



Effectiveness Of Structured Teaching Programme On Knowledge And Attitude Regarding Water Birth Among Nursing Professionals At Selected Hospitals And Nursing Schools And Colleges Of Urban Area.

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Abstract: **Introduction:** Water birth is an emerging natural birthing technique increasingly recognized for its benefits in reducing labor pain, enhancing maternal comfort, and promoting positive birth outcomes. Despite global popularity, its adoption in India remains limited due to a lack of awareness and trained professionals. Nursing professionals, as key players in maternal care, require updated knowledge and attitudes towards water birth to ensure safe and effective implementation. **Objective:** The study aimed to assess the knowledge and attitude of nursing professionals regarding water birth, evaluate the effectiveness of a structured teaching programme, and examine associations with demographic variables. **Methods:** A quasi-experimental one-group pre-test post-test design was used. A total of 96 nursing professionals from selected hospitals and nursing colleges participated through non-probability convenience sampling. Data were collected using structured questionnaires and a modified Likert attitude scale. **Results:** Pre-intervention, 73.96% of participants had average knowledge and 58.33% had moderately favorable attitudes. Post-intervention, 56.25% showed good knowledge and 66.67% demonstrated improved attitudes. Paired t-tests revealed statistically significant improvements in both knowledge ($t=8.08$, $p<0.001$) and attitude ($t=5.44$, $p<0.001$). Significant associations were found between knowledge and experience, prior exposure, and interest in further training. **Conclusion:** The structured teaching programme was effective in enhancing knowledge and attitude regarding water birth among nursing professionals.

Index Terms - structured teaching , attitude , water birth

Introduction

Pregnancy stands as a profound experience for couples, marking the commencement of a new life journey parenthood. From the moment of conception to delivery, there exists a set of guidelines outlining what should and should not be done. A crucial aspect that garners significant attention is the mode of delivery¹. Most of the women think labor is likely to be one of the most painful events of their lives. In addition, there are various methods of birthing techniques, which include external manipulations like performing episiotomies, induction of labor, augmentation, applying instruments and ventouse, fundal pressure, which causes a disastrous experience for the mother and stress for the baby to enter the earth². Those mechanical approaches at hospitals are driving women to look for a more personalized and organized prenatal care childbirth and focus on the concepts of natural birthing technique³. Among the natural birthing techniques, water birthing is found to be more comfortable and is viewed as an emerging trend in midwifery care settings. In water birth, a portion of the labor, delivery, or both occurs while the woman is in a warm water filled birth pool. This can occur in a hospital, birthing center, or at home, with the assistance of a doctor or nurse-midwife guiding the mother through the process⁴. The first water birth in India was reported in the media in 2007⁵. The use of warm water induces relaxation, leading to a shortened duration of labor. Additionally, it minimizes pain and eliminates the requirement for anesthesia. The calming impact of the water enhances the elasticity of the perineum, thereby decreasing the likelihood of severe vaginal tears and the necessity for episiotomy^{6,7}. The buoyancy effect of water allows mothers to move and reposition themselves during labor. And the fear of a baby breathing under water was appeased by the work of Dr. Johnson, neonatal physiologist, who found that a baby is protected against the possibility of breathing naturally through the diving reflex⁸. The International Child Birth Education Association trusts that women with low-risk water births are not contraindicated, which may provide an environment for a gentle physiologic birth. Certain conditions may make women ineligible for water births, including those under the age of 17, individuals with preeclampsia, multiple pregnancies, breech positioning of the baby, premature delivery, and women experiencing vaginal infections⁹.

NEED FOR THE STUDY-

Water birth minimizes pain and distress, fostering an individual's self-confidence. Water birth lowers the risk of Apgar score, shortens the duration of labor and obviously lowers the risk of NICU admission and the risk of augmentation. Nowadays, it is becoming more popular and widespread in many countries, mainly in midwifery-led care settings. In India Water births are still like gold dust. Few hospitals have experienced staff helping women in labor and giving birth in the pool. Some may have facilities but don't have confident staff to perform water delivery. Since water birth facilities are becoming a slowly growing trend, women's prefer water birth over other birthing techniques. Since the nurse midwives are playing a vital role in caring for the women in labor, they need to be self-adjusted to the trends emerging in obstetrics. Therefore, creating awareness about water birth plays a vital role in safe water birthing. Lack of awareness about water birth acts as an obstacle to practicing water birthing. Therefore, it is essential to evaluate the knowledge and attitude of healthcare providers regarding water birth¹⁰

OBJECTIVE-

1. To assess the existing knowledge regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.
2. To assess the attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.
3. To evaluate the effectiveness of structured teaching programme on knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.
4. To find out the association between pre test knowledge and attitude score regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area with their selected demographic variables.

HYPOTHESIS

- Hypothesis will be tested at 0.05 level of significance.

1. H01 - There will be no significant difference between pre-test and post-test knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.

