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## **Tables & Figures**

Tables & figures should be placed inside the text. Tables and figures should be presented as per their appearance in the text. It is suggested that the discussion about the tables and figures should appear in the text before the appearance of the respective tables and figures. No tables or figures should be given without discussion or reference inside the text.

Tables should be explanatory enough to be understandable without any text reference. Double spacing should be maintained throughout the table, including table headings and footnotes. Table headings should be placed above the table. Footnotes should be placed below the table with superscript lowercase letters.

Each figure should have a caption. The caption should be concise and typed separately, not on the figure area. Figures should be self-explanatory. Information presented in the figure should not be repeated in the table. All symbols and abbreviations used in the illustrations should be defined clearly. Figure legends should be given below the figures.

### **Guideline for Reporting P values:**

*P* is always italicized and capitalized.

- i) Correct expression: ( $P = .05$ ). Wrong Expression: ( $P < .05$ ) unless  $P < .001$ .
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- iii) When rounding, 3 digits is acceptable if rounding would change the significance of a value (eg,  $P = .049$  rounded to  $.05$ ).
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- v) Reporting actual *P* values avoids this problem of interpretation. *P* values should not be listed as not significant (NS) since, for meta-analysis, the actual values are important and not providing exact *P* values is a form of incomplete reporting.
- vi) Do not use 0 before the decimal point for statistical values *P*, alpha, and beta because they cannot equal 1.

### **Conclusions**

This should briefly state the major findings of the study.

### **Acknowledgements**

A brief acknowledgement section may be given after the conclusion section just before the references. The acknowledgements of people who aided in manuscript preparation, funding for research, etc. should be listed in this section. All sources of funding should be declared as an acknowledgement. Authors should declare the role of the funding agency, if any, in the study design, collection, analysis and interpretation of data, in the writing of the manuscript. If the study sponsors had no such involvement, the authors should so state.

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# ANXIETY AND DEPRESSION AMONG BREAST CANCER PATIENTS IN PORT HARCOURT, SOUTH SOUTH-NIGERIA

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## Abstract

**Introduction:** Depression and anxiety are common among people diagnosed with cancer. The patients with untreated depression or anxiety are less likely to take their cancer treatment medication and continue unhealthy habits which may result to poor quality of life. This study aims to assess the level of depression and anxiety among breast cancer patients over a period of 8 months in the two tertiary Hospitals in Port Harcourt.

**Methods:** This was a descriptive longitudinal study that was conducted over a period of 8 months among 254 female patients with breast cancer in the two tertiary hospitals in Port Harcourt, South-South Nigeria. They were assessed at the time of diagnosis, 4 months and 8 months after using Hospital Anxiety and Depression Scale (HADS). Data were analysed using Statistical Package for Social Sciences (SPSS) version 20. Frequency tables were used to demonstrate the outcome. Means and standard deviation for the continuous variables were calculated.

**Results:** The HADS anxiety and depression subscales scores of the respondents were relatively high. The level of anxiety at baseline, 4 month and 8 months were 68.7%, 68.9% and 66.4 % respectively and the level of depression were at baseline, 4 month and 8 months are said to be 60.2%, 63.0% and 60.3 % respectively. There was presence of anxiety and depression across the assessment times and the level of anxiety and depression increased substantially at 4 months and began to reduce at 8 months. Comparing mean scores on level of depression at different assessment times was statistically significant ( $p=0.001$ ).

**Conclusion:** Breast cancer women in Port Harcourt had relatively high level of psychological distress. It is important to pay close attention to the assessment of mental health while managing breast cancer patients.

**Keywords:** *Breast cancer, Depression, Anxiety.*

## Introduction

Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life (DeSantis et al., 2015). Breast cancer is the most common cancer type in women in sub-Saharan Africa, 129 000 women were newly diagnosed in 2020 (McCormack et al., 2020). The African Breast Cancer - Disparities in Outcomes Study (ABC-DO) was set up to examine determinants of breast cancer survival across five African countries at different stages of economic and epidemiological transitions. In 2020, the five participating countries had age-standardized breast cancer incidence rates per 100 000

women ranging from 20.0 years in Zambia and 22.2 years in Uganda to 49.0 years in Nigeria, 52.6 years in South Africa, and 57.6 in Namibia (McCormack et al., 2020). Breast cancer survival was alarmingly low in Black African women. At 3 years after diagnosis, survival in ABC-DO was 90% in White Namibian women, 58% in Black Namibian and South African women, 46% in Ugandan and Zambian women, and 36% in Nigerian women (McCormack et al., 2020).

The diagnosis of breast cancer may lead the affected to experience psychiatric co-morbidity. Depression and anxiety are common psychiatric morbidity among breast cancer patients and are often neglected (Ng et al., 2015). The patients with untreated depression or anxiety are less likely to take their cancer treatment medication and continue unhealthy habits which may result to poor quality of life (Shrestha et al., 2017). Breast cancer patients may experience depression and/or anxiety at any stage of their illness from pre-diagnosis to the terminal phase of the illness (Ng et al., 2015). Studies in the developed countries have reported the prevalence of depression to range from 1 % to 56 %, whereas the prevalence of depression from Asian studies is between 12.5 % and 31 % (Zainal et al., 2013). A clinical practice review reported that depression affects about 20%, and anxiety about 10% of cancer patients, compared to 5% and 7% in the general population (Pitman et al., 2018). Two different systematic reviews conducted which included several studies all over the world reported that the prevalence of depression among breast cancer patients were 32.2% and 41.9% (Hashemi et al., 2020; Pilevarzadeh et al., 2019) The studies showed a high level of anxiety among breast cancer patients, indicating the importance of psychological factors as well as physical in breast cancer patients.

This study was carried out to assess the level of anxiety and depression among breast cancer patients from the time of diagnosis till eight months of follow up visit at the two tertiary Hospital in Port Harcourt. The understanding of this would help in planning for the improvement of quality health care services and cancer management at the Tertiary centers in Port Harcourt in order to improve patients' well-being.

## **Materials and Methods:**

**Study design:** This was a descriptive longitudinal study that was conducted over a period of 8 months.

**Population of study:** It was carried out among 254 female patients with breast cancer aged 18-70 years.

**Sampling:** They were purposively selected in the two tertiary hospitals in Port Harcourt, South-South Nigeria. The study instrument was a semi-structured, interviewer administered questionnaire comprising the Hospital Anxiety and Depression Scale to assess the level of anxiety and depression on a 4-point Likert scale.

The HADS is a 14-item self-report instrument designed to screen for presence and severity of symptoms of depression and anxiety over the past week in medical patients. Seven items related to a depression sub-scale (HADS-D) are intermingled with seven items related to an anxiety sub-scale (HADS-A), each item scoring 0–3 (Rishi et al., 2017). The anxiety (HADS-A) and depression (HADS-D) subscale are scored from 0 to 3 giving a maximum score of 21 for anxiety and depression respectively, where 0 means 'Often' and 3 mean 'Very seldom' or

from ‘Not at all’ to ‘Most of the time’. A total score of 0-7 is reported as Normal, a score of 8-10 is Borderline abnormal (borderline case) and a total score of 11-21 is said to be Abnormal (case) (Rishi et al., 2017). The questionnaire was administered to patients by trained clinical research assistants when patients were first diagnosed with breast cancer (baseline). The questionnaires were administered again at 4 months and 8 months follow-up visits thereafter.

**Data analysis:** The data analysis was analyzed using SPSS version 20 (IBM SPSS statistics). Means and standard deviation for the continuous variables were calculated. Individual items were presented as frequencies and percentages with summary averages. In comparing differences in mean between evaluation times, Friedman ANOVA was used. All statistical tests were two-tailed and results considered statistically significant at p-value less than 0.05.

**Ethical clearance:** Ethical approval was gotten from the Ethics Committee of the two tertiary hospitals in Port Harcourt and written informed consent was obtained from the respondents.

**Results**

A total of 254 questionnaires were administered at the baseline and 4 months, all the questionnaires were consistent and completely filled, giving a response rate of 100%. However, only 247 questionnaires were reported at the 8 months resulting to a 97% response rate. **Table 1** shows that shows that the highest 175 (68.9%) level of anxiety among the breast cancer patients was at 4 months, then dropped at 8 months to 164 (66.4%).

**Table 2** shows distribution of anxiety at different evaluation times, severe anxiety was noticed at 4 months 128 (50.4%). **Table 3** compares the mean scores of levels of anxiety at different evaluation times which show that there was no statistically significant association at the 3 various time of evaluation. The highest level of anxiety was at 4 months with a mean score  $9.02 \pm 3.81$ . **Table 4** shows a statistically significant difference of level of anxiety between 4 months and 8 months  $p < 0.05$ . **Table 5** shows that the highest 160 (63.9%) level of depression among the breast cancer patients was at 4 months, then dropped at 8 months to 149 (60.3%). **Table 6** shows distribution of depression at different evaluation times, the severe depression was highest at 4 months 67 (26.4%).

**Table 7** compares the mean scores of levels of depression at different evaluation times which show a statistically significant difference between the level of depression over time. The highest level of depression was at 4 months with a mean score  $7.83 \pm 4.14$ . **Table 8** shows that there is a statistically significant difference between level of depression over time  $p < 0.05$

**Table 1: Level of anxiety among breast cancer patients in tertiary hospitals in Port Harcourt**

Assessment times	Presence of anxiety		Total
	Yes	No	
Baseline	171 (67.3%)	83 (32.7%)	254 (100)
4 months	175 (68.9%)	79 (31.1%)	254 (100)
8 months	164 (66.4%)	83 (33.0%)	247 (100)

**Table 1:** shows that the highest 175 (68.9%) level of anxiety among the breast cancer patients was at 4 months, then dropped at 8 months to 164 (66.4%).

**Table 2: Distribution of level of anxiety among breast cancer patients in tertiary hospitals in Port Harcourt**

Assessment times	No anxiety n (%)	Borderline anxiety n (%)	Severe anxiety n (%)	Total n (%)
Baseline	83 (32.7)	45 (17.7)	126 (49.6)	254 (100.0)
At 4 months	79 (31.1)	47 (18.5)	128 (50.4)	254 (100.0)
At 8 months	83 (33.6)	43 (17.4)	121 (49.0)	247 (100.0)

**Table 2:** shows distribution of anxiety at different evaluation times, severe anxiety was noticed at 4 months 128 (50.4%).

**Table 3: Comparison of mean scores on level of anxiety at different evaluation times among breast cancer patients in tertiary hospitals in Port Harcourt**

Assessment times	Mean score ± SD	Median (range)
Baseline	8.93±3.85	10 (1 – 15)
At 4 months	9.02±3.81	10 (11 – 15)
At 8 months	8.87±3.87	10 (1 - 15)

*Friedman ANOVA = 5.586; p-value = 0.061* SD – Standard deviation

**Table 3** compares the mean scores of levels of anxiety at different evaluation times which show that there was no statistically significant association at the 3 various time of evaluation. The highest level of anxiety was at 4 months with a mean score 9.02±3.81.

**Table 4: Multiple comparisons of means (Post Hoc) for anxiety scores across different evaluation times among breast cancer patients in tertiary hospitals in Port Harcourt**

Groups	Anxiety scores		
	Mean score ± SD	Mean Difference	p-value
<b>Baseline</b>	<b>8.93±3.85</b>		
4 Months	9.02±3.81	-0.091	0.073
8 Months	8.87±3.87	0.057	0.342
<b>4 Months</b>	<b>9.02±3.81</b>		
Preliminary	8.93±3.85	0.091	0.073
8 Months	8.87±3.87	0.150	0.009*
<b>8 Months</b>	<b>8.87±3.87</b>		
Preliminary	8.92±3.82	-0.057	0.342
4 Months	9.01±3.78	-0.150	0.009*

\*Statistically significant

**Table 4** shows a statistically significant difference of level of anxiety between 4 months and 8 months p<0.05

**Table 5: Prevalence of depression among breast cancer patients in tertiary hospitals in Port Harcourt**

Assessment times	Presence of depression		Total
	Yes	No	
Baseline	153 (60.2%)	101 (39.8%)	254 (100)
4 months	160 (63.0%)	94 (37.0%)	254 (100)
8 months	149 (60.3%)	98 (39.7%)	247 (100)

**Table 5:** shows that the highest 160 (63.9%) level of depression among the breast cancer patients was at 4 months, then dropped at 8 months to 149 (60.3%).

**Table 6: Distribution of level of depression among breast cancer patients in tertiary hospitals in Port Harcourt**

Assessment times	No depression	Borderline depression	Severe depression	Total
	n (%)	n (%)	n (%)	n (%)
Baseline	101 (39.8)	94 (37.0)	59 (23.2)	254 (100.0)
At 4 months	94 (37.0)	93 (36.6)	67 (26.4)	254 (100.0)
At 8 months	98 (39.7)	88 (35.6)	61 (24.7)	247 (100.0)

Table 6: shows distribution of depression at different evaluation times, the severe depression was highest at 4 months 67 (26.4%).

**Table 7: Comparison of mean scores on level of depression at different evaluation times among breast cancer patients in tertiary hospitals in Port Harcourt**

Assessment times	Mean score ± SD	Median (range)
Baseline	7.44±3.91	8.5 (1 – 21)
At 4 months	7.83±4.19	9 (1 – 19)
At 8 months	7.64±4.20	9 (1 - 19)

*Friedman ANOVA = 13.915; p-value = 0.001\**

SD – Standard deviation

Table 7 compares the mean scores of levels of depression at different evaluation times which show a statistically significant difference between the level of depression over time. The highest level of depression was at 4 months with a mean score 7.83±4.14.

**Table 8: Multiple comparisons of means (Post Hoc) for depression scores across different evaluation times among breast cancer patients in tertiary hospitals in Port Harcourt**

Groups	Depression scores		
	Mean score ± SD	Mean Difference	p-value
<b>Baseline</b>	<b>7.44±3.91</b>		
4 Months	7.83±4.19	-0.390	0.001*
8 Months	7.64±4.20	-0.231	0.028*
<b>4 Months</b>	<b>7.83±4.19</b>		
Baseline	7.44±3.91	0.390	0.001*
8 Months	7.64±4.20	0.170	0.016*
<b>8 Months</b>	<b>7.64±4.20</b>		
Baseline	7.41±3.91	0.231	0.028*
4 Months	7.81±4.20	-0.170	0.016*

Statistically significant

Table 8 shows that there is a statistically significant difference between level of depression over time  $p < 0.05$

### Discussion

This study showed that breast cancer patients had relatively high levels of depression and anxiety in Port Harcourt Nigeria. The level of anxiety at baseline, 4 month and 8 months were found to be 68.7%, 68.9% and 66.4 % respectively. Furthermore, the level of depression at baseline, 4 month and 8 months are said to be 60.2%, 63.0% and 60.3 % respectively. There was statistically significant difference between the level of depression over different time of the study. Breast cancer patients are known to suffer from high level of psychological distress at the beginning of the illness (Ng et al., 2015). This is related to the fear and uncertainties toward the illness and its treatment. The reported prevalence of distress in breast cancer patients varies depending on the study design, settings, region and assessment tools. On

average, the prevalence of depression and anxiety among cancer patients ranged from 20 to 30 % (Ng et al., 2015) contrary to this present study.

