THE KNOWLEDGE AND ATTITUDE TOWARDS PREECLAMPSIA AMONG PREGNANT WOMEN ATTENDING BANADIR AND MEDINA HOSPITALS IN MOGADISHU-SOMALIA

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Research article

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Abstract

Background: Preeclampsia is a pregnancy complication characterized by high blood pressure and signs of damage to another organ system, most often the liver and kidneys. It occurs as early as 20 weeks of the pregnancy. **Aim:** the aim of this study was to explore the knowledge and attitude towards preeclampsia among pregnant women attending Banadir and Medina hospitals in Mogadishu-Somalia.

Method: The study was a descriptive cross-sectional study conducted in Mogadishu Somalia. Systematic random sampling probability technique was carried out in 2 hospitals to recruited 384 women. Well-structured questionnaires were filled by participants who gave their consent. Data were analyzed using the statistical package for social sciences version 21. Descriptive data were generated and statistical inferences tested using the chi-square method with the level of significance set at 5%. **Result:** The age of the respondents was between 14-50 with a mean age of 32.49 ± 5.9 . It was found that 54.3% of the participants did not know preeclampsia. The women knew poor diet as a cause of preeclampsia. Finally, the prevalence of preeclampsia in Banadir state, Somalia was 43%.

Conclusion: The study recommended to the government of Somalia to generate both health education to the pregnant mother and increase the level of education of mother by offering free education to the women, in Somalia.

Background

Globally, an estimated 292,982 maternal deaths occurred in 2013. Among this global burden, 85% occurred in developing countries of sub-Saharan Africa (56%) and southern Asia (29%) [1]. The maternal mortality ratio in developing countries in 2015 is 239 per 100 000 live births versus 12 per 100 000 live births in developed countries [1]. There are large disparities between countries, but also within countries, and between women with high and low income and those women living in rural versus urban areas. More than 70% of maternal deaths are due to five major complications: haemorrhage, infection, unsafe abortion, obstructed labour, and hypertensive disorders of pregnancy, including preeclampsia and eclampsia and the majority of maternal deaths (61%) occur in the postpartum period, and more than half of these take place within the day of delivery [2].

According to the countries level for maternal mortality indicator, the estimation in worldwide in 2015 was showing that the one-third of the maternal death occur in the Nigeria and India, that makes approximate 58 000 maternal deaths (19%) and 45 000 maternal deaths (15%), respectively. Sierra Leone is estimated to have the highest MMR at 1360, Eighteen other countries, all in sub-Saharan Africa, are estimated to have very high MMR in 2015, with estimates ranging from 999 down to 500 deaths per 100 000 live births: Central African Republic 882, Chad (856) Nigeria (814), South Sudan (789), Somalia (732), etc [3].

Somalia has some of the worst maternal and child health indicators in the world due to years of widespread internal conflict and no Central Government has left Somalia in extreme poverty civil war and

that prevents access to the appropriate health care facility. A major cause of maternal death in Somalia is preeclampsia and Eclampsia[4].

Hypertensive disorders of pregnancy are an important cause of maternal and neonatal morbidity globally. Pre-eclampsia and eclampsia are the most severe hypertensive disorders in pregnancy. Preeclampsia is a condition that can develop during pregnancy characterized by high blood pressure (hypertension) and protein in the urine (proteinuria). If not properly recognized and managed, preeclampsia can progress to eclampsia, which involves the development of seizures in a woman with preeclampsia.[5]

The most mortality that attributed to pre-eclampsia is preventable and can be prevented by monitoring and early diagnosis with effective treatment and deal with it. but there is the common signs and symptoms that preeclampsia may have to classified from that other condition which may arise much earlier. Other negative effects of preeclampsia include prematurity, increased operative delivery, hemolysis-elevated liver enzymes-low platelet count (HELLP) Syndrome, fetal morbidity and mortality, renal failure and convulsion[6].

Delivery is proposed for patients with preeclampsia without severe features after 37 weeks of gestation and in case of severe preeclampsia after 34 weeks of gestation. Between 24 and 34 weeks of gestation, conservative management of severe preeclampsia may be considered in selected patients. Antenatal corticosteroids should be managed to less than 34 gestation week preeclampsia women to promote fetal lung maturity. Termination of pregnancy should be discussed if severe preeclampsia occurs before 24 weeks of gestation. Maternal end-organ dysfunction and non-reassuring tests of fetal well-being are indications for delivery at any gestational age. Preeclampsia is also a risk factor for developing cardiovascular disease later in life and therefore mandates long-term follow-up[7].

