Pregnant Women's Perceptions, Attitudes, and Practices Regarding Birth Planning and Emergency Preparedness in a Tertiary Hospital in Gezira State, Sudan

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Abstract

Background: Birth planning and emergency preparedness are useful, cost-effective, and accessible public health interventions to reduce maternal and neonatal mortality. Awareness, attitudes, and practices regarding birth planning and emergency preparedness are essential for prompt emergency response to avoid delays, including appropriate and timely referral to obstetric care. Objective: This study aimed to assess the knowledge, attitudes, and practices regarding birth planning and emergency preparedness among pregnant women attending the antenatal clinic at Wad Madeni Maternity Hospital in Gezira State, Sudan. **Methods:** A hospital-based cross-sectional study design was used from April to July 2022. A total of 419 pregnant women were randomly sampled. Data were collected using a structured questionnaire using a rating scale to assess perceptions, attitudes, and practices, and analyzed using appropriate descriptive and inferential statistical methods using the Statistical Package for the Social Sciences version 16 with significance levels. The P-value for correlation was set at <; 0.05.

Results: Most pregnant women in this study were rural residents with adequate education, two-thirds of whom received regular prenatal care from various sources (64.2%, 87.1%, 62.5%, 58.9%, respectively), and their overall awareness and practice levels were low (74.9% and 79.0%). Almost all (97.1%) respondents had positive attitudes. Significant associations were found between women's awareness, fertility, education level, and attitudes, with p-values of (.05, and .003), respectively. **Conclusions:** Most pregnant women had positive attitudes, regularly participated in prenatal care, and were well-informed about birth planning and emergency preparedness, but their awareness and practice levels were low.

Keywords: awareness, attitude, birth planning, emergency, pregnancy, practice.

1. Introduction:

Birth planning and emergency preparedness (BPER) is the process of preparing pregnant women and their families psychologically and physiologically for birth and emergency situations. Core elements of BPER include recognizing the expected date of birth, having a health facility with a skilled birth attendant, recognizing danger signs, developing a transportation and communication plan, and having someone accompany the mother to the health facility when labor begins. Making decisions. (1, 2).

Birth planning and emergency preparedness is recommended by WHO and other organizations as a useful, cost-effective, and accessible health intervention that reduces maternal and neonatal mortality and morbidity with multiple benefits. It can help increase service utilization by encouraging women and their

families to plan for the support, clothing, and equipment they need during labor and beyond, to recognize obstetric risk signs, and to know how to seek help when the unexpected happens (3,4). Birth planning and emergency preparedness are guidelines that help health care providers assess and triage pregnant women according to their circumstances. They have been adopted in Sudan to manage delay, a major factor affecting maternal mortality (5). Therefore, all women should know and document their preparedness for childbirth and emergency preparedness to cope with unexpected complications (6, 7). Understanding birth planning and emergency preparedness is essential for obtaining prompt and appropriate obstetric care, which is important to reduce the impact of life-threatening situations. Sudan has implemented reproductive strategies such as prenatal care packages that include health education and counseling on birth planning and emergency situations over the past decade (8).

Several studies agree that awareness and positive attitudes reduce the impact of delay in care during obstetric emergencies, and the most commonly cited factors influencing awareness are socio-economic status, education status, occupation, medical training, and follow-up antenatal care visits, and other studies, found that women agreed on the importance of BPER awareness and practice. (9, 10) A systematic review of published studies on pregnant women's preparedness for childbirth and complications conducted in Ethiopia included 13 studies and 6,493 participants. The results showed that 32% of pregnant women (25.6, 38.5) were prepared for BPER. In addition, 51.35% of women saved money for childbirth and emergencies, 38.74% of women sought a qualified midwife, and only 26.33% of pregnant women knew the risk signs during pregnancy. One-fifth (20.59%) of women arranged transportation, and 54.85% of women indicated their place of birth. The study found that only 8.18% of pregnant women identified potential emergency blood donors. The proportion of pregnant women who were prepared for childbirth and prepared for emergencies was low (11). The proportion of pregnant women in Sudan in the study area and their perceptions, attitudes, practices, and influencing factors that they were unaware of. Therefore, this study identified gaps that could provide initial data.