The highest severity of the level of anxiety and depression reported in this current study at the 4 months can be related to denial and anger associated with the news of cancer diagnosis and preparation for the treatment plan. Also, the fear of the unknown and possible outcome with side effects of the treatment was attributed to the anxiety level. Subsequently, level of anxiety slightly reduced by 8 months which is related to acceptance of the disease condition, plan of specialist intervention and the ability to cope with illness experience. In addition, the high level of depression at the 4 months signifies that most of the breast cancer patient found it hard to agree with their condition because of its life limiting nature. Also, increased level of depression at 4 months could be associated with the treatment received in terms of the mastectomy and loss of their hair due to side effect of the chemotherapy. This could also affect their body image and self-esteem. This implies that the management of breast cancer should be a multidisciplinary approach where a Family physician, clinical psychologist, Palliative care physician with the surgeon and clinical oncologist are involved in providing holistic care to the patients and the family to reduce the mental health burden and in order to improve quality of life. This present study was in contrast with a Malaysia study that was carried out among breast cancer women for a period of one year. The Malaysian breast cancer patients had relatively low levels of depression and anxiety at the time of diagnosis. There was no change in the level of depression at 6 months and 1 year (Ng et al., 2015) . However, in the study by Stafford et al., the course of anxiety and depression of the breast cancer and gynaecological cancer patients were measured using HADS for Anxiety Subscale and Centre for Epidemiological Studies Depression Scale (CES-D) at diagnosis and again every 8 weeks for 56 weeks (Stafford et al., 2015). It was found that anxiety and depression symptoms were highest at diagnosis with significant improvements observed by 8 and 24 weeks, respectively and maintained thereafter. The researchers highlighted that the depressive symptoms did not decrease significantly at the beginning of the cancer due to the inclusion of physical symptoms in the assessment tool like CES-D, which they frequently encountered during the early treatment stage of cancer like surgery and chemotherapy (Stafford et al., 2015). However, in the current study, we studied the depressive symptoms using the HADS depression subscale, which does not contain somatic symptoms in the assessment.

Meanwhile, this current study is in agreement with the finding by Ferrandina et al. Their study examined psychological distress among early-stage cervical cancer patients and found no changes in the depressive symptoms after 12 months. In contrast, the anxiety symptoms in the study by Ferrandina et al. decreased over time starting from 3 months after surgery (Ferrandina et al., 2012). The illness and treatment related sequelae were recognized as the possible risk factor for psychological distress. For example, lymphedema, which is a common consequence of breast cancer, has a negative impact on patients' body image, ability to carry on with daily activities and social interaction.

In relation to this present study, a study done in Lasuth Nigeria among 33 breast cancer patients who participated in the study, 39.4% experienced minimal depression, 36.4% experienced mild depression, 9.1% experienced moderate depression and 15.2% experienced severe depression. (Akin-Odanye et al., 2011). This high level of depression was speculated to a higher level of existential concerns related to fear of death or fear of being abandoned when the financial and psychological cost of care becomes unbearable to friends and relatives. This was supported by Fagbenle, et al, where they suggested that in Nigerian cancer



patients' psychological distress is often related with high cost of treatment with the state of economic impoverishment and having to travel long distances in order to receive quality treatment. An individual's average income would determine how much would be available to pay for treatment and other associated cost (Akin-Odanye et al., 2011). Similarly, the prevalence of anxiety and depression among breast cancer patients in an Ethiopia study was 60.7 and 58.6% respectively which was relatable with this present study. Their report was linked to lack of financial support and poor patient-providers interaction (Belay et al., 2022). However, the outcome from this present study is lower than the one done in Ghana among breast cancer patients where the level of anxiety was 92.5% and a high prevalence of depression (84.2%) (39.2% being mild and 45% being moderate-to-severe) and anxiety (92.5%) (34.2% being mild and 58.3% being moderate-to-severe), with 44% having both and with the prevalence being significantly higher among those living without partners (Calys-Tagoe et al., 2017). This high prevalence in this study was reported to due to situational stress relating to the diagnosis and treatment of the cancer and late presentation of breast cancer cases in Ghana. It was discovered that over 50% of patients present with locally advanced or metastatic disease (Calys-Tagoe et al., 2017). The discrepancy in these two studies despite being in the same West African region was attributed to the fact that most of the participants in the Ghanaian study were newly diagnosed patients with breast cancer, explaining the much higher prevalence of anxiety. On the other hand, our finding was higher than a study done in Malaysia among 205 patients with breast cancer where they found the prevalence of anxiety to be 31.7% and depression 22.0% (Hassan et al., 2015) and India where the prevalence of depression was 21.5% and anxiety said to be 37.0% (Srivastava et al., 2017). The large sample size they used in comparison with the studies carried out in Malaysia and India may be the potential reason for the higher prevalence in our study. And the Malaysia study was also slightly similar to that of a study conducted in the Federation of Bosnia and Herzegovina where they used the Hamilton Depression Assessment Scale (HDRS), which revealed that 40.3% of respondents had depression (Marijanović et al., 2017). The disagreement between this report and this present study is due to the difference in the depression measurement scale, this present study and the Ethiopia study used HADS, while the Bosnian study used HDRS.

It is worthy of note that, in this present study, the level of depression was still high at 8 months despite the completion of treatment for most patients just like the study done among breast cancer women in China, 13% fulfilled the criteria for clinical depression at 18 months postdiagnosis as assessed by the Center for Epidemiologic Studies-Depression scale (Chen et al., 2009). The presence of depression was related to many reasons, most women after being diagnosed with breast cancer find it difficult to come to terms with the diagnosis followed by dealing with the uncertainty of the illness and imagining the worst. Their results also showed that depression was common among the study population; however, it was often overlooked or undiagnosed. Furthermore, symptoms of breast cancer treatment such as tiredness and pain are also caused for feeling depressed (Purkayastha et al., 2017). These symptoms become a hurdle in their day-to-day activities, making family, work, and financial adjustments in anticipation of treatment and/or periods of being unwell could be also contribute to the distress in these women. Another major concern is their appearance, breast cancer and its treatment can change the way a woman thinks and feels about her whole body, her femininity, her self-esteem, and the way she behaves (Purkayastha et al., 2017). Mastectomy or loss of hair due to chemotherapy and early menopause could be a serious threat to a woman's image of herself. Fertility and libido may also be affected by treatment of breast cancer with chemotherapy or hormonal therapy. One of the major concerns for these women

was the response and support from their partners, children, and family member which has a positive influence on their psychological health (Purkayastha et al., 2017).

This present study is also similar to some other studies that demonstrated that patients are usually at greater risk of developing psychological distress leading to some level of anxiety and depression (Schetter & Tanner, 2012; Vin-Raviv et al., 2015). Among the study population, anxiety and depression were the most dominant symptoms under predicted and undertreated from observations. Where the breast cancer treatment and its related cost were the reasons for financial straining for patients and their caregivers in Ghana (Kyei, 2018).

### **Conclusion**

In conclusion, Port Harcourt breast cancer patients have relatively high levels of depression and anxiety for the first 8 months after the diagnosis. Cancer is becoming a major cause of morbidities and mortalities across the world. With the advancement in cancer treatment, there is increased attention in improving the survival rate among the cancer patients. The findings in the current study reflect the importance of prevention or reduction of psychological suffering among the breast cancer patients such as depression and anxiety and this could be achieved by reviewing the management protocols to improve wellbeing of the cancer patients.

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### **Declaration of Conflicting Interests**

There is no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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## **MATERNITY WASTE MANAGEMENT AWARENESS AND ASSOCIATED FACTORS AMONG WORKERS IN SELECTED HEALTHCARE CENTRES IN ANAMBRA STATE.**

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### **Abstract**

This study was on awareness of waste management practices and associated factors among workers in PHCs in selected LGAs of Anambra State. The design of the study was descriptive. Questionnaire was used to collect data from 171 respondents. Results showed that 64.9% expressed high level of awareness about using collection/segregation of waste while 35.1% expressed low level of awareness. 57.3% expressed high level of awareness about the different means of transporting waste while 42.7% expressed low level of awareness. There was significant association between level of awareness of using collection/segregation of waste and their level of education. There is no significant association between their level of awareness of different means of transporting of HCW and their profession. The researcher recommends sustenance of workers' awareness by training and retraining, employing more workers and provision of infrastructure.

**Keywords;** *Awareness, Waste, Practice, Management, Public Health Workers*

### **Introduction**

The saying that cleanliness is next to Godliness is a broad statement that has been culturally and traditionally understood to include both personal and environmental cleanliness. Waste generation is inextricably linked to human existence, and the challenge with these wastes is determining how to dispose of them without causing harm to the environment through air pollution, water contamination, or reduction in the ozone layer.

Maternity care is a complicated service in which a healthcare worker cares for multiple people at the same time. This results in the development of bulk wastes that need to be properly managed and disposed of in order to protect the mother, her unborn child, and the general public from illness. According to the World Health Organization (WHO, 2015), maternity care refers to the treatment of a woman while she is pregnant, during childbirth, and for the first forty-two days after delivery. WHO (2015) continued that motherhood is a fulfilling natural experience that is very important to the woman and society, but many women face challenges that may result in the loss of their lives or the lives of their babies. Bosah (2013) thus pointed out that it is critical to invest in women's health by giving in to everything that will keep them healthy and removing everything that will make them unhealthy.

Waste generation from various sources has become so intertwined with human existence that waste generation has become synonymous with human existence. Hospital or medical waste is generated in the diagnosis, treatment, or vaccination of humans or animals, in conducting research on them, or in the manufacturing and examination of biological entities. (WHO, 2015; USEPA,2013).Medical or healthcare waste, is divided into three categories: general (harmless), infectious, and extremely infectious (harmful). Some wastes, by implication, are dangerous others are not. Non-hazardous waste, also known as non-harmful waste, generated in healthcare facilities is similar to waste generated in domestic activities in that it does not expose anyone to risks, injuries, or infection under the conditions in which it is generated if it is segregated at the point of generation. Hazardous waste, often known as dangerous waste, is waste that can cause physical, chemical, or biological harm to people during its handling, processing, or treatment (Park, 2019; Johannessen, 2020).

Waste generated in health care institutions should be managed in a sanitary manner to avoid contamination and illness transmission. According to Awodele (2016), 75 percent of waste is stored in normal trash bins. This is in line with what Fadipe (2011) and Ngwulakwu (2009) reported in their work. This suggests that garbage container color coding is not done properly and one-sixth of PHC facilities continue to dispose of their garbage in the community refuse dumps. According to Fadipe (2011), this is harmful to the community's health because scavenging is still a viable means of subsistence. This could potentially be a route for hospital infections to spread into the population. While some Primary Healthcare Centres may have sharps safety bins, the correct usage and disposal of those sharps are still being debated. High awareness of waste generators and handlers creates a leveraging point for the expected attitude as to good waste management. High awareness is therefore very important to good maternity waste management in the primary health care centers.

Waste management in general, and maternity waste management in particular, is a national and international concern. The ability or inability of waste generators and handlers, the government, and waste disposal companies to keep up with the task of good waste management and the environment, rather than the size of the waste, is what constitutes a major problem. A dirty environment, according to Daniel (2013), has negative effects on people's health and quality of life. It can also take away a person's sense of beauty, lowering their living standards. Waste management has become more difficult, according to Chukwurah (2018), due to the widespread use of non-rotting materials such as polythene.

The placenta, perineal pad, and swabs used in the labour rooms are also included. According to Chukwurah (2018) Hospitals, primary health care facilities, laboratories, mortuaries, autopsy centers, blood banks, and nursing homes are among the sources of these wastes. The mismanagement of these wastes by maternity workers may place people at danger of hospital-acquired illnesses, occupational health hazards, and food poisoning. Furthermore, Daniel (2013) said that when blood, bodily fluids, and infected sharps are improperly disposed of, illnesses such as hepatitis B, hepatitis C, HIV/AIDS, and other viral infections can spread. Health-care practitioners, clients and their relatives, support-service personnel, cleaners, scavengers, unborn children, and, in fact, everyone is at risk of contracting these illnesses.

According to Giusti (2019), many countries disregard the distinction between hazardous and non-hazardous medical wastes. Again, insufficient worker awareness of waste management and disposal raises severe concerns about the management of pregnancy waste in health care.

Healthcare/maternity waste management is generally harmful as a result of the hospital administrators' lack of concern and proper training (Geoffrey, 2015).

Waste management strategies in maternity health care are a major public health and environmental concern. According to a survey conducted by the World Health Organization (WHO, 2015) on health care waste management in 22 developing countries, the proportion of health care facilities (HCF) using improper waste disposal methods ranged from 18 to 64 percent. The necessity of a national regulatory framework, a competent internal management system, a waste generator and handler training and retraining program, estimation of health care waste generation, and good disposal systems, thus, become imperative. In order to ensure human safety, Pruss (2019) pointed out that WHO has supplied health-care facilities with comprehensive instructions on how to handle and dispose of medical waste in a safe, efficient, and environmentally friendly manner.

Maternity healthcare waste management is a key topic that poses a significant difficulty, particularly in developing countries' healthcare facilities. Technical, economic, and social obstacles, as well as a lack of development in the human resource handling these wastes, stymie the management of maternal healthcare waste. As a result of the foregoing, residents are exposed to health risks and environmental pollution as a result of contagious nature and obnoxious waste stench. Regardless of the differences in management approaches used in health facilities, the problem of poor management affects all units and levels of management (Giusti, 2019). Johannessen (2020) stated that hospitals and primary health care centers respectively generate an average of 92kg and 42kg of maternal healthcare waste each day. However, the better management of these generated wastes receives little attention thus allowing heaps of wastes to accumulate and become rendezvous for rodents. These rodents enter the wards and even homes to be a source of infection to humans.

Despite the fact that the volume of waste generated in basic health centers is less than that in hospitals, mismanagement of maternity wastes in Primary Health Centers may represent a substantial risk factor for disease transmission. However, paucity of studies on maternity waste management in Primary Health Centers in Anambra State has not helped the researcher to exactly identify how generated wastes are managed. A number of significant factors that can contribute to the mismanagement of maternity healthcare waste include lack of proper understanding about waste collection and segregation, risk awareness, a poor impression of waste disposal, and a lack of financial resources. The consequences of poor waste management, as well as the causes of economic disaster can be profound.

Workshops on hospital waste management had been conducted for health personnel. The local governments have established central disposal sites in selected places. Waste management is supervised at Primary Health Centers by coordinators and heads of departments, Primary healthcare departments of local government areas, and environmental health officers on a regular basis. Despite these, maternity workers still have difficulties managing wastes in primary health centers. The justification for this study is based on an observation made during one of the researcher's visits to Primary Health Care Centers in the Local Government Areas, where it was observed that many of the Primary Health Centers do not have functional placenta pits and no access pathways to the pits that did exist as weeds have taken over the pathways. The local incinerators were likewise found to be either non-existent or decrepit. Placenta, a human part, and pads soiled with blood or faeces, if disposed off indiscriminately, will give off intolerable obnoxious odours within the environment. One, therefore, wonders how maternity workers in health centers handle maternity wastes

generated by them and whether they are aware of the health hazards they are exposed to. The researcher, therefore, had the desire to investigate maternity waste management practices by maternity workers in Primary Health Centers in selected local government areas of Anambra State.

Based on this, the study aimed at assessing the awareness of waste management practices among maternity workers in Primary Health Centers in selected Local Government Areas of Anambra state.

### **Materials and Methods**

The design for the study was descriptive survey. The population for the Study consisted of all workers in the Primary Health Centers in selected Local Government Areas in Anambra state and as at the time of the study, there was hundred (300) Primary Health workers in the selected Local Government Areas. Validity of the instrument was done by presentation to experts in research and to the researcher's supervisors. Based on their assessments, criticisms, remarks and suggestions, the researcher made necessary corrections, and after that, final production of the questionnaire was made. In terms of reliability, test-retest was used with correlation coefficient of 0.92.