2. H1 - There will be significant difference between pre-test and post-test knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.

3. H02 - There will be no significant association between the pre-test knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area with their selected demographic variables.

4. H2 - There will be significant association between the pre-test knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area with their selected demographic variables.

ASSUMPTION- Nursing professionals may have some knowledge regarding water birth.

MATERIAL AND METHODS-

- **Research Design:-** Quasi experimental - one group pre-test post-test design.
- **Research Approach:-** Evaluatory interventional research approach.
- **Setting of the study:-** At selected hospitals and nursing schools and colleges of urban area.
- **Study Population:-** Nursing professionals at selected hospitals and nursing schools and colleges of urban area.
 - **Target Population:-** The target population is the entire population of Nursing professionals at selected hospitals and nursing schools and colleges of urban area from which the sample will be drawn
 - **Accessible Population:-** Nursing professionals at selected hospitals and nursing schools and colleges of urban area who are available at the time of data collection and fulfill the inclusion and exclusion criteria.
- **Sample Size:-** 100
- **Sampling Technique:-** Non probability convenience sampling method.
- **Variables:-**
 - **Independent Variables:-** Structured teaching programme on knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.
 - **Dependent Variable:-** Knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.
- **Method of selection of study subjects:-**
 - a) **Inclusion Criteria:-** Nursing professionals those who are,
 - holding diploma and degree in nursing or a registered nurse.
 - staff nurse and nursing teachers etc.
 - able to read and write English and Marathi language.
 - willing to participate in the study.

b) Exclusion Criteria:- Nursing professionals those who are,

- suffering from any illness and hospitalized during study.
- not present during the time of data collection.
- already attended the same programme before six month.

C) Subject Withdrawal Criteria: -

Subject Withdrawal Criteria Subject have the rights to withdraw from (i.e., discontinue participation in) research at any time. If subject decide to withdraw from all component of research study, the investigator must discontinue all the following research activities involving that subject's participation in the present study. Following are the reason for subject withdrawal from present research study:

1. Personnel reason can include death of loved one, relocation, change in job, divorce or any family related issues.
2. Health and safety
3. Unacceptable adverse effect
4. Disclose confidentiality
5. Non-compliance like subject may ties over time treatment or intervention or due to lengthy study.

APPROPRIATE METHOD OF MEASUREMENTS-

In this study the investigator used 03 data collection instruments.

Part A: Demographic variable consists of 12 questions.

Part B: Structured knowledge questionnaires consist of 30 questions.

Part C: Modified five point likert attitude scale consist of 15 statements.

LEVEL OF KNOWLEDGE

Poor
Average
Good

RANGE OF SCORE

0 - 10
11 - 20
21- 30

LEVEL OF ATTITUDE

Favorable
Moderately Favorable
Unfavorable

RANGE OF SCORE

$\geq 75\%$
51% -75%
 $\leq 50\%$

DATA COLLECTION PROCEDURE-

Permission was obtained from the head of the department, dean and institutional ethical committee. The study's objective was communicated, and informed consent was secured from the study participants. Data were gathered using a structured knowledge questionnaire and attitude scale devised by the researcher. The data collected was kept confidential. Institutional ethical guidelines were followed.

DATA ANALYSIS-

The information gathered from the participants was organized and analyzed. Descriptive and inferential statistics were employed for data analysis. Demographic variables were examined through frequency distribution, mean, and standard deviation. Effectiveness was find out through paired t test. The association of knowledge and attitude with selected demographic variables was determined using a chi-square test.

RESULT AND DISCUSSION-

DATA INTERPRETATION, ORGANIZATION OF DATA: TABLES, FIGURES AND GRAPHS

The data collected of the study was classified, organized and analyzed under following sections:-

SECTION I

Deals with analysis of demographic data of nursing professionals at selected hospitals, nursing schools and colleges of urban area in terms of frequency and percentage.

SECTION II

Deals with analysis of data related to assessment of the knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area in terms of frequency and percentage.

SECTION III

Deals with analysis of data related to the effectiveness of structured teaching programme on knowledge and attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.

SECTION IV

Deals with analysis of data related to the association between pretest knowledge and attitude regarding water birth among nursing professionals with selected demographic variables.

SECTION I

Deals with analysis of demographic data of nursing professionals at selected hospitals, nursing schools and colleges of urban area in terms of frequency and percentage.

