

“Effectiveness Of Educational Bundle On Knowledge Regarding Antenatal Care And Family Among Antenatal Mothers”

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Abstract

Background: Antenatal care, also known as prenatal care, prenatal care is a type of preventive health care. This can be provided in the form of a medical examination, healthy lifestyle management, and providing medical information such as the physiological changes of the mother during pregnancy, biological changes, and the importance of nutrition. Regular prenatal care, such as prenatal screening and diagnosis, helps reduce maternal deaths, miscarriages, birth defects, low birth weight, newborn infections, and other preventable health problems. Family planning consist various methods of contraception through which a couple can wish to have number of children or choice to have no children, and the age at which they wish to have them. Many factors that play a role in family planning decisions such as marital situation, career or work considerations, financial situations. If sexually active, family planning may involve the use of contraception and other techniques to control the timing of reproduction. The present study aimed to assess the effectiveness of the educational bundle on knowledge regarding antenatal care and family planning among antenatal mothers.

Methods: A quantitative research approach was done on 95 antenatal mothers who visited to ANC OPD at Queen Mary Hospital, KGMU, Lucknow. A non-probability purposive sampling technique was used. Socio-demographics data were obtained by the tool “Demographic Variables”, and Knowledge was assessed by the tool “Knowledge Assessment tool about antenatal care and family planning through self structured questionnaire”.

Results: In pre test 19 participants (20.00%) were classified as having very poor knowledge, with scores between 1-5, about 46 participants (48.42%), were categorized as having poor knowledge, with scores ranging from 6-10. Additionally, 26 participants (27.37%) demonstrated an average level of knowledge, scoring between 11-15. Only a small number of participants, 4 (4.21%), exhibited good knowledge, with scores between 16 and 20. There were no participants who scored in the excellent range (21-25), resulting in 0% for this category and after intervention a significant rise in post -test knowledge. No participants (0.00%) fell into the very poor category (scoring 1-5). Only 7 participants (7.39%) were classified as having poor knowledge, with scores ranging from 6 -10.

The majority of the participants, 58 (61.05%), exhibited good knowledge, with scores between 16-20. Additionally, 5 participants (5.25%) achieved excellent knowledge levels, scoring between 21-25. This distribution highlights a substantial increase in the overall knowledge levels among the antenatal mothers following the post test.

Conclusions: It is concluded that, the educational bundle was effective in enhancing knowledge among antenatal mothers about antenatal care and family planning.

Keywords: Antenatal mothers, Antenatal care, Family planning, Educational bundle, Knowledge.

Date of Submission: 29-01-2025

Date of Acceptance: 09-02-2025

I. Introduction

Around 810 women worldwide pass away every day as a result of pregnancy and childbirth, with poor birth environments accounting for 94% of these cases (WHO, 2019). The Millennium Development Goals and Sustainable Development Goals worked together to reduce the risk of death, improve the use of institutional

deliveries, upgrade the support of skilled professionals, and guarantee that all pregnant women should seek basic medical care for mothers in order to lower the mortality rate among the perinatal, maternal, and neonatal stages in developing nations.¹

The recommendations of WHO for respectful maternal care assures prevention from harm as well as abuse, and permits for informed choices, continuous support while the birthing process. While in addition, Charter developed for maternity care provided with dignity by the White Ribbon Alliance describes about pregnant women’s universal rights along with this it also includes the rights against disrespect and abuse which consist of 7 categories.²

In a statement supported by the International Federation of Gynecology and Obstetrics (FIGO) and the International Confederation of Midwives (ICM), over 90 international organizations, including the WHO, called on state officials, health administrators, and healthcare providers to take action against abuse and disrespect in institution-based delivery. "Every woman has the right to the highest standard of health care which includes, inter alia, the right to a dignified and respectful healthcare," is the stated goal.³

Objectives:

Primary Objective was to assess effectiveness of educational bundle on knowledge regarding antenatal care and family planning among antenatal mothers. Secondary Objective were to assess the pre and post test knowledge score of antenatal mothers regarding antenatal care and family planning, to compare pre and post-test knowledge score regarding antenatal care and family planning, to find out the association between the pre-test knowledge scores of antenatal mothers regarding antenatal care and family planning with their selected socio demographic variables

II. Methods

It was quantitative research approach. Quasi Experimental, one group pre-test post-test research design was employed on antenatal mothers in ANC OPD of obstetrical and gynaecological department, Queen Mary Hospital, KGMU, Lucknow from January 2023 to June 2024. There were 95 samples included from the setting.