### **Data Collection**

The instrument for data collection was a pretested questionnaire developed by the researcher. The questionnaire which was self-administered by the researcher comprised of six (6) sections. Section A contained bio data of the respondents, while sections B – F contained six test items each that elicited information on the level of awareness of maternity workers about the management of maternity wastes. Section B contained test items on the level of awareness of using collection/segregation of maternity waste. Section C contained test items on the level of awareness of different means of transporting waste to the disposal point. Section D contained test items on the level of awareness of how maternity waste is stored before final disposal. Section E contained test items on the level of awareness of methods of final disposal of maternity waste. While Section F contained test items on identifying problems encountered while managing wastes in the Primary Health Centers. The instrument used the 4-points Likert type Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Also, distribution and retrieval of questionnaire was possible because the researcher visited on the centers different sessions such sessions were antenatal clinic (ANC), and Child health welfare clinic. Moreover, in some of those sessions, some women delivered babies too. In order to get the number of respondents needed for the study, several visits were made on different days.

### **Ethical Statement**

In view of the above, application for ethical approval was written to the Research Ethics Committee ACE-PUTOR University of Port Harcourt approval was given. Consequent upon that, a letter of introduction of the researcher was written by Dr. Faith Diorgu ACE-PUTOR MSc. Midwifery Coordinator, University of Port Harcourt to the HODs of Health of Idemili North LGA, Onitsha South LGA and Ihiala LGA. The HODs also wrote letter of introduction of the researcher to the officers in-charge of the Primary Health Centers used for the research. The respondents were protected from physical and psychological harm by making their participation voluntary and maintaining confidentiality of the information they gave. Moreover, the questionnaire did not provide any space for names of the respondents to be documented.

### Study Area

The study was carried out in Anambra State. Anambra state is one of the south-eastern states of Nigeria with attendant maternal issues which prompted the researcher to carry out the study in the area.

### Calculation of sample size

A total of thirty-five (35) Primary Health Centers with total population of 300 were used with a sample size of 171 derived from using the Taro Yamane's formula of  $n = \frac{N}{1 + N(e)^2}$  where  $n$  = sample size,  $N$  = population and  $e$  = level of significant or limit of tolerable error. Using the formula

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{300}{1 + 300(0.05)^2}$$

$$n = \frac{300}{1 + 300(0.0025)}$$

$$n = \frac{300}{1 + 0.75}$$

$$n = \frac{300}{1.75}$$

$$n = 171 \text{ (approx)}$$

### Eligibility Criteria

Only health care workers in maternity wards were used as respondents in the study. This means that health care workers outside the these wards were not used as part of the study. In all, the following set of individuals were included in the study;

Those included in the study were;

Midwives – who are professionals licensed to practice midwifery

Senior Community Health Extension Workers

Junior Community Health Extension Workers

Cleaners (janitors)

Laboratory Attendants.

### Sampling Method

The researcher used multi stage sampling method. Multi stage sampling looks at taking sample based on hierarchy or structural natural cluster in the population. Anambra state was clustered in her natural structure according to senatorial zones. There were three senatorial zones in Anambra state, which are – Anambra North, Anambra Central and Anambra South. In each zone, one Local Government Area was selected using simple random sampling technique. In the Primary Healthcare Centres, the respondents were selected using convenient non-probability sampling technique. A total of three Local Government Areas were used

### Data Analysis

Data analyses were done using the descriptive statistics of simple frequency, mean and percentages as well as inferential statistics of t-test, and spearman ranking correlation.

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**Results**

Table 1 Demographic data of respondents in selected Local Government area of Anambra State.

		<b>F</b>	<b>%</b>
<b>Gender</b>	Female	140	81.9
	Male	31	18.1
<b>Total</b>		<b>171</b>	<b>100</b>
<b>Age</b>	20 - 29 years	59	34.5
	30 – 39 years	43	25.1
	40 – 49 years	41	24
	50 years and above	28	16.4
<b>Total</b>		<b>171</b>	<b>100</b>
<b>Marital status</b>	Single	66	38.6
	Married	98	57.3
	Divorced/separated	0	0
	Widow/widower	7	4.1
<b>Total</b>		<b>171</b>	<b>100</b>
<b>Profession</b>	Nurse/midwives	70	41
	Midwives	30	17.5
	SCHEW	47	27.5
	JCHEW Cleaner	24	14.0
<b>Total</b>		<b>171</b>	<b>100</b>
<b>Qualification</b>	WAEC	42	24.6
	OND	58	33.9
	HND/Degree	71	41.5
<b>Total</b>		<b>171</b>	<b>100</b>

Table 1 shows that majority of the respondents 140 (81.9%) are females. While 98 (57.3%) are married 66 (38.6%) are single. For their educational qualification 71 (41.5%) are Higher National Diploma (HND) and Degree holders respectively. In terms of professional qualification, the nurse/midwives represent the majority with 70 (41%) followed by the senior community health extension workers (SCHEW) who are 47 (27.5%) while single qualified midwives are 30 (17.5%) and the Junior CHEW are 24 (14%). Furthermore, most of the respondents 59 (34.5%) are within the age range of 20-39 years.

**Table 2** shows item by item analysis of level of awareness of maternity workers about collection/segregation of waste created in primary healthcare centres in selected Local Government Areas of Anambra State.

<b>ITEMS</b>	<b>SCALE</b>				<b>Mean</b>	<b>St.D</b>
	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>		
<b>I am aware that;</b>						
Methods of maternity waste management include segregation, collection, storage, treatment and final disposal	164	-	7	-	3.9	.40
Maternity waste must be separated at point of generation	115	41	8	7	3.5	.77
Maternity waste collection must be done on-site	64	47	34	26	2.9	1.08
Maternity waste separation must be done according to type of waste	60	27	5	79	2.4	1.37

Maternity waste separation must be done at the point of final disposal	-	7	8	156	1.1	.46
Infectious maternity wastes includes body parts, body fluids, soiled dressings	136	14	7	14	3.6	.91
<b>Grand Mean</b>					<b>3.4</b>	<b>.71</b>

Table 2 shows the awareness of using collection/segregation of maternity waste among workers in Primary Health Centers in selected Local Government Areas in Anambra State. From the table 164 (95.9%) strongly agreed that they are aware that methods of maternity waste management include segregation, collection, storage, treatment and final disposal but 7 (4.1%) disagreed. 115 (67.3%) of the respondents strongly agreed to the statement that they are aware that maternity waste must be separated at the point of generation, 41 (24.0%) agreed to the statement, 8 (4.7%) disagreed while 7 (4.1%) respondents strongly disagreed giving a mean and standard deviation of  $3.5 \pm 0.77$ . While 64 (37.4%) respondents strongly agreed they are aware that collection of maternity waste is done on-site, 47 (27.5%) of the respondents agreed, 34 (19.9%) disagreed and 26 (16.2%) respondents strongly disagreed with the statement to give a mean and SD of  $2.9 \pm 1.08$ . The statement that separation of maternity waste is done according to type of waste attracted 60 (35.1%) of respondents who strongly agreed, 79 (46.2%) agreed, 27 (15.8%) disagreed while 5 (2.9%) respondents strongly disagreed with the statement indicating a mean and standard deviation of  $2.4 \pm 1.37$ . Majority 156 (91.2%) of the respondents strongly disagreed with the statement that they are aware that separation of maternity waste is done at the point of final disposal, 8 (4.7%) respondents disagreed, 7 (4.1%) respondents agreed with the statement with a mean and standard deviation of  $1.1 \pm 0.46$ . On whether they are aware that body parts, body fluids, soiled dressings are examples of infectious maternity wastes, 136 (79.5%) respondents strongly agreed that they are aware, 14 (8.2%) respondents agreed, 7 (4.1%) disagreed and 14 (8.2%) strongly disagreed with the statement with mean and standard deviation of  $3.6 \pm 0.91$ . Of all the items only two “I am aware that separation of maternity waste is done according to type of waste and I am aware that separation of maternity waste is done at the point of final disposal did not meet the acceptability criteria with  $2.4 \pm 1.37$  and  $1.2 \pm 0.46$  respectively.

**Table 3:** level of awareness of collection and segregation of maternity waste in selected local government area of Anambra State.

awareness of using collection/segregation of maternity waste	Awareness score range	Frequency	Percentage
Low	0-18	60	35.1
High	19-24	111	64.9
<b>Overall</b>	<b>0-24</b>	<b>171</b>	<b>100</b>

Overall mean= $20.2 \pm 2.05$ ; median 19.7

Table 3 measured the level of awareness of maternity waste generation and disposal among workers in PHC in selected LGAs in Anambra State. From the table, 35.1% of the respondents showed low level of awareness concerning the collection and segregation of maternity waste while 64.9% showed high level of awareness. **Research Question Two:** Are the PHC workers in the selected Local Government Areas of Anambra State aware of the different means of transporting waste to the disposal point?

**Table 4:** Awareness of different means of transporting maternity waste to the disposal point in selected local government area of Anambra State.

Items	SCALE				Mean	St.D
	SA	A	D	SD		
<b>I am aware that;</b>						
Maternity waste is packed in a plastic bag and transported by hand to the disposal point	140	29	-	2	3.8	.48
Maternity waste is well packed and moved to the final disposal point in a wheelbarrow	56	74	41	-	3.1	.75
Maternity waste is thrown into municipal dumpsite	29	48	47	47	2.3	1.06
Placenta is thrown into the nearby bush	34	67	5	65	2.4	.82
Placenta is thrown into placenta pit	71	82	15	3	3.2	.71
Recycling of maternity waste generated in PHCs is done onsite	43	45	7	76	2.4	.78

Table 4 shows the awareness of different means of transporting maternity waste to the disposal point among workers in primary health centers in selected Local Government Areas in Anambra State. From the table, 140 (81.8%) strongly agreed to the statement that they are aware that maternity waste is transported packed in a plastic bag by hand to the disposal point, 29 (17.0%) agreed to the statement, 2 (1.2%) while respondents strongly disagreed giving a mean and standard deviation of  $3.8 \pm 0.48$ . 56 (32.7%) of the respondents strongly agreed to the statement that they are aware that maternity waste must be moved to final disposal point well packed into a wheelbarrow, 74 (43.3%) agreed to the statement, while 41 (24.0%) disagreed giving a mean and standard deviation of  $3.1 \pm .75$ . While 29 (7.0%) of the respondents strongly agreed that they are aware that maternity waste is thrown into municipal dumpsite, 48 (28.0%) agreed, 47 (27.5%) disagreed and 47 (27.5%) strongly disagreed to the statement to give a mean and standard deviation of  $2.3 \pm 1.06$ . The statement that placenta is thrown into the nearby bush attracted 34 (19.9%) of the respondents who strongly agreed, 67 (39.2%) agreed, 5 (2.9%) disagreed, while 65 (38.0%) respondents strongly disagreed with the statement indicating a mean and standard deviation of  $2.4 \pm .82$ . On whether they are aware that placenta is thrown into placenta pits, 71 (4.5%) respondents strongly agreed, 82 (48.0%) agreed, 15 (8.8%) respondents disagreed to the statement, while 3 (1.7%) strongly disagreed giving a mean and standard deviation of  $3.2 \pm .71$ . Majority 76 (44.4%) of the respondents strongly disagreed with the statement that they are aware that recycling of maternity waste generated in PHCs is done onsite, 7 (4.1%) respondents disagreed, 45 (26.3%) agreed, while 43 (25.1%) strongly agreed to the statement giving a mean and standard deviation of  $2.4 \pm 0.78$ .

**Table 5:** Level of awareness of different means of transporting maternity waste in selected local government area of Anambra State

Awareness of different means of transporting maternity waste to the disposal point	Awareness score range	Frequency	Percentage
Low	0-18	73	42.7
High	19-24	98	57.3
<b>Overall</b>	<b>0-24</b>	<b>171</b>	<b>100</b>

Overall mean=20.1±2.25; median 19.4

Table 5 measured the level of awareness of different means of transporting maternity waste to the disposal point among workers in Primary Health Center in the selected Local Government Areas in Anambra State. From the table, 42.7% of the respondents showed low level of awareness of different means of transporting maternity waste to the disposal point while 57.3% showed high level of awareness.

**Table 6:** Chi-square analysis of awareness and level of education

\*Association is significant at p<0.05

Awareness of using collection/segregation of maternity waste	Level of education			χ <sup>2</sup> -value	p-value
	WAEC (n=42)	OND (n=58)	HND/BSC (n=71)		
High	15 (35.7%)	38 (65.5%)	58(81.7%)		
Low	27 (64.3%)	20 (34.5%)	13(18.3%)	26.320	0.041*
<b>Total</b>	<b>42(100%)</b>	<b>58(100%)</b>	<b>71(100%)</b>		

From the values, there is a significant association between the level of awareness of using collection/segregation of maternity waste among workers in primary healthcare centres and their level of education of workers in primary healthcare centres in the selected Local Government Areas. This implies that the educational level of the workers has exposed them to the dangers of improper waste management hence those who handle wastes are able to collect and segregate maternity wastes before disposal.

**Table 7** Chi-square analysis of the level of awareness and profession

Level of awareness of different means of transporting maternity waste to the disposal point	Profession				χ <sup>2</sup> -value	p-value
	Nurses (n=70)	Midwives(n=30)	SCHEW (n=47)	JCHEW (n=24)		
High	38 (54.3%)	18 (60%)	27(57.4%)	15(62.5%)		
Low	32 (45.7%)	12 (40%)	20(42.6%)	9(37.5%)	52.741	0.061
<b>Total</b>	<b>70(100%)</b>	<b>30(100%)</b>	<b>47(100%)</b>	<b>24(100%)</b>		

the table shows that there is no significant association between the level of awareness of different means of transporting maternity waste to the disposal point among workers in primary healthcare centres of the study area and the profession of workers in primary healthcare centres in the selected LGAs. This implies that the profession of the workers has no effect whatsoever on their level of awareness of different means of transporting maternity waste to the disposal point.

## Discussions

The findings of research question revealed that maternity workers had high awareness about collection and segregation of waste created in Primary Health Centers in the selected Local Government Areas of Anambra State. This finding is in line with the study on the awareness and practices on solid waste management among students in University Utara in Malaysia, carried out by Ying and Hashin (2020) where the researchers came up with a result that indicated high awareness and good practices in segregation and recycling. This is equally in line with one of the findings of Abah and Ohimam (2011). The researchers' study on current practices and commitment to sustainable health care waste management at a tertiary health center, including estimating the amount of health care waste generation, analyzing waste segregation strategies and determining health care personnel grasp of health care waste management. The research found among other things that the degree of waste management practices in health care was zero i.e., unsustainable. However, the findings of this study disagreed with the study carried out by Ramesh, Babar and Ratana (2015) on the habits and challenges of infectious waste management among health care professionals in tertiary health care facilities in Pakistan with the focus on health care waste management, the segregation, collection, storage and disposal. In that study they found out that hospital waste segregation, collection, storage and disposal had major faults.

Awodele et al (2011) also did a study in Nigeria that represented high awareness of health workers on segregation and collection of waste where they noted that all the hospitals used in their study except one segregate and collect onsite. Awodele et' al study is in line with the present study as it has indicated similarity in the waste management. However, while that of the previous finding stressed on onsite collection, the presents stressed on immediate.

The finding of the study revealed that respondents' level of awareness of different means of transporting maternity waste to final disposal point was high. This is because high percentage of maternity workers was aware that wheelbarrow was used to pack waste to final disposal point and that placenta is thrown into placenta pit. Lower percentage indicated being aware of throwing waste into Municipal dumpsite as well as being aware of throwing placenta into nearby bush. All these revealed high level awareness. This agrees with one of the findings of Nmadu (2014) where his study that investigated hospital waste management strategies in Nigeria's Primary Health Centers in Zaria revealed that the most popular means of carrying waste was via wheelbarrow. Contrary to the above Letho et al (2021) in their study on awareness and practice of medical waste management among health care providers in national referral hospital revealed that half of the hospital wastes were not correctly transported based on correct segregation process.