Table 1: Frequency & percentage distribution of the nursing professionals at selected hospitals

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age (in years)	Below 25	94	97.92
		25-34	2	2.08
		35-44	0	0.00
		45 & above	0	0.00
2	Gender	Male	31	32.29
		Female	65	67.71
		Other	0	0.00
3	Marital status	Single	95	98.96
		Married	1	1.04
		Divorced	0	0.00
		Widowed	0	0.00
4	Educational Qualification	GNM	6	6.25
		Basic B.Sc. Nursing	88	91.67
		Post Basic B.Sc. Nursing	0	0.00
		M.Sc. Nursing	0	0.00

		Other	2	2.08
5	Professional Role	Staff nurse	9	9.38
		Nursing Educator	6	6.25
		Clinical Instructor	1	1.04
		Nursing Superintendent	1	1.04
		Others	79	82.29
6	Years of Experience	Less than 1 year	91	94.79
		1-5.	5	5.21
		6-10.	0	0.00
		More than 10 years	0	0.00

Table 1: Frequency & percentage distribution of the nursing professionals at selected hospitals

Sr. No.	Variable	Groups	Frequency	Percentage
7	Workplace	Hospital	5	5.21
		Nursing school / college	59	61.46
		Both	32	33.33
8	Area of Work	Maternity / Labor Unit	1	1.04
		General Ward	3	3.13
		ICU / NICU	2	2.08
		Nursing School or College	38	39.58
		Others	52	54.17
9	Have you heard about water birth before?	Yes	45	46.88
		No	51	53.13
10	Source of Information about Water Birth (if yes)	Nursing Curriculum	16	16.67
		Workshops/Seminars	10	10.42
		Internet	39	40.63
		Colleagues	3	3.13
		Others	28	29.17
11	Previous Exposure to Water Birth	Yes	10	10.42
		No	86	89.58
12		Yes	81	84.38

	Interest in Attending Further Training on Water Birth	No	15	15.63
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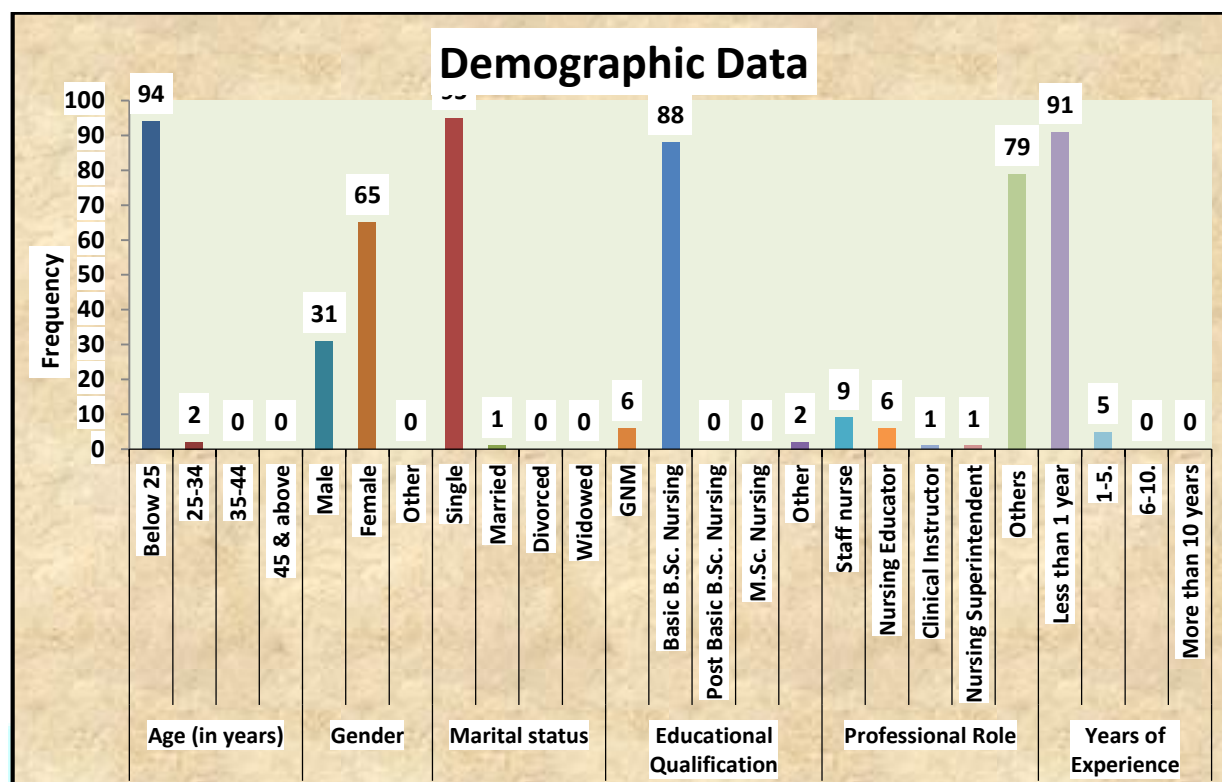