2. Methodology:

Study Design: This hospital-based descriptive cross-sectional study was conducted at the antenatal clinic of Wad Madeni Maternity Hospital in Gezira State, Sudan.

Study area: Wad Madeni, Obstetrics and Gynecology Hospital. This hospital is a tertiary government hospital providing antenatal care to 11,052 pregnant women annually, and also provides health services to the local population as well as the surrounding population. The health center and rural hospital provide outpatient care and refer patients with severe obstetric-related illnesses.(12).

Study subjects: This study included all pregnant women who visited the antenatal clinic during the study period and were willing to participate.

Sample: A formula was used to determine the sample size. N = population size, d = error percentage (0.05). Adding an expected non-response rate of 10%, n = N / (1 N) (d2) = 11052 / (11052 Ã— 0.0025) yielded 419 study participants. The study unit was randomly chosen.

Data collection methods and tools: A structured questionnaire derived from published studies and literature was used to collect information on participants' demographics and their knowledge, attitudes, and practices regarding birth planning and emergency preparedness. The questionnaire was divided into four sections. The first section is for the demographic and obstetric characteristics of the participants. The second section describes how to become familiar with the rating scales.

Section 3 for attitudes using a 5-point Likert scale; and Section 4 for practice using a two-step checklist. (Yes/No), birth planning and emergency preparedness, and the reevaluation scale ((average ≥75.0% good practice, 74.9–50% satisfactory practice, ≤ 49.9%). The level of practice was measured through the reevaluation scale (49.9% poor practice).

Data analysis: The analysis was performed using the Statistical Package for the Social Sciences version 16 and appropriate descriptive and inferential statistical methods. The chi-square test was then used to examine potential relationships between qualitative variables, and a p-value of less than 0.05 was considered statistically significant. The study results were assessed as follows. : good for positive attitude,≤ 49.9% negative attitude. The average score for excellent practice is ≥ 75.0%, the average score for satisfactory practice is 74.9% and the average score for poor practice is 49.9%.

Ethical considerations: The Ethics Committee of Alneelain University gave approval to the Ethics Committee of the Gezira State Ministry of Health and the Ethics Committee of the Wad Madeni Maternity Hospital. All participants were informed of the purpose of the study and signed a written informed consent to participate in the study.

3. Results

Table (1): Distribution of study participants according to their socio-demographic and Obstetrics Background (n= 419)

Variable	Item	Frequency	Percentage
Age	<20	14	3.3
	20-30	239	57.0
	>30	166	39.6
Place of residence	Rural	269	64.2
	Urban	150	35.8
Occupation	Housewife	344	82.1
	Employee	75	17.9
Educational status	No regular education	6	1.4
	Primary school	48	11.5
	High secondary school, graduated, and postgraduate	365	87.1
Gravidity	Primigravida	15	3.6
	Multigravida	234	55.8
	Grand- gravida	170	40.6
Age at first pregnancy	≤18 years	192	45.8
	≥18 years	227	54.2
Follow-up pattern during the last pregnancy	Regular.	262	62.5
	Irregular.	157	37.5

reasons women do not have regular antenatal visits	Lack of knowledge.	65	15.5
	Not receiving proper services.	31	7.4
	Economic reason	87	20.8
In any of those ANC visits, did you get an opportunity to be advised/counseled on the following (where to deliver, benefits of delivering at the health facility/hospital, what to do in case of any complications)	Who has had an opportunity to be advised/counseled	45	10.7
	Who hasn't had an opportunity to be advised/counseled?	374	89.3

Table (2) Distribution of study participants according to their awareness about birth preparedness and emergency readiness *(n=419)*.