Independent variable in the study was educational bundle and dependent variable was knowledge regarding antenatal care and family planning. Study setting was Queen Mary Hospital, KGMU, Lucknow. Antenatal mothers was taken as study population. Study duration was started from January 2023 to June 2024.

Target Population And Accessible Population

Antenatal mothers who visited to ANC OPD of Queen Mary Hospital at KGMU, Lucknow who are willing to participate in the study.

Sample Size And Sampling Technique:

Sample size for this study was 95. Sampling technique was non probability purposive sampling technique.

Tools For Data Collection, Data Analysis And Intervention

Tool 1-Self structured questionnaire which includes demographic variables of antenatal mothers. Tool 2-Self structured questionnaire which includes knowledge assessment of antenatal mothers regarding antenatal care and family planning care. Descriptive and inferential statistics was used for data analysis. pre-test was done followed by intervention then post-test was done after 7 days of giving intervention.

Inclusion criteria

Antenatal mothers who visit to opd in QMH. Primi antenatal mother of reproductive age [18-45 years]. Antenatal mothers who are available at the time of data collection. Antenatal mothers who are willing to participate in the study. Antenatal mothers who can read, write and understand hindi

Exclusion criteria

Mothers who are already adopted family planning method. Antenatal mothers who are not will to participate

Data collection process

In data collection process, systematic methods were used for gathering information relevant to the research. In this study, data collection was done from 01.04.2024 to 15.06.2024 in Obstetrical and Gynaecological department of KGMU, Lucknow. Firstly, ethical permission was obtained from concerned authority.

The sample was selected on the basis of non probability purposive sampling technique. Investigator introduced self and explained regarding method and benefit of the study to the sample to gain cooperation. On the first day pre-test is conducted which includes demographic variable and knowledge assessment tool after that

intervention given by using educational bundle. The post test is conducted at 7th day using knowledge assessment tool.

III. Results

Description of frequency and percentage distribution of demographic variables

Result showed that 35.79% samples were between 18 and 24 years ,35.79% samples were between 25 and 29 years, 23.16% samples were between 30 and 34 years, 5.26% samples were between 35 and 45 years.

In terms of religion, about 76.84% samples were identified as Hindu, about 23.16% were identified as Muslim. There were no participants identifying as Sikh, Christian, or other religions. The education levels of participants varied, only 9.47% samples were having primary education, 9.47% were having matriculation level education, 28.42% were having intermediate education, and about 52.63% were having completed graduation or higher education.

Regarding occupation, 82.11% were housewives, while 5.26% worked in the medical profession, 11.58% were in non-medical professions.

About 85.26% reported having no monthly income. About 3.16% had a monthly income between 5,000 and 10,000 INR, approx 6.32% samples earned between 10,000 and 20,000 INR per month, and only 5.26% earned more than 20,000 INR per month.

When considering family type, 34.74% lived in nuclear families, 3.16% in extended families, and about 62.11% in joint families.

In terms of residence,71.58%) lived in urban areas,27.37%) lived in rural areas, and 1.05%) lived in other types of areas.

The duration of married life varied, 56.84% married for 1-2 years, 26.32% married for 2-3 years, 7.37% married for 3-5 years, 9.47% married for more than 5 years.

The timing of antenatal visits also varied, 15.79% visiting during the first 1-2 months of pregnancy, 29.47% during 3-4 months, 30.53% during 5-6 months, 24.21% during 7-9 months.