Figure No-1: Distribution of the nursing professionals at selected hospitals

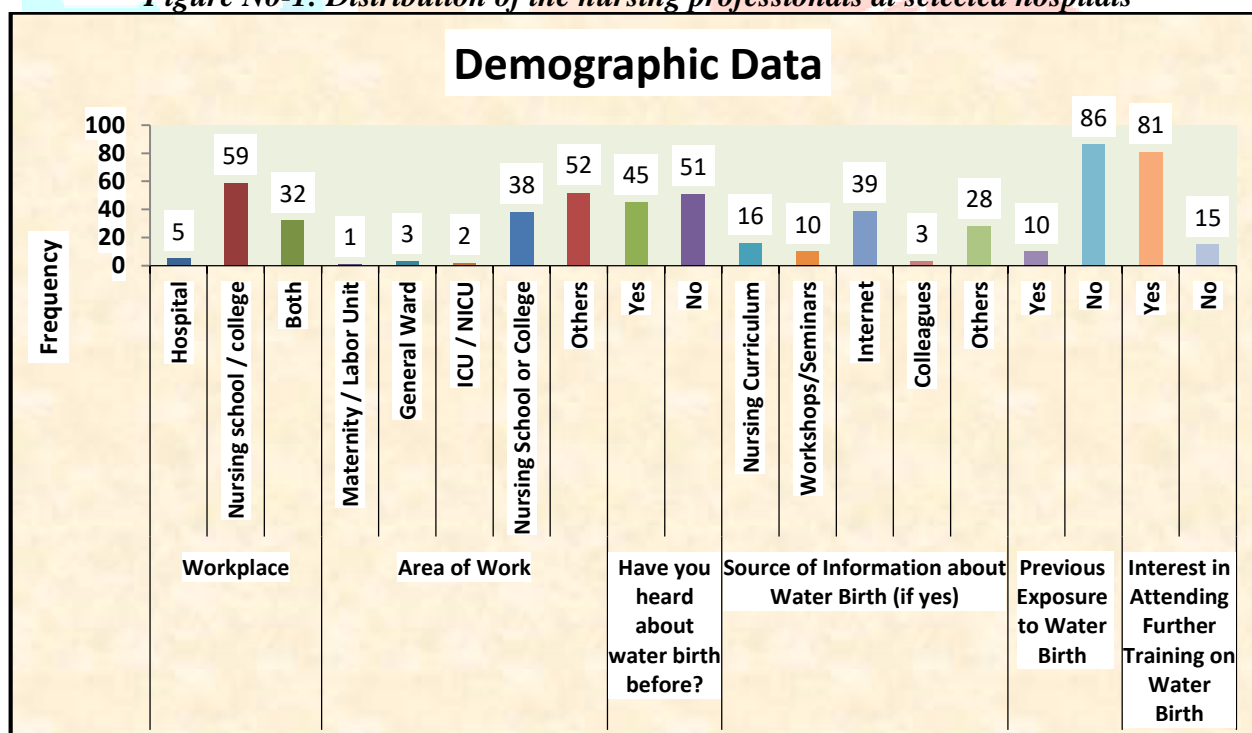


Figure No-1: Distribution of the nursing professionals at selected hospitals

SECTION II

Deals with analysis of data related to assessment of the knowledge regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area in terms of frequency and percentage.

Table 2: General assessments of Knowledge- PRE & POST test

Variable	Groups	Score	Pre Test		Post Test	
			Frequency	Percentage	Frequency	Percentage
Knowledge	Poor	0-10	21	21.88	11	11.46
	Average	11-20.	71	73.96	31	32.29
	Good	21-30.	4	4.17	54	56.25
Knowledge	Minimum		3		4	
	Maximum		23		27	
	Average (SD)		13.68 (4.03)		19.11 (4.92)	

