

Birth Preparedness and Complication Readiness among Pregnant Women Attending Antenatal Clinic at Menyet El-Nasr Central Hospital

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Abstract

Background: Birth preparedness and complication readiness (BPCR) is the way toward getting ready for ordinary birth and anticipating the actions needed in case of an emergency occurrence. **Aim:** The present study aimed to assess birth preparedness and complication readiness among pregnant women attending antenatal clinic at Menyet El-Nasr Central Hospital. **Study design:** A descriptive research design was followed. **Setting:** The study was conducted at antenatal clinic at Menyet El-Nasr Central Hospital from the period of February 2019 to August 2019. **Sample type:** A purposive sample was used. **Study sample:** 197 pregnant women who were attended to predetermine setting according to inclusion and exclusion criteria. **Data collection tools:** Three tools were used for data collection, first tool, A structured interview questionnaire to identify socio-demographic and obstetric data of women, second tool was a questionnaire to assess practice of BPCR, third tool was a questionnaire to assess attitude of woman toward BPCR. **Results:** The study findings revealed that the majority of studied women (83.8%) had poor knowledge about danger signs (DS) during pregnancy, labor, and postpartum. More than one third of the studied women (38.1%) had fair knowledge about birth preparedness and complication readiness. More than three quarters of studied women (78.2%) were practice birth preparedness and complication readiness. The most of studied women (98.5%) had positive attitude about BPCR. Also, there was positive, significant, moderate correlation between practice & knowledge scores, attitude & knowledge scores and practice & attitude scores. **Conclusions:** The study concluded that studied woman had poor knowledge about danger signs during pregnancy, had fair knowledge about birth preparedness and complication readiness, majority of them were prepared for BPCR and the most of the studied women had positive attitude regard BPCR. **Recommendation:** Proper utilization of mass media for increase the public knowledge about danger signs during pregnancy and BPCR.

Keywords: Attitude, Birth preparedness, Complication readiness, Danger signs, Knowledge, Practice.

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I. Introduction

Maternal and newborn health is still major concerns worldwide. Around 99% of maternal mortality rates (MMR) occur in low- and middle-income countries (LMICs). Complications during pregnancy and childbirth that contribute to maternal and infant mortality are preventable in many cases through appropriate care before and throughout pregnancy and delivery. Internationally, 303,000 women die every year because of pregnancy-related causes. From these maternal deaths, high income nations have the most reduced number which accounts roughly under 1%. Contrary, Low and Middle Income nations (LMIC) have about 99%, with sub-Saharan Africa (SSA) alone representing 66% of maternal passings. In 2017, MMR was 37 deaths per 100,000 live births in Egypt. (Suandi et al., 2019).

Birth preparedness and complication readiness is the way toward making arrangements for normal delivery and anticipating activities required in emergency cases. It assists to ensure that women can arrive skilled delivery care when labor begins and diminish postponement to look for care and to arrive health care facilities that occur when women experience obstetric complications. In Moreover, it emanates from the way that most pregnancy entanglements are unexpected and unusual. It promotes active preparation and decision making for delivery by pregnant women and their family. Conversely, unprepared families will waste a great deal of time in recognizing problem, getting organized, getting money, finding transport, and arriving at the suitable health facility when complications happen (Bogale et al., 2019).

Knowledge of danger signs, identification of the desired place of birth, considering the favored birth attendant, making a decision about the location of the nearest proper care facility, preparing funds for birth-related and emergency costs, knowing a birth companion, support in caring for the home and children while the woman is away, transportation to a health facility for the birth, transportation in the case of an obstetric emergency, and determining the compatible perfect blood donors in case of emergency occurrence are critical components of birth preparedness (Mulugeta et al., 2020).

Also, birth preparedness concept is to widen knowledge, awareness, and activities of the pregnant, their families, providers, and community. The idea of birth preparedness came out according to the varying definitions in practice and in the literature. Guidelines of the WHO's Coordinated Administration of Pregnancy and Childbirth are that "all pregnant should have a preset strategy for birth and for dealing with sudden unusual circumstances," and health providers should teach the pregnant about DS of labor supporting them and communities in building up their arrangements (Rosado et al., 2019.)

Birth preparedness is significant in preparing the pregnant ready for normal or emergency delivery and assist in diminishing deferrals in getting care. Both knowledge of birth preparedness in addition to the actual groundwork for labor, for example, making transport arrangement and identifying a skilled birth attendant, also the identification a blood donor and the bleeding is hazardous and may lead to women's deaths (August et al., 2016).

Different studies show how lack and low level of knowledge about BPCR have a negative impact on maternal and child health. Poor knowledge about how arranging for blood donors, identifying health facility in cases of emergency, and identifying skilled providers are attributable risk for maternal complications and bad neonatal health sequelae (Nkwocha et al., 2017). Another study shows that only one fifth of pregnant women have favorable knowledge about BPCR. Nearly one third of them are from urban areas. They are found unaware about different ordinary or urgent situation during pregnancy and labor. Also, the most obvious reason of the complications is due to delay in ANC attendance due to adequate knowledge lack (Letose et al., 2020).

Practice of BPCR is so critical to be discussed. Some studies were done to prove how it is important to decrease perinatal complications. Only less than half of the studied women have prepared for BPCR. They haven't identified means of transportations. Also, one fifth of the studies sample has identified potential blood donors in emergency cases. Also, Women and whole community approach towards seeking BPCR is also of great importance. Three quarter of the women had a positive attitude to BPCR. Another study showed that attitude towards BPCR was negative among both rural and urban respondents however positive attitude toward BPCR was higher in the urban area (Endeshaw et al., 2018).

Nurses have a role in making each pregnant at adequate level of knowledge about the hazardous signs that may happen during their whole pregnancy course which are unpredictable. Vaginal bleeding, blurring of vision, severe headache, high grade fever, swollen hands/face, and diminished fetal movement generally show the presence of an obstetric complication that may happen at any point during pregnancy, delivery or post-delivery. Awareness and getting adequate level of education about these danger signs will assist women to be able enough to make the right decisions. Suitable healthcare seeking action is to get quick sufficient care which reduces maternal mortality and morbidity (Mwilike et al., 2018).

