In relation to type of family, 25 (41.67%) subjects belonged to joint family. In relation to marital status, 60 (100%) subjects were married. Regarding income, 31 (51.67%) subjects were having an income of 3001-4000. Regarding the habit, 60 (100%) subjects were not having any bad habits. In relation to the gestational age, 22 (36.67%) subjects belonged to second trimester.

Section II: To assess the pre-test level of knowledge regarding selected prenatal hygiene among antenatal mothers

From the above study, it is evident that the maximum mean score percentage obtained by the subjects was 62.14 with standard deviation of 1.1763 in the area of knowledge on food hygiene and the minimum mean percentage score was 37 with the standard deviation of 1.5192 in the area of food hygiene.

The above findings were found consistent with a pre-experimental study conducted to assess the effectiveness on perineal hygiene involving cleaning of external genitalia and surrounding area. Pre-test and post-test were finished by administering knowledge questionnaires among 68 pregnant mothers. The perineal

area is conducive to the growth of pathogenic organisms because it is warm, moist and not well ventilated. There are many orifices situated in this area and the pathogenic organisms can enter into the body and cause infection. Study revealed that the information provided regarding perineal hygiene was effective to prevent bad odour, prevent infection and to promote comfort.⁵²

Section III: To assess the post-test level of knowledge regarding selected prenatal hygiene among antenatal mothers

The maximum mean percentage knowledge score obtained by the subjects regarding prenatal hygiene among antenatal mother was 95.33% with standard deviation of 0.49 in the area of general hygiene, dental hygiene 86.14% with standard deviation 0.758, breast hygiene 91.33% with standard deviation of 0.676, food hygiene 92.85% with standard deviation 0.536 and in the area of perineal hygiene, 90.5% with standard deviation 0.490 .

Section IV: To assess the effectiveness of structured teaching program regarding selected prenatal hygiene among antenatal mothers

The above table indicates that the obtained general hygiene mean knowledge score level in post test was higher than pretest ($5.72 > 2.67$) with standard deviation of ($0.49 > 1.386$) with the paired 't' test value of 16.372, dental hygiene ($6.03 > 2.92$) with standard deviation of ($0.758 > 1.405$) with the paired 't' test value of 14.132, breast hygiene ($5.48 > 2.22$) with standard deviation of ($0.676 > 1.519$) with the paired 't' test value of 14.579, food hygiene ($6.5 > 4.35$) with standard deviation of ($0.536 > 1.176$) with the paired 't' test value of 11.999 and perineal hygiene ($3.62 > 2.45$) with standard deviation of ($0.490 > 0.790$) with the paired 't' test value of 9.088. The overall post-test knowledge score was higher than the overall pre-test knowledge score with the standard deviation. The table value 1.96 with paired 't' value was found to be significant at the level of $p < 0.05$. Hence hypothesis was accepted. It was evident that the STP was effective in improving the knowledge regarding selected prenatal hygiene among antenatal mothers working in select garment factories.

Section V: To find out the association between the pre-test levels of knowledge regarding selected prenatal hygiene among antenatal mothers with their selected demographic variables

From the above table, it was evident that obtained chi-square values were significant in areas of educational

status 5.99, income 7.815 and in area of gestational age 5.99. The other demographic variables were non-significant. It was evident that there was a significant association between the three selected demographic variables such as educational status, income and gestational age of the antenatal mothers and selected prenatal hygiene in the pretest knowledge score at the level of $p < 0.05$. Hence the research hypothesis was accepted.

Conclusion

This study was conducted to assess the knowledge of antenatal mothers who were working in select garment factories. Prenatal hygiene is one of the most vital steps for antenatal mothers. In this regard, investigator played a vital role in providing information to the antenatal mothers and also antenatal mother's knowledge is accountable on prenatal hygiene. The present study revealed that most of the antenatal mothers 32 (53.4%) had inadequate knowledge regarding selected prenatal hygiene in the pre-test and the equal number of antenatal mothers 60 (100%) had adequate level of knowledge regarding selected prenatal hygiene in the post-test. Hence the above findings indicate that structured teaching programme was effective in increasing the knowledge of the antenatal mothers regarding selected prenatal hygiene and it was found to be appropriate, effective and could motivate the antenatal mothers to enhance their knowledge.