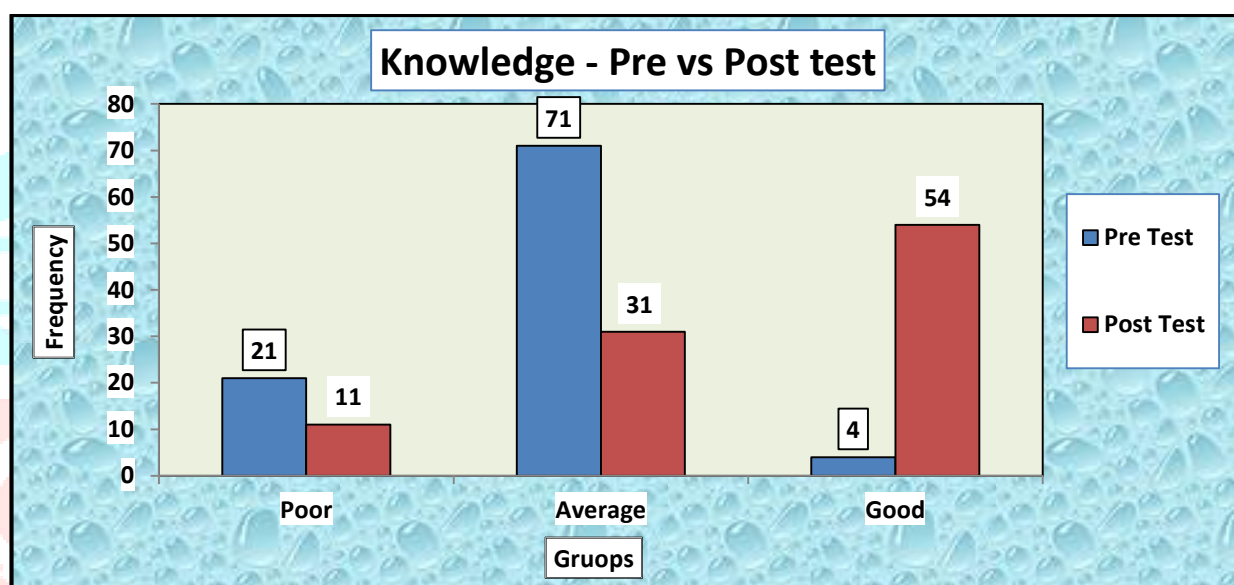


Figure No-2: General assessments of Knowledge - PRE & POST test

General assessments of Knowledge

For the assessment purpose total score of knowledge regarding water birth among nursing professionals at selected hospitals, nursing schools and colleges was divided in to three groups like poor (0-10 score), average (11-20 score) and good (21-30 score).

Pre Test:

At the time of pretest, assessment of the knowledge regarding water birth among nursing professionals shows that, 21.88% had poor knowledge, 73.96% professionals had average knowledge and 4.17% of them had good knowledge.

Average knowledge score at the time of pretest was 13.60 with standard deviation of 4.03. The minimum score of knowledge was 3 with maximum score of 23.

Post Test:

At the time of posttest, assessment of the knowledge regarding water birth among nursing professionals shows that, 11.46% had poor knowledge, 32.29% professionals had average knowledge and 56.25% of them had good knowledge.

Average knowledge score at the time of posttest was 19.11 with standard deviation of 4.92. The minimum score of knowledge was 4 with maximum score of 27.

Deals with analysis of data related to assessment of the attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area in terms of frequency and percentage.

Table 3: General assessments of attitude - PRE & POST test

Variable	Groups	Score	Pre Test		Post Test	
			Frequency	Percentage	Frequency	Percentage
ATTITUDE	Unfavorable	15-45	35	36.46	18	18.75
	Moderately Favorable	46-60	56	58.33	64	66.67
	Favorable	61-75	5	5.21	14	14.58
ATTITUDE	Minimum		35		40	
	Maximum		73		75	
	Average (SD)		48.60 (7.62)		53.30 (8.02)	