Case in Somalia

Somalia has some of the worst maternal and child health indicators in the world due to years of widespread internal conflict, extreme poverty, civil war and lack of access to an appropriate health care facility. Maternal mortality in Somalia is high and is among top high countries in the numbers of women dying in pregnancy, next to South Sudan; one the major common causes is preeclampsia and hypertensive disorders[3].

Preeclampsia and eclampsia kill mothers during pregnancy and childbirth, and yet these deaths can be prevented. Early detection and prompt intervention at the first point of contact is crucial in averting these deaths.WHO recommends that emergency life-saving care be given to patients at the first contact prior to referral in order to increase the chance of survival at the referral health facility[8].

Thus this study discovers knowledge and attitude towards preeclampsia pregnant women attending Banadir and Medina hospitals in Mogadishu-Somalia, regardless of the level of education, and parity.

This study has great significance concerning the way and role to improve maternal and prenatal mortality by increasing the knowledge and attitude towards preeclampsia among pregnant women.

The study was based on three research question.

1. What is the knowledgeable are pregnant women in both hospitals about preeclampsia?
2. What is the attitude of pregnant women seeking antenatal care towards preeclampsia in Banadir and Medina hospitals
3. What are socio-demographic characteristics associated with knowledge of preeclampsia?

It is believed that assessing the knowledge and attitude towards preeclampsia will enhance the formulation of policies by the concerned communities and the Central Government.

Methods

Study Site

This study was conducted in two hospitals located in Mogadishu, Banadir Region, Somalia.

Somalia is a country located in the Horn of Africa. It is bordered by Ethiopia to the west, Djibouti to the northwest, the Gulf of Aden to the north, the Indian Ocean to the east, and Kenya to the southwest.

Banadir Region or Mogadishu “known as locally as Hamar”, which is the [capital](#) and [most populous region/city](#) of [Somalia](#), located in the coastal on the [Indian Ocean](#). This region is bordered by the Somali regions of [Middle Shebelle](#) and [Lower Shebelle](#) as well as the [Indian Ocean](#). The Banadir region consists of seventeen districts namely: Abdiiaziz, Bondhere, Daynile, Dharkenley [Hamar-Jajab](#), [Hamar-Wayne](#), [Hodan](#), Howl-Wadag, Huriwa, Karan, Shangani, Shibis, Waberi, Wadajir, Warta-Nabada ,Yaqshid and Kahda districts. The Banadir region has a total population of 2.5 million residents[9].

Banadir Hospital is Maternal and child hospital was established in 1977 as part of Chinese government development projects to Somali people which included other infrastructure as well as. The hospital is situated in the centre of the capital city of Somalia.

The hospital comprises three main departments.

1. The maternity which offers treatment services to medical and surgical conditions of pregnant and non-pregnant women
2. The pediatric department deals with medical and surgical conditions for all ages of children, controls and acute watery diarrhoea
3. The medical and surgical activities are also delivered routinely or as emergency forms.

Medina Hospital, one of Mogadishu's two major hospitals. It focuses on trauma and emergency maternal medicine, treating several hundred war-wounded patients and expectant mothers every month.

Study design

A hospital-based descriptive cross-sectional study design was proposed with quantitative techniques of data collections addressing various aspects of knowledge and attitude towards preeclampsia among pregnant women.

Inclusion/Exclusion criteria

This was only focused on Women in the reproductive age group (15-49) years who are currently pregnant attending ANC at the study sites. Also was excluded if they had seriously ill which are unable to participate in the study. And Non-consenting women were also excluded.

Sample Size Determination

The sample size will be determined using Fisher's et al, 2003 Formula.

The formula will be used to estimate the smallest possible categorical sample size for the moment of population. Due to a lack of the previous study on this topic conducted in Somalia, we took 50% as prevalence of preeclampsia with a Confidence interval at 95% set us 1.96 and marginal error of 5%. i.e. (0.05).

Substituting into the formula, the sample size was computed as follows

$$n = \frac{(1.96)^2 \cdot 0.5 \times 0.5}{(0.05)^2} = 385$$

Sample size collection and technique

Systematic random sampling probability technique was carried out in 2 hospitals to conduct the study.