Significance of the study

Consistently during 2015, Complications of pregnancy and labor led to death of around 830 women every day. practically These deaths took place in low-income settings. Most of them are preventable. The Hemorrhage, hypertension, infections were outstanding leading to their deaths. Also there were indirect causes, because of the presence of different conditions prior to emergence that interfere with the maternal health (WHO 2015).

Tragically, skilled birth attendant utilization is low even in areas of available services. For previous occasions, maternal deaths are thought to happen because of three delays: delay in deciding to seek suitable care; delay in reaching an appropriate health facility; and receiving sufficient emergency care once at a facility postponement. In many societies in the world, cultural beliefs and absence of awareness hinder preparation in advance for delivery of the expected baby. Since no action is taken prior to the delivery, the family attempts to act just when labor begins. most of the pregnant and their families do not have a clue how to perceive the danger signs of complications. At the point when complications occur, the unprepared family will waste a great deal of time in recognizing the issue, getting organized, getting money, finding transport and arriving the proper referral facility (Begashaw et al., 2017). So this study was conducted.

Aim of study

This study aimed to assess birth preparedness and complication readiness among pregnant women attending antenatal clinic at Menyet El-Nasr Central Hospital.

Research questions

1. Does a pregnant woman have knowledge about birth preparedness and complication readiness?
2. What is a pregnant woman attitude & practice regarding birth preparedness and complication readiness?

Subject and Methods

Study design: A cross-sectional descriptive design was used.

Study setting: This study was carried out at the Menyet El-Nasr Central Hospital from the period of February 2019 to August 2019.

Sample type: A purposive sample was used.

Study subjects: Study subjects consist of 197 pregnant women who were attended to antenatal clinic during pregnancy with the following criteria:

Inclusion criteria

- Primarpara & Multiparous women.
- Pregnant women on second and third trimester.

Exclusion criteria:

- Pregnant women who seriously ill, or mentally ill
- Pregnant women who unable to communicate.

Sample size:

This aim of the study is to assess BPCR among pregnant women attending antenatal clinic at Menyet El-Nasr Central Hospital. A previous study showed that knowledge of the birth preparedness of the pregnant women as 57.01% (*Nkwocha et al., 2017*). Considering level of significance of 5%, and power of study of 80%, the sample size can be measured using the following formula:
, the following formula is used:

$$\text{Sample size} = [(Z_{1-\alpha/2})^2 \cdot P(1-P)]/d^2$$

Where,

$Z_{1-\alpha/2}$ = the standard normal variate, at 5% type 1 error ($p < 0.05$), it is 1.96.

P = the expected proportion in population based on previous studies.

d = absolute error or precision.

So, sample size = $[(1.96)^2 \cdot (0.57) \cdot (1-0.57)] / (0.14)^2 = 196.08$

Based on the above formula, the sample size needed for the study is **197** pregnant women.

Tools for collection of data:

To achieve the aim of this study, three tools were used for collection of data.

Tool I: A Structured Interview Questionnaire

It was developed and used by the researcher and consisted of four parts to deal with the following data.

Part I: Socio-demographic properties of the women

PartII: Obstetric data (e.g., number of gravid, number of Para, number of abortion , number of still birth, gestational age of current pregnancy, number of antenatal visits, obstetric complications during previous pregnancies, place of previous delivery, neonatal complications, mode of previous last delivery, place where sought health assistant and decision maker about woman’s health care).

Part III : Woman knowledge about danger signs during pregnancy, labor, and postpartum: It was adopted from **Idowu et al., (2015)** to evaluate knowledge of pregnant woman regard DS such as; vaginal bleeding,foul-smelling vaginal discharge, edema, blurred vision, severe headache, decreased fetal movement, high fever, convulsions, difficulty in breathing, severe abdominal pain, prolonged labor >12 hours, and retained placenta that not delivered in 30 minutes.

Scoring system:

For assessing the pregnant knowledgeofDSoccurring throughout pregnancy, labor and postpartum periods; the scale includes 20 items. If they know the score is one mark and if they do not know the score is zero. Knowledge level for each part and total knowledge score is considered poor if less than 50.0%, fair if it is 50.0% to < 75.0% and it is considered good if it is equal to $\geq 75.0\%$.

Part IV :Knowledge of pregnant woman about birth preparedness and complication readiness: It was adopted from **Nkwocha et al.,(2017)**to assess knowledge of pregnant woman about BPCR such as identifying place of delivery, saving money, good personal hygiene, and....etc.

Scoring system:

For assessing the studied women knowledge about BPCR, the scale includes eleven statements. If the response is yes the score is one mark and if not the score is zero. The total score is presented as mean \pm SD. Knowledge level the scale is considered poor if less than 50.0%, fair if it is 50.0% to < 75.0% and it is considered good if it is equal to $\geq 75.0\%$.

ToolIII: Practice of pregnant woman toward birth preparedness and complication readiness: It was adopted from **Tobin et al., (2018)**to evaluatepractice of pregnant woman toward BPCR such as know of expected date of delivery, registration for antenatal within the first trimester, identified birth place, identified skilled birth attendant, prepared birth supplies for delivery, financial plans in place for payment for antenatal care and delivery, husband’s approval of chosen place of delivery, identified transport for cases of emergency, identified accompanying person during an emergency, predetermined place to access emergency services and arrangement for blood donation if needed, savings in case of an emergency.

Scoring system:

For assessing the studied women practice about BPCR, the scale includes activities. If the response is done the score is one mark and if not done the score is zero. The total score is presented as mean \pm SD. Prepared level is considered if the total score is $\geq 50.0\%$, not prepared is considered if total score is equal to <50.0%.

Tool III: Attitude of the pregnant toward birth preparedness and complication readiness questions:

It was adopted from **Mbonu,(2018)**, it assess the attitude of the pregnant toward BPCR as seeking medical help if she noticed any DS during pregnancy, getiing prepared for birth and its complications.

Scoring system:

For assessing the attitude of the studied women about BPCR, the scale includes 7 statements on 5 likart scale, strongly disagree (1), disagree (2), undecided (3), agree (4) and strongly agree (5). The total score is presented as mean \pm SD. Positive attitude is considered if the total score is $\geq 50.0\%$, while negative attitude is considered if total score is equal to <50.0%.

Validity of the study tools:

Before conducting the current study, content validity of the study tools was determined after reviewing the literature then confirmed by three expertise in the field of woman’s health and midwifery nursing. Based on expertise’s suggestions, minor modifications were done such as simplify some statement to be easy understood.

Reliability of the tools:

Internal consistency and a reliability coefficient (Cronbach’s alpha) of the following components of the tools used in data collection were obtained using SPSS program.

Cronbach’s alpha	Score
Part III	0.845
Part IV	0.710
Tool II	0.743
Tool III	0.746

This means that the tools were reliable.

Pilot study

The pilot study was done on 20 pregnant women (10%) of the sample size to evaluate the clarity and how the tools are applicable, as well as to assess the time needed for answer. The results of the pilot study didn't included in the sample size and according to analysis of pilot results, modifications of the tools were done as paraphrasing of some sentences.

Ethical considerations

An ethical approval letter was achieved from the Ethics Committee of the Faculty of Nursing, Mansoura University. An official authorization was taken from the director of Menyet El-Nasr Central Hospital and director of antenatal clinic to obtain the official permission to conduct the study after explaining the aim of the study. Then written informed consent was obtained from every pregnant woman involved in the study & subsequent to clarifying of the nature objective of the study. The participants were reassured about the anonymity, privacy, safety and confidentiality of the gathered data throughout the entire study. The participants were informed about their privileges to reject cooperation or pull back from the examination whenever.

Research Process

The process was carried out through two stages; preparatory and operating stages. Preparatory stage included: reviewing literature, developing tools and pilot study while the operating stage included; data collection and data analysis.

The preparatory Stage:

It included reviewing the local and international relevant literature and theoretical knowledge about the various aspect of the study using articles, books, journals to select data collection tools and make necessary modifications. This stage lasted one month (February 2019).

Operating Stage:-

I. Data Collection Phase:

Data were collected using a sample from antenatal clinic, of Menyet El-Nasr Central Hospital after obtaining the written approval from research ethics committee of the faculty of Nursing, Mansoura University to head of antenatal clinic, and the head of Menyet El-Nasr Central Hospital. The researcher introduced herself to head of antenatal clinic and the head of Menyet El-Nasr Central Hospital and took written consent to do the study after clarification of the study aim. The researcher attended antenatal clinic for four days per week from 9 A.M. to 1P.M. The researcher stated vommunication by introducing herself to women, obtained written permission from them to be within the study after illuminating of the study aim. The researcher interviewed each woman individually for 25-30 minutes, during the interview; the researcher asked the woman about sociodemographic characteristics, obstetric data, knowledge about the danger signs of pregnancy, labour, and postpartum. Then subsequently, the researcher asked about knowledge, Attitude and practice toward BPCR and recorded woman answer in the data collection sheet.

II. Data Analysis Phase:

Gathered data were coded, processed and statistically analyzed using SPSS (statistical package of social sciences), version 16. Data were presented as frequency and percentages (qualitative variables) and mean \pm SD (quantitative continuous variables). Student's t test was utilized for comparison of continuous quantitative variables and one way anova (F test) was utilized for correlation of continuous quantitative variables. Pearson's correlation test was applied to correspond two quantitative continuous variables. The difference was significant ($P \leq 0.05$).

II. Results

Table (1): The studied women distribution in relation to their socio-demographic properties

Characteristics	Items	no (197)	%
Age (years)	< 20 years	32	16.2
	20- <25	58	29.4
	25- <30	47	23.9
	30- <35	31	15.7
	35+	29	14.7
	Range: 15.0-43.0, Mean \pm SD=26.36 \pm 6.82, Median = 25.0		
Education level	Basic & less	118	59.9
	Secondary	45	22.8
	University	34	17.3
Husband Education	Basic & less	132	67.0
	Secondary	28	14.2
	University	37	18.8

Occupation	House wives	144	73.1
	Employee	53	26.9
Residence	Rural	181	91.9
	Urban	16	8.1
Family income	Insufficient	53	26.9
	Sufficient	119	60.4
	Sufficient & save	25	12.7
Family size	< 4 persons	110	55.8
	≥4 persons	87	44.2
Range: 2.0-9.0, Mean ± SD=3.36±1.18, Median = 3.0			

Table (1) shows distribution of the studied women in relation to their demographic properties. It was founded that the studied women age ranged from 15 to 43 years with average 26.36±6.82. More than half (59.9%) of them and their husbands (67.0%) were basic & less education. Only, (26.9%) were employed and (8.1%) from urban areas. Family income was sufficient in (60.4%).

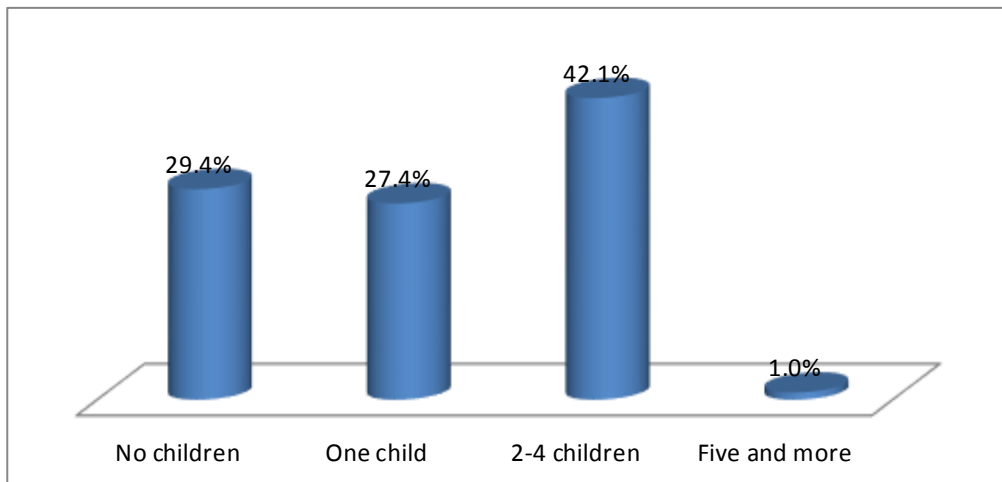


Figure (1): Number of children among the studied women

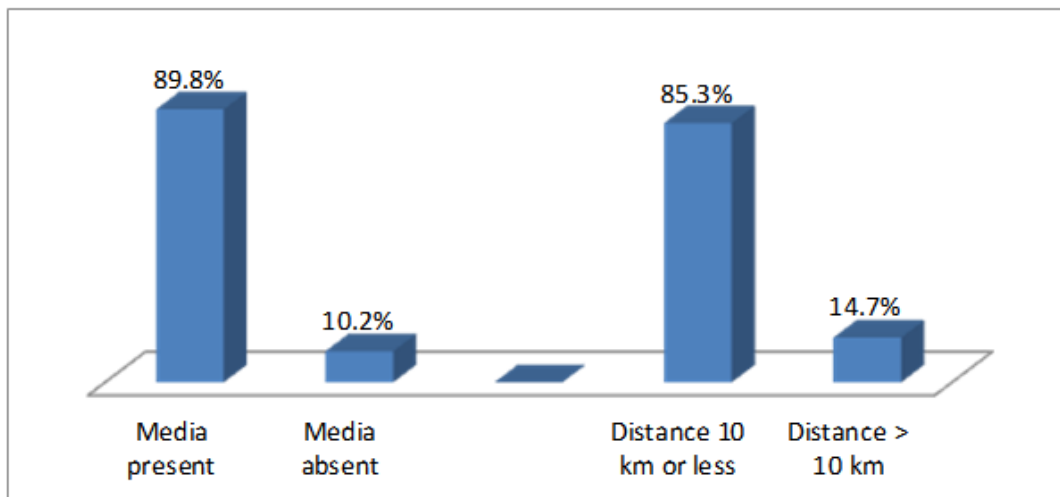


Figure (2): Media in houses of the studied women and distance from nearby health center

Table (2): The studied women distribution in relation to their obstetric characteristics

Obstetric characteristics	Items	no (197)	%
Gravidity	Primigravida	54	27.4
	Muligravida	143	72.6
Parity	Primipara	56	28.4
	Para 1-2	107	54.3
	Para more than 2	34	17.2
Abortions	Non	157	79.2
	1-2	36	18.3
	>2	4	2.0

Still birth	Non	185	93.9
	1-2	12	6.1
Gestational age	2 nd Trimester	104	52.8
	3 rd Trimester	93	47.2
Obstetric complications (141)	Yes	45	31.9
	No	96	68.1
Neonatal complications (141)	Yes	20	14.2
	No	121	85.8
Mode of delivery (141)	Normal VD	40	28.4
	CS	101	71.6

Table (2) shows the studied women distribution in relation to their obstetric characteristics. Primigravida and Muligravida represented by (27.4%) and (72.6%) and of the studied women. Percentage of abortion was (20.3%) and still birth was (6.1%). Half (52.8%) of the studied women was in second trimester and (47.2%) was in the third trimester. Out of 141 women had previous deliveries; (31.9%) had obstetric complications and (14.2%) had neonatal complications and their mode of deliveries was normal (28.4%).

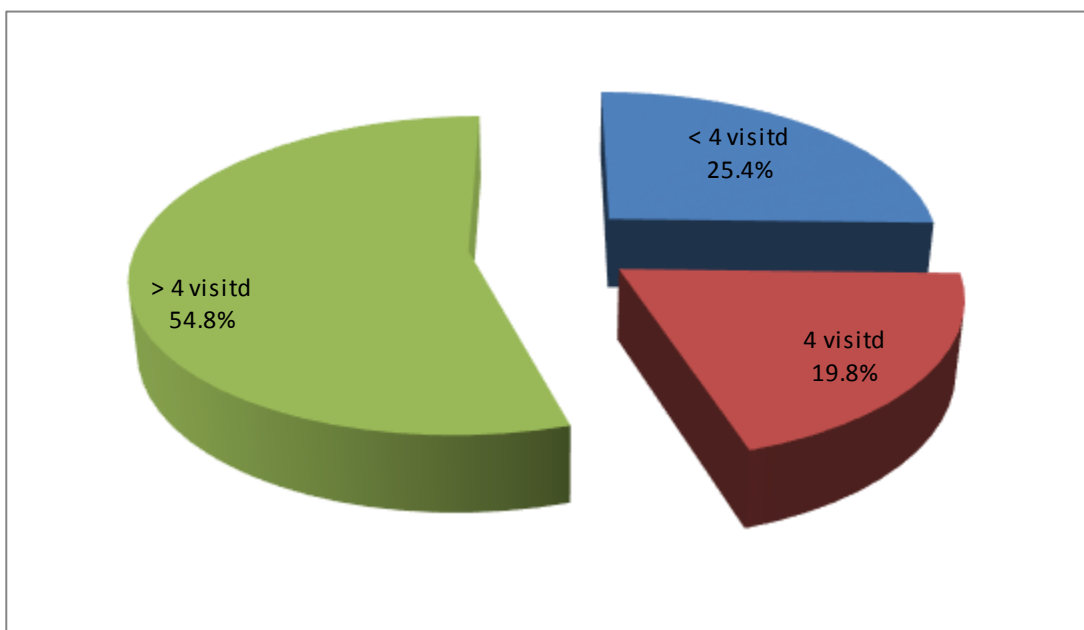


Figure (3): Frequency of antenatal visits

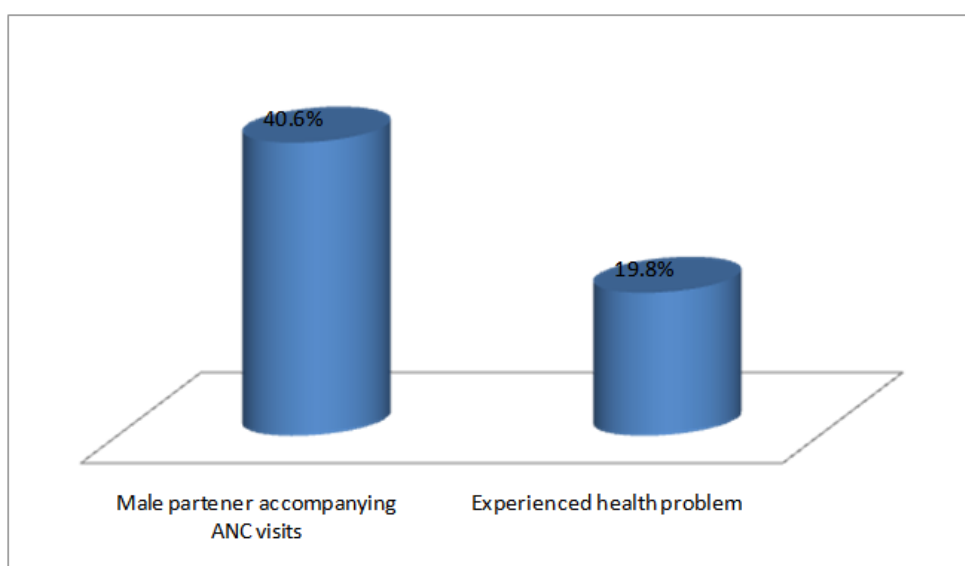


Figure (4): Percentage of male partners accompanying women during ANC visits and percentage of experiencing any health problems during pregnancy

Table (3): The studied women knowledge about danger signs during pregnancy, labor, and postpartum (197)

Items	Know (1)		Don't know (0)	
	no	%	No	%
I. know danger signs during pregnancy				
Yes 168 (85.3%)				
No 29 (14.7%)				
Vaginal Bleeding	128	65.0	69	35.0
Edema	74	37.6	123	62.4
Blurred vision	25	12.7	172	87.3
Severe headache	57	28.9	149	71.1
Reduced feta movement	69	35.0	128	65.0
High fever	77	39.1	120	60.9
Convulsions	14	7.1	183	92.9
Difficulty breathing	50	25.4	147	74.6
Severe abdominal pain	58	29.4	139	70.6
II. know danger signs during labor				
Yes 107 (54.3%)				
No 90 (45.7%)				
Severe vaginal bleeding	96	48.7	101	51.3
Prolonged labor >12 hours	12	6.1	185	93.9
Convulsion	16	8.1	181	91.9
Severe headache	31	15.7	166	84.3
Placenta not delivered in 30 minutes after delivery	5	2.5	192	97.5
III. Know danger signs during post-partum				
Yes 112 (57.4%)				
No 85 (42.6%)				
Severe vaginal bleeding	87	44.2	110	55.8
Foul smelling and vaginal discharge	24	12.2	173	87.8
High fever	86	43.7	111	56.3
Severe headache or blurred vision	24	12.2	173	87.6
Pain, warmth or tenderness in legs	22	11.2	175	88.8
Edema	59	29.9	138	70.1

Table (3) shows the studied women knowledge about the DS during pregnancy, labor, and postpartum. Out of 197 studied women, (85.3%) showed that they know danger signs of pregnancy that percentage of each known signs differed from (7.1%) Convulsions up to (65.0%) vaginal bleeding. While, (54.3%) reported that they knew danger signs during labor that percentage of each known signs differed from (2.5%) Placenta not delivered in 30 minutes after delivery up to (65.0%) severe vaginal bleeding. Also, (57.4%) reported that they knew danger signs during post partum period that percentage of each known signs differed from (11.2%) Pain, warmth or tenderness in legs up to (44.2%) severe vaginal bleeding.

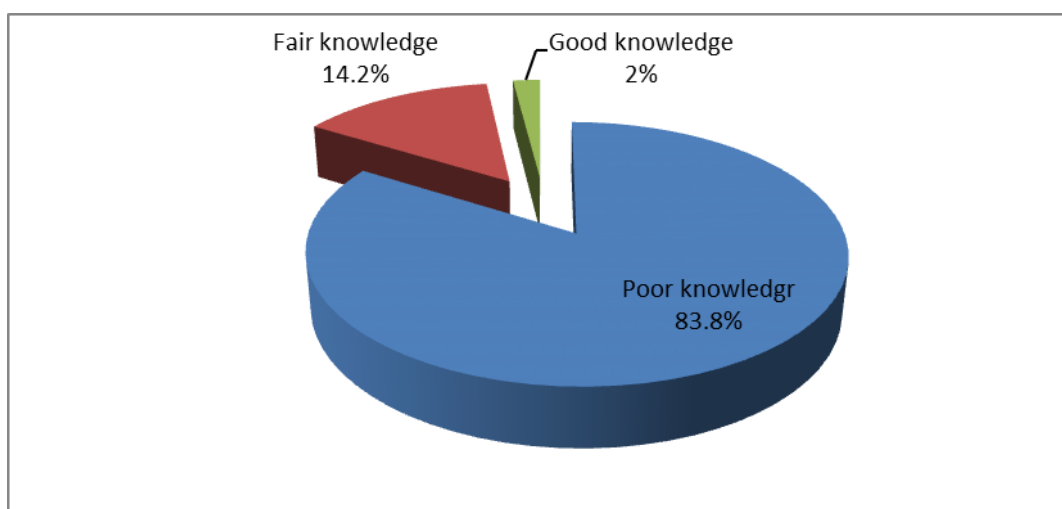


Figure (5): The studied women knowledge level about the danger signs (DS)of pregnancy, labor, and postpartum

Table (5): The studied women knowledge about birth preparedness and complication readiness (197)

Items	Yes (1)		No (0)	
	no	%	no	%
Identifying place of delivery	188	95.4	9	4.6
Saving money	119	60.4	78	39.6
Provide important items for clean delivery & postpartum period	180	91.4	17	8.6
Being aware of the danger signs and the need to act at once	83	42.1	114	57.9
Identify mean of transportation	185	93.9	12	6.1
Arranging emergency funds	75	38.1	122	61.9
Arranging for a birth companion	141	71.6	56	28.4
Arranging for a blood donor	54	27.4	143	72.6
Identify health facility for emergency	129	65.5	68	34.5
Identify skilled provider	122	61.9	75	38.1
Good personal hygiene	196	99.5	1	0.5

Table (5) shows the studied women knowledge about BPCR. There were high percentages of knowledge about good personal hygiene (99.5%), identifying place of delivery (95.4%), identify mean of transportation (93.9%) and provide important items for clean delivery & postpartum period (91.4%). While lower percentage was reported for knowledge about arranging for a blood donor (27.4%), arranging emergency funds (38.1%) and being aware of the DS and the need to act at once (42.1%).

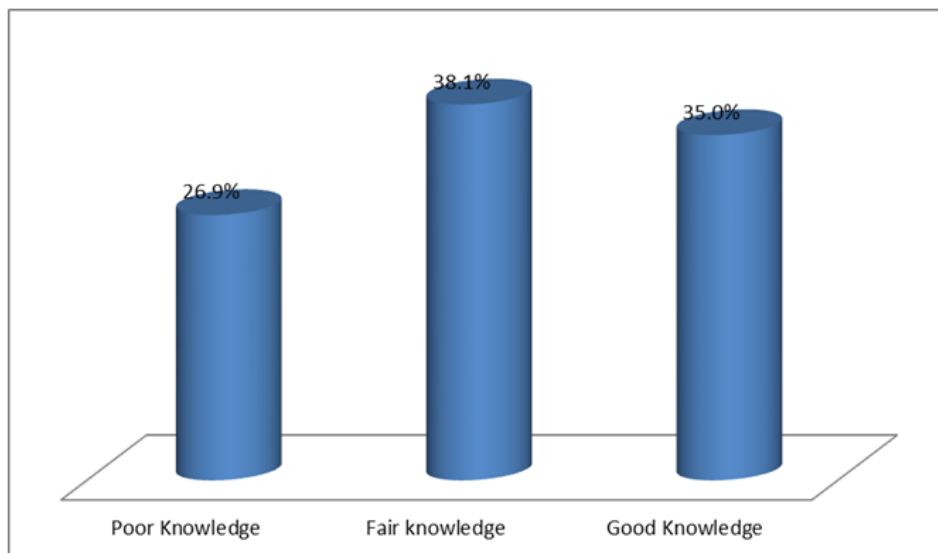


Figure (6): Knowledge level of the studied women about birth preparedness and complication readiness

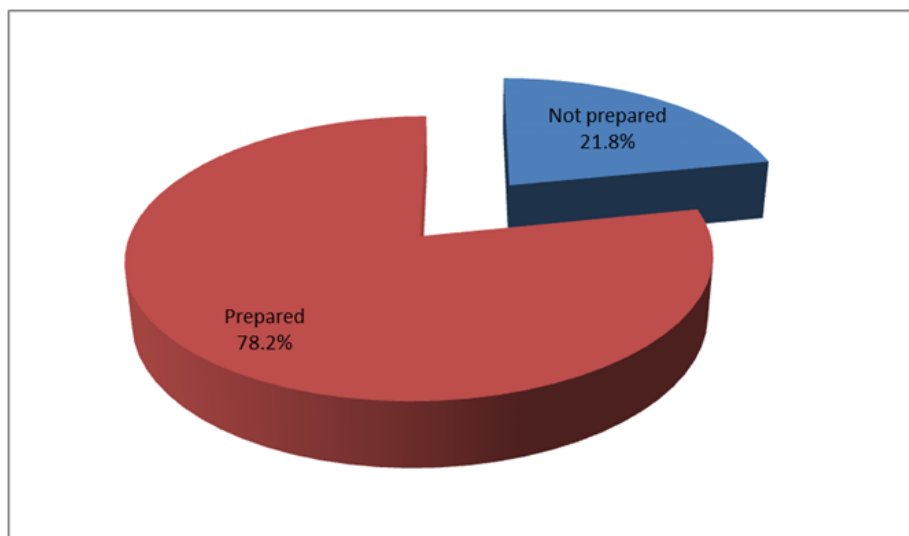


Figure (7): Level of the practice score of the studied women about birth preparedness and complication readiness (197)

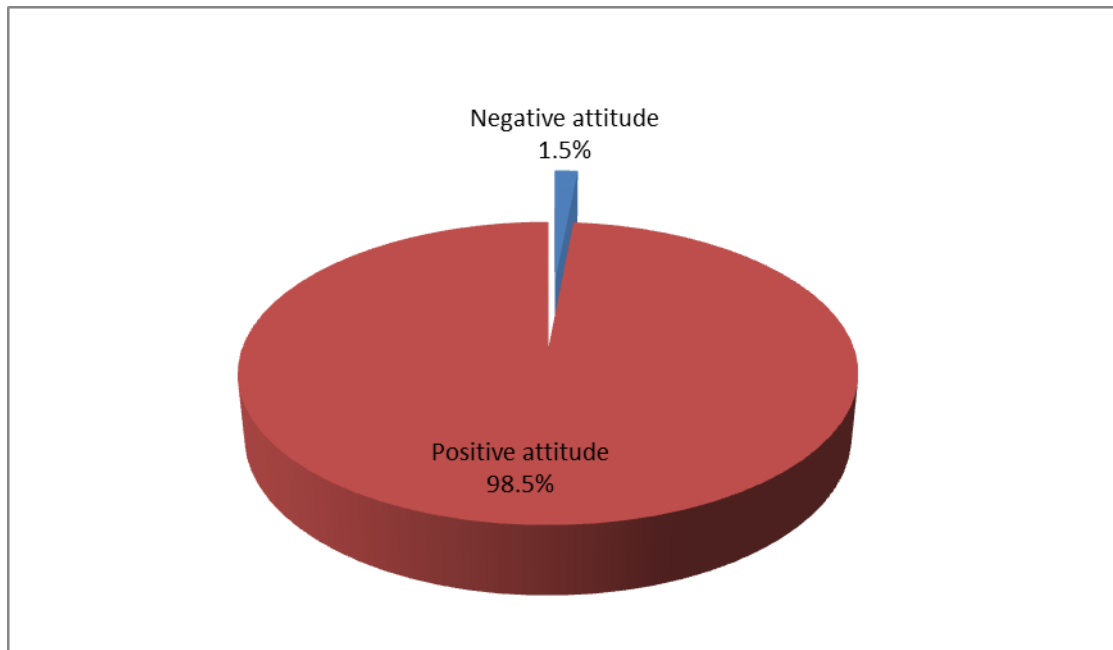


Figure (8): Level of the attitude score of the studied women about birth preparedness and complication readiness (197)

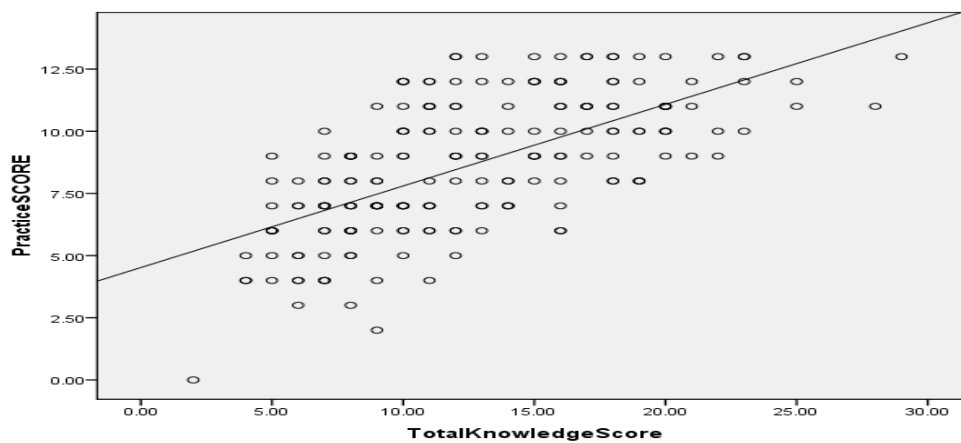


Figure (9): Correlation between the total scores of knowledge and practice among the studied women about BPCR (197)

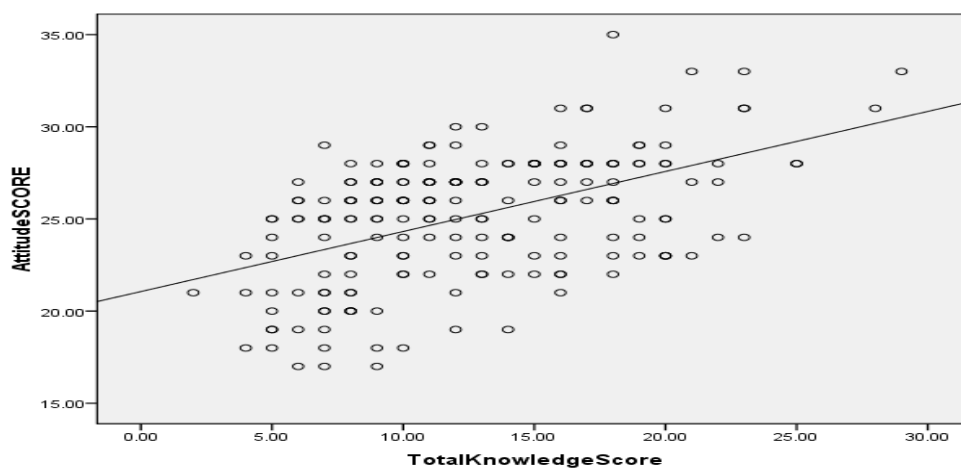


Figure (10): Correlation between the total scores of knowledge and attitude among the studied women about BPCR (197)

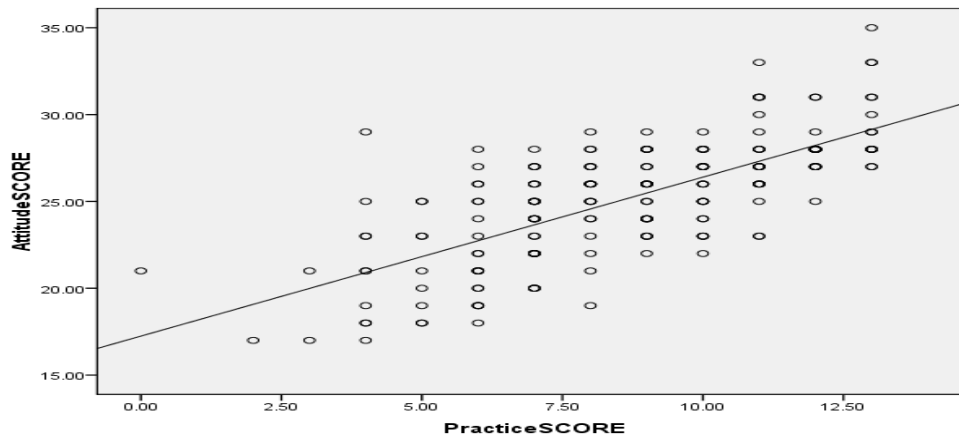


Figure (11): Correlation between the total scores of practice and attitude among the studied women about birth preparedness and complication readiness (197)

Figures (9-11) showed positive, significant, moderate correlation between practice & knowledge scores, attitude & knowledge scores and practice & attitude scores.

III. Discussion

The study aimed to assess birth preparedness and complication readiness (BPCR) among the pregnant. Research questions were supported by the study findings. Such findings evidenced that majority of the pregnant studied had poor knowledge about DS during pregnancy, labor, and postpartum, more than one third of the studied women had fair knowledge about BPCR, more than three quarters of the pregnant studied was prepared to BPCR, most of them had positive attitude.

Concerning, women knowledge about DS during pregnancy, the present study results showed that majority of pregnant studied had poor knowledge about DS of pregnancy. These results were in the same line with **Liben et al., (2019)** who assess knowledge of danger signs and associated factors among pastoral women in Ethiopia. They reported that most of studied women were found to have no knowledge about danger signs of pregnancy. On the other hand, the present study result was in contrast to a study done by **Iiyasu et al., (2019)** who shows obstetric risk perception and recognition of danger signs in northern Nigeria and reported that more than half of the studied women had good knowledge about danger sign during pregnancy, labor and postpartum.

The present study finding showed that there were more than half of studied women know danger signs during labor. This finding was in the same line with **Salem et al., (2018)** who assess knowledge of obstetric danger signs among women. They reported that more than half of woman had knowledge about DS during labor.

Concerning to knowledge of the studied women about danger signs during postpartum; the current study findings revealed that more than half of studied women had knowledge about danger signs during postpartum. This finding dissimilar with that of **Hibstu et al., (2017)** who asses knowledge of obstetric danger signs and associated factors among the pregnant of Southern Ethiopia and reported that less than half of women were knowledgeable about danger signs during postpartum on account of cultures difference.

The present study showed that vaginal bleeding was frequently mentioned by studied women as DS during pregnancy, labor and post-partum. This was supported by **Iiyasu et al., (2019)** who showed that bleeding from vagina was most frequent danger sign during pregnancy, labor and post-partum. While, the present study finding was in disagreement with **Salem et al., (2018)** who reported that fever was most frequent danger sign of pregnancy. The present study results differ from other studied which maybe due to the awareness of women and difference in sample size.

In relation to the pregnant studied BPCR knowledge, the present study result show that more than one third of women had fair knowledge about BPCR. Such study finding, was consistent with study **Padaguggari et al., (2018)** who assess knowledge and practices regarding BPCR among the pregnant attending antenatal clinic and reported that three quarter of the studied women had moderate knowledge about BPCR. This results also supported by **Sabita&Abhilasha, (2018)** who reported that half of women had moderate knowledge about BPCR.

The present study findings revealed that most of studied women identified the place of delivery. This result was in disagreement with **Nkwocha et al., (2017)** who assess birth preparedness and complication readiness knowledge and practice by pregnant women in Nigeria and reported that more than half of the

pregnant identified the place of delivery. The difference between the study results and other studies might be due to the difference in culture.

The present study findings was not in line with a similar study done by **Gebre et al., (2015)** who assess BPCR among the pregnant in Ethiopia and reported that less than one fifth of studied women identifying skilled provider. The difference between the study results and other studied might be due to the difference education status.

The present study findings revealed that most of studied women identifying mean of transportation. This result was supported with **Dessu et al., (2020)** who assess BPCR and associated factors among ANC attendant pregnant mothers in Ethiopia and reported that three quarter of studied women identified mode of transportation. This result was in disagreement with **Smeele et al., (2018)** who reported that majority of studied women was not identified mode of transportation. The difference between the study results and other studied might be due to variation in information access to the populations.

The present study results showed that less than one third of the pregnant arranged for a blood donor. This findings was supported with **Nkwocha et al., (2017)** who reported that less than one third of studied women arranged for a blood donor (26.04%). This results was in disagreement with **Gebre et al., (2015)** who reported that most of studied women was not arranged for a blood donor. The difference between the study results and other studied might be due to education status.

The present study revealed that most of studied women prepared for clean delivery and post-partum. This results was dissimilar with **Dessu et al., (2020)** who reported with two third of studied women prepared these items. The difference between the study results and other studies might be due to culture.

The present resultsshowed that more than half of the women identified saving money. This results was in the same line with **Mulugeta et al., (2020)** who reported that two third of studied women identified saving money. Also, similar with **Nkwocha et al., (2017)** who reported that two third of the pregnant identified saving money.

The present findings revealed that three quarters of the pregnant was prepared for BPCR. Four items of these practices were the most of women including know the expected date of delivery, registration for ANC within 1st trimester, identified birth place and husband's approval of chosen place of delivery. While less than half of studied women not arranged for blood donation and savings in case of an emergency. These results were supported by **Tobin et al., (2014)** who reported that Majority of the women planned to act in critical components of birth preparedness, arranged transportation during delivery, purchase of birth supplies, and identification of a skilled birth attendant.

However this finding was not in line with a similar study done by **Azeze et al., (2018)** who evaluate BPCR practice and influencing factors among women in Southern Ethiopia. They reported that the most of women saved in case of an emergency and less than half of the women identified skilled birth attendants. variations in health-seeking behavior could result in this difference.

The present study revealed that the most of the studied women had a positive attitude towards BPCR. This results was in line with **Mbonu, (2018)** who assess knowledge, attitude and practice of BPCR among the pregnant. It showed that three quarter of the women had a positive attitude to BPCR.

The results of the present study clarifies how the correlation between knowledge and practice about BPCR is positive and significant. This result was in agreement with **Sabita&Abhilasha, (2018)** who reported that practice increases along with increasing knowledge level, so they are positively correlated.

IV. Conclusion

The present study highlighted that the majority of studied women (83.8%) had poor knowledge about DS during pregnancy, labor, and postpartum. More than one third of studied women (38.1%) had fair knowledge about BPCR. More than three quarters studied women (78.2%) were practice BPCR. The most of studied women (98.5%) had positive attitude about BPCR. Also, there was positive, significant, moderate correlation between practice & knowledge scores, attitude & knowledge scores and practice & attitude scores.

V. Recommendations

- Prepare queue card (mother and baby card), that have information about danger signs and birth preparedness, counsel and give the card to remained.
- Proper utilization of mass media (Radio and TV) for increasing public awareness about the importance of BPCR.
- Periodic health education and awareness campaigns on BPCR should be taken to the community, making women the main target.
- **Further research** is needed to assess factors affecting the BPCR on pregnant women.

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Conflicts Of Interest Disclosure

The authors declare that there is no conflict of interest.

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