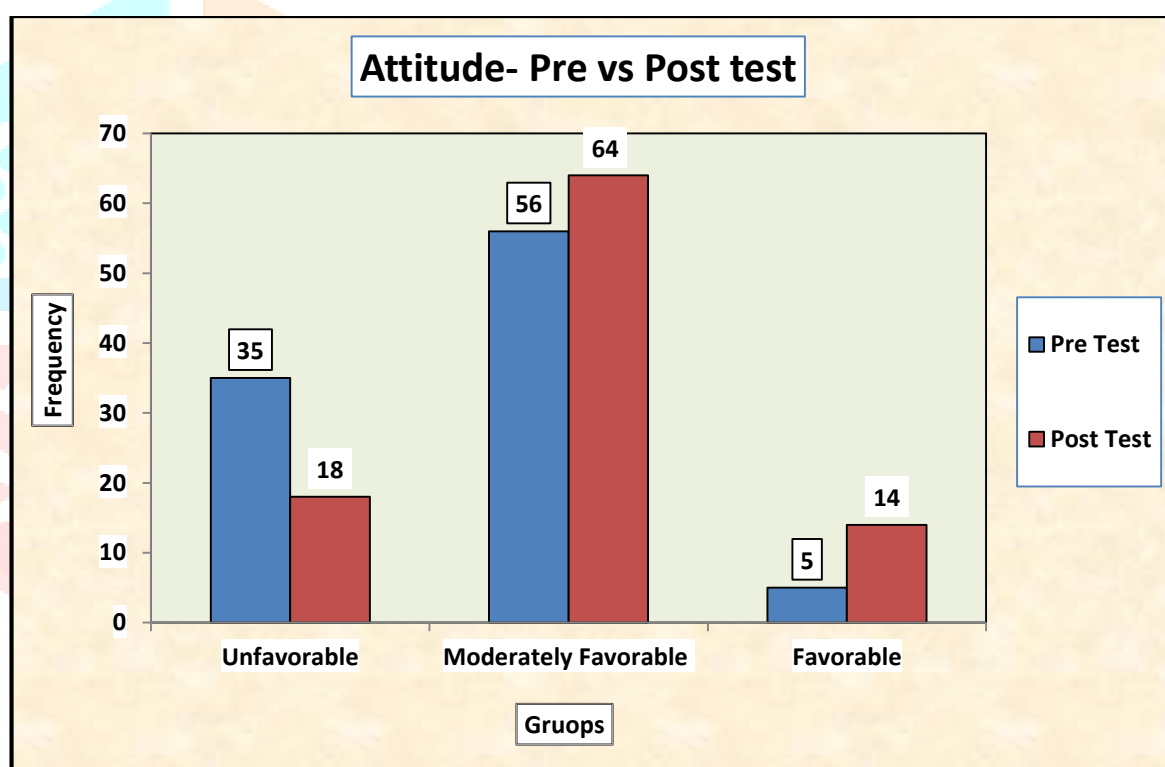


Figure No-3: General assessments of attitude - PRE & POST test

General assessments of Attitude

For the assessment purpose total score of attitude regarding water birth among nursing professionals at selected hospitals, nursing schools and colleges was divided in to three groups like unfavorable (15-45 score), moderately favorable (46-60 score) and favorable (61-75 score).

Pre Test:

At the time of pretest, assessment of the attitude regarding water birth among nursing professionals shows that, 36.46% had unfavorable attitude, 58.33% professionals had moderately favorable attitude and 5.21% of them had favorable attitude.

Average attitude score at the time of pretest was 48.60 with standard deviation of 7.62. The minimum score of attitude was 35 with maximum score of 73.

Post Test:

At the time of posttest, assessment of the attitude regarding water birth among nursing professionals shows that, 18.75% had unfavorable attitude, 66.67% professionals had moderately favorable attitude and 14.58% of them had favorable attitude.

Average attitude score at the time of posttest was 53.30 with standard deviation of 8.02. The minimum score of attitude was 40 with maximum score of 75.

SECTION III

Deals with analysis of data related to the effectiveness of structured teaching programme on knowledge regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.

Table 4: Comparison of the pre and posttest Knowledge (paired t test)

Group	Frequency	Mean	S.D.	t value	P value
Pre Test	96	13.68	4.03	8.08	0.000
Post Test	96	19.11	4.92		

The comparisons of pretest and posttest means of knowledge regarding water birth among nursing professionals were done by paired t test.

The pretest average score was 13.68 with standard deviation of 4.03. The posttest average score was 19.11 with standard deviation of 4.92. The test statistics value of paired t test was 8.08 with p value 0.00. The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and posttest knowledge.

Shows that, structured teaching programme to improve knowledge regarding water birth among nursing professionals was effective.

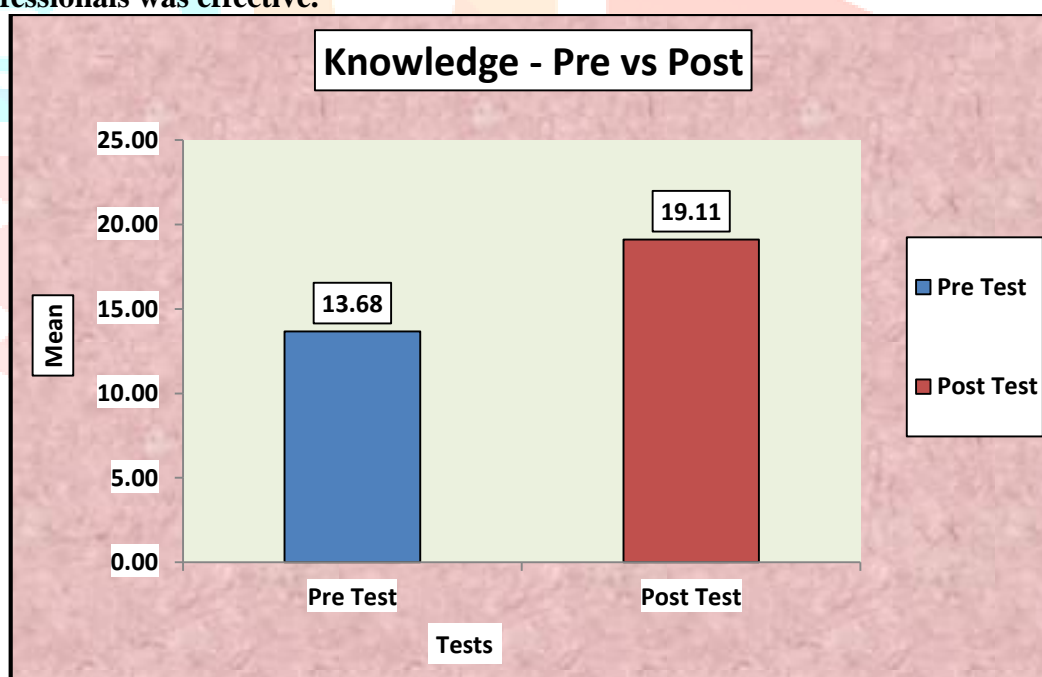


Figure 4: Comparison of the average pre and posttest Knowledge score

Deals with analysis of data related to the effectiveness of structured teaching programme on attitude regarding water birth among nursing professionals at selected hospitals and nursing schools and colleges of urban area.