Nursing Implications

The findings of the present study have implications in the areas of the nursing education, nursing administration, nursing practice and nursing research.

Implication for Nursing Education

- Nursing personnel should be given in-service education to update their knowledge on reproductive health. So that they would be able to impart appropriate knowledge to the pregnant women.
- Nursing education should emphasize on preparing prospective nurses to impart health education by adopting different methods of educational technology in new lifestyle.

Implication for the Nursing Practice

- From this study, students, nurses and health personnel would be able to understand the importance of assessment of prevention measures of prenatal hygiene and its complications.

- b. Since the nurses are the first source of knowledge regarding health for the women, they must be patient and educate the antenatal women regarding prenatal hygiene.
- c. With the knowledge of prenatal hygiene, nurses would be able to prevent pregnancy complications helping women to have a healthy life.

Implication for Nursing Administration

- a. Nursing administration who is a member of the planning committee must provide suggestions to have inter-departmental, intra-departmental and extra-departmental communication for the development of design and layout of the hospital, educational institutions and other health sectors.
- b. The nursing administration should arrange continuing education programs for nursing personnel and students regarding prenatal hygiene.

Implication for Nursing Research

- a. Research should be conducted on preparation of better practices of nursing care and development of good and effective policies to provide quality care to the pregnant women regarding knowledge on prenatal hygiene for their implementation.
- b. There is need to have research based evidence to prove the cost effectiveness of knowledge on prenatal hygiene in reducing morbidity and mortality rate.

Recommendations

On the basis of the present study, certain suggestions have been made for future studies.

1. A similar study can be done on a larger sample.
2. A similar study can be done to assess the practices of antenatal mothers regarding prenatal care.
3. A study can be conducted to assess the effectiveness of a teaching protocol in terms of knowledge, practice and attitude of antenatal mothers.
4. A comparative study can be conducted between urban and rural areas regarding prenatal hygiene among antenatal mothers.

5. A study can be done regarding knowledge on prenatal hygiene among newly married woman.

Conflict of Interest

None.

References

1. <http://www.righthealth.com/topic/Hygienic#ixzz17Ps0U9fC>.
2. D.C. Dutta. Text book of Obstetrics. 6th ed reprint. Central publications; 2006. p. 95, 101, 102.
3. Pilletteri A. Maternal and child health nursing care of the child bearing and care of the rearing family. 6th ed. Wolters kluwer publications. p. 277, 278, 281-283.
4. Lowdermilkperry. Maternity nursing. 7th ed. Mosby Elsevier publications, 2006. Pp: 232, 255.
5. Joan ingen. Department of Obstetrics and gynaecology. Only community health center, Onancock, VA., Healthline Pregnancy Guide. February 2006. www.google.com.
6. Radnai M, Gorzó I, Nagy E, Urbán E, Eller J, Novák T, Pál A. Caries and periodontal state of pregnant women. Part I. Caries status. Szegedi Tudományegyetem, Általános Orvostudományi Kar, Szent-Györgyi Albert Orvos- és Gyógyszerésztudományi Centrum, Fogorvostudományi Szak. Fogorv Sz. 2005 Apr; 98(2):53-7.
7. TNAI. A: Text book of community health nursing, 3rd edition 2003 published by Mrs. Synthia Chakravarthy, New Delhi.
8. Perineal hygiene. <http://www.india.com>
9. R. Kavitha, dissertation of structured teaching program on knowledge of prenatal mothers self-care among antenatal period in Karnataka, India. 2001.
10. Manizheh sayyah Melli, Mohammad Raza Rashidi, Abbas Delazar, Elaheh Mandarek. Effect of peppermint water on prevention of nipple cracks in lactating primiparous women. April 19, 2000.