Banadir hospital antennal care visit per month

$$\frac{1500}{2520} \times 385 = 230$$

Medina hospital

$$\frac{1020}{2520} \times 385 = 155$$

Sampling interval (K) for both hospitals will be

➤ Banadir hospital: $\frac{1500}{230} = 6$

➤ Medina hospital: $\frac{1020}{155} = 6$

Data Collection

Data will be collected by face to face interview technique using structured and pretested questionnaire. the four nurses and 2 midwives classified into 2 male and 4 female respectively graduated with a minimum diploma which fluent for writing, listening and speaking Somali language and principle of the investigator was involved in the data collection process was recruit and train research assistants how to manage collected questionnaires. Each questionnaire was checked before being administered to ensure the quality and completeness of data. Recruitment of participants and data collection was started in April and the end of May. 2019.

Data Analysis

The completed copies of the questionnaire were collected by the principal investigator. Data arranged, coded and entered and analyzed into IBM SPSS version 21.

Descriptive and inferential statistics were used. Frequencies, proportions/percentages, means, medians, standard deviations were computed and presented in form of tables and graphs as appropriate to describe specific demographic characteristics. On the other hand bivariate analysis using the chi-square test, with P value (0.05) was conducted to test the association between a dependent variable with each specific independent variable.

Results

Table 1 depicted the Socio- demography status of the respondents in the study who attended antenatal care of both two hospitals. The age of the respondents was between to 14-50 with a mean age of the 32.49±5.9. The 235(61.) were married in the level of education the 108(28 %.) while the primary level of education while the 98 (25.5%) were the primary level of education.in occupation characteristics of the

respondents was indicated 247(64.8%) of non-employed while rest was employed. The majority of participant 233(60.5%) were primipara, and also 239(62.1%) were the third trimester of their pregnancies. most of the participant was said we visited once 156(42.9%) for this current pregnancy.

Table 1: Socio-demographic Characteristics

Variable	Frequency	Percentage
1. Age		
14-25	54	14.3%
26-34	153	39.7%
35-50	178	46.0%
Total	385	100%
1. Education		
Non-formal	131	34%
Primary	98	25.5%
Secondary	108	28. %
Tertiary	48	12.5%
Total	50	100%
1. Marital status		
Windowed	37	9.6%
Married	235	61.0%
Divorce	113	29.4%
Total	385	100%
1. occupation:		
Employed	138	35.2%
Non-employed	247	64.8%
Total	385	100%
1. parity status:		
primipara	233	60.5%
multipara	152	39.5%
Total	385	100%
156		

1. ANC attended time		42.9 %
One	135.	34.1%
Two	45	11.7%
Three	40.	10.3%
four≥	385	100%
Total		
1. Trimester status		
First	42	
Second	104.	
Third	239.	
Total	385.	
Mean age (SD) years		
32.49±5.9.		

Table 2 presented factor that influencing the participant's knowledge to the preeclampsia. And the study found it that the ANC attended time and level of education of participant was statistical significantly associated with the knowledge of participant to the preeclampsia. While Age, occupation, trimester status of the participant, parity status and marital status were statistical none significantly associated with the knowledge of the participant to the preeclampsia with $P < 0.05$ (Refer to table 2).

Table 2: Factors influencing the knowledge of preeclampsia to the mothers

		the knowledge of preeclampsia to the mothers		Total	P-value
Age		Yes	No		
	14-25	27.	27.	54.0	0.166
	26-34	66.	87.	153.0	
	35-50	83	95.	178.0	
	Total	176	209	385	
occupation	Employed	66.	72.	138.	0.303071
	Non-employed	110.	137.	247.	
	Total	176.	209.	385	
Trimester status	First	21.0	21.	42	0.141541
	Second	55.	49.	104	
	Third	100	139.	239	
	Total	176	209	385	
parity status	primipara	113.	120.	233	0.105043
	multipara	63.	89.	152.	
	Total	176	209.	50	
marital status	married	103.	132.	235.	0.649480
	divorce	55.	58.	113.	
	Windowed	18.	19	37	
	Total	176.	209.	385	
ANC attended time: One	One	8.	107.	115	0.000001**
	two	26.	68.	94	
	Three	69.	25.	94	
	four>	73.	9	82	
	Total	176.	209.	385	

level of education:	Non formal	10.	121.	131	0.000001**
	Primary	25.	73.	98.	
	Secondary	96.	12	108	
	Tertiary	45.	3	48	
	Total	176	209	385	