Table 5: Comparison of the pre and posttest attitude (paired t test)

Group	Frequency	Mean	S.D.	t value	P value
Pre Test	96	48.60	7.62	5.44	0.000
Post Test	96	53.30	8.02		

The comparisons of pretest and posttest means of attitude regarding water birth among nursing professionals were done by paired t test.

The pretest average score was 48.60 with standard deviation of 7.62. The posttest average score was 53.30 with standard deviation of 8.02. The test statistics value of paired t test was 5.44 with p value 0.00. The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and posttest attitude.

Shows that, structured teaching programme to improve attitude regarding water birth among nursing professionals was effective.

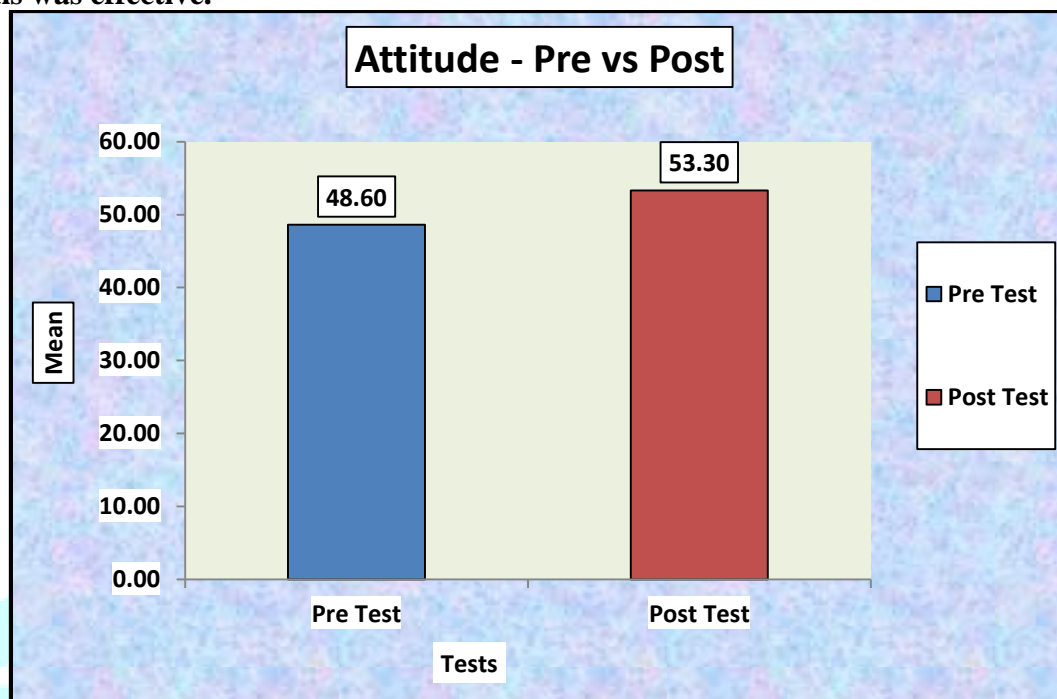


Figure 5: Comparison of the average pre and posttest attitude score

SECTION IV

Deals with analysis of data related to association between pretest knowledge and attitude regarding water birth among nursing professionals with selected demographic variables.

ASSOCIATION OF KNOWLEDGE IN RELATION TO DEMOGRAPHIC VARIABLES - PRE TEST

Table 6: Association of Knowledge with demographic variables – Pre Test

Variable	Groups	Knowledge - PRE Test		Chi Square	d.f.	p value	Significance
		below Md	above Md				
Age (in years)	Below 25	51	43	0.04	1	0.83	Not Significant
	25-34	1	1				
	35-44	0	0				
	45 & above	0	0				
Gender	Male	19	12	0.30	1	0.58	Not Significant
	Female	36	29				
	Other	0	0				
Marital status	Single	54	41	0.75	1	0.39	Not Significant
	Married	1	0				
	Divorced	0	0				
	Widowed	0	0				
Educational Qualification	GNM	5	1	3.42	2	0.18	Not Significant
	Basic B.Sc. Nursing	48	40				
	Post Basic B.Sc. Nursing	0	0				
	M.Sc. Nursing	0	0				

	Other	2	0				
Professional Role	Staff nurse	4	5	2.25	4	0.69	Not Significant
	Nursing Educator	3	3				
	Clinical Instructor	1	0				
	Nursing Superintendent	1	0				
	Others	46	33				
Years of Experience	Less than 1 year	50	41	3.93	1	0.047	Significant
	1-5.	5	0				
	6-10.	0	0				
	More than 10 years	0	0				

ASSOCIATION OF KNOWLEDGE IN RELATION TO DEMOGRAPHIC VARIABLES - PRE TEST

Table 6: Association of Knowledge with demographic variables – Pre Test

Variable	Groups	Knowledge - PRE Test		Chi Square	d.f.	P value	Significance
		below Md	above Md				
Workplace	Hospital	3	2	1.04	2	0.59	Not Significant
	Nursing school / college	36	23				
	Both	16	16				
Area of Work	Maternity / Labor Unit	0	1	3.67	4	0.45	Not Significant
	General Ward	3	0				
	ICU / NICU	1	1				
	Nursing School or College	22	16				
	Others	29	23				
Have you heard about water birth before?	Yes	21	24	3.9	1	0.048	Significant
	No	34	17				
Source of Information about Water Birth (if yes)	Nursing Curriculum	7	9	3.61	4	0.46	Not Significant
	Workshops/Seminars	6	4				
	Internet	22	17				
	Colleagues	3	0				
	Others	17	11				
Previous Exposure to Water Birth	Yes	6	4	0.03	1	0.86	Not Significant
	No	49	37				
Interest in Attending	Yes	43	38	6.26	1	0.012	Significant

Further Training on Water Birth	No	13	2				
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ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES – PRE TEST

The chi square test was used to see the association between pretest knowledge and attitude regarding water birth among nursing professionals with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables years of experience, heard about water birth before and interest in attending further training on water birth p value of the association test with pretest knowledge was less than 0.05. That means, knowledge of nursing professionals regarding water birth was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the pretest knowledge.

No Significant Association:

For the demographic variables age, gender, marital status etc., p value of the association test with pretest knowledge was more than 0.05. That means, knowledge of nursing professionals regarding water birth was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the pretest knowledge.

Deals with analysis of data related to association between pretest attitude regarding water birth among nursing professionals with selected demographic variables.

ASSOCIATION OF ATTITUDE IN RELATION TO DEMOGRAPHIC VARIABLES - PRE TEST

Table 7: Association of attitude with demographic variables – Pre Test

Variable	Groups	Attitude - PRE Test		Chi Square	d.f.	P value	Significance
		below Md	above Md				
Age (in years)	Below 25	47	47	0.00	1	1.00	Not Significant
	25-34	1	1				
	35-44	0	0				
	45 & above	0	0				
Gender	Male	20	11	3.85	1	0.049	Significant
	Female	28	37				
	Other	0	0				
Marital status	Single	47	48	1.01	1	0.31	Not Significant
	Married	1	0				
	Divorced	0	0				
	Widowed	0	0				
Educational Qualification	GNM	4	2	2.84	2	0.24	Not Significant
	Basic B.Sc. Nursing	42	46				

	Post Basic B.Sc. Nursing	0	0				
	M.Sc. Nursing	0	0				
	Other	2	0				
Professional Role	Staff nurse	6	3	3.78	4	0.44	Not Significant
	Nursing Educator	2	4				
	Clinical Instructor	1	0				
	Nursing Superintendent	1	0				
	Others	38	41				
Years of Experience	Less than 1 year	44	47	1.89	1	0.17	Not Significant
	1-5.	4	1				
	6-10.	0	0				
	More than 10 years	0	0				

ASSOCIATION OF ATTITUDE IN RELATION TO DEMOGRAPHIC VARIABLES - PRE TEST

Table 7: Association of attitude with demographic variables – Pre Test

Variable	Groups	Attitude - PRE Test		Chi Square	d.f.	P value	Significance
		below Md	above Md				
Workplace	Hospital	5	0	6.14	2	0.046	Significant
	Nursing school / college	30	29				
	Both	13	19				
Area of Work	Maternity / Labor Unit	1	0	5.02	4	0.29	Not Significant
	General Ward	3	0				
	ICU / NICU	1	1				
	Nursing School or College	16	22				
	Others	27	25				
Have you heard about water birth before?	Yes	27	18	3.38	1	0.066	Not Significant
	No	21	30				
Source of Information about Water Birth (if yes)	Nursing Curriculum	11	5	3.38	4	0.50	Not Significant
	Workshops/Seminars	5	5				
	Internet	18	21				
	Colleagues	2	1				
	Others	12	16				
	Yes	8	2	4.01	1	0.045	Significant

Previous Exposure to Water Birth	No	40	46				
Interest in Attending Further Training on Water Birth	Yes	39	42	0.71	1	0.40	Not Significant
	No	9	6				

ASSOCIATION OF ATTITUDE IN RELATION TO DEMOGRAPHIC VARIABLES - PRE TEST

The chi square test was used to see the association between pretest attitude and attitude regarding water birth among nursing professionals with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables gender, workplace and previous exposure to water birth, p value of the association test with pretest attitude was less than 0.05. That means, attitude of nursing professionals regarding water birth was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the pretest attitude.

No Significant Association:

For the demographic variables age, marital status, educational qualification etc., p value of the association test with pretest attitude was more than 0.05. That means, attitude of nursing professionals regarding water birth was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the pretest attitude.

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