Table 1: Description of frequency and percentage distribution of demographic variables (N=95)

SN	Demographical variable	Frequency	(%)
1	Age in Years		
	a. 18 – 24	34	35.79
	b. 25 – 29	34	35.79
	c. 30 – 34	22	23.16
	d. 35 – 45	5	5.26
2	Religion		
	a. Hindu	73	76.84
	b. Muslim	22	23.16
	c. Sikh	0	0.00
	d. Christian	0	0.00
	e. Other	0	0.00
3	Education		
	a. Primary	9	9.47
	b. Matriculation	9	9.47
	c. Intermediate	27	28.42
	d. Graduation and above	50	52.63
4	Occupation [pregnant mother]		
	a. Housewife	78	82.11
	b. Medical profession	5	5.26
	c. Non medical profession	11	11.58
	d. Other	1	1.05
5.	Monthly Income (pregnant mother)		
	a. No income	81	85.26
	b. 5,000 – 10,000 per month	3	3.16
	c. 10,000 – 20,000 per month	6	6.32
	d. More than 20,000 per month	5	5.26
6	Type of Family		
	a. Nuclear family	33	34.74
	b. Extended family	3	3.16
	c. Joint family	59	62.11
7	Residence		
	a. Urban	68	71.58
	b. Rural	26	27.37

	c. Other	1	1.05
8	Duration of married life		
	a. 1-2 year	54	56.84
	b. 2-3 year	25	26.32
	c. 3-5 year	7	7.37
	d. more than 5 year	9	9.47
9	Time of antenatal visit		
	a. 1-2 month	15	15.79
	b. 3-4 month	28	29.47
	c. 5-6 month	29	30.53
	d. 7-9 month	23	24.21

Frequency and percentage distribution of pretest score

According to the results, 19 participants (20.00%) were classified as having very poor knowledge, with scores between 1 and 5. A significant portion, 46 participants (48.42%), were categorized as having poor knowledge, with scores ranging from 6 to 10. Additionally, 26 participants (27.37%) demonstrated an average level of knowledge, scoring between 11 and 15. Only a small number of participants, 4 (4.21%), exhibited good knowledge, with scores between 16 and 20. There were no participants who scored in the excellent range (21-25), resulting in 0% for this category. The mean score for the pretest knowledge was 8.74, indicating that on average, the participants had a score close to the poor knowledge category. The standard deviation (S.D.) was 3.564, reflecting a moderate spread of scores around the mean, suggesting variability in the participants' knowledge levels. The minimum score recorded was 2, indicating the lowest level of knowledge among the participants, while the maximum score was 18, indicating the highest level of knowledge achieved by any participant in the pretest.

Table 2: Frequency and percentage distribution of pretest knowledge score. (N=95)

Category	Scoring Criteria	Frequency	(%)	Mean	S.D.
Very poor	1-5	19	20.00	8.74	3.564
Poor	6-10	46	48.42		
Average	11-15	26	27.37		
Good	16-20	4	4.21		
Excellent	21-25	0	0.00		

Frequency and percentage distribution of post-test

the post test knowledge levels regarding antenatal care and family planning among the 95 antenatal mothers indicated a significant improvement in knowledge levels after the intervention. No participants (0.00%) fell into the very poor category (scoring 1-5). Only 7 participants (7.39%) were classified as having poor knowledge, with scores ranging from 6 to 10. A total of 25 participants (26.31%) demonstrated average knowledge, scoring between 11 and 15. The majority of the participants, 58 (61.05%), exhibited good knowledge, with scores between 16 and 20. Additionally, 5 participants (5.25%) achieved excellent knowledge levels, scoring between 21 and 25. This distribution highlights a substantial increase in the overall knowledge levels among the antenatal mothers following the post test. The mean score for the posttest knowledge was 16.07, indicating a marked improvement in the overall knowledge level compared to the pretest. The standard deviation (S.D.) was 3.216, reflecting a moderate spread of scores around the mean, suggesting some variability in the participants' knowledge levels, but generally clustering around the mean score. The minimum score recorded was 9, indicating the lowest level of knowledge among the participants, while the maximum score was 22, indicating the highest level of knowledge achieved by any participant in the posttest

Table 3: Frequency and percentage distribution of post-test knowledge score. (N=95)

Category	Scoring Criteria	Frequency	Percentage (%)	Mean	S.D.
Very poor	1-5	0	0.00	16.07	3.216
Poor	6-10	7	7.39		
Average	11-15	25	26.31		
Good	16-20	58	61.05		
Excellent	21-25	5	5.25		