## Conclusion

Majority of the maternity workers in selected local government area of Anambra State have high level of awareness about using collection/segregation of maternity waste. Also, majority of the maternity workers have high level of awareness of the different means of transporting maternity waste to the disposal point

## Contribution of Author

All authors confirm total contribution to the paper all-rounded beginning the study conception and design, data collection, analysis and interpretation of results.

### Conflict of interest

Prior to the commencement of the investigation, the researchers had no special cultural, personal, religious or even academic interest, interest. Hence, the outcome of the findings is wholly accepted

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## Nursing Informatics Competences of Nurse and Midwife Educators in Bayelsa State, Nigeria

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### Abstract

**Background:** Nursing informatics competence refers to possessing the necessary knowledge, skills, and capacity to execute specialized information management activities that could aid nursing/clinical decision-making. This study examined the nursing informatics competencies of nurse and midwife educators in Bayelsa, Nigeria. **Method:** A cross-sectional descriptive design was applied on a convenience sample of 169 consenting nurse-educators (teachers) in the nursing and midwifery programmes in Bayelsa. The standardized Farzandipour's Nursing Informatics Competency Questionnaire (FNICQ) was used for data collection. All collected data were summarized using descriptive statistics and hypotheses were tested with Chi Square test of independence at a 5% level of significance. Data was analyzed with the aid of SPSS 25 software. **Results:** Majority of the respondents had moderately good computer knowledge (87.0%) and informatics skills (81.1%). Attending informatics trainings was significantly associated with poor computer knowledge ( $p = 0.030$ ), but not with years of teaching experience, highest educational qualification, and school type ( $p > 0.05$ ). There was no significant association between informatics skills ( $p > 0.05$ ) and the socio-demographic variables. **Conclusion:** The teachers have moderately good informatics competencies that were not determined by years of teaching experience and educational qualification. Frequent implementation of highly targeted and standardized informatics trainings and drills in universities are highly recommended.

**Keywords:** *Clinical decision-making, Information management, Nursing informatics.*

### INTRODUCTION

Competence refers to being highly qualified and possessing the necessary knowledge, skills, and capacity to execute specialized activities, as well as values, attitudes, critical thinking, and decision-making abilities. As a result, nursing informatics competencies entail having the knowledge, skills, and capacities to execute certain informatics activities (Nes et al., 2021). To keep younger generation nurses graduating and licensed, which is one of nursing education's primary aims, much emphasis has been made on evaluating and empowering nursing informatics competencies among nurses and nurse educators (Gadelha et al., 2019). If nursing informatics competencies were to be lacking in nursing programs, this will result in inefficiencies of nursing information technology.

Nursing informatics competencies are made up of three components: basic computer skills, informatics knowledge, and informatics skills. Basic computer skills are the knowledge and competence to use a computer and related technology (Harerimana & Mtshali, 2019). Furthermore, informatics skills may be defined as the capacity to put instructions, tools, and specific informatics procedures into action. Nursing informatics competencies are growing more prevalent in nursing education and healthcare settings worldwide (Raman, 2015).

Given that nurses account for the highest number of health professionals globally, they are projected to be the largest category of informatics users (Kim & HanJong, 2019). As a result, several countries have banded together to ensure that nurses entering education and practice settings have the nursing informatics competencies needed to use information technology in meaningful and effective ways (Kaihlanen et al., 2021). In nursing education programs, the curriculum expects nurse-educators to frequently focus on the acquisition, teaching, learning, and using of informatics skills. The curriculum is often guided with the Novice to Expert and Cognitive Load theories.

The increasing use of sophisticated patient information management systems and communication technologies in the healthcare industry necessitates nurses possessing core abilities that were previously not seen as essential for strictly clinical practice. The organizational changes required to effectively integrate informatics competencies into nursing practice necessitate tight collaboration between nursing leaders, educators, and informatics specialists (Tolonen & Värri, 2017).

Owing to the more recent introduction of nursing informatics into nursing education in the less technologically advanced nonetheless, it is likely that some nurse educators in the developing countries have not received schooling that includes entry-to-practice informatics competencies, nor have they been provided with institutional opportunities to develop such competencies (Rajalahti et al., 2014). As a result, today's nurse educators may lack the informatics knowledge and advanced competencies required to provide effective strategic and tactical mentoring, adoption, and use of nursing informatics (Forman et al., 2020).

There are calls to investigate informatics abilities important to nurse educators. Till the time of this study, no known peer-reviewed and published empirical study dwelt on this area of inquiry in Nigeria including the setting of the study. Consequently, a study of this nature was justified to address this knowledge gap. The problem statement was articulated using the PEO framework (PEO, acronym for Population, Exposure, and Outcome) as follows: Among nurse and midwife educators (P), in Bayelsa State in Nigeria, what are their informatics competencies?

## **METHODS**

**Design and sampling:** A descriptive analytic approach was applied to this study. The research was carried out at two tertiary institutions in Bayelsa State, Nigeria, that offer nursing and midwifery programmes. The two public tertiary institutions that offer nursing and midwifery programmes include the Niger Delta University and the Bayelsa State College of Nursing and Midwifery Tombia. Bayelsa state lies in Nigeria's south-south, deep within the Niger Delta area. The study population is 253 nursing and midwifery academics from the designated institutions.

A sample size of 169 was determined for the study using the single population proportion formula that is mathematically calculated in line with Charan and Biswas formula. A minimum sample size of 384 was computed. Given that the population is less than 10,000, a finite population sample size correction formula was applied as advocated by Bolarinwa (2020). A corrected sample size of 152 was computed as the minimum sample size required for this study. A 10% non-response rate was added using the non-response formula  $n^* = n \div (1-p)$ ; A final sample size of 169 was used for the study.



The convenience sampling technique was applied in the selection of the consenting respondents across the institutions under study.

**Instrument and data collection:** The standardized Farzandipour's Nursing Informatics Competency Questionnaire (FNICQ, developed by Farzandipour et al. (2021)) was adopted for this study. It is a structured 39 item self-report questionnaire that comprise four sections (A-C). Section A comprise 6 items which will extract the socio-demographic characteristics of the respondents such as age, sex/gender, highest academic qualification, years of teaching experience, Institution of practice, and attendance to any informatics training/workshop. The socio-demographic variables have categorical responses. Section B comprises 17 items which focuses on basic computer skills. Section C comprise 16 items that assess informatics skill. The sections measuring basic computer skill and informatics skill all have 5 point likert type responses ranging from strongly disagree (score 1), disagree (score 2), undecided (score 3), agree (score 4), to strongly agree (score 5). Content validity was tested using nursing five research experts and the agreement between the experts was 0.93. A test-retest reliability assessment of the questionnaire was done on 20 nurse educators in Rivers State University and an index of 0.89 was obtained.

Data collection was done after obtaining Ethical Approval from the institutional Review Board. Data collection took place between November 2021 and February 2022. The respondents were approached. The purpose of this study was explained to the potential respondents. Signed informed consent was requested and obtained from verbally consenting participants. The structured questionnaire was submitted to the academics to fill in their responses. All administered questionnaire was retrieved within 1 hour of administration. A unique number was coded on each filled and returned questionnaire.

**Data analysis:** The categorical data from participant's demographic data were summarized using descriptive statistical methods such as frequency and percentage. The basic computer skill and informatics skill scores were summarized using mean, standard deviation, frequency and percentage. Test of association between informatics competency and socio-demographic variables was done using the Chi square statistic at a 5% level of significance and 95% confidence interval. All statistical analysis were done with the aid of Statistical Products and Service Solutions software version 25 (IBM Chicago IL, USA; SPSS version 25).

**Ethical consideration:** This study adhered strictly to the provisions of the Helsinki Declaration of 1975, as revised in 2013. The study was approved by the University of Port Harcourt Institutional Review Board. Signed informed consent was obtained from participants. Consenting respondents were given all essential information regarding this study and their rights to discontinue with the study at any point without reprisal was explained. All collected data was protected and used for the approved academic purpose.

## RESULTS

Table 1 showed that the majority of the respondents were aged 50-59 years (27.2%). They were mostly females (91.7%) with Bachelor's degree (24.3%), and 20-29 years academic job experience (29.0%). They practiced predominantly in colleges of nursing/midwifery (61.5%) and had attended no on the job informatics training (91.1%).

Table 2 showed that majority (87.0%) of the respondents had moderate computer knowledge (mean(SD) 3.01(0.34) on a 5-point scale).

Table 3 showed that majority (81.1%) of the respondents had moderate informatics skill (Mean(SD) 2.96(0.36)).

Table 4 showed that attending informatics trainings was significantly associated with poor computer knowledge ( $p = 0.030$ ), but not with years of teaching experience, highest educational qualification, and school type ( $p > 0.05$ ).

## DISCUSSION

This study found that that majority (87.0%, mean(SD) 3.01(0.34)) of the respondents had moderate computer knowlegde. This finding was not suprising based on the premise that with the proliferation of computer devices in many facets of human operations, nurses may have actively and/or pasively acquired basic knowledge related to computer use. This finding did not corroborate with the findings of a South Korean study on factors associated with nurses' informatics competency by Hwang and Park (2011) who reported that approximately 58.9% of nurses had below average basic computer knowledge. The dissimilarity in findings could be linked to the nature of the respondents utilized for the study. Where the present study examined nurses practicing in the educational industry (nursing and midwifery educational programmes), the South Korean study focused on educationally prepared nurses who practiced in teaching hospitals as preceptors. This finding supported a study conducted in the USA by Choi and Martinis (2013) that reported that nurses in their MSN and PhD programmes had moderately good basic computer skills (mean 3.39,  $Mean < 2.5 = low$ ,  $2.5-3.49 = moderate$ ,  $3.5-5 = high$ ). The similarity in findings could be linked to the similarity in sample size examined for the study. The American study examined 154 nurses while this study examine 169 nurses. Additionally, nurses in their MSN and PhD programmes are likely to be educators/teachers in basic and undergraduate nursing programmes. This finding also did not support another study in the USA on nursing informatics competencies by Choi and Zucker (2013) that reported that about 96% of Post MSN nurses had above average Basic Computer Knowledge between 2007 and 2010. This finding was not suprising as one would expect that more frequent computer use would come alongside higher educational advancement.

This study found that majority (81.1%) of the respondents had moderate informatics skill (Mean(SD) 2.96(0.36)). This finding was in line with an American study by Choi and Martinis (2013) that reported that nurses in their MSN and PhD programmes had moderately good informatics skills (mean 3.36,  $Mean < 2.5 = low$ ,  $2.5-3.49 = moderate$ ,  $3.5-5 = high$ ). The similarity in findings could be linked to the instrument of data collection. This study and the American study utilized a 5 point-likert type questionnaire. In line with the mentioned, similar results were expected. More so, this finding supported an Iranian study by Khezri and Abdekhoda (2019) that reported that nurses from Tabriz University of Medical Sciences' hospitals have moderately good Informatics skills (score 62.9%). The similarity in findings could be linked to the method of data collection utilized in the study. Both this study and the Iranian study utilized self-report questionnaire. The use of self-report method of data collection tends to minimize the Hawthorne effect that might arise if the respondents were orally interviewed by an interviewer.

This study found that attending informatics trainings was significantly associated with poor computer knowledge ( $p = 0.030$ ), but not years of teaching experience, highest educational qualification, and school type ( $p > 0.05$ ). This finding may suggest that the nurse educators who make an attempt to attend informatics trainings are the ones who already have poor basic

computer knowledge. This finding was buttressed by a South Korean study conducted by Chung and Staggers (2014) that reported that engagement in self-directed informatics education were substantially linked with better informatics competences ( $p = 0.001$ ), but not general clinical experience ( $p > 0.05$ ). The similarity in findings could be linked to the idea that use of a 5% level of significance in the test of hypotheses. Both this study and the South Korean study utilized a 5% significance level for the estimation of the probability of association. The use of a 5% level of significance ensures a 95% Confidence of detecting an association if such association really exists. In contrast, this study did not support an Iranian study conducted by Khezri and Abdekhoda (2019) that reported that informatics proficiency was positively associated to years of job experience ( $p = 0.01$ ). The dissimilarity in findings could be linked to the nature of statistical tools utilized in the study. The Iranian study a more robust correlation statistics (a parametric tool) whereas this study utilized the less robust non-parametric chi square statistics.

### **Limitation**

This study used a self-report questionnaire for this study. Owing to the sensitivity of this topic (information competences) and its relevance in this COVID 19 era, the study may have suffered some degree of Hawthorne effect. It is a phenomenon where respondents in a study modify their actual or intended responses and behavior simply because they are being studied, examined or observed. The Hawthorne effect can impose possible uncertainties and confounders that perhaps impose a fair chance of committing type 1 error. The possible findings of this study must be interpreted with caution if they were to be used for generalization outside this study population.

### **CONCLUSION**

In conclusions Educators in nursing and midwifery programmes in Bayelsa Nigeria have moderate computer knowledge and informatics skills. The educators who attended informatics trainings still had poor computer knowledge thus requiring more training. Administrators of nursing and midwifery programmes in Bayelsa should frequently organize highly targeted and relevant informatics trainings for educators with the aim of improving their informatics competencies.

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# Prevalence and Pattern of Harmful Traditional Practices among Adolescents in a selected community in Obio/Akpor Local Government Area Rivers State, Nigeria

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## Abstract

**Introduction:** Harmful traditional practices among adolescents remain an important public health problem. As many as 200 million female adolescents and women have been reported to have had genital cuttings of various degrees and also living with the complications that these procedures have on their health. Despite existing laws against Harmful Traditional Practices (HTP) it is still prevalent with its negative effect on the victims. The aim of this study is to determine the prevalence and pattern of traditional practices in Rumuekini community, Rivers State.

**Methodology:** The study was carried out in January 2021, in Rumuekini community. It was a cross-sectional analytical study in which a semi structured interviewer administered questionnaires was used to get relevant information from adolescents.

**Results:** A total of 130 adolescents aged 10-19 years and their parents were interviewed, seventy- eight (60%) of them were females giving a male to female ratio of 1:1. The mean age was  $14.03 \pm 2.31$  years. The prevalence of HTP was 10% among the adolescents. Common HTPs mentioned were Son preference, frenulectomy and scarification.

Males were less likely to experience HTPs compared to the females. (OR 0.01,95% CI 0.1-0.85). Parents who had experienced HTP themselves were more likely to subject their children to similar experience as 37.5% of them had subjected their children to HTP compared to the 1.0% of the parents who did not experience HTP. This finding was statistically significant. Fishers exacts test.  $<0.001$ , OR 58, 95% CI 7.2 – 473.

**Conclusions:** Harmful traditional practices still exist with a high prevalence, parental experience of HTPs, female sex were significantly associated with the risk among adolescents. Parents who experienced such HTP needs counseling to prevent them from perpetrating same on their children.

**Keywords:** Harmful Traditional practices, Prevalence, Adolescence

## Introduction

The World Health Organizations in 1978 had defined traditional practice “as the sum total of all the knowledge and practices, whether explicable or not, used in diagnosis, prevention and elimination of physical, mental or social imbalance and relying exclusively on practical experiences and observations handed down from generation to generation whether verbally or in writing”(WHO, 1978).

All groups including cultural, social, religious groups worldwide have specific cultures, traditions or beliefs that govern them. Traditional practices are hinged on certain beliefs as well as experiences which is indigenous to a specific set of people and passed on from one generation to another. Nigeria has experienced several cultural practices related to health or illness, however as science advanced many of such traditional practices were abandoned. Some of these practices are beneficial while some are harmful (NDHS, 2018; Newman, 2011).

Harmful traditional practices among adolescents remain an important public health problem. As many as 200 million female adolescents and women have been reported to have had genital cuttings of various degrees and also living with the complications that these procedures have on their health. These traditional practices were predominantly done within the adolescent period. Genital cutting is a worldwide problem, prevalent in several developing countries in Asia, Africa and the Middle East (WHO, 2008; Boyden, 2012). The prevalence is as high as 75% in some African countries, with a national prevalence of 20% in Nigeria and 7% in Rivers State, although higher prevalence had been reported in the state. Female genital cutting is usually carried out during childhood or during the adolescent period, by women traditionally trained for it, or by some health personnel (WHO, 2008; NDHS, 2018 & Jeremiah, 2014).

