

Impact of Education on Knowledge and Perception of Antenatal Care Among Primigravida Mothers, Residing in Farasan, Kingdom of Saudi Arabia: A Community-based Interventional Study

Santhi Muttipoll Dharmarajlu^{1*}, Hawazen Ibrahim Musawa², Khwlah Mohamed Qradi², Jawaher Yahya Gradi², Awatif Mrwaei Mohssin², Hanein Hussain Hakami²

Abstract

Pregnancy is one of the most cherished phases in the life of a woman. This timeframe holds immense importance for both the mother and the infant. Offering appropriate prenatal care during pregnancy is crucial for the health of the mother and the growth of the foetus. It provides a chance to promote sound parenting techniques and healthful conduct. The quality of prenatal care contributes to sustaining overall well-being throughout an individual's lifetime. On the other hand, insufficient care during pregnancy disrupts the care cycle and impacts the well-being of both women and babies. The aim of this study was to assess the knowledge and perception of antenatal care among primigravida mothers residing in Farasan, Saudi Arabia. Through quantitative survey approach and pre-experimental – one group pre- and post-test design, the 50 primigravida mothers were selected by purposive sampling method. A structured interview schedule was employed to evaluate the awareness and knowledge of antenatal care among first-time pregnant mothers. Their perceptions about antenatal care were assessed using a 5-point Likert scale. To educate them about antenatal care, instructional material was provided through video presentations. The study's findings revealed that, in terms of awareness, the mean score for the pre-test was 7.18 ± 1.924 , whereas for the post-test it was 22.76 ± 1.188 , resulting in a mean difference of 15.58. This suggests that the first-time pregnant mothers had significantly improved knowledge about antenatal care following the educational programme, indicating the effectiveness of the teaching approach. In perception the overall mean score during pre-test was 21.58 ± 3.214 and in post-test the overall mean score obtained by mothers was 57 ± 1.841 , with a mean difference of 35.42. It reveals that the primigravida mothers had highly favourable attitude towards antenatal care after implementation of educational programme. The 't' values calculated for the awareness and perception scores were 9.88 and 6.49, respectively, at the 0.05 significance level. Consequently, it is evident that there was a significant enhancement in the knowledge and attitude of first-time pregnant mothers regarding antenatal care following the implementation of the educational programme. These results can be valuable in devising a health intervention Program with the objective of enhancing maternal healthcare practices and, in turn, advancing the overall health of women.

*Author for Correspondence

Santhi Muttipoll Dharmarajlu
E-mail: santhipooja1979@gmail.com

¹Assistant Professor, Department of Nursing, College of Nursing, Jazan University, Jazan, Kingdom of Saudi Arabia

²Students, Department of Nursing, College of Nursing, Jazan University, Jazan, Kingdom of Saudi Arabia

Received Date: September 13, 2023

Accepted Date: October 26, 2023

Published Date: October 30, 2023

Citation: Santhi Muttipoll Dharmarajlu, Hawazen Ibrahim Musawa, Khwlah Mohamed Qradi, Jawaher Yahya Gradi, Awatif Mrwaei Mohssin, Hanein Hussain Hakami. Impact of Education on Knowledge and Perception of Antenatal Care Among Primigravida Mothers, Residing in Farasan, Kingdom of Saudi Arabia: A Community-based Interventional Study. International Journal of Women's Health Nursing and Practices. 2023; 1(2): 6–13p.

antenatal care after implementation of educational programme. The 't' values calculated for the awareness and perception scores were 9.88 and 6.49, respectively, at the 0.05 significance level. Consequently, it is evident that there was a significant enhancement in the knowledge and attitude of first-time pregnant mothers regarding antenatal care following the implementation of the educational programme. These results can be valuable in devising a health intervention Program with the objective of enhancing maternal healthcare practices and, in turn, advancing the overall health of women.

Keywords: Knowledge, perception, antenatal care, primigravida mothers, educational programme

INTRODUCTION

Pregnancy represents one of the most treasured phases in a woman's life, and it carries paramount significance for both the mother and the developing foetus. Ensuring proper care during pregnancy is crucial for the well-being of the mother and the optimal growth of the unborn child. This period serves as an opportunity to foster essential parenting skills and promote healthy behaviours. High-quality antenatal care significantly contributes to lifelong good health. Conversely, insufficient care during pregnancy disrupts the continuity of health care, adversely affecting both women and infants. "Primigravida" pertains to a woman experiencing her first pregnancy. It is imperative that these first-time mothers gain knowledge about various facets of pregnancy, encompassing physical and emotional dimensions, labour support methods, the childbirth process, the responsibilities of parenthood, and effective coping strategies. It is essential to view the mother and child as an interconnected unit since the developing foetus is an integral part of the mother. Pregnancy and childbirth are natural physiological processes in a woman's life, with the gestational period typically spanning around 280 days. Within any given community, mothers and children constitute a group of utmost priority. Risk factors are associated with the process of childbearing in women and the stages of growth and development in children. Maternal health encompasses the well-being of women throughout the duration of pregnancy, childbirth, and the postpartum period. One pivotal component of maternal and child health is the provision of excellent antenatal care, which plays a significant role in mitigating maternal mortalities. Maternal mortality serves as a critical health metric, with the direct causes of maternal fatalities being well-identified, and largely avoidable and treatable. Prominent among these direct causes are issues such as excessive blood loss, infection, unsafe abortion, high blood pressure, and obstructed labour, all of which are prevalent triggers of maternal harm and fatality. Furthermore, there exist indirect contributors, including conditions like anaemia, malaria, and heart diseases. The vast majority of these maternal deaths can be averted through timely and effective intervention delivered via top-quality maternal healthcare. Eliminating preventable maternal fatalities remains an utmost priority on the global healthcare agenda. Antenatal care encompasses the comprehensive care provided to a pregnant woman, starting from the moment her pregnancy is confirmed and extending until the onset of labour, inclusive of ongoing monitoring of the pregnancy's progression. The primary objective of antenatal care is to uphold the natural course of pregnancy, identify and address any potential complications as early as possible. The focus on promoting health and encouraging individuals to lead healthy lives has gained paramount significance in the field of healthcare. Empowering communities to be well-informed healthcare advocates and to embrace a perspective that prioritizes overall well-being constitutes a pivotal aim in the realm of healthcare reform [1, 2].

Despite substantial endeavours, the Millennium Development Goal aimed at decreasing maternal mortality by 75% was not achieved, with only a 44% reduction realized. Consequently, this goal has been carried forward in the Sustainable Development Goals. It is noteworthy that maternal mortality rates in developing nations are 19 times higher in comparison to their developed counterparts [3]. Merely ensuring the survival of women through pregnancy and childbirth cannot be the sole indicator of successful maternal health. To genuinely enhance maternal health, it is imperative to broaden initiatives aimed at reducing maternal mortalities and fostering overall well-being. Therefore, possessing adequate knowledge of antenatal care is regarded as a crucial element in the advancement of maternal health [2, 4, 5]. The study aims to assess the understanding and attitudes of expectant mothers regarding various facets of antenatal care, encompassing topics like dietary practices, antenatal examinations, immunization, sufficient rest and sleep, physical activity, hygiene, breast care, breastfeeding, and pregnancy-related complications. The ultimate goal is to ameliorate antenatal care services by enhancing both their quality and availability, which, in turn, will augment women's comprehension and outlook on antenatal care [6–9].

Objectives

1. To evaluate the comprehension and standpoint of antenatal care in first-time expectant mothers before introducing an educational program.

2. To gauge the impact of educational initiatives on antenatal care in first-time expectant mothers.
3. To link pre-test scores with specific demographic factors.
4. To examine the relationship between pre-test and post-test scores concerning knowledge and perceptions of antenatal care in first-time expectant mothers.

Hypothesis

1. A noteworthy contrast exists between the scores of antenatal care among first-time expectant mothers before and after the assessments.
2. A significant connection exists between pre-test scores and specific demographic variables.
3. A notable link is observed between the pre-test and post-test scores regarding the knowledge and perception of antenatal care among first-time expectant mothers.

MATERIALS AND METHODS

Research Approach

This is a quantitative based cross-sectional study.

Research Design

Pre-experimental-one group pre and post-test design.

Research Setting

The study was carried out was carried out in Farasan community, Jazan Region, Saudi Arabia.

Population

The population for the present study were primigravida mothers residing in Farasan in the Kingdom of Saudi Arabia.

Sample Size

Primigravida mothers with 12 to 24 weeks of gestational age. The sample size was 50.

Sample Techniques

The study employed a purposive sampling technique, which is a non-probability sampling method.

Criteria for Sampling Technique

Inclusion Criteria

- Primigravida mother with 12 to 24 weeks of gestational age.
- No high-risk pregnancy
- Can read and write Arabic
- Willing to participate.

Tool for Data Collection

- Semi-structured interview schedule on demographic variables of primigravida mothers such as age, education level, income, occupation, gestational week, age at marriage, age at pregnancy, previous knowledge about antenatal care and residence.
- A semi-structured interview schedule was utilized to evaluate the knowledge of antenatal care among first-time pregnant mothers. It has 25 questions, correct response was given a score of 1. Total marks were 25.
- A 5-point Likert scale was used to evaluate the perception of antenatal care among primigravida mothers. It has 12 questions, response was given a score of 5 for strongly agree and a score of 1 for strongly disagree. Total marks were 60.
- Education about antenatal care was given through video-assisted teaching.

Data Collection Procedure

1. Permission was obtained from the Dean, University College of Farasan.
2. Primigravida mothers were selected by inclusion criteria method.

3. A pre-test was administered through a semi-structured interview schedule to evaluate the antenatal care knowledge of first-time pregnant mothers. Additionally, a 5-point Likert scale was employed to gauge their perceptions regarding antenatal care. Immediately after pre-test the education on antenatal care and its effects was taught to the primigravida mothers through video-assisted teaching for 20 minutes.
4. Post-test was conducted by using same pre-test tool on 15th day after educational administration.

Plan for Data Analysis

1. A combination of descriptive and inferential statistical methods was employed.
2. Mean, standard deviation, and mean percentage were utilized to evaluate primigravida mothers' knowledge and perception regarding antenatal care and its impact.
3. Inferential statistics, such as the paired "t" test, were applied to determine disparities between pre-test and post-test knowledge and perception of antenatal care and its effects.
4. The chi-square test was used to investigate the connection between pre-test scores and demographic variables.
5. Correlation and coefficient test was used to identify the significant relationship between knowledge and perception scores of antenatal care and its effects among primigravida mothers.

FINDINGS AND RESULTS

The percentage-wise distribution of demographic variable shows that the highest percentage (56%) of primigravida mothers were in the age group between 21 and 25 years. The maximum percentage (60%) of them were having 21 to 24 weeks of gestation. A total of 54% of mothers were educated up to graduate level with the income of SR 5000 to 10000. Maximum (76%) of them were residing in urban area. Most (62%) of them were home makers. Nearly 60% of mothers were aged 18 to 20 years at marriage and age at first child was between 18 and 20 years. A total of 50% of the mothers had previous knowledge about antenatal care through their family members.

Frequency- and percentage-wise distribution of pre- and post-test knowledge questions on antenatal care shows that in post-test, all the mothers gave correct response for the aspects of: Is maternal smoking harmful to the foetus? (100%) and What are the preventive measures to be taken to relieve the pedal oedema (100%). Whereas in pre-test only 20% and 36% of mothers, respectively, answered these aspects correctly. More or less similar percentage of mothers answered in the aspects of Number of TT (tetanus toxoid) injections to be taken during pregnancy (96%), Duration of rest and sleep per day during pregnancy (98%), Can high blood pressure affect the foetal growth? (96%), Is there any infection during pregnancy that can cause harm to your baby? (96%), Are there any medicines other than those prescribed by doctor that can cause harm to your baby? (98%), and What should be done in case of any such danger signs of pregnancy? (96%). In pre-test, these were answered correctly by less than 35% of mothers. Nearly 85% of them responded in the aspects of Total number of antenatal check-ups during pregnancy (84%), Reason for antenatal check-up during pregnancy (86%), What is antenatal diet (86%), What changes should be made in diet during 1st and 3rd trimester of pregnancy (84%), and What are the danger signs of pregnancy? (84%). In pre-test, these aspects were answered by very less percentage of mothers (24%, 22%, 16%, 32%, and 14%, respectively). A total of 80% of mothers responded in post-test for the aspect of What are the tests the pregnant woman needs to undergo during pregnancy. In pre-test, 20% of them were responded (Table 1).

Frequency- and percentage-wise distribution pre and post-test attitude questions on antenatal care shows that in post-test all the mothers strongly agreed towards the items of Antenatal follow-up is good to monitor mother's and foetus's health (100%), Antenatal booking should be done whenever the pregnancy is confirmed (100%), Screening of blood for infections (HIV, HBV, etc.) should be carried out during antenatal check-up (100%), Anaemia needs to be prevented especially among pregnant women (100%), Pregnant women should change dietary habit as advised by doctor (100%), Hospital delivery is very safe than home delivery (100%) and Smoking can cause harm to the foetus. Whereas

in pre-test it was strongly agreed by very less percentage of mothers in these aspects (30%, 32%, 28%, 24%, 36%, 32%, respectively). Nearly 98% of the mothers expressed strongly agree about Antenatal check-up from 3rd month onwards is necessary for pregnant women, Blood pressure should be checked regularly during pregnancy (98%), Taking iron and folic acid tablets daily is very important for the foetal growth (96%) and If you get any problem during the pregnancy, immediately report to the health centre (98%). In pre-test it was agreed only by less than 30% of the mothers. Only 90% of them strongly agreed in the aspect of Supplementation of folic acid after the planning of pregnancy till 3rd month in order to prevent neural tube defect for the foetus. In pre-test it was only 20% of the mothers who strongly agreed (Table 2).

Table 1. Frequency- and percentage-wise distribution pre- and post-test knowledge questions on antenatal care.

Knowledge Questions on Antenatal care	Pre-test		Post-test	
	Number	%	Number	%
1. What is antenatal care?	9	18%	47	94%
2. Anaemia is a health problem?	14	28%	46	92%
3. First antenatal check up to be done in which month of pregnancy	15	30%	45	90%
4. Total number of antenatal check-ups during pregnancy	12	24%	42	84%
5. Reason for antenatal check-up during pregnancy	11	22%	43	86%
6. Number of TT (tetanus toxoid) injections to be taken during pregnancy	19	38%	48	96%
7. Reason for taking TT injection during pregnancy	14	28%	41	82%
8. Duration of rest and sleep per day during pregnancy.	10	20%	49	98%
9. How many iron and folic acid tablets to be taken during pregnancy	11	22%	47	94%
10. Reason for prescribing iron and folic acid tablets during pregnancy.	12	24%	45	90%
11. What are the tests the pregnant woman needs to undergo during pregnancy	10	20%	40	80%
12. Can high blood pressure affect the foetal growth?	9	18%	48	96%
13. What is antenatal diet?	8	16%	43	86%
14. Importance of antenatal diet during pregnancy	13	26%	46	92%
15. What changes should be made in diet during 1st and 3rd trimester of pregnancy	16	32%	42	84%
16. How much calories, protein, iron and calcium to be needed during pregnancy	9	18%	39	78%
17. Is maternal smoking harmful to the foetus?	10	20%	50	100%
18. Is there any infection during pregnancy can cause harm to your baby?	15	30%	48	96%
19. Are there any medicines other than those prescribed by doctor can cause harm to your baby?	11	22%	49	98%
20. What are the danger signs of pregnancy?	7	14%	42	84%
21. What should be done in case of any such danger signs of pregnancy?	11	22%	48	96%
22. What is antenatal exercise?	8	16%	41	82%
23. What are the benefits of antenatal exercise?	9	18%	45	90%
24. What are the antenatal exercises?	11	22%	46	92%
25. What are the preventive measures to be taken to relieve the pedal oedema	18	36%	50	100%

Table 2. Frequency- and percentage-wise distribution pre- and post-test attitude questions on antenatal care.

Rating Scale on Antenatal Care	Pre-test		Post-test	
	Number	%	Number	%
1. Antenatal check-up from 3rd month onwards is necessary for pregnant women	12	24%	49	98%
2. Antenatal follow-up is good to monitor mother's and foetus's health	15	30%	50	100%
3. Antenatal booking should be done whenever the pregnancy is confirmed	16	32%	50	100%
4. Screening of blood for infections (HIV, HBV, etc.) should be carried out during antenatal check-up	14	28%	50	100%
5. Blood pressure should be checked regularly during pregnancy	15	30%	49	98%
6. Pregnant women should change dietary habit as advised by doctor	12	24%	50	100%
7. Supplementation of folic acid after the planning of pregnancy till 3rd month in order to prevent neural tube defect for the foetus.	10	20%	45	90%
8. Taking iron & folic acid tablets daily is very important for the foetal growth	14	28%	48	96%
9. Hospital delivery is very safe than home delivery	18	36%	50	100%
10. Smoking does not cause any harm to the foetus	16	32%	50	100%
11. If you get any problem during the pregnancy, immediately report to the health centre	17	34%	49	98%
12. Doing antenatal exercise in 2nd and 3rd trimester help the mother to prevent maximum complications	14	28%	47	94%

Table 3. Distribution of mean, standard deviation (SD), and mean difference of pre- and post-test scores on antenatal care among primigravida mothers

S.N.	Areas of Antenatal Care	Maximum Score	Pre-intervention		Post intervention		Mean Difference	't' Test Value	P Value
			Mean	SD	Mean	SD			
1	Knowledge aspects of antenatal care	25	7.18	1.924	22.76	1.188	15.58	9.88	0.05
2	Attitude aspects of antenatal care	60	21.58	3.214	57	1.841	35.42	6.49	

Overall distribution of mean, standard deviation (SD), and mean difference of awareness and perception on antenatal care shows that, in awareness the total mean score for pre-test was 7.18 ± 1.924 , whereas in post-test it was 22.76 ± 1.188 with a mean difference of 15.58. The results demonstrate that primigravida mothers possessed exceptional knowledge of antenatal care following the implementation of the educational programme, indicating the effectiveness of the teaching approach. In perception the overall mean score during pre-test was 21.58 ± 3.214 and in post-test the overall mean score obtained by mothers was 57 ± 1.841 , with a mean difference of 35.42, which reveals that the primigravida mothers had highly favourable attitude towards antenatal care after implementation of educational programme (Figure 1). The computed 't' values for awareness and perception scores were 9.88 and 6.49, respectively, at a 0.05 significance level (Table 3). This indicates a significant enhancement in the knowledge and attitude of primigravida mothers regarding antenatal care following the educational programme's implementation.

There was no significant association between age, education level, income, occupation, gestational week, age at marriage, age at pregnancy, previous knowledge about antenatal care and residence with the pre-test scores on antenatal care. Hence it shows that the difference observed mean score values were not true differences, so the research hypothesis was rejected. A notable correlation of 0.82 was observed between knowledge and perception scores.

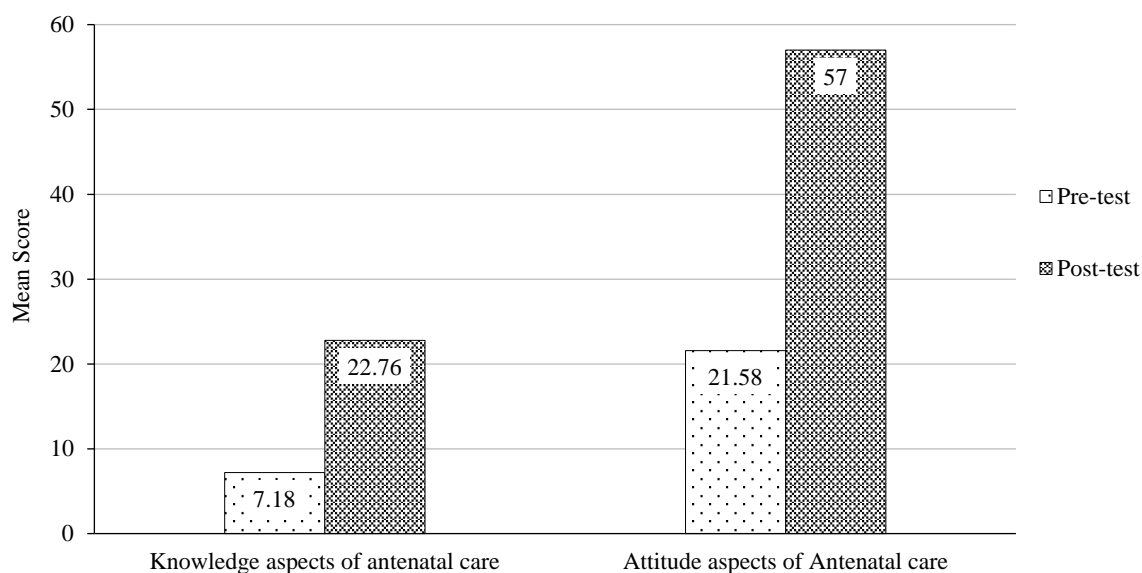


Figure 1. Distribution of mean score for knowledge, perception and practice of antenatal care.

DISCUSSION

Antenatal care plays a vital role in ensuring positive health outcomes for both women and newborns. Nutrition education and counselling are integral components of antenatal care and exert a significant influence on maternal and child health. Malnutrition during pregnancy not only impacts the newborn but also jeopardizes the health of the mother. When a pregnant woman's diet fails to provide the necessary nutrients for both her and her foetus, it can lead to maternal weakness and an increased risk of life-threatening complications. This also makes the infant more susceptible to being born with low birth weight, which can hinder their ability to feed adequately in the early stages of life. The availability and accessibility of antenatal care services in Saudi Arabia vary significantly and depend on factors such as urban or rural residence, socioeconomic status, and various cultural influences. It is worth noting that most foetal weight gain occurs during the final trimester, which implies that the influence of nutrition is not confined to the second or third trimester alone [10–13].

CONCLUSION

During pregnancy, nutrition is of paramount significance, benefiting not just the mother's health but also the appropriate growth of the foetus. The significance of maternal nutrition during pregnancy has garnered increasing attention as it is recognized that pregnancy involves higher physiological, metabolic, and nutritional requirements. In developing countries, women often contend with nutritional deficiencies, but there is limited research on the sociocultural factors, including superstitions and taboos, that can contribute to malnutrition. In this study, the primigravida mothers gained excellent knowledge and favourable attitude towards all the components of antenatal care after the educational programme.

Recommendations

- Comparative study can be done in both experimental and control group women about antenatal care.
- A study can be done on the many education tools to promote more knowledge and perception about antenatal care.
- Awareness to be given about antenatal care.

Conflicts of Interest

The research received no specific grant from any funding agency in public, commercial or not-for-profit sectors. The authors declared no conflicts of interest.

REFERENCES

1. Lincetto O, Mothebesoane AS, Gomez P, Munjanja S. Antenatal care. In: Lord D, Wake R, Elder L, Grear K, Antayhua A, editors. Opportunities for Africa's Newborns. Antenatal Care: Practical data, Policy and Programmatic Support for Newborn Care in Africa. Geneva, Switzerland: Partnership for Maternal, Newborn & Child Health; 2012. pp. 51–62.
2. Babu AR, Abirami S. Assess the effectiveness of structured teaching programme on knowledge regarding prenatal care among primigravida mothers. *Int J Res Eng Sci Manage.* 2020; 3 (1): 230–232.
3. World Health Organization. Maternal Health. [Online]. Available at https://www.who.int/health-topics/maternal-health#tab=tab_1
4. Manisha, Chhillar R, Dular SK. Assessment of knowledge regarding antenatal care among the primigravida mothers attending antenatal OPD – a descriptive survey. *Eur J Mol Clin Med.* 2020; 7 (11): 6613–6618
5. Yadav L. Assessment of the knowledge regarding antenatal care among pregnant women with a view to develop information booklet at selected clinics of district of Punjab. *Int J Sci Res.* 2017; 6 (6): 1375–1381.
6. Pratiti H, Renu, Rebecca P, Swati N, Priyanka D, Seeta M, et al. Knowledge of primigravida mothers on antenatal nutrition. *Asian Pacific J Health Sci.* 2017; 4 (4): 12–14. doi: 10.21276/apjhs.2017.4.4.4.
7. Victoria Mary D. A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Antenatal Care Among Primigravida Mothers at the Selected Primary Health Centre at Alamarathupatti Dindigul. Master's Thesis. Dindigul, India: Jainee College of Nursing; 2017.
8. Bej P. Knowledge, attitude and practices among pregnant women about antenatal care, danger sign during pregnancy and adopting family planning method. *J Prevent Med Holistic Health.* 2018; 4 (1): 10–15. doi: 10.18231/2454-6712.2018.0004.
9. Warri D, George A. Perceptions of pregnant women of reasons for late initiation of antenatal care: a qualitative interview study. *BMC Pregnancy Childbirth.* 2020; 20: Article 70.
10. Patil A, Biradar S. Antenatal care among primi mothers. In *J Nurs Educ Res.* 2020; 8 (4): 429–431.
11. Dayna AJA, Chaudhary V. A study to evaluate the effectiveness of structured teaching programme on knowledge regarding antenatal care among primigravida mothers in a selected villages of Mehsana district. *Int J Adv Nurs Manage.* 2020; 8 (1): 93–95. doi: 10.5958/2454-2652.2020.00022.0.
12. Alatawi M, Faheem WA, Alabdulaziz H. Knowledge, attitude, and practice of primigravida women on birth preparedness. *Open Nurs J.* 2021; 15: 38–46. doi: 10.2174/1874434602115010038.
13. Maharaj R, Mohammadnezhad M. Perception of pregnant women towards early antenatal visit in Fiji: a qualitative study. *BMC Pregnancy Childbirth.* 2022; 22 (1): Article 111. doi: 10.1186/s12884-022-04455-y.