

Research Article

An Effectiveness of a Planned Teaching Program on Knowledge Regarding the Practice of Antenatal Exercise among Primigravida Mothers at a Government Hospital, Chittoor

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A B S T R A C T

Background of the Study: Pregnancy is a long and a very special journey of dramatic physical, psychological and social change; of becoming a mother, of redefining family relationships and of taking on the long-term responsibility for caring for and cherishing a newborn child. Generations of women have travelled the same route, but each journey is unique (D H 1993)". All human life on the planet is born of a female. A woman is an important person in the family. She nourishes her foetus and gives birth to a child. Her health is a tender and wanted component of total care and cannot be neglected.

Aim: To improve the knowledge regarding antenatal exercises among primigravida mothers

Methodology: The pre-experimental design was selected for the investigation. The investigation was conducted at Chittoor's Government Hospital. The antenatal mother among the primigravida mother was selected using a non-convenient sampling technique. Participants falling under inclusion criteria and who were willing were selected for the study. Using descriptive and inferential statistics, the collated data was analysed and interpreted.

Results: In this study pretest knowledge scores of primigravida mothers were (0) for the mothers with adequate knowledge, (2/10%) for the mothers with moderate knowledge and (18/90%) for the mother with inadequate knowledge, and posttest knowledge scores of primi- gravida mothers were (15/75%) of the mothers with Adequate knowledge (5/25%) for the mothers with moderate knowledge and (0) for mothers with Inadequate knowledge.

Conclusion: The study concluded that the planned teaching programme was effective regarding antenatal exercises among primigravida mother.

Keywords: Pregnancy, Primigravida Mothers, Antenatal Mother

Introduction

Systemic exercise to help the pregnant woman adapt to the physical changes in her body during pregnancy and to tone up the muscles that will be stretched or stressed during delivery.¹

Pregnancy should be seen as an opportunity to embrace exercise routines, and women should be encouraged to maintain those habits. Antenatal exercise is tailored to promote health benefits to both pregnant women and fetuses.²⁻⁴

According to the National Institute for Health and Care Excellence (NICE) guidelines and the American Congress of Obstetricians and Gynaecologists (ACOG), antenatal exercise (ANEX) has minimal risk and paramount benefits, although some modification is needed as per maternal and foetal requirements. ACOG recommended that low-impact or moderate exercise for 30 minutes on most days of the week helps with weight management, reduces the risk of gestational diabetes mellitus (GDM), and improves psychological well-being.⁵⁻⁹

Antenatal physical exercise has modes in health maintenance and prevention and treatment of disease for pregnant women and fetuses. Different organisations and medical institutions prescribe regular physical exercise during the antenatal period. So despite this, the pregnant populations are less active and decrease their exercise level during pregnancy than before State. Therefore, this present study aimed to assess antenatal physical exercise level and its associated factors among pregnant women in Hawassa City, Sidama Regional State, Ethiopia.^{5,3}

In the general population being physically inactive is the fourth leading cause of global mortality, accounting for 503 million (9.7%) premature deaths. Considering the escalating rate of disease attributable to Physical inactivity, the WHO also developed a global action plan to reduce physical inactivity by at least 10% by 2025 and 15% by 2030. Especially for the pregnant population, being physically inactive is found to be an independent risk factor for maternal Obesity, gestational diabetes mellitus and gestational hypertension.¹⁰⁻¹²

Objectives

- To assess the pretest and posttest knowledge of mothers regarding the practice of antenatal exercise among primigravida mothers.
- To evaluate the effectiveness of the planned teaching programme with knowledge regarding the practice of antenatal exercise among primigravida mothers.
- To find out the association between knowledge scores regarding antenatal exercise among primigravida mothers and their selected demographic variables.

Methodology

The research design used for the present study is a pre-experimental pre-test post-test design. The study was conducted in Government Hospital, Chittoor. 650 beds. The MCH services were started in a government hospital in 2015. The present study was conducted in the antenatal OPD department of a government hospital in Chittoor on the 20th of January 2025 with the presence of a census of 50 of all antenatal mothers who were present at the government hospital the Chittoor district. A non-convenient sample technique was used to select antenatal exercise among primigravida mothers based on inclusive and exclusive criteria.