Each year, adolescents are scarred by harmful practices perpetrated by adults. Most of these adolescents cannot give consent neither can they refuse to give consent because they depend on their parents and they are not of legal age (UNICEF, 2012). Some of these practices affect the adolescent health an aspect which have been largely ignored and may worsen if these beliefs are allowed to thrive among this group of people that constitute about 33% of Nigerian population with poor health indices compared to their counterparts in developed countries (UNICEF, 2012; NDHS, 2018). Despite existing laws against these practices there still exist HTPs that affects negatively the health of adolescents and the convention of the right of the child prohibits such practices. Hence, this work is to determine the Prevalence and pattern of traditional practices in Rumuekini community, Rivers State.

### **Materials and methods**

**Study design:** A cross-sectional analytical, community-based survey in which trained interviewers collected data using semi-structured questionnaires.

**Setting:** The study was carried out in Rumuekini community, a semi-urban community in Obio/Akpor Local Government area of Rivers state, South- South region of Nigeria. Rumuekini is bounded by several communities - Aluu in the North, Alakahia and Rumosi in the West and Rumahuolu in the East. Rumuekini is made up of 8 villages, the community is in essence heterogeneous with different ethnicity and faith respectively because it is a home to several persons who are not indigenes of the community. The indigenous people used to be mainly farmers and petty traders. But with civilization they are found in all works of lives. There is a primary health care centre and three private clinics in the community. The community was purposively selected because of its cosmopolitan nature with a diversity of ethnic groups and religion.

**Study participants:** Participants were adolescents aged 10-19 years whose parents gave consent and who accented to the study (gave consent). Inclusion criteria involved living in the study area for at least 6 months at time of study or are from the study community. While exclusion criteria include adolescents who were ill at the time of the survey.

### **Sample Size and Sampling Technique**

The Cochran formula was used to calculate the minimum sample size (Cochran,1963) The prevalence of 7% of traditional practice reported by a previous study in Nigeria (Jeremiah , 2014), with 95% Confidence Interval (CI), an error margin allowed at 5 % and allowance for non-response of 10 %. A total of 130 adolescents were recruited for the study. A proportionate number of participants were enrolled from each of the 8 villages that make up Rumuekini community.

The socioeconomic classification of the participants was done based on Olusanya et al (1985) classification into upper, middle and lower social class.

### **Data collection**

A semi-structured questionnaire developed by the researcher by evaluation of related works on traditional practices and adolescent health was used.

The questionnaire has 2 sections (A and B) for the adolescent and their parent/guardian respectively. The questions include socio-demographic variables, types of traditional practices practiced, and perceptions of such practices. Questionnaires was interviewer-administered to both the adolescents and their parent/guardian. Exposure to HTPs was ascertained by a session of the questionnaire that asked – have you ever been subjected to or practiced any form of HTP?

**Data analysis:** Data was entered into excel, was analyzed using SPSS version 25. Descriptive statistics was done and involved proportions, mean and standard deviation while the inferential statistics used includes chi square, regression analysis. In all a p value of < 0.05 was accepted as significant.

**Ethical clearance:** Ethical clearance was obtained from the Ethic and Research Committee of the University of Port Harcourt, while permission was obtained from the individual village heads.

### **Results**

A total of 130 adolescents aged 10-19 years and their parents were interviewed with a response rate of 100%. Seventy- eight (60%) of them were females while 52(40%) of them were males, the ages were grouped into three, with 38(29.2%) of them within the age group of 10-13 years, 42(32.3%) with in the age group of 14-16 years and 50(38.5%) of them within the age group of 17-19 years. The mean age of the adolescents was  $14.03 \pm 2.31$  years. Of the 130 participant, 100 (76.9%) of them were Christians, 22(16.9%) were Muslim while 8(6.2%) did not belong to any religion. Socioeconomic classes were upper 27(20.8%), middle 56 (43.1%) Lower 47 (36.1%). Sixty four (49.2%) of adolescents were students, 32(24.6%) were involved in business. Sixty- eight (52.3%) of the study participants had secondary level of education as seen in table I.

Among the 130 adolescents 113(86.9%) reported that they had heard about traditional practices, while 103(79.2%) had heard about the harmful traditional practices, thirteen (10%) of the adolescents had experienced one form of harmful traditional practice or another, 32(24.6%) of the adolescent parents/caregivers reported that they themselves were subjected to harmful traditional practices while 98 (75.4%) of them did not experience any form of HTPs. (Table 2).

Concerning if the practices should be abolished 119(91.5%) of the participants agrees that it should be abolished 8(3.2%) disagreed while 3(2.3%) did not give any response. (Table II)

Fig I: Shows the various harmful traditional practices mentioned by the participants, multiple response were noted. Scarification, son preference, frenulectomy and male passage of rites were the common traditional practices mentioned by the participants.

The prevalence of HTP was 10.0% among the adolescents, more female (15.4%) compared to the males (1.9%) had experienced HTP, the sex difference was statistically significant  $p=0.01$ . Males were less likely to experience HTPs compared to the females. (OR 0.01,95 % CI 0.1-0.85).

Concerning the relationship between parental experience of HTP and the likelihood of their children experiencing same. Of the 32 parents who had experienced HTP themselves, 12(37.5%) of them had subjected their children to HTP compared to the 1(1.0%) of the 98 parents who did not experience HTP. This finding was statistically significant. Fishers exacts test.  $<0.001$ .

Study participants whose parents had also experience HTP were more likely to be exposed to similar experience (OR 58, 95% CI 7.2 – 473).

Socio economic classes and religion were not significantly related to higher prevalence HTP among the study participants. (Table III)



Table 1: socio-demographic characteristics of the study participants

Variables	Frequency	Percentages (%)
<b>Sex</b>		
Male	52	40
Females	78	60
<b>Ages in years</b>		
10-13	38	29.2
14-16	42	32.3
17-19	50	38.5
<b>Socioeconomic class</b>		
Upper	27	20.8
Middle	56	43.1
Lower	47	36.1
<b>Religion</b>		
Christianity	100	76.9
Muslim	22	16.9
Not known	8	6.2
<b>Occupation</b>		
Students	64	49.2
Business	32	24.6
Farming	12	9.2
Others	22	16.9
<b>Level of education</b>		
Tertiary	45	34.6
Secondary	68	52.3
Primary	14	10.8
None	3	2.3
Total	130	100.0

Table II: Knowledge and experience of traditional practice among respondents

Variables	Frequency	Percentages (%)
<b>Ever heard of traditional practices</b>		
Yes	113	86.9
No	17	13.1
<b>Ever heard of HTP</b>		
Yes	103	79.2
No	27	20.8
<b>Subjected to or used HTP</b>		
Yes	13	10
No	117	90
<b>Parental experience of HTP</b>		
Yes	32	24.6
No	98	75.4
<b>Should the practice be abolished</b>		
Yes	119	91.5
No	8	6.2
No response	3	2.3
<b>Total</b>	<b>130</b>	<b>100.0</b>

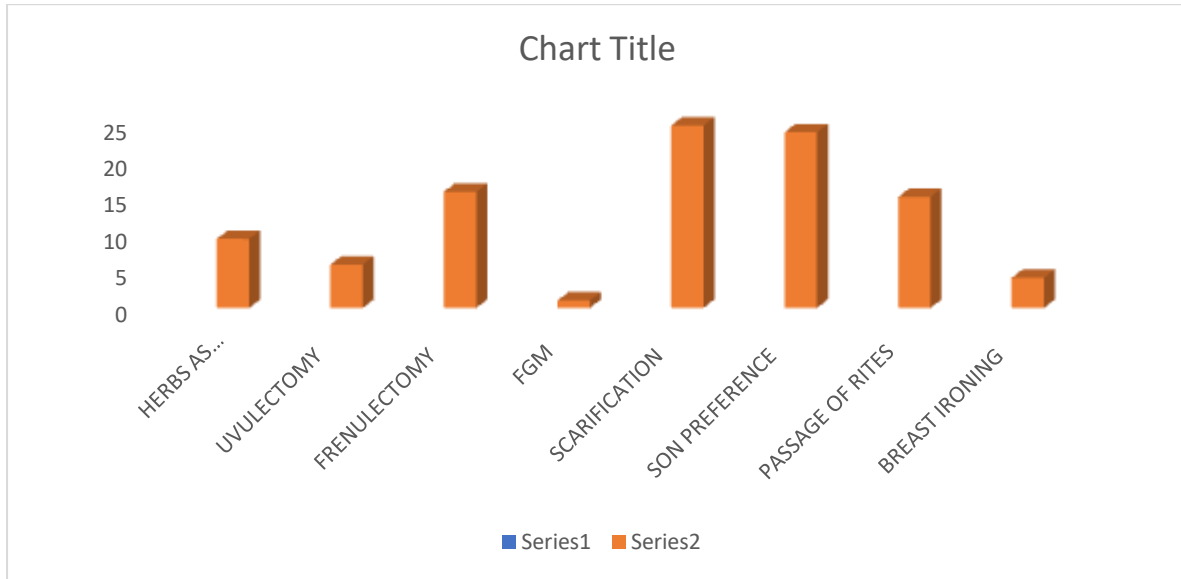


Fig 1. The common harmful traditional practices mentioned

Table III: Relationship between HTPs and some variables

Parameters	Experience of HTP	No experience of HTP	Total	Fishers Exact	OR 95% CI
<b>Sex</b>					
Males	1(1.9%)	51(98.1%)	52(100.0%)	<b>0.01*</b>	0.11
Females	12(15.4%)	66(84.6%)	78(100.0%)		0.01 - 0.85
<b>SEC</b>					
Upper	3(11.1%)	24 (88.9%)	27 (100.0%)	0.73	1.16
Middle/Lower	10(9.7%)	93(90.3%)	103(100.0%)		0.30 - 4.56
<b>Religion</b>					
Christian	11(11.0%)	89(89.0%)	100(100.0%)	0.73	1.73
Others	2(6.7%)	28(93.3%)	30(100.0%)		0.36-8.28
<b>Parental experience of HTP</b>					
Yes	12(37.5%)	20(62.5%)	32(100.0%)	<b>&lt; 0.001*</b>	58.2
No	1(1.0%)	97 (99.0%)	98(100.0%)		7.2- 473.4
<b>Total</b>	13(10.0%)	117(90.0%)	130(100.0)		

OR ODD RATIO, 95% CI CONFIDENCE INTERVAL

**Discussion**

Traditional practices have been in existence in every culture, society and even religion. They encompass activities that can be detrimental to a person or group of persons involved. HTPs can result in both physical and psychological injuries, which the individual can experience immediately or can remain with him or her throughout his or her life time. (UNICEF, 2012; Gebrekirsos, 2014). This study was aimed to determine the prevalence and pattern of traditional practices especially the HTPs among adolescents in Rumuekini Community.

This study found that majority of the adolescent were aware of what traditional practices were and most of them had used one form of it or another. This finding is similar to the report by Gebrekirstos et al, 2014.

Although the use of traditional practice was common in this study, however, the prevalence of HTPs in this present study was 10.0% this was much lower than what was reported by

Gedamu et al (2018). This difference can be attributed to the study population and the setting. While this present study involved only adolescents with a small sample size, Gedamu et al (2018) made use of pregnant women aged 15-49 years with a much larger sample size in a rural setting. Also, in this present study the overall prevalence of HTPs was obtained instead of the various HTPs and this was gotten by asking the question have you ever experienced any HTP while in the study by Gedamu et al (2018), the prevalence of individual types of HTPs that occurred in pregnancy, delivery, and post-partum period were identified and analysed with their varied prevalence rates reported.

This present study recorded that males were less likely to experience HTPs compared to the females. (OR 0.01, 95% CI= 0.1-0.85), this is similar to most reports as most HTPs from time immemorial were targeted at girls and women and males were often protected against them (UNICEF, 2012).

The forms of HTP observed in this study is not different from those from previous studies (NDHS, 2018; Gebrekirstos, et al, 2014; Lei et al, 2011 & Jeremiah et al, 2014). This shows that despite government effort at ensuring eradication of such practices it is still very much with us. And a lot of effort is needed to stop such practices.

A multiple logistic regression revealed a rather strong relationship between a parent's experience on HTPs and the likelihood of same parent subjecting his or her children to similar experience, this study found that the odds of subjecting a child to HTP was 54 time higher among parents who had experienced same HTP compared to those who hadn't any experience. This finding was similar to a study carried out in Ethiopia and in Nigeria (NDHS, 2018; Gebrekirstos, et al, 2014 & Jeremiah, 2014).

Though there is no statistically significant difference in terms of religious affiliation and socio- economic class with respect to the prevalence of HTPs. This finding is however at variance with another study (UNICEF, 2022; NDHS, 2018) that had reported that socioeconomic class especially the level of education of parents determines the tendency of using HTPs, hence the higher the level of education the less likely are they to accept traditional practices.

**Conclusion:** This study evaluated the prevalence and pattern of HTPs among adolescent in Rumuekini community. The finding of this study concludes that the prevalence of HTP in the study area was found to be high. That females were more likely than male to experience HTPs among adolescents and that there is a strong relationship between a parent's experience of HTPs and the likelihood of same parent subjecting his or her children to similar experience.

It is recommended that the general populace be educated on the magnitude of HTP and the dangers some of these practices has on the health of the adolescents. Parents who experienced such HTP needs counseling to prevent them from perpetrating same on their children.

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## Time Flow Analysis in the General Outpatient of a Tertiary Health Facility in a Middle-Income Country

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### Abstract

**Introduction:** Patient waiting time is an important indicator for efficiency and quality of care. Long waiting at the GOPD negatively affects the hospitals' image, patient satisfaction and quality of care.

**Objectives:** Study determined waiting time in the general outpatient clinic of Niger Delta University Teaching Hospital, Okolobiri.

**Methods:** A prospective longitudinal patient flow study involving 164 consenting outpatients, selected by stratified sampling technique. The patient flow map was designed and data on respondents' characteristics and waiting time were collected with a validated structured questionnaire and time-motion logbook. Total time spent comprised of service and idle time spent at records, nursing, consultation, and pharmacy departments. Time efficiency was calculated by dividing service time by total waiting time and expressed as percentage.

**Results:** The mean age of participants was  $44.3 \pm 14.0$  years. Majority were women (65.2%), married (60.4%), Christians (89.0%) and obtained post-secondary education. Median total time spent at HMIS, nursing, consultation, and pharmacy units were 41minutes (IQR: 31.0-71.0), 16.0 minutes (IQR:10.0 – 30.7); 30.0 minutes (IQR: 19.0 – 41.0) and 14.0 minutes (IQR: 9.0 – 21.0), respectively. The median total time spent at the GOP clinic was 113.5 minutes (IQR – 86.0 – 138.8 minutes), while median total service time was 36.5 minutes (IQR: 26.0 – 46.0). Time efficiency for visits to the GOP clinic was 32.6%.

**Conclusion:** The general outpatient flow process is inefficient as 67.4% of total time spent in the OPD were idle time and the HMIS station accounted for over 30% of the time.

**Keywords:** General Outpatient; waiting time; time efficiency

### Introduction

Inefficient patient flow in the OPD will lead to overcrowding, increased waiting time and reduced patient satisfaction. Therefore, patient flow analysis to map care delivery process and measure cycle time helps to identify constraints in the patient flow pathway. It helps in the evaluation of waiting time and improves efficiency of service and patient care (Dixon et al., 2015).

