Prevalence and Knowledge of Preeclampsia among Pregnant Women in the Buea Health District South-West Cameroon

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Abstract

Background: Preeclampsia is a global public health concern which affects pregnant women both in developed and developing countries and it is one of the leading causes of maternal and perinatal morbidity and mortality in the world. Lack of knowledge on signs/symptoms of preeclampsia has been shown to be one of the factors that contribute to the increase of further complications due to preeclampsia. Despite this, to the best of our knowledge no similar study has been done in the Buea Health District.

Objective: The aim of this study was to determine the prevalence and knowledge of preeclampsia among pregnant women attending antenatal in the Buea Health District.

Method: A hospital based cross-sectional study was conducted between February to June 2020 in the Buea Health District. A non-probability convenience sampling technique was used to select 16 health facilities from the five health areas selected and a consecutive sampling technique was used to recruit 422 pregnant women. An administered structured questionnaire was used for data collection. Descriptive analysis was done using was charts and graphs. A scoring system was used to measure the knowledge.

Results: The age range which was between 18 and 44, with the highest range group between 26 to 30 years 174 (41.23%) with a mean age of 28.35 years ± 4.64 and were married (50.2 %). The prevalence of preeclampsia was 0.47%. Among 422 pregnant women, 61.6%, 36.9% and 1.5% had an inadequate, moderate and adequate knowledge respectively. Among the pregnant women that have an adequate knowledge 36.9% had a moderate knowledge and 1.5% had an adequate knowledge on preeclampsia.

Conclusion: We found a prevalence of preeclampsia of 0.47% and an overall adequate knowledge on PE among pregnant women was low in the Buea Health District which shows that providing and improving information on preeclampsia is needed.

Keywords: Prevalence; Preeclampsia; Pregnant women; knowledge; Buea Health District

Introduction

Preeclampsia (PE) also called toxemia is a multisystem disorder that complicates 3% to 8% of pregnancies globally and is a major source of morbidity and mortality [1-4]. It is a condition related to pregnancy typically characterized by blood pressure ≥ 140/90 mmHg after 20 weeks gestation and associated with proteinuria (≥ 300 mg/24 h or ≥ 1+dipstick) [2,5,6]. Approximately 10% to 15% of maternal deaths are directly associated with pre-eclampsia and eclampsia particularly in developing countries [6-9]. Preeclampsia has remained a significant global public health threat in both developed and developing countries that contribute to maternal and perinatal morbidity and mortality.

Globally, 76,000 women and 500,000 babies die each year from this disorder [10]. Furthermore, WHO estimated the incidence of preeclampsia to be seven times higher in developing countries than developed countries [3,4]. Which include that, a pregnant woman in low-resource countries are at a higher risk of developing preeclampsia compared to those in high resource countries (developed countries). Reports indicate that patients' knowledge about a disease or a condition has significant benefits on compliance to treatment and helps to abate complications associated with the disease

[11,12]. One major difficulty in combating preeclampsia is the late reporting of women to healthcare centers following an experience of a sign or symptom [12,13]. This emphasizes the need for women to have adequate knowledge on the disease [14-16]. For this to be achieved there is the need to assess the baseline knowledge of pregnant women [15,17,18]. Previous studies in a few countries in Africa indicate that the knowledge on preeclampsia of women is generally low [5-8]. This study aimed to determine the prevalence of preeclampsia and assess the knowledge on preeclampsia among pregnant women attending antenatal care in Buea Health District.

Material and Methods

Study area

This study was carried out from December 2019 to June 2020 for a period of 6 months in the Buea Health District (BHD) located in the south West Region of Cameroon. It is one of the eighteen health districts of the South West Region. Buea is one of the fastest emerging towns and the capital of the South West Region of Cameroon with an estimated population of 177,297 inhabitants. Buea Health District is divided into seven health areas (Molyko, Bova, Muea, Buea Town, Bokwaongo, Buea road, Tole). The Buea health District has a total of 39 health facilities among those health facilities 17 public, 20 lucrative, 2 confessionals. Almost all facilities are providing antenatal care services like physical examination of pregnant women, health education, testing and counseling, Vaccination, etc.

Study design

This was a cross sectional hospital-based study.

Study population and sampling method

The target population for this study was all pregnant attending ANC in the selected health facilities. A non-probability convenience sampling method was used to select five health areas and 16 health facilities and a consecutive sampling technique was used to recruit the pregnant women. Pregnant women who attending ANC and gave their consent were included in the study and pregnant women who refused to consent and had critical conditions were non-included in the study.

Sample size calculation

The sample size was calculated using a single population sample size calculation formula:

$$n = \frac{z^2 \times p(1-p)}{e^2}$$

where: n = sample size, z = confidence interval to 95% (1.96), p = Prevalence (50%), e = margin error (0.05)

Hence: $n = \frac{(1.96)^2 \times 0.5(1-0.5)}{(0.05)^2} = 384$

A minimum Sample size n=384. Therefore, with a 10% non-response rate (38) the sample size was 422.

Data collection tools and procedures

A structured closed-ended questionnaire was used to collect data from all enrolled participants. The questionnaire was first designed by reviewing previous studies of similar objectives, after which supervisor's consultation was sought to ascertain its validity in public health perspective and required modifications were made. The questionnaire was made up of three sections which are:

Section 1: Demographics data (Age, Marital status, occupation, level of education, religion, parity, age of pregnancy).

Section 2: Physical examination and anthropometrics data (weight, Blood pressure, height, protein in urine).

Section 3: Knowledge about preeclampsia (signs/symptoms of preeclampsia, risks factors of preeclampsia, etc).

Data management and analysis

Data was collected between February-June 2020, coded, keyed into the computer using Microsoft Office Excel 2007 and cleaned and then transferred IBM SPSS (Statistical Package for Social Sciences) Statistics version 25 for analysis. The categorical variables were presented as percentages and continuous variables as mean and standard deviation. A scoring system was used where a correct answer attracts a score of one (1) and a wrong or no response (or I don't know) attracts a score of zero (0) was used to scale participants' knowledge of PE. The scores were expressed as percentages and Bloom's cut-off point was employed to classify knowledge on PE into three levels: Low (<70%), moderate (71% to 80%) and high (81% to 100%).

Ethical considerations

Ethical approval was obtained from Institutional Review Board Faculty of Health Sciences of the University of Buea, followed by administrative approval from the Regional Delegation of Public Health of the South West Region and directors of both institutions. Furthermore, personal and demographic data collected during the study were coded to ensure confidentiality and the data was only accessible to the principal investigator.

Results

Socio-demographics data

A total of four hundred and twenty-two (422) pregnant women participated in this study. Looking at age range which was between 18 and 44, with the highest range group between 26 to 30 years had the highest number of participants 174 (41.23%) while the age group >40 years had the least number of participants 2 (0.47%). The mean and median age of the study subjects were 28.35 years (SD ± 4.64), and 23 respectively, whereas the minimum and maximum ages were 18 and 41 years respectively. About 50.2% (212) were married while 39.3% (166) were single. Concerning level of education, those with secondary level of education were the highest percentage 26.8% (111) whereas those of the tertiary level of education had the least 8.1% (34). For occupation we had a highest percentage of informal workers with 31.8% (135) and least percentage of housewives 6.2% (2). Concerning religion, majority of the participants were Christian 342 (81.1%). More details as shown in Table 1.

Majority of the pregnant had not received a health talk on preeclampsia (88%) and just few did. See Figure 2.

Prevalence of preeclampsia

The prevalence of preeclampsia during the study period in our study population (pregnant women) was determined by taking the number of pregnant women with the criteria of interest (new onset Blood Pressure of (SBP ≥ 140 and/or DBP ≥ 90 at 20 weeks of gestation plus presence of protein in urine) divided by the total number of pregnant women time one hundred in the study population. The number of pregnant women that had these criteria was counted. Therefore, in respect to these criteria we found a prevalence of 0.47% corresponding to 2 positives cases among all the recruited pregnant women.

Table 1: Socio-demographics data of the study population (n=422).

| Variables	Frequency	Percentage (%)
Age groups		
18-25	127	30.1
26-30	174	41.2
31-35	95	22.5
36-40	24	5.7
41-44	2	0.5
Marital status		
Single	166	39.3
Married	196	46.5
Divorced	3	0.7
Widowed	57	13.5
Level of education		
No formal education	51	12.1
Primary education	34	8.3
Secondary education	226	53.6
Tertiary education	111	26.3
Occupation		
Informal	151	35.7
Government	64	15.1
Housewife	90	21.4
Student	117	27.8
Religion		
Muslim	80	18.9
Christian	342	81.1
Parity		
≤ 2	175	41.5
>2	247	58
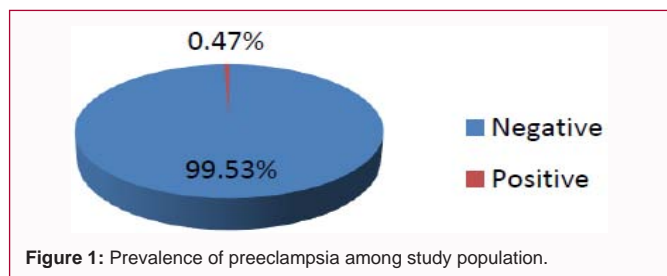
Figure 1: Prevalence of preeclampsia among study population.

Majority of the pregnant had not received a health talk on preeclampsia (88%) and just few did. See Figure 2.

The Figure 3 demonstrates the knowledge level on preeclampsia of pregnant women percentage. Results reveals that 36.4% had an average knowledge, 1.5% had an adequate knowledge on preeclampsia and 61.6 had an inadequate knowledge on preeclampsia.

Knowledge on preeclampsia

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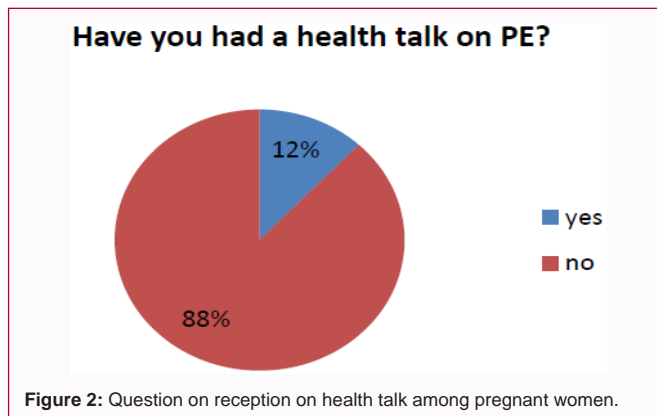

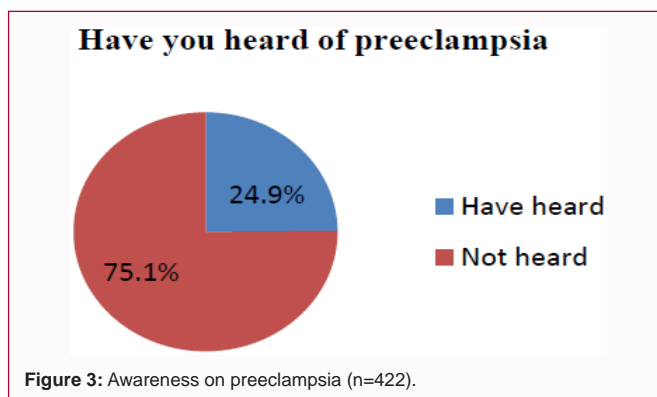**Figure 2:** Question on reception on health talk among pregnant women.

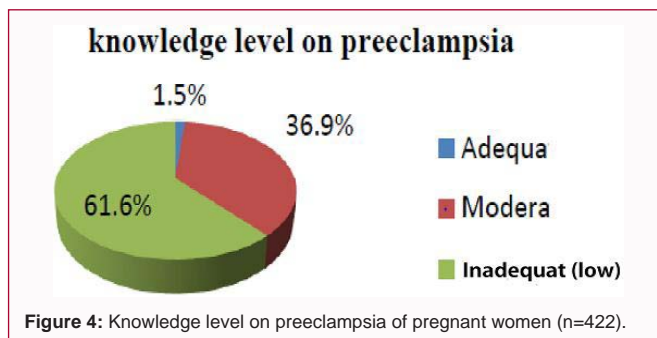**Figure 3:** Awareness on preeclampsia (n=422).

Figure 4: Knowledge level on preeclampsia of pregnant women (n=422).

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Discussion

Prevalence of preeclampsia

Preeclampsia remains a public health treat in the world, with different prevalence from country to country. In this study the prevalence of preeclampsia was 0.47% which is lower than the 3.3% reported by Halle-Ekane et al. [7] in Fako Division. It is equally lower than the 48.6% reported in a study conducted in the Mezam Division Nkem et al., a study in Nigeria reported a prevalence of 6.6% by Olusanya et al. [11] and a study done in Ethiopia found a prevalence of preeclampsia of 8.48% [12] which are all higher than that of the current study. The variations in this prevalence may be due to the difference in the health facilities types, geographical locations, study designs years, in sample size and period during which the study

was carried out. This can also be due to the fact that the numbers of pregnant women in an older age were lower since old age is a risk factor of preeclampsia.

Knowledge on preeclampsia among pregnant women

The majority of participants did not receive health talk on preeclampsia (88%). The majority also did not hear about preeclampsia.

In terms of knowledge on preeclampsia, our study reports an inadequate knowledge (low) of preeclampsia among our study population (61.6%) and adequate knowledge of 38.4%. Furthermore, among associated warning signs and symptoms including swelling in face and hands, vision changes with weight increase this finding was consistent with results illustrated in Tanzania [1]. Where their survey revealed that the majority of the pregnant had average knowledge towards preeclampsia. The lack of knowledge may be due to lack of planned preeclampsia educational or awareness program among pregnant women in the Buea Health District. Indeed, some studies revealed that the educational program is so important to improve antenatal mothers' knowledge towards preeclampsia [10]. In investigating factors that influence knowledge, versa.

Conclusion

The aim of this study was to determine the prevalence and knowledge of preeclampsia among pregnant women attending antenatal care in the Buea Health District. We had a prevalence of preeclampsia of 0.47% even thought is low it is bad because it is not acceptable or tolerable. We found that 61.6% of the pregnant women had an inadequate knowledge about preeclampsia where the need of improving and providing information on preeclampsia.

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