Criteria For Sample Selection: Inclusive Criteria

1. Primigravida mother of 1st pregnancy.
2. Primigravida mother who can speak, the local language (Telugu). English.
3. Primigravida mothers who are available at the time of data collection.

Exclusive Criteria

1. The primigravida mother who can refuse or is not willing to participate in the study.
2. The primigravida mothers who are not available at the time of study.
3. The mothers who are multigravida.
4. The mother who is having complications like abruptio placenta, vasa previa, etc.
5. The mother who has a bad obstetrical history, like abortion or still birth.

Description of the study

The study consists of 2 sections.

Section A

It consists of demographic variables like age, week of gestation, education of husband, education of mother, occupation of husband, type of family, religion, income of the family, duration of the marriage and sources of information.

Section B

It consists of 25 multiple-choice question with four options. In each question to assess the knowledge regarding the practice of antenatal exercise among primigravida mothers.

Scoring Key I:- By coding demographic variables.

Scoring II - It consist of 25 planned questions to assess the level of knowledge of the mother.

Score Interpretation

Section II has included 25 questions; each correct response will get a score of '1', and score of '0' will be for a wrong answer, The resulting score will be interpreted as follows.

Inadequate knowledge

(below 50%)

Moderate knowledge

(50-75%)

Adequate knowledge

(75-100%)

Data collection procedure

The investigator obtained prior permission from the government hospital in Chittoor, Andhra Pradesh, to conduct the study. The research decided to take 20 samples from the Government Hospital Chittoor.

The sampling technique used was the non-probability convenient sampling technique. Participants falling under inclusion criteria and who were willing were selected for the study. Rapport was established with self-introduction, and oral consent was taken. Primigravida mothers were made comfortable, and instructions were given to them regarding questionnaires.

On 20/01/25, a pre-test was conducted for 20 primigravida mothers by using planned knowledge questionnaires on antenatal exercise for 15 minutes, and a planned teaching programme was given for 30 minutes to the same sample on the same day in the antenatal OPD department.

On 27/01/25, a post-test was conducted for 20 primigravida mothers which was the same planned knowledge questionnaire for 15 minutes on the same samples. Statistical analysis was done by descriptive and inferential statistics.

Data analysis

This chapter deals with the analysis and interpretation of data collected through a structural questionnaire among primigravida mothers on knowledge regarding the antenatal exercise.

Results and Interpretation

The above table 1 shows that out of 20 respondents, the majority of them 11(55%), belong to the age group 15-20 years, whereas 6(30%) belong to the age group 21-25 years, 2(10%) belong to 26-30 years and, 1(5%) belongs to above 30 years.

The above table 2 shows that out of 20 respondents, the majority of them 09(45%) belong to the age group 25-30 years, whereas 7(35%) belong to age group 13-24 years, 4(20%) belong to 01-12 years and 0(0%) belong to above 30 years.

The above table 3 shows that out of 20 respondents, majority of them 09 (45%), belong to the secondary level education, whereas 6(30%) belong to the primary level

education, 3(15%) have to the No formal education, and 2(10%) belong to the graduate and above level.

The above table 4 shows that out of 20 respondents, the majority of them 10(50%), belong to the secondary level of education, whereas 8(40%) belong to the primary level education, 1(5%) has to the No formal education, and 1(5%) belongs to the graduate and above level.

Table 1. Frequency and Percentage Distribution of the Respondents According to Age (in Years)

Age (in Years)	Frequency	Percentage
15-20	11	55
21-25	6	30
26-30	2	10
Above 30	1	5
Total	20	100

Table 2. Frequency and percentage distribution of the respondents according to gestation

Weeks	Frequency	Percentage
1-12	4	20
13-24	7	35
25-30	9	45
Above 30	0	0
Total	20	100

Table 3. Frequency and percentage distribution of the respondents according to education

Level	Frequency	Percentage
Primary	6	30
Secondary	9	45
No formal education	3	15
Graduate and Above	2	10
Total	20	100

Table 4. Frequency and Percentage Distribution of the Respondents According to Education of Husband

Level	Frequency	Percentage
Primary	8	40
Secondary	10	50
No formal education	1	5
Graduate and above	1	5
Total	20	100

The above table 5 shows that out of 20 respondents, majority of them 11(55%), belong to the housewife category, whereas 5(25%) belong to the Self-employment category, 4(20%) belong to the other category and 0(0%) belong to the Government employee category.

The above table 6 shows that out of 20 respondents, majority of them 7(35%), belong to the Other category, whereas 6(30%) belong to the Self-employment category, 5(25%) belong to the Employee category and 2(10%) belong to the Government employee category.

The above table 7 shows that out of 20 respondents, majority of them 11(55%), belong to the small family, whereas 6(30%) belong to the joint family, 3(15%) belong to the extended family and 0(0%) belong to the single family.

The above table shows 8 that out of 20 respondents, majority of them 12(60%), belong to the Hindu religion, whereas 6(30%) belong to the Christian religion, 2(10%) belong to the Muslim religion and 0(0%) belong to the Other religion.

Table 5.Frequency and Percentage Distribution of the Respondents According to Occupation of Mother

Occupation	Frequency	Percentage
House wife	11	55
Self-employment	5	25
Government employee	0	0
Other	4	20
Total	20	100

Table 6.Frequency and Percentage Distribution of the Respondents According to Occupation of Father

Occupation	Frequency	Percentage
Employee	5	25
Self-employee	6	30
Government employee	2	10
Other	7	35
Total	20	100

Table 7.Frequency and percentage distribution of the respondents according to type of family

Type	Frequency	Percentage
Small family	11	55
Joint family	6	30
Extended family	3	15
Single family	0	0
Total	20	100

Table 8.Frequency and percentage distribution of the respondents according to Religion

Religion	Frequency	Percentage
Hindu	12	60
Muslim	2	10
Christian	6	30
Others	0	0
Total	20	100

The above table 9 shows that out of 20 respondents, the majority of them 8(40%), belong to the income range of Rs.60000-Rs.90000, whereas 6(30%) belong to the income range of Rs.30000-Rs.60000, 4(20%) belong to the income range above Rs.90000 and 2(10%) belong to the income range < Rs.30000.

The above table 10 shows that out of 20 respondents, majority of them 8(40%), belong to the marriage duration below 1 year, whereas 4(20%) belong to the marriage duration 2 years, 3 years or 4 years or above.

The above table 11 shows that out of 20 respondents, majority of them 8(40%), belong to the Source of Information through Planned Media, whereas 5(25%) belong to the Source of Information through Books and Journals, 4 (20%) belong to Source of Information through Health workers, and 3(15%) belong to the Source of Information through Any Relative or Family.

Table 9.Frequency and percentage distribution of the respondents according to the income of the family

Income(annual)	Frequency	Percentage
< 3000	2	10
30000-60000	6	30
60000-90000	8	40
Above 90000	4	20
Total	20	100

Table 10.Frequency and Percentage Distribution of the Respondents According to the Duration of Marriage

Duration(in Years)	Frequency	Percentage
Below 1 year	8	40
2 Years	4	20
3 Years	4	20
4 Years or Above	4	20
Total	20	100

Table 11. Frequency and percentage distribution of the respondents according to the Source of information

Source	Frequency	Percentage
Plan Media	8	40
Health Worker	4	20
Any relative or family	3	15
Books and Journals	5	25
Total	20	100

The above table 12 shows that the mean scores of women were 8.8 in the pre-test and 19.5 in the post-test and the standard deviations were 3.5214 in the pre-test and 3.0277 in the post-test.

The results presented in Table 13 reveal that during the pre-test, a majority of the respondents (90%) had *inadequate knowledge* (below 50%), while only 10% demonstrated *moderate knowledge*. However, in the post-test, 75% of respondents achieved *adequate knowledge* (75–100%), and 25% showed *moderate knowledge*, indicating a considerable improvement after the intervention.

Also, *t* is significant at 0.05 level, and we conclude that there is significant improvement of the respondents according to the Pre-test and Post-test scores.

Further analysis in Table 14 shows that the difference between the pre-test and post-test scores is statistically significant ($t = 9.7563$, $p = 0.000004392 < 0.05$). This confirms that there was a significant improvement in the knowledge levels of the respondents following the intervention.

The above table 15 showed that 8(40%) respondents were in a gestation period of 13-24 weeks. Among them, 3(15%) were in the age group 15-20 years, 4(20%) had in the age group 21-25 years, 1(5%) was in the age group above 30 years, and 0(0%) were in the age group 26-30 years.

The above table 15 showed that 8(40%) respondents were in a gestation period of 25-30 weeks. Among them, 5(25%) were in the age group 15-20 years, 2(10%) were in the age group 21-25 years, 1(5%) was in the age group above 30 years, and 0(0%) were in the age group 26-30 years.

The above table 15 showed that 4(20%) respondents were in a gestation period of 1-12 weeks. Among them 3(15%)

were in the age group 15-20 years, 1(5%) was in the age group 21-25 years, 0(0%) were in age the group above 30 years, 0(0%) were in the age group 26-30 years.

The table 15 showed that 0(0%) respondents were in a gestation period of 1-12 weeks. Among them, 0(0%) were in age group 15-20 years, 0(0%) were in the age group 21-25 years, 0(0%) were in the age group above 30 years, and 0(0%) were in the age group 26-30 years.

The above table 16 showed that 10(50%) respondents were Housewife's. Among them, 3(15%) had Primary-level education, 4(20%) had Secondary-level education, 2(10%) had no formal education, and 1(5%) had graduate-level education or above.

The above 16 table showed that 6(30%) respondents were Self-employed. Among them, 2(10%) had Primary-level education, 2(10%) had Secondary-level education, 1(5%) had no formal education, 1(5%) had graduate and above level.

The above table 16 showed that 4(20%) respondents were others. Among them, 1(5%) had primary-level education, 3(15%) had Secondary-level education, 0(0%) had no formal education, and 0(0%) had graduate-level or above.

The above table 16 showed that 0(0%) respondents were others. Among them, 0(0%) had primary-level education, 0(0%) had Secondary-level education, 0(0%) had no formal education, and 0(0%) had graduate-level or above.

The above table 17 showed that 8(40%) respondents were below 1 year of marriage duration. Among them, 4(20%) had Small families, 2(10%) had Joint families, 2(10%) had extended families, 0(0%) had Single families.

The above table 17 showed that 4(20%) respondents were below 1 year of marriage duration. Among them 3(15%) had Small families, 1(5%) had a Joint family, 1(5%) had an extended family, and 0(0%) had a single family.

The above table 17 showed that 4(20%) respondents were below 1 year of marriage duration. Among them, 2(10%) had Small families, 2(10%) had Joint families, 0(0%) had extended families, and 0(0%) had Single families.

The above table 17 showed that 4(20%) respondents were below 1 year of marriage duration. Among them 2(10%) had Small families, 1(5%) had Joint families, 0(0%) had extended families, and 0(0%) had Single families.

Table 12. Frequency and percentage distribution of the respondents according to the pre- test and post-test scores of respondents

Pre-test		Post-test		Both		Frequency	Percentage
Mean	S.D	Mean	S.D	Mean	S.D		
8.8	3.5214	19.5	3.0277	28.3	6.5491	20	100

Table 13. Frequency and percentage distribution of the respondents according to the Pre-test and post-test scores of respondents

SL No.	Level of Knowledge	Pre-test	Post-test
1	Inadequate Knowledge (Below 50%)	18 (90%)	0
2	Moderate Knowledge (50-75%)	2 (10%)	5 (25%)
3	Adequate Knowledge (75-100%)	0	15 (75%)

Table 14. Testing of Significance of the Respondents According to the Pre- Test and Post-Test Scores of respondents

Size(N)	Degrees of freedom	P-Value	t-value Value	t-Significant Value
20	9	0.000004392	9.7563	1.833

Since $P < 0.05$, it is significant for the respondents according to the pre-test and post-test scores

Table 15. Association between knowledge of women according to age (in years) and gestation period (in weeks)

Variables	Category	N/%	Age (in Years)				Total	Chi-Square	P-Value
			15-20	21-25	26-30	Above 30			
Gestation Period (in Weeks)	1-12	N	3	1	0	0	4	4.6753	0.9459
		%	15%	5%	0%	0%	20%		
	13-24	N	3	4	0	1	8		
		%	15%	20%	0%	5%	40%		
	25-30	N	5	2	1	0	8		
		%	25%	10%	5%	0%	40%		
	Above 30	N	0	0	0	0	0		
		%	0%	0%	0%	0%	0%		
	Total(N)		11	7	1	1	20		
	Total (Percentage)		55%	35%	0%	10%	100%		

Table 16. Association between Knowledge of Women According to Occupation of Mother

Variables	Category	N/%	Education				Total	Chi-Square	P-Value
			Primary	Secondary	No formal	Graduate and Above			
Occupation of Mother	House wife	N	3	4	2	1	10	2.5370	0.9955
		%	15%	20%	10%	5%	50%		
	Self Employee	N	2	2	1	1	6		
		%	10%	10%	5%	5%	30%		
	Govt. employee	N	0	0	0	0	0		
		%	0%	0%	0%	0%	0%		
	Other	N	1	3	0	0	4		
		%	5%	15%	0%	0%	20%		
	Total(N)		6	9	1	1	20		
	Total(Percentage)		30%	45%	15%	10%	100%		

Table 17. Association between Knowledge of Women according to Type of Family and Marriage Duration

Variables	Category	N/%	Type of family				Total	Chi-Square	P-Value
			Small family	Joint family	Extended family	Single family			
Marriage duration	Below 1 year	N	4	2	2	0	8	2.5960	0.9951
		%	20%	10%	10%	0%	40%		
	2 years	N	3	1	1	0	4		
		%	15%	5%	5%	0%	20%		
	3 years	N	2	2	0	0	4		
		%	10%	10%	0%	0%	20%		
	4 years or above	N	2	1	0	0	4		
		%	10%	5%	0%	0%	20%		
Total(N)			11	6	3	0	20		
Total(Percentage)			55%	30%	15%	0%	100%		

Discussion

The first objective of the study was to assess the pre-test and post-test knowledge of mothers regarding the practice of antenatal exercise among primigravida mothers.

Result

In this study pre-test knowledge scores of primi-gravida mother were (0) for the mothers with adequate knowledge (2/10%) of mothers with moderate knowledge and (18/90%) of mothers with inadequate knowledge, and post-test knowledge scores of primi- gravida mothers were (15/75%) for mothers with adequate knowledge (5/25%) of mothers with moderate knowledge and (0) for mothers with inadequate knowledge.

This study was supported by; the study done by Snigdha Das(2023)

A video-assisted planned teaching programme on antenatal exercises was conducted among Antenatal mothers in Maternity and Child Welfare Hospital (M&CWH) in Dhirenpara, Guwahati. An evaluative approach and a pre-experimental one-group pre-test–post-test design were used. 59 antenatal mothers attending antenatal clinics in Dhirenpara Maternity and Child Welfare Hospital were selected through a convenient sampling technique. The tool consisted of demographic data of antenatal mothers, a structured questionnaire, a lesson plan and a video on antenatal exercises. Pre-test and video-assisted Planned teaching programme was administered by the investigator on the same day, and the post-test was administered after seven days. Data were collected and analysed by using descriptive and inferential statistics. Study findings reveal that in the pre-test, majority of mothers, 36 (72%) had moderately adequate knowledge, and 5 (19%) had

adequate knowledge. The antenatal mothers, 59 (100%), after the post-test had scored 17–25, showing adequate knowledge regarding antenatal exercises, indicating the effectiveness of the video-assisted structured teaching programme. There was no significant association between pre-test knowledge and any of the demographic variables at $p < 0.05$.

Conclusion

The study concluded that, the planned teaching program was effective regarding antenatal exercises among primigravida mother.

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