Waiting time is the time a patient must wait between effective demand and receipt of specific service (Idowu et al., 2014); the time a patient waits in the clinic before being seen by one of the clinic medical staff (Oche & Adamu, 2013). Shahzadi & Annayat, (2017) defined

patients' waiting time as "the length of time from when the patient entered the outpatient clinic to the time the patient actually leaves the OPD". This is the definition of waiting time adopted in this study.

The definitions of waiting time vary from among researchers, institutions and countries but all are agreed that patients should not be made to wait for too long in the OPD. Waiting time is a serious challenge to hospital administrators and cuts across nations and continents. The Institute of Medicine (IOM) in the USA, recommends that 90% of patients should be seen by a healthcare staff within 30 minutes of their presentation at the clinic.

Several studies have shown that inefficiency in patient flow management is associated with low patient satisfaction (Naidoo & Mahomed, 2016; Al-Harajin, et al., 2019) and also affect patients' perception of quality of service (Belayneh et al., 2017). Therefore, waiting time is an important indicator of quality of services offered by hospitals and also affects patients' satisfaction and utilisation of healthcare services.

The Out Patient Department (OPD) which provides ambulatory health services is an important gateway to care and provides patients' first impression about the hospital (Javed, 2015; Pandit, et al., 2016; Patel & Patel 2017). The OPD delivers, preventive, curative, and rehabilitative services and patients are expected to visit multiple stations while accessing OPD services.

In low resource settings like Nigeria, Ogunfowokan & Mora (2012) observed that time-specific appointments are not the usual practice in general outpatient clinics. Most outpatient visits are unscheduled and the volume of patients arriving are highly unpredictable. This could lead to crowding, challenge with queue management, long waiting time and reduced patient satisfaction.

Several studies in developing countries show that patients spend 2-4 hours in the OPD before seeing the doctor. It is 90 – 180 minutes in North-western Nigeria (Oche & Adamu, 2013); 2.7 hours (Range: 0.2–7.2) at the National hospital Abuja (Ogunfowokan & Mora, 2012); 274 minutes (80 – 525) in University of Port Harcourt Teaching Hospital (Ogaji & Mezie-Okoye 2017); 220.11 minutes (SD±62.26) in Calabar (Adindu & Esu 2012) and 146 minutes in Benin (Enabulele, et al., 2018).

The inefficiency in the patient flow pathway of many health institutions in the country is of concern as it may be a hinderance to access and quality of care. There is need to pay attention to the time patients spends while accessing services of healthcare providers as this will show how efficient or otherwise the system is. Patients' health problems should not be compounded by prolonged waiting time. Studies on waiting time, its causes and how to reduce it using simple quality improvement methods should be encouraged in our tertiary hospitals.

Although, there are no standards on best clinical services time, comparisons between and among institutions helps to make health institutions remain focused on the need for timely care and patient satisfaction as these are indices used to measure quality care.

This study determined time spent by ambulatory general outpatients at four service stations (records, nursing, consulting and pharmacy) as well as the total clinic time and OPD efficiency in a tertiary hospital in south-South, Nigeria.

### **Literature review**

Long waiting lines for medical treatment is a major challenge in many public health care delivery systems putting costs on patients without providing any benefits for health care service providers (Heinrich et al., 2017).

Queueing theory is a branch of operational research that examines every component of waiting in line, including arrival process, service process, number of servers, number of system places, and the number of those to be served. Analysing delays and its causes in a service process will help create more efficient and cost-effective services and systems. Queue management system is used to streamline patient flow through hospitals and clinics and using the queue systems patients won't have to wait longer than its necessary (Bidari et al., 2021).

Kreindler (2017) is of the opinion that a mismatch of population to capacity and process inefficiency, in different combinations will lead to failure of the improvement efforts.

Patient waiting time in outpatient clinics is often the major reason for patients' complaints about their experiences of visiting outpatient clinics. Therefore, patient satisfaction with waiting time plays a crucial role in the process of health quality assurance or quality management (Belayneh et al., 2017).

This study looked at the impact of improving service process, using the Lean strategy, on waiting time and satisfaction of general outpatients. The study was guided by the Lewin's change theory. According to Gaiya (2014), it is important that managers, or change agents, identify an appropriate change theory or model to provide a framework for implementing, managing and evaluating change. Thus, the Lewin's theory of change is quite appropriate as it provides the framework needed for a Lean strategy and tools to be used for quality improvement in the GOPD.

Daultani et al. (2015) observed that many healthcare organizations in the last decade, have adopted lean thinking to reduce wastages and to improve flow efficiency in the patient flow processes. According to Poksinska (2010), Lean strategy in health care is mostly used as a process improvement approach and focuses on 3 main areas: (1) defining value from the patient point of view, (2) mapping value streams, and (3) eliminating waste in an attempt to create continuous flow.

Naidoo et al., (2016) carried out a study to determine the impact of Lean principles, techniques, and tools on the operational efficiency in the outpatient department (OPD) of a rural district hospital in KwaZulu-Natal, South Africa. They used action research method with pre-, intermediate and post-implementation assessments. Their main intervention was employing 5Whys, VSM and A3 lean tools in the outpatient clinic. Their findings showed significant reduction was achieved in cycle times (27%;  $p < 0.05$ ) and waiting times (from 11.93 to 10 min;  $p = 0.03$ ) at the investigations' node and consulting room node, a significant reduction in waiting times from 80.95 to 74.43 min, ( $p < 0.001$ ). The average efficiency increased from 16.35% (baseline) to 20.13% (post-intervention).

Similarly, Gijo & Jiju, (2014), used lean six sigma (LSS) approach to address the problem of long patient waiting time in the outpatient department (OPD) of a super specialty hospital attached to a manufacturing company in India. They identified non-value-added steps in the process and removed them. They prepared a cause-and-effect diagram for high patient waiting time, and causes were validated with the help of data collected from the process. As a result of this project, they reduced average waiting time from 57 min to 24.5 min.

In a study to improve the workflow efficiency in an Outpatient Pain Clinic at a Specialized Oncology Centre in Jordan, Al Hroub et al., (2019) applied Lean Principles. Their aim was to improve clinic time efficiency, decrease clinic waiting time, and improve patient satisfaction using lean thinking concepts and their tools, i.e., value-stream mapping.

Post intervention, the pain clinic workflow became more efficient and the mean clinic waiting time decreased from 72.5 min at pre-intervention to 19.5 and 21 min at the two post-intervention quarters, respectively. Also, patient satisfaction improved from 75% at the pre-intervention to 100% and 96.7% at the two post-intervention quarters.

## **Methodology**

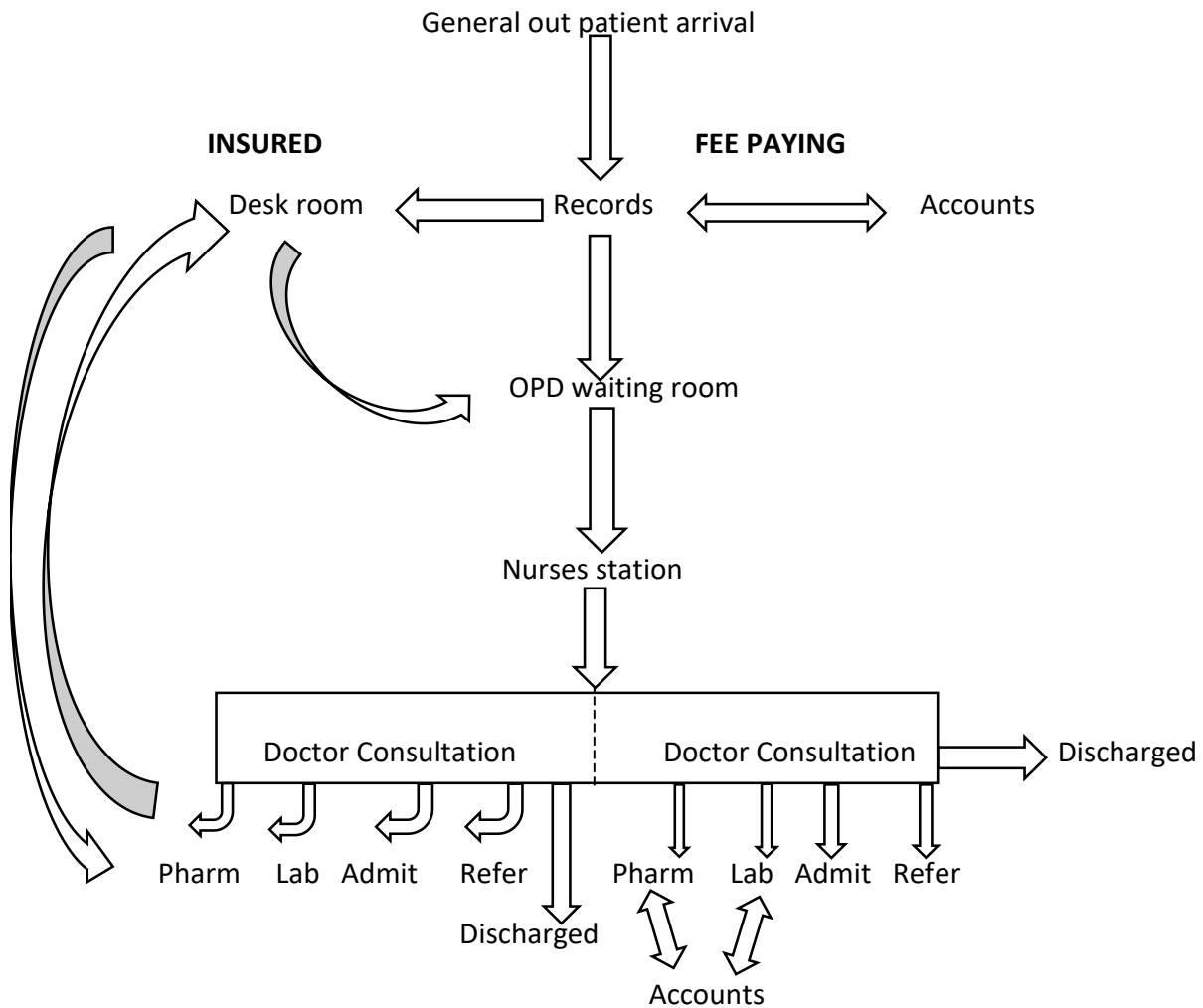
### **Study setting**

This study was carried out in the General Outpatient Clinics (GOPC) of the Family Medicine Department of Niger Delta University Teaching Hospital Okolobiri (NDUTH), Bayelsa State south -South Nigeria. The general outpatient clinics are operated in two separate buildings, one for the insured and the other for the non-insured. These outpatient clinics do not have formal appointment system, as patients' visits are largely unscheduled and documentations manually done.

### **Study Design**

A prospective longitudinal patient flow study in which respondents at the OPD were followed from registration through to collection of drugs at the pharmacy. The figure 1 below shows the pathway followed by the general outpatients as they access healthcare services. On the right of the figure 1 is the pathway for the fee-paying patients while on the left is the pathway for the insured patients.





**Figure 1:** General outpatient flow mapping

**Study population**

The study population included all adult (>18 years) patients who visited the general outpatient department during the period of the study.

**Sampling Method**

From the hospital's records department, average 1615 adult outpatients were seen monthly in the past six months prior to the study from January 2021 to 30<sup>th</sup> June, 2021.

Patients were grouped into two strata, namely: insured and non-insured. In each stratum, patients were further divided into new and revisit patients to ensure that all patients subgroups are captured in the time flow analysis. The study sample was obtained by taking proportionate sizes from each subgroup. Daily patients' attendance in the OPD records section is a mix of referred patients, specialist clinic patients, patients for investigations, etc. It was not be feasible to have a sampling frame of patients for only general outpatient clinic since there is no appointment system in the hospitals GOPD. Therefore, consecutive sampling of patients that met the inclusion criteria was carried out from 8am to 11am daily. This process was repeated daily until the sample size for each subgroup was reached.

Sample size was calculated using the effect size from a previous study on waiting time and satisfaction by Al Hroub et al., (2019) and the formula

$$n \text{ per group} = \frac{2 (Z_{\alpha/2} + Z_{\beta})^2 * P (1 - P)}{(P_1 - P_2)^2}$$

$$N = 41 \text{ per group} \times 4 \text{ subgroups} = 164$$

### Study instrument/Data collection tools

The study instruments were the time motion log book and a validated self-administered structured questionnaire. The time motion log book was used to capture information on the various times spent at each service station and on total clinic time. The questionnaire captured information on patients' bio-demographic data, day of visit, treatment status, visit type and number of staff members present and patients seen.

### Study Procedure/Data Collection Process

Data was collected over a period of 3 weeks between October and November 2021. Eligible patients were recruited after the objectives, procedure and benefits of the study were explained to them and an informed consent obtained. Participants were followed by trained research assistants who used the time-motion logbook and synchronized time piece to collect quantitative data on patients' time of entry, type of service and time spent at each service point, (records, nursing, consulting doctor and pharmacy) till the exit of the patient. This captured the waiting time in minutes at the various stations and the total clinic time by the patient in the GOPD. The times spent by the patients were operationalized for analyses as shown (Opurum et al., 2022):

1. Idle time – time spent at a service station before receiving attention at the station
2. Service time – time spent receiving care from the staff at the service station
3. Station waiting time – summation of the idle and service time spent at each station
4. Total service time – sum of all the times spent in useful engagement with a health care provider across all service stations
5. Total Idle time – sum of all the idle times spent by the patient waiting for service to be initiated at all the service stations
6. Total waiting time – sum of total service and total idle time spent at all service stations
7. Time efficiency - the percentage of total time spent engaging with health care staff. It is calculated as:  $time \text{ efficiency} = \frac{total \text{ service time}}{total \text{ time spent}} \times 100.$

The closer this is to 100, the more time-efficient the outpatient visit. At exit point, a validated structured questionnaire was used to collect information on patients' socio-demographic characteristics and household data.

### Data analysis

The data obtained from the time motion log book and questionnaires checked for correctness and completeness after every day of data collection. Data were entered into Statistical package for scientific solution (SPSS Version 25.0) software which was used for data cleaning and data analysis. Categorical variables (sex, marital status, residence, educational level and employment status) were expressed as frequencies and percentage. Continuous variables (service and idle time in all service stations) were tested for normality using the Shapiro- Wilk's test. These variables were summarized using median and interquartile range, since they were not normally distributed. Total time spent in each station was calculated by adding the idle and service time in that station. Total idle time was obtained by the summation of all idle time spent in all the stations, while total service time by summing up all service time spent in all station. Total time at GOP clinic was a summation of total idle and

service time. Time efficiency was calculated by dividing total service time by total time at GOP clinic and multiplying by 100 to express as percentage.

## Results

### Sociodemographic and socioeconomic characteristics of study participants

A total of 164 participants completed the study. Of the 164 participants, majority were women (65.2%) and about a third (34.8%) were men. Mean age of participants was  $44.3 \pm 14.0$  years (Table 1). Table 1 also showed that majority were married (60.4%) and identified with the Christian faith (89.0%). Slightly above half of participants had post-secondary education (54.3%) and were in government employment (50.6%). Eighty-nine participants were either very poor (31.1%) or poor (23.2%) among study participants (Table 1).