Table 3 showed some questions related to the knowledge of preeclampsia to the women of reproductive age .during this study the researcher asked the women for four questions in preeclampsia knowledge. First was the cause of the preeclampsia and found it, that the majority 75(19.5) of them were said, it is the cause of poor diet, and also some of them were said 73(19. %) it is the lack of physical activities, while the other was said marital problem, stress, malnutrition and family problem. the secondly the researcher asked who give you the information related to preeclampsia. the majority 101(26.2%)of them were said we did not get any information related to the preeclampsia. While some other were said we get from Midwife 89(23%), Obstetrician64 (16.6%) Nurse 54(14%), any physician77 (20%) and Obstetrician64 (16.6%) Nurse 54(14%). The third question was the relationship between the cholesterol and preeclampsia, then most of them were I don't know 200(51.9). the final question on knowledge of women to the preeclampsia was what is the relationship between the salt and preeclampsia and the majority of them told that they didn't know their relationship.

Table 3: Knowledge towards preeclampsia among women of reproductive age.

Variable	Frequency	Percentage
1. Cause of preeclampsia		
malnutrition	62.	16.1%
poor diet	75.	19.5%
Stress	57.	14.8%
family problem	48.	12.5%
lack of physical activities	73.	19. %
marital problem	70.	18.3%
Total	385	100%
1. Information giver to resp		
Obstetrician	64.	16.6%
any physician	77.	20.1 %
Nurse	54.	14%
Midwife	89.	23.1%
None	101	26.2%
Total	385.	100%
1. The cholesterol and preeclampsia		
Yes	82	21.3%
No	103	26.8%
I don't know	200	51.9%
Total	385	100%
1. The salt and preeclampsia		
Yes	118.	30.6%
No	107.	27.8%
I don't know	160.	41.6%
Total	385	100%

Table 4 presented the last section of our study that is the attitude towards preeclampsia among women of reproductive age as same as the above table also asked the four question that may be tested on their attitude towards the preeclampsia. The first one was the symptoms of preeclampsia and the majority134 (34.8%) of them were said high blood pressure and others 104 (27. %) Were said Swelling for legs and feet, while 89(23.1%) were said we don't know the preeclampsia. the second question was how is your satisfaction on the ANC service, and the most108 (28.1%) of them were said it is average. the third question was what you do if you develop the oedema of legs, constant headache, palpitations, blurring of vision, and upper abdominal pain} and the majority were said 154(40. %) we rest at home. finally, we asked to do you had the previous diagnosis of preeclampsia, the majority 335(87.%)Said no, we have not been a diagnosis of preeclampsia.

Table 4: The attitude towards preeclampsia among women of reproductive age.

Variable	Frequency	Percentage
1. The preeclampsia symptoms on respondents experience.		
Swelling for legs and feet	104.	27. %
high blood pressure	134.	34.8%
Headache	58.	15.1%
I don't know	89.	23.1%
Total	385.	100%
1. The respondent's satisfaction rate to ANC service.		
Excellent	39.0	11. %
Good	59.	15.3%
Average	108	28.1%
poor	84	21.1%
don't know	95	24.5%
Total	385.	100%
1. the action the respondents take if they develop,(oedema of legs, constant headache, palpitations, blurring of vision, and upper abdominal pain}		
do nothing	118.	30.6%
seek medical care	113.	29.4%
rest at home	154.	40. %
Total	385.	100%
1. Previous diagnosis of preeclampsia		
Yes	50.	13.%
No	335	87.%
Total	385	100.%

Discussion

The study focused on the knowledge and attitude towards preeclampsia among pregnant women attending Banadir and Medina hospitals in Mogadishu-Somalia. A cross-sectional survey method was used to recruit participants who are a reproductive age group (15-49) years with currently pregnant attended ANC at the study sites.

The study revealed that the ANC attended time among women was statistically significant. Association with their knowledge to preeclampsia, this means if the mother attended more times to ANC service she was likely to know the home delivery. the other study also indicated a similar result of this[1].

The level of education of participant was a statistically significant association with their knowledge of preeclampsia. The similar study conducted in Chicago, IL, USA the similar result, that is the education or previous learning was significantly associated with their knowledge of preeclampsia[10]

Other hands the Age, occupation, trimester status of the participant, parity status and marital status were statistical none significantly associated with the knowledge of the participant to the preeclampsia. Another study found that maternal age was more clearly and more strongly related to the risk of preeclampsia than paternal age but it is not associated the knowledge of preeclampsia to the mother also the study found that there may be association of another variable like occupation, trimester status of the participant, parity status and marital status and preeclampsia but they did not mention their relationship to the knowledge of the preeclampsia[11].

The study found high blood pressure as the most common symptoms of preeclampsia as the participant mentioned while a similar study revealed a similar result of this study[12].

The study also found that 54.3% of the participant were don't know the preeclampsia while The similar study conducted in Chicago, IL, USA, found the close this result, that is 43.3% of preeclampsia knowledge in the study community[10]. And that is low as this research also indicated.

The prevalence of women with preeclampsia in Banadir state, Somalia was 13%. While other similar study conducted in Dilla region of Ethiopia founded the contrary to this result and they found 2.3% prevalence of preeclampsia. Although the difference is not much, it may be due to cultural and time difference between two study time and population[13]. The satisfaction of the participants on the ANC service was average that means they were not very satisfied with their service. The study in Khartoum State, in Sudan, also found that the Prevalence of full satisfaction was (22%) among pregnant women who visited public Antenatal Care Clinics, and this result is similar the result in the study founded[14].

The women mostly stayed at home when they develop the symptoms of preeclampsia. another on the management of preeclampsia and women's decision after they develop any symptoms of the preeclampsia was found the contrary of this study, and they said that women were looking for health centre when they develop the symptoms of preeclampsia[15].

Conclusion

The study found that the ANC attended time and level of education of participant were statistical significantly associated with the knowledge of participant to the preeclampsia, while Age, occupation, trimester status of the participant, parity status and marital status were statistical none significantly associated with the knowledge of the participant to the preeclampsia, the study also found that 54.3% of the participant were don't know the preeclampsia.

The questions related the knowledge of preeclampsia to the women found out that the women know poor diet as a cause of the preeclampsia, also the most of them said we didn't get any information related to preeclampsia. The participants said we didn't know any relationship between the cholesterol and preeclampsia or the salt and preeclampsia.

The study found high blood pressure as the most common symptoms of preeclampsia. The satisfaction on the ANC service to the mother was average, and the women said we rest at home if we develop the oedema of legs, constant headache, palpitations, blurring of vision, and upper abdominal pain and final the prevalence of women with preeclampsia in Banadir state, Somalia was 13%.

Recommendation

The study recommended to the government of Somalia to generate both health education to the pregnant mother and increase the level of education of mother by offering free education to the women, in Somalia. Also, the government may implement policy relate to the ANC service in Somalia since the mother said we are not well satisfied with their service.

Finally, the study recommended studying another study on the same topic with the different state in Somalia and a different method of study design.

List Of Abbreviations And Acronyms

ANC: Antenatal care

BP: Blood pressure

HELLP: hemolysis-elevated liver enzymes-low platelet count Syndrome

IDPs: internally displaced people

LMIC: low and middle-income countries

LGA: local government area

MMR: Maternal mortality rate

MDG: Millennium development goals

PAULESI: Pan African University Life and Earth Science institute

PIH: Pregnancy-induced hypertension

SPSS: Statistical package of social science

UN: United Nations

UNICEF: United Nations Children's Fund

UNFPA: United Nations Population Fund

US: United States

WHO: World health organization

Declarations

Ethical consideration

Ethical approval was obtained from the Galkayo University (GU) Ethics Review Board. Ethical approval in Somalia to conduct research was obtained from the Federal Ministry of Health and permission to conduct study the hospitals will be required from the administrative office of hospitals. The purpose, general content and nature of the study was explained in a language suitable to each respondent to obtain verbal and written consent before they were included in the study then the researcher got the verbal response from the participants also the researcher got consent from their parent if the participants were less than 16 years. the researcher obtained both verbal and written consent from the participants , but the most of the participants were prefer the verbal consent because the somalia are oral societies so that they like only verbal not the written.

Consent for publication

The participant was got verbal consent for publication without mentioning their names.

Availability of data and materials

The original data from this research is available in SPSS and excel spreadsheet.

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I am declaring that I paid the amount of money used for this research, from proposal to manuscript preparation.

COMPETING INTEREST

The authors stated that they have no competing interest.

Authors' contributions

Only the first author has done the thesis with his graduation requirement.

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Ethical approval

The approval letter is available and it may be sent if needed.

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Figures

Figure 1

The participant's knowledge to preeclampsia.