Variables		**Yes**		**No**	
		Frequency	**Percentage**	**Frequency**	**Percentage**
Informed about BPER		247	58.9	172	41.1
Source of information about BPEP	A family member or relative	142	33.9		
	Neighbor	21	5.0		
	Health worker	77	18.4		
	Media	7	1.7		
What do you know about components of birth preparedness and emergency readiness?					
EDD.		128	30.5	291	69.5
Nearest location with skilled provider for delivery and emergency service.		186	44.4	233	55.6
Choose a skilled provider.		3	.7	416	99.3
Plan for transportation means.		10	2.4	409	97.6
Plan for communication means.		194	46.3	225	53.7
Save money to be used during an emergency.		247	58.9	172	41.1
Prepare essential items for cleaning and safe delivery.		170	40.6	249	59.4
Identify support people to accompany /make decisions.		16	3.8	403	96.2
Be able to identify signs of an obstetric emergency.		42	10.0	377	90.0
Plan to be able to respond immediately in the event of an emergency to avoid delays.		29	6.9	390	93.1
Arranging blood donors in case of an emergency		26	6.2	393	93.8
Average.		25.1			

Rating scale: Average ≥ 75.0% Good awareness, 74.9% - 50% satisfactory awareness, ≤ 49.9% Poor awareness

Table (3): Distribution of study participants according to their attitude towards birth preparedness and emergency readiness *(n=419)*.

Variables	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	No.	%	No,	%	No.	%	No.	%	No.	%
Knowing the birth plan for seeking care without delay when complications occur is important.	27	6.4	382	91.2	0	0.0	0	0.0	10	2.4
BPER, are cost-effective and affordable health intervention, for reducing MM.	25	6.0	384	91.6	0	0.0	0	0.0	10	2.4
Mothers who know the location of the nearest health facility where emergency service is provided can prevent delay risk.	26	6.2	381	90.9	0	0.0	0	0.0	12	2.9
Mothers' who have a plan respond immediately in the event of an emergency to avoid delays.	27	6.4	380	90.7	0	0/0	0	0/0	12	2.9
Average	97.1				2.7%					

Rating scale: Average ≥ 50.0% Positive Attitude, ≤ 49.9% Negative Attitude

Table (4): Distribution of the study participants according to their practice in birth preparedness and emergency readiness *(N=419)*.

Variables	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Ask about EDD	133	31.7	286	68.3
Identified the nearest location with a skilled provider for delivery and emergency service.	104	24.8	315	75.2
Choose a skilled provider.	134	32.0	285	68.0
Plan for transportation means.	49	11.7	370	88.3
Plan for communication means.	50	11.9	369	88.1
Save money to be used during an emergency.	115	27.4	304	72.6
Prepare essential items for cleaning and save delivery.	165	39.4	254	60.6
Identify support to accompany or make a decision	129	30.8	290	69.2
Be able to identify signs of an obstetric emergency.	71	16.9	348	83.1
Plan to be able to respond immediately in the event of an emergency to avoid delays.	36	8.6	383	91.4

Arranging blood donors in case of an emergency.	53	12.6	366	87.4
Average	21.0			

Rating scale: Average ≥ 75.0% Good practice, 74.9–50% satisfactory practice. ≤ 49.9% Poor practice

Table (5): Distribution of the study participant according to their level of awareness, attitude and practice *(overall table)* (N=419)

Level of awareness	Good awareness	Satisfy awareness	Poor awareness	Total
	36(8.6%)	69(16.5%)	*314(*74.9)	419(100%)
Level of practice	**Good practice**	**Satisfy practice**	**poor practice**	
	61(14.6%)	27 (6.4%)	331(79.0%)	419 (100%)
Level of attitude	Positive attitude		Negative attitude	
	407(97.1%)		12(2.7%)	419 (100%)

Table (6): Association between awareness practice of BPER and selected variables **(n = 419)**

Variable		Awareness of BCR			Chi-square df p-value	Practice of BCR			Chi-square df p-value
		Good	Satisfy	Poor		Good	Satisfy	Poor	
Gravidity	Primigravida	1	1	13	9.127[a] 4 .050	1	0	14	6.02[a]4 .198
	Multigravida	13	37	184		28	15	191	
	Grand multigravida	22	31	117		32	12	126	
Education level	Read and write	0	2	4	9.504[a] 6 .147	1	2	3	20.00[a] 6 .003
	Primary school	0	6	42		1	1	46	
	Secondary	19	39	152		39	16	155	
	College& above	17	22	116		20	8	127	

P-value < 0.05 is considered a significance.

Discussion

This study revealed that 57.0% are between the ages of 20-30 years with acceptable education levels, as 87.1% of the educated are high secondary school graduates or postgraduates.

The level of awareness regarding birth planning and emergency readiness (BPER) among pregnant women varies throughout the trimesters of pregnancy, with a significant proportion demonstrating a good and satisfactory understanding. This awareness is often gained through antenatal visits. In our study most of the participants have satisfactory experience as they have many pregnancies (55.8%) are multiparas,

two-thirds of them reported attending regular check-ups and antenatal visits during their most previous pregnancies, and more than have informed about BPER by multisource (62.5%, 58.9% consecutively); Despite of; most of our participant have poor awareness and practice concerning BPER ((74.9)% (79.0%) respectively), potentially increasing their delay and complications risks in their future pregnancies; most of them 407 (97.1%) had Positive attitude, this may be due their acceptable level of education as the most of them are Secondary school (50.1%) or university and above (37.0%) study leveed. Our study aligns with previous research that reported just (46.1%) and (18.8%), respectively, of mothers who were knowledgeable & practiced BPER (13). Additionally, compared with a study done in Nigeria, in which the respondents were aware of and practiced BPEP, it was (44.9%) and (36.9%), respectively. Our study result is different from the second study in that their study group had good awareness and a positive attitude (63.6% and 75.3%, respectively) but only 34.4% had practiced BPER (14, 15).

The finding of a study in Bangkok suggests that pregnant women who live in urban areas (78.4% of them) have better birth preparedness than those who live in rural areas (19%); this disagrees with our study, in which (64.2%) of them are rural residents, and they revealed poor practice BPER by an average of (21.0%). (3, 4)

Fortunately, our study indicates that almost all of the 407 participants (97.1%) possess a positive attitude regarding BPER, which is a favorable outcome, despite their poor awareness and practice. However, there remains an opportunity to enhance their knowledge regarding BPER pertinent to both maternal and fetal health. Moreover, our study revealed that among 419 respondents, 58.9% were aware of and practiced saving money to be used during emergencies, whereas 46.3%, 11.9%, 44.4%, and 24.8% were aware of and practiced planning for communication means and the nearest location with a skilled provider for delivery and emergency service. (40.6%) and (39.4%) were aware of and practiced preparing essential items for clean and safe delivery. The results obtained in this study showed a lower value compared with studies done in Nigeria (97.6% and 97.2% identified health facilities and skilled care providers, respectively), then (96.8% and 91.7% saving money & a mode of transport). This variation might be because the free antenatal care and delivery services offered by Edo State benefited from health education opportunities derived from ANC attendance on birth preparedness and danger signs in pregnancy, labor, and delivery, which might have contributed to the high level of ANC registration among respondents, as most of the respondents reported health care providers as their major source of information. (16)

Limitation

Lack of literature for awareness, attitude, and practice in Sudan; interval stoppage of the services in the ANC clinic in Wad Madeni Obstetric & Genealogical Hospital.

Competing interests.

The authors declare that they have no conflict of interest.

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Authors' contributions

The authors' responsibilities were as follows: all authors designed and supervised the study, ensured the quality of the data, and assisted in the analysis and interpretation of the data. All authors critically reviewed the manuscript. The corresponding authors did the analysis & drafted the manuscript and had the responsibility to submit the manuscript for publication.

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