**Table 1:** Sociodemographic and socioeconomic characteristics of study participants

Characteristics	Frequency N = 164	Percent (%)
<b>Gender</b>		
Male	57	34.8
Female	107	65.2
<b>Age</b>		
18 – 30 years	30	18.3
31 – 40 years	33	20.1
41 – 50 years	33	20.1
51 – 60 years	38	23.2
> 60 years	30	18.3
<b>Marital status</b>		
Married	99	60.4
Single	38	23.2
Separated/Widowed	27	16.4
<b>Educational status</b>		
No formal education	9	5.5
Primary	17	10.4
Secondary	49	29.9
Post -Secondary	89	54.2
<b>Religion</b>		
Christianity	146	89.0
Islam	4	2.4
Others	14	8.6
<b>Employment status</b>		
Public (Government) employed	83	50.6
Self- employed	40	24.4
Private sector employed	14	8.5
Unemployed/student	27	16.5
<b>Socio-economic status</b>		
Very poor	51	31.1
Poor	38	23.2
Not poor	11	6.7
Rich	46	28.0
Very rich	18	11.0

### Time spent at the health management information unit of the GOP clinic

The median total time spent at the health management information system (HMIS) unit of the GOP clinic was 41 minutes with an interquartile range (IQR) of 31.0 – 71.0 minutes (Table 2; Figure 1). Table 2 further shows that the median total service time spent at the HMIS unit was 12 minutes (IQR: 9.0 – 21 minutes) while median total idle time was 29.0 minutes (IQR: 17.0 – 50.0 minutes). The time spent at the HMIS unit was made up of 7.0 minutes (IQR: 5.0 – 7.0 minutes) at the account desk; 30.5 minutes (IQR: 19.3 – 47.8 minutes) at the record desk

and 32.5 minutes (IQR: 17.8 – 47.0 minutes) at the information desk of the insured patients (Table 2).

**Table 2:** Time spent at the health management information unit of the GOP clinic

Service Stations	Time in minutes – Median (IQR)	Skewness (SE)	Kurtosis (SE)
<b>Accounts Unit</b>			
Accounts Service Time	2.0 (2.0 – 3.0)	5.0 (0.26)	34.9 (0.53)
Accounts Idle Time	4.0 (3.0 – 6.0)	5.0 (0.27)	30.9 (0.53)
Account Total Time	7.0 (5.0 – 8.0)	5.6 (0.27)	39.4 (0.53)
<b>Record Unit</b>			
Records Service Time	9.0 (5.0 – 16.0)	2.2 (0.20)	5.4 (0.40)
Record Idle Time	18.0 (10.0 - 31.0)	1.5 (0.20)	2.6 (0.40)
Record Total Time	30.5 (19.3 – 47.8)	1.3 (0.20)	1.4 (0.40)
<b>Information desk of insured patients</b>			
Desk room Service Time	6.0 (3.0 – 11.0)	1.8 (0.27)	3.8 (0.53)
Desk room Idle Time	20.0 (10.8 – 35.5)	2.0 (0.27)	5.2 (0.53)
Desk room Total Time	32.5 (17.8 – 47.0)	1.7 (0.27)	3.8 (0.53)
<b>Total Time in Health Management Information department</b>			
Total HMIS Service Time	12.0 (9.0 – 21.0)	2.0 (0.19)	4.5 (0.38)
Total HMIS Idle Time	29.0 (17.0 – 50.0)	1.8 (0.19)	5.4 (0.38)
Total HMIS time in GOPD	41.0 (31.0 – 71.0)	1.9 (0.19)	6.5 (0.38)

**Time spent receiving clinical services at the GOP clinic**

Table 3 shows that the median total time for clinical services was 61.0 minutes (IQR: 44.3 – 83.0 minutes). Of this, the median time spent at the nursing station was 16.0 minutes (IQR:10.0 – 30.7 minutes); at doctor consultation station was 30.0 minutes (IQR: 19.0 – 41.0 minutes) and the pharmacy station was 14.0 minutes (IQR: 9.0 – 21.0 minutes). Median idle time while receiving clinical services ranged from 6.0 minutes at the pharmacy station to 16.0 minutes at the doctor consultation station (Table 3).

**Table 3:** Time spent at clinical service stations and time efficiency at the GOP clinic

Service Stations	Time in minutes – Median (IQR)	Skewness (SE)	Kurtosis (SE)
<b>Nursing services</b>			
Nurses Service Time	4.0 (3.0 – 5.0)	1.6 (0.19)	3.3 (0.38)
Nurses Idle Time	12.0 (6.0 – 27.0)	1.5 (0.19)	1.3 (0.38)
Nurses Total Time	16.0 (10.0 – 30.7)	1.4 (0.19)	1.2 (0.38)
<b>Medical consultation</b>			
Doctor Service Time	11.0 (8.0 – 14.8)	1.7 (0.19)	3.7 (0.38)
Doctor Idle Time	16.0 (7.0 – 27.8)	1.6 (0.19)	3.8 (0.38)
Doctor Total Time	30.0 (19.0 – 41.0)	1.6 (0.19)	4.4 (0.38)
<b>Pharmacy services</b>			
Pharmacy Service Time	6.0 (3.0 – 10.0)	1.8 (0.24)	4.2 (0.48)
Pharmacy Idle Time	6.0 (3.0 – 10.0)	4.6 (0.24)	27.8 (0.48)
Pharmacy Total Time	14.0 (9.0 – 21.0)	4.7 (0.24)	26.9 (0.48)
<b>Total Clinical time</b>			
Clinical service time	20.0 (14.0 – 27.0)	0.9 (0.19)	0.3 (0.38)
Clinical idle time	40.0 (24.0 – 57.8)	0.9 (0.19)	0.5 (0.38)
Clinical Total time	61.0 (44.3 – 83.0)	0.9 (0.19)	0.8 (0.38)
Total Idle Time	74.0 (55.3 – 99.5)	1.1 (0.19)	2.0 (0.38)
<b>Total time spent in GOPD</b>	<b>113.5 (86.0 – 138.8)</b>	<b>1.2 (0.19)</b>	<b>2.4 (0.38)</b>
Time efficiency (%)	32.6 (25.2 – 40.5)	0.31 (0.19)	0.26 (0.38)
Percentage Idle Time (%)	67.4 (58.6 – 74.5)	0.45 (0.19)	0.12 (0.38)

## Discussion

This study was carried out to determine general outpatients waiting time at four stations namely, records, nursing, consultation and pharmacy.

The socio-demographic profiles of the study participants were similar to previous report by Oche & Adamu (2013) in North western Nigeria, with a sex ratio of 62.5% females and 37.5% males but a mean age of 33 years and 36.5% having post -secondary level of education. This may be an indication of poor health seeking behaviour of men in this area. Evidence from literature suggests men are less likely to seek health services compared to women (Ogunyemi et al., 2021, Thompson et al, 2016). Some other studies, have found more females than males- Umar et al., (2011), Ogunfowokan and Mora (2012) at the at the National Hospital Abuja, Nigeria, Ogaji and Mezie-Okoye (2017) in Port Harcourt, Sriram and Noochpoung (2018) in India, and Ahmad et al., (2017) in Malaysia.

On waiting time, the average time for registration at the Health Management Information Systems (HMIS) unit was 41.0 (31.0 – 71.0) minutes. This is high compared to that observed by Ogaji & Mezie-Okoye (2017) in University of Port Harcourt Teaching Hospital 24.8 minutes, and Patel et al., (2017) in India where more than 75% of the patients are registered within 30 minutes. In a primary care clinic in Malaysia, Ahmad et al., (2017), found the average waiting time for registration was 17.20 minutes and that 53.44% of the patients were registered within 15 minutes. In Northwestern Nigeria, Oche & Adamu (2013) observed that patients waited between 60 - 120 minutes to be registered at the records section with a median registration time of 76.0 (1.0 – 132.0) minutes. This is higher than what was found in this study and was attributed to shortage of registration clerks.

Achieving the Institute of Medicine (IOM) recommendation on waiting time is a challenge in many developing countries, as several studies have shown that patients spend long time in the OPD before seeing the doctor. The average time of 41.0 minutes to get registered at the HMIS of the OPD, with only 12.0 minutes as service time, was a major contributor to the total idle time. The desk room (administrative section) of the insured outpatients and the records section of the non-insured patients were the major cause of the long waiting time at this station. This could be related to the multiple or duplicative process of registering the patients at the desk room office of the insured outpatients.

Other studies have shown that registration time may be affected by factors such as number of registration counter, day of visit to the hospital and timing of visit at hospital (Patel & Patel, 2017). The absence of time-specific appointment system in the hospital and the manual process of registering outpatients would lead to uncontrolled patient arrival, overcrowding and long waiting time at registration point. According to Ahmad et al., (2017) modelled study of time-specific appointment showed that patients who were given an appointment time and arrived at the appropriate time had shorter waiting time than those who walked in without an appointment. Comparing waiting times across units in the OPD will help to identify where the bottle-neck in the patient flow process lies and help the hospital or departmental administrators to know where to institute quality intervention. Studies have shown that simple quality interventions can improve patient flow, reduce waiting time and increase patients' satisfaction with services they receive.

In this study, the OPD patients spent a median time of 16.0 minutes (IQR:10.0 – 30.7 minutes) at the nurses' station. This figure is comparable to the 18.2 minutes found by Ogaji & Mezie-Okoye (2017) in University of Port Harcourt Teaching Hospital. Ahmad et al., (2017) in Malaysia found patients spent 13.66 minutes at the nurses' station. This amount of time spent at the nurses' station in this study is high considering that the nurses station gives health education and then measure and record patients' vital signs. The median service time for this present study was 4.0 minutes (3.0 – 5.0) and idle time 12.0 (6.0 – 27.0) minutes. The idle time at the nurses' station was long.

For doctor consultation patients spent 30.0 minutes (IQR: 19.0 – 41.0) minutes. Only 11.0 (8.0 – 14.8) minutes of this timing was spent on actual consultation with the doctors while more time was attributed to idle time 16.0 (7.0 – 27.8) minutes. It has been shown that patients' satisfaction is directly associated with consultation time (Alarcon-Ruiz et al., 2019). Patients prefer to have more time with the doctor and also willing to wait longer if they get to see a familiar doctor for continuity of care (Ahmad et al., 2017). Purposeful longer consultation is associated with doctors being more likely to identify psychosocial problems, explore presenting complaints more accurately, prescribe less and offer more preventative advice (Ahmad et al., 2017; Fitri Surbakti & Sari, 2018).

Ogaji & Mezie-Okoye (2017), in Port Harcourt found an average consultation time of 19.3 (5 -60) minutes, Ogunfowokan & Mora (2012) found patients spent a median time of 9 minutes consulting the doctor in National Hospital Abuja), and Oche & Adamu (2013), observed a mean time of 7 minutes for consultation in north western Nigeria. In Malaysia, Ahmad et al., (2017), observed an average of 18.21 minutes for consulting the doctor and Sun et al., (2017) in China found the waiting times for consultations was ranged between 20.88–23.92 minutes. There is therefore, wide variation in the consulting time with the doctor across clinics and countries.

For pharmacy, total time spent was 14.0 minutes (9.0 -21.0 minutes). The service and idle times were 6.0 minutes each. This is lower than that obtained by Ogaji & Mezie-Okoye (2017) in University of Port Harcourt Teaching Hospital 26.5 minutes. Majority of the fee-paying patients did not purchase drugs from the hospital pharmacy. The lower traffic could have contributed to the difference in waiting time observed between the institutions.

The findings from this study showed that total average time spent by patients in the GOPD was 113.5 (86.0 – 138.8) minutes. This result is lower than that found in Port Harcourt 274.1 minutes (80.0 – 525 mins) (Ogaji & Mezie-Okoye, 2017) and in University of Benin Teaching Hospital 173 minutes (2 mins – 2 days) (Enabulele et al., 2018). This result is also lower than that found by Ogunfowokan & Mora (2012), at the National hospital Abuja 2.7 hours (range 0.2–7.2 hours) and that by Oche & Adamu (2013) 168 minutes in Usmanu Danfodiyo University, Sokoto, Nigeria. The higher value obtained by Ogaji & Mezie-Okoye (2017) could be because they included patient that went for radiological and laboratory tests. Oche & Adamu (2013) in Sokoto studied only new patients. This study captured new and revisit patients and did not include the radiology and laboratory sections.

In Ethiopia, Beleyneh et al., (2017) observed a mean waiting time of 149.2 minutes in the general outpatient department of Felge Hiwot referral hospital and a waiting time of 94.2 minutes in Debere Markos referral hospital. In India, Naaz & Mohammed (2019) at the OPD of AYUSH hospital found on average that a patient spent 2 h 17 minutes from arrival in the

hospital to exit from the OPD. In a district primary care clinic in Gombok, Malaysia, Ahmad, et al (2017), reported average total waiting time from registration to seeing a doctor to be 41 minutes. This is lower than what was found in this study and could be that they have quality improvement methods in place as well as operational guidelines for OPD clinics.

The time efficiency of 32.6% (26.0 - 46.0) shows that there is huge waste of time in the GOPD patient flow pathway. These wastes could be from inefficient care processes, inadequate personnel, lack of necessary working materials, staff attitude among others.

### **Limitations**

This study focused only on general out-patients, excluding other outpatient clinics and so findings cannot be generalized to other outpatient clinics in the hospital. The general outpatients that went for laboratory and radiological investigations were not followed and so the actual total time spent by these patients could not be quantified. This study is a single facility study and cannot be generalized to other general outpatient clinics in other hospitals in Bayelsa state.

### **Implications of the findings**

There are implications from this study that borders on research and policy reviews. There is need to explore the causes of the very high idle time recorded in this study especially at the registration and nurses' stations. This exploration should include administration, operational and human resource dimensions of the challenge.

The findings emphasize the need for the hospital management to come up with a standard operational guideline for general outpatient treatment and waiting time. By these findings, policy makers in the health sector ought to realize that periodic audit of time spent on general outpatient visits will aid the hospital management keep track on waiting time, patient satisfaction and quality of care.

### **Conclusion**

The inefficiency in patient flow management at the General Outpatient Department is consequent on the long idle times at the various service stations. The causes of this long waiting time need to be established and appropriate interventions initiated to reduce it for improved outpatient flow in the GOPD.

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# **Obstetric Emergency Preparedness among Nurse-Midwives Working in Obstetrics Units of Selected Hospitals in Imo State**

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## **Abstract**

This study assessed obstetric emergency preparedness among Nurse-Midwives Working in Selected Specialist Hospitals in Imo State. A descriptive survey research design was adopted for the study. Three hundred and thirty-two (332) nurses/midwives were selected from the total population of 3800, using Taro Yamane sample size determination formula. The structured questionnaire used to collect data was validated by the researcher's supervisor. Test-retest reliability method was employed to determine the reliability of the instruments and a reliability index of 0.82 was obtained. Descriptive statistics involving simple percentages and mean were used to answer the research questions while t-test statistics was used to test the null hypothesis 0.05 level of significance. Results were presented in Tables and charts. Findings of the study revealed that 15.5% of the respondents were between the age of 20 – 30years, 35.3% were between 31 – 40years, 27.4% were between 41 – 50years while 19.8% were between 51years and above. 61.4% of the respondents had Bachelor's degree in Nursing, 22.5% had Bachelors of Science while 16.1% had Doctor of Philosophy. 68.5% of the respondents were full time staff while 31.5% were part time staff. The result also revealed that there Nurse-Midwives has good perception of their specific roles and responsibilities during obstetric emergencies, emergency crash cart are usually available at the work. The study therefore conclude that Nurses play a significant role in the identification and management of obstetric emergencies. Thus, the study recommends that areas where the nurses lag obstetric emergency preparedness need to be strengthened.

**Keywords:** Emergency, Preparedness, Obstetric.

## **Introduction**

Reducing maternal and neonatal mortality and morbidity globally remains a priority for the health and development agenda in the Sustainable Development Goals (World Health Organization (WHO), 2015). Most maternal and newborn deaths and stillbirths occur during or immediately after labour and childbirth. Available evidence indicates that while 303,000 women died in 2015 from preventable causes related to pregnancy and childbirth, sub-Saharan Africa accounted for 66% of these deaths (WHO, 2015). Within sub-Saharan Africa, nearly 29% of the maternal deaths occurred in Nigeria with an estimated 58,000 pregnant women dying annually in the country mainly from preventable obstetric causes (Namitha, 2017). While many socio-economic and cultural factors have been put forward to explain the high rates of maternal deaths in Nigeria, it is evident that the poor accessibility of women to quality emergency obstetric and newborn care (EmONC) is at the root of the problem.