Comparison between pretest and post-test score of knowledge regarding antenatal care and family planning to assess the effectiveness of educational bundle

In the pretest, the distribution of knowledge levels was as follows: 19 participants (20.00%) fell into the very poor category with scores between 1 and 5, 46 participants (48.42%) were in the poor category with scores between 6 and 10, 26 participants (27.37%) demonstrated average knowledge with scores ranging from 11 to 15,

4 participants (4.21%) had good knowledge with scores between 16 and 20, and no participants (0.00%) achieved excellent knowledge, with scores between 21 and 25. In contrast, the post test results showed a significant improvement in knowledge levels. There were no participants (0.00%) in the very poor category, and only 7 participants (7.39%) remained in the poor category. The number of participants with average knowledge slightly decreased to 25 (26.31%). The majority of the participants, 58 (61.05%), demonstrated good knowledge, and an additional 5 participants (5.25%) achieved excellent knowledge.

This comparison highlights improvement in knowledge levels among the antenatal mothers following the intervention, with a notable shift from lower to higher knowledge categories

Table 4: Comparison between Pretest and Post-test Knowledge regarding antenatal care and family planning among antenatal mothers .

(N=50)

Score of Knowledge	Mean	SD	t value	Result
Pre-test Knowledge	8.74	3.564	21.027	S
Post-test Knowledge	16.07	3.216		

Association between the pre-test knowledge scores of antenatal mothers regarding antenatal care and family planning with their selected socio demographic variables

Age groups revealed a chi-square value of 16.181 with 9 degrees of freedom, resulting in a p value of 0.063, indicating a non-significant association. Among different age brackets, participants aged 25-29 years had the highest representation in the poor knowledge category, while those aged 18-24 and 30-34 years displayed varied distributions across knowledge levels.

Religion showed a chi-square value of 0.354 with 3 degrees of freedom, leading to a non-significant association (p = 0.950). Hindu participants constituted the majority across knowledge categories, whereas Muslim participants exhibited variability, with a notable proportion in the poor knowledge category.

Education level demonstrated a significant association (chi-square = 25.818, df = 9, p = 0.002). Participants with primary education or lower had lower knowledge levels compared to those with matriculation, intermediate, or graduate and above education levels.

Occupation among pregnant mothers also exhibited significance (chi-square = 17.340, df = 9, p = 0.044), with housewives comprising the majority in all knowledge categories. In contrast, participants in medical and non-medical professions showed varied distributions across knowledge levels.

Monthly income, type of family, residence (urban/rural), duration of married life, and timing of antenatal visits did not show significant associations with pretest knowledge levels among the antenatal mothers in this study. Overall, these findings underscore the importance of education and occupation in influencing knowledge levels related to antenatal care and family planning among expectant mothers, highlighting potential areas for targeted interventions and educational initiatives.

Table 5: Association between the pre-test knowledge scores of antenatal mothers regarding antenatal care and family planning with their selected socio demographic variables.

(N= 95)

Demographic Variables	Pre - test Knowledge				DF	Chi square value	“P” Value
	Very poor (19)	Poor (46)	Average (26)	Good (4)			
1. Age in Years					9	16.181	0.063
a. 18 – 24	11	17	5	1			
b. 25 – 29	6	18	10	0			
c. 30 – 34	2	8	9				
d. 35 – 45	0	3	2	0			
2. Religion					3	0.354	0.950
a. Hindu	14	35	21	3			
b. Muslim	5	11	5	1			
c. Sikh							
d. Christian							
e. Other							
3. Education					9	25.818	0.002*
a. Primary	6	3	0	0			
b. Matriculation	3	5	1	0			
c. Intermediate	7	14	6	0			
d. Graduation and above	3	24	19	4			
4. Occupation [pregnant mother]							
a. Housewife	18	42	16	2			
b. Medical profession	0	1	3	1			

c. Non medical profession	1	3	6	1	9	17.340	0.044**
d. Other	0	0	1	0			
5. Monthly Income (pregnant mother)					9	12.875	0.168
a. No income	18	41	20	2			
b. 5,000 – 10,000 per month	0	1	2	0			
c. 10,000 – 20,000 per month	1	3	1	1			
d. More than 20,000 per month	0	1	3	1			
6. Type of Family					6	11.927	0.064
a. Nuclear family	3	15	14	1			
b. Extended family	1	0	2	0			
c. Joint family	15	31	10	3			
7. Residence					6	4.241	0.644
a. Urban	13	34	18	3			
b. Rural	5	12	8	1			
c. Other	1	0	0	0			
8. Duration of married life		///			9	9.858	0.362
a. 1-2 year	12	28	11	3			
b. 2-3 year	3	9	12	1			
c. 3-5 year	1	5	1	0			
d. more than 5 year	3	4	2	0			
9. Time of antenatal visit					9	3.389	0.947
a. 1-2 month	4	6	4	1			
b. 3-4 month	5	16	7	0			
c. 5-6 month	5	13	9	2			
d. 7-9 month	5	11	6	1			

IV. Discussion

1. To assess the effectiveness of educational bundle on knowledge regarding antenatal care .

The present study shows a significant improvement in knowledge levels after the educational intervention, with the mean knowledge score increasing from 8.74 in the pretest to 16.07 in the post test. This finding aligns with a study conducted by **Yuju Wu et al. (2019) in china**, which reported a significant increase in antenatal care knowledge following an educational intervention, with the mean score improving from 5.5 to 7.5 out of 10³². Similarly, a study by Khatri et al. (2019) in Nepal supports these findings, demonstrating that an educational intervention significantly improved knowledge about antenatal care and danger signs during pregnancy.³³

2: To assess the effect of pre and post-test knowledge score of antenatal mothers regarding antenatal care and family planning.

The present study demonstrates a substantial increase in knowledge scores, with the percentage of participants in the "Good" knowledge category rising from 4.21% in the pretest to 61.05% in the post test.

This finding is supported by a study conducted by Nurhikmah et al. (2020) in Ethiopia, which reported a significant increase in the proportion of women with good knowledge about antenatal care from 23.8% before the intervention to 63.2% after the intervention.³⁴

In contrast, a study by Ohnishi et al. (2005) found a more modest improvement in knowledge categories, with the percentage of participants with good knowledge increasing from 20.3% to 39.7% after their intervention. This difference could be attributed to variations in the study population or the specific content of the educational materials used.³⁵

3: To compare pre and post-test knowledge regarding antenatal care and family planning.

The present study found a statistically significant difference between pre and post-test knowledge scores (t = 21.027, p = 0.001). This finding is consistent with a study by Abdel-All et al. (2022) in Egypt, which also reported a significant improvement in knowledge scores following their educational intervention (t = 15.63, p < 0.001).

Similarly, a study by Puri et al. (2020) in Nepal found a significant difference between pre and post-test scores (t = 11.24, p < 0.001), although the magnitude of improvement was slightly smaller than in the present study³⁷.

4: To find out association between the pre-test knowledge scores of antenatal mothers regarding antenatal care and family planning with their selected demographic variables.

The present study found significant associations between pretest knowledge levels and education ($p = 0.002$) and occupation ($p = 0.044$). These findings are partially supported by a study conducted by Hagos et al. (2021) in Ethiopia, which found a significant association between education level and antenatal care knowledge ($p < 0.001$), but did not find a significant association with occupation.³⁹

In contrast, a study by Tekelab et al. (2019) in Ethiopia found significant associations between antenatal care knowledge and education ($p < 0.001$), occupation ($p = 0.003$), and additionally, age ($p = 0.012$) and income ($p = 0.001$), suggesting that demographic factors influencing knowledge may vary across different populations.⁴⁰

V. Conclusion

From the findings of the study, it has been observed that educational bundle on knowledge regarding antenatal care and family planning is helpful to increase knowledge among antenatal mothers

Acknowledgements

I'm thankful to the institution, head of department, guide, co-guide and students of M.Sc. Nursing bath 2022-2024. I'm also grateful to faculty members of KGMU college of nursing, staff members of Queen Mary Hospital, KGMU, Lucknow for their guidance and support.

Declarations

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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