The minimum care package required during pregnancy and childbirth for the management of potentially life-threatening complications is referred to as emergency obstetric and newborn care (EmONC) (WHO, 2009). The components (or signal functions) of this care package were agreed by the global partners in 1997 (World Health Organization, 2009). The EmONC care package addresses the main causes of maternal death, stillbirth and early neonatal death, including obstetric haemorrhage, (pre-) eclampsia, sepsis, complications of obstructed labour, complications of miscarriage or abortion and intrapartum asphyxia. The WHO defines

emergency obstetric care (EmOC), now branded ‘emergency obstetric and newborn care (EmONC)’, as “a list of life-saving services or signal functions that define a health facility with regard to its capacity to treat obstetric emergencies” (Geleto et al., 2018). According to Say et al., (2014), EmONC is an evidence-based service required to manage potentially life-threatening complications that affect many women during pregnancy, childbirth, and the immediate postpartum period. Two types of EmONC services have been described: Basic emergency obstetric and newborn care (BEmONC) and comprehensive emergency obstetrics and newborn care (CEmONC). BEmONC is offered in primary healthcare facilities and consists of skilled delivery care, the administration of antibiotics, manual removal of the placenta, removal of retained products of conception, assisted vaginal delivery possibly with a vacuum extractor, and basic neonatal care including neonatal resuscitation. In contrast, CEmONC consists of all comprehensive emergency obstetrics services as well as caesarean section, safe blood transfusion services and the treatment of the sick baby and is offered mainly in referral secondary healthcare centres by skilled medical and midwifery personnel. Although the Federal Ministry of Health of Nigeria recommends BEmOC as the entry point to the health-care system generate universal health coverage for all citizens (Okonofua, *et al.*, 2016).

Obstetric complications can neither be predicted nor be totally prevented but can be managed by timely provision of life-saving services. Maternal death is usually the end result of inadequately or inappropriately managed complications arising during pregnancy and childbirth (Verma, 2016). Quality of care in emergency obstetrics involves institutional and staff preparedness in the provision of appropriate emergency services while responding to the needs and rights of the clients. These include having staff with relevant skills available, having functional equipment and supplies, and having adequate infrastructure, all of which are prerequisites for the provision of prompt and appropriate care when emergencies arise. Proper knowledge about identification signs, emergency measures to be taken and well-equipped obstetric unit can reduce maternal mortality by almost 35-40% (Park, 2009). Since nurses are the primary healthcare providers, their preparedness for obstetric emergencies attains paramount importance.

Several reports indicate that a large number of women tend not to attend basic antenatal care or delivery services in health facilities, but rather attempt to deliver at home or with traditional or faith-based birth attendants. As such, when women experience severe complications of pregnancy, they are brought to healthcare facilities for obstetric emergency care, sometimes in very dire conditions (Okonofua, 2012). Therefore, there is need for nurses/midwives to always be prepared to handle the challenges in line with current international standards.

Studies have showed that up to 40 percent of maternal deaths occurring in Teaching Hospital in developing countries were attributable to inadequacies in the healthcare system, including the inappropriate delivery of EMOC by health personnel (Okonofua, 2017). Additional reports from several referral facilities in the country and elsewhere in sub-Saharan Africa have also reported high case-fatality rates as well as high rates of maternal mortality in secondary and tertiary hospitals due to poor quality obstetric services. While inadequate and poor EMOC services may explain the high case fatality associated with obstetric complications that reach referral hospitals, lack of preparedness (inadequate knowledge and poor skills of providers) in the provision of related services is also part of the problem. Previous studies have shown that inadequate knowledge of EMOC, poor skills of health

providers and the absence of essential equipment and shortages of health providers account for the inadequate delivery of EmONC in developing countries (Fikre, 2016; Jonas, et al., 2017). Similar studies have also been reported from Nigeria where severe shortages have been identified in health workers’ knowledge and practices of EmONC (Ebuehi, 2016). Therefore, there is need to Study Obstetric Emergency Preparedness among Nurse-Midwives Working in Imo State Specialist Hospitals.

This study investigated Obstetric Emergency Preparedness among Nurse-Midwives Working in Obstetrics Units of Selected Hospitals in Imo State. Specifically, the study ascertained Nurse-Midwives perception of their specific roles and responsibilities during obstetric emergencies; ascertain the availability of emergency crash cart at the work settings and ascertained the contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies.

**Methodology**

This study adopted the descriptive survey research design. The descriptive survey research design examines a group of individuals by collecting and evaluating data from a small number of persons who are thought to be representative of the entire group (Nhlapo, 2017). It is a form of survey design that aims to accurately portray the participants (Enarebebe-Emberru et al., 2019). It was adopted to study Obstetric emergency preparedness among nurse-midwives working in selected obstetric units in Imo state specialist hospital because it focuses on one or more dependent variables in a defined population or sample of that population.

The population of the study consists of nurse/midwives currently working with Federal Medical Center (FMC) Owerri, Imo specialist hospital Issh, Imo State University Teaching Hospital. As the time of this study, a pilot study revealed that a total of 300 midwives and 900 nurses are working in the antennal unit of Federal Medical Center Owerri, Imo specialist hospital Owerri, while 450 midwives and 800 nurses are working with Imo State University Teaching Hospital antenatal unit making a total of 2450 midwives and nurse. The sample size of 362 nurses/midwives was selected from the total population of 2450. The instrument for data collection was a self-structured questionnaire developed by the researcher. The questionnaire is divided into two parts. The first part consists of personal data while the second part contains items designed to measure the obstetric emergency preparedness among nurse-midwives. Descriptive statistics will be used as data analysis method. Hence, measure of central tendency simple percentage and mean was used to answer the all the research questions while t-test statistics was used to test all the null hypothesis 0.05 level of significance.

**Results**

**Table 1** percentage and frequency of demographic data

Variable	F	%
Age		
20 – 30	62	15.5
31 – 40	148	37.3
41 – 50	109	27.4
> 51	79	19.8
<b>Educational qualification</b>	245	

B.NSc		61.4
M. Sc	89	22.5
PhD	64	16.1
<b>Type of employment</b>		
Full time	271	68.5
Part time	127	31.5
<b>Type of employment</b>		
> 1 year	62	15.5
1 – 5 years	148	37.3
6 – 10 years	109	27.4
<11 years	79	19.8
<b>Years of experience</b>		
> 1 year	62	15.5
1 – 5 years	148	37.3
6 – 10 years	109	27.4
<11 years	79	19.8

The result showed that 15.5% of the respondents were between the age of 20 – 30years, 35.3% were between 31 – 40years, 27.4% were between 41 – 50years while 19.8% were between 51years and above; 61.4% had B.NSc, 22.5% had B.Sc while 16.1% had PhD; 68.5% of the respondents were full time staff while 31.5% were part time staff. For work experience, 15.5% of the respondents had less than 1 year work experience, 37.3% had worked for 1 – 5years, 27.4% worked for 6 – 10years, while 19.8% had more than 11years working experience.

Results on their experiences in handling obstetric emergencies showed that less than 15.5% of the respondents had less than 1 year work experience in handling obstetric emergencies, 37.3% had 1 – 5years working experience in handling obstetric emergencies, 27.4% had 6 – 10years working experience in handling obstetric emergencies while 19.8% had more than 11years working experience in handling obstetric emergencies.

**Research Question 1:** What is Nurse-Midwives perception of their specific roles and responsibilities during obstetric emergencies?

**Table 2** Mean and standard deviation of Nurse-Midwives perception of their specific roles and responsibilities during obstetric emergencies.

ITEMS	$\bar{x}$	SD
I am acquainted with correct triaging of obstetric emergencies.	3.12	1.47
I have skill in using personnel protective equipment's.	3.80	1.31
I acquainted with taking vital signs.	2.76	1.42
Most time I do not know what to do during emergency.	2.71	1.05
I know that I am supposed chart patients immediately they report to the hospital	3.41	1.65
I am aware that I am supposed to stabilize the patient even before the doctor comes	2.72	1.47
<b>Grand Mean</b>	<b>3.09</b>	<b>1.31</b>

Table 2 shows mean ratings and standard deviations of level nurse-midwives awareness of specific roles and responsibilities during emergencies. The mean value ranges from 2.72 to

3.80 with a grand mean value of 3.09 which is above the criterion mean of 2.5 thereby showing that the Nurse-Midwives has good perception of their specific roles and responsibilities during obstetric emergencies.

**Research Question 2:** What is the availability of emergency crash cart at the work settings?

**Table 3** mean and standard deviation of the availability of emergency crash cart at the work settings

ITEMS	$\bar{x}$	SD
Emergency crash cart is readily available during emergency.	3.12	1.47
Anytime there is emergency crash cart is always made available	3.01	0.15
we have emergency crash cart but the contents are not usually complete.	2.58	1.42
<b>Grand Mean</b>	<b>2.90</b>	<b>1.1</b>

Table 3 shows mean ratings and standard deviations of the availability of emergency crash cart at the work settings. The mean value ranges from 2.58 to 3.12 with a grand mean value of 2.90 which is above the criterion mean of 2.5 thereby showing that the availability of emergency crash cart at the work settings is high.

**Research Question 3:** What are the contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies?

**Table 4** Mean and standard deviation of the contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies.

ITEMS	$\bar{x}$	SD
Pair of scissors	3.02	1.07
Adhesives, bandages, gauze	2.41	0.15
Gloves	2.38	0.42
Syringes	2.95	0.14
<b>Grand Mean</b>	<b>2.60</b>	<b>0.54</b>

Table 4 shows mean ratings and standard deviations of the contents of emergency crash cart at the work setting for use by the midwives during obstetric emergencies. . The mean value ranges from 2.38 to 3.02 with a grand mean value of 2.60 which is above the criterion mean of 2.5 thereby showing that the contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies are; Syringes, Gloves etc.

**Table 8: Summary of t-test analysis of the relationship between nurse-midwives age and their emergency preparedness.**

Variables	N	$\bar{X}$	S.D	df	t-cal.	t-crit.	Decision
Ages	398	2.15	0.87				
				20	0.67	±1.96	Accepted
<b>Total</b>	<b>398</b>						

*Level of significance = 0.05*

Table 8 shows that the calculated t-value used in testing the hypothesis stood at 0.67 while the t-critical value stood at  $\pm 1.96$  using 20 degrees of freedom. At 0.05 level of significance and 20 degrees of freedom, the calculated t-test of 0.67 is less than t-critical value of  $\pm 1.96$ , therefore, the null hypothesis was retained hence there is no significant relationship between nurse-midwives age and their emergency preparedness.

**H<sub>02</sub>:** There is no significant relationship between nurse-midwives type of employment and their emergency preparedness.

**Table 9: Summary of t-test analysis means ratings of the relationship between nurse-midwives type of employment and their emergency preparedness.**

Variables	N	$\bar{X}$	S.D	df	t-cal.	t-crit.	Decision
Type of employment	298	3.11	0.84				
				27	0.58	$\pm 1.96$	Accepted
<b>Total</b>	<b>298</b>						

**Level of significance = 0.05**

Table 4.9 shows that the calculated t-value used in testing the hypothesis stood at 0.58 while the t-critical value stood at  $\pm 1.96$  using 27 degrees of freedom. At 0.05 level of significance and 27 degrees of freedom, the calculated t-test of 0.58 is less than t-critical value of  $\pm 1.96$ , therefore, the null hypothesis was retained hence there is no significant relationship between nurse-midwives type of employment and their emergency preparedness.

**Discussion** The findings of the study revealed that 15.5% of the respondents were between the age of 20 – 30years, 35.3% were between 31 – 40years, 27.4% were between 41 – 50years while 19.8% were between 51years and above. 61.4% of the respondents had B.NSc, 22.5% had B.Sc while 16.1% had PhD. 68.5% of the respondents were full time staff while 31.5% were part time staff. 15.5% of the respondents had less than 1 year work experience, 37.3% had 1 – 5years working experience, 27.4% had 6 – 10years working experience while 19.8% had more than 11years working experience. Less than 15.5% of the respondents had less than 1 year work experience in handling obstetric emergencies, 37.3% had 1 – 5years working experience in handling obstetric emergencies, 27.4% had 6 – 10years working experience in handling obstetric emergencies while 19.8% had more than 11years working experience in handling obstetric emergencies.

**Nurse-Midwives perception of their specific roles and responsibilities during obstetric emergencies.**

The result of the study revealed a mean ratings and standard deviations of Nurse-Midwives perception of their specific roles and responsibilities during obstetric emergencies.

The mean value ranges from ( $\bar{x} = 2.72$ ) to ( $\bar{x} = 3.80$ ) with a grand mean value of ( $\bar{x} = 3.09$ ) which is above the criterion mean of ( $\bar{x} = 2.5$ ) thereby showing that the level of nurse-midwives awareness of specific roles and responsibilities during emergencies is high. The findings is in line with that of Ekwempu, Maine, Olorunkoba and Kisseka, (2019) who observed in their study that majority of Nurse-Midwives has good perception of their specific roles and responsibilities during obstetric emergencies.

**Availability of emergency crash cart at the work settings.**

The result of the study revealed mean ratings and standard deviations of availability of emergency crash cart at the work settings. The mean value ranges from 2.58 to 3.46 with a grand mean value of 3.01 which is above the criterion mean of 2.5 thereby showing that the level of nurse-midwives familiarity with procedures for staff call up systems during emergencies is high. The findings of the study is in accordance with that of Gerdtz and Bucknall, (2017) who said that availability of emergency crash cart at the work settings is high and that in order to accomplish an effective team work, each one working in the emergency situation needs to get acquainted with staff call up systems of the organization and must be designated with clear roles and responsibilities.

**Contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies**

The findings of the study is in accordance with that of mean ratings and standard deviations of contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies.. The mean value ranges from 2.38 to 3.02 with a grand mean value of 2.60 which is above the criterion mean of 2.5 thereby showing that the nurse-midwives attend to obstetric emergency drills at work setting. This result is in line with that of Evans et al., (2019) who opined that contents of the emergency crash cart at the work setting for use by the midwives during obstetric emergencies are; Syringes, Gloves etc.

**Limitations of the study**

Inadequate finance and time constraint affecting the collection of materials needed for the research.

**Implications of the Findings**

Based on the findings of the study, the researcher recommends as follows;

1. In-service training and re-training of health providers should be included in national policy and programs that address maternal mortality prevention in referral facilities in the country.
2. Those who are willing to do the work should be encouraged through good incentives e.g. prompt payment of salaries and allowances.
3. There is a need for recruitment of additional nursing staff to complement those presently available in the facilities.
4. Non-governmental Organizations (NGOs) and Faith-Based Organizations (FBOs) should focus on improving access to cheaper medical services for majority of low income earners in rural communities.

**Conclusion**

Nurses play a significant role in the identification and management of obstetric emergencies. The knowledge and reported skills on EMOC practices by health providers in referral facilities in Nigeria is lower than average. Therefore, they need to be prepared to respond promptly and effectively so that negative consequences arising out of these events can be better handled. The areas in which they possess minimal preparedness should be identified and dealt seriously to safeguard the life of pregnant woman and the hidden client- the fetus presenting in obstetric emergencies.



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# Essential Newborn Care Practice among Nurse/Midwives in Tertiary Hospitals in Port Harcourt Metropolis

By

Tariah, Awolayefori Edna

## Abstract

**Background:** Managing pregnant women through the natal period by obstetric care givers is very essential and should be promoted globally. It is capable of reducing neonatal mortality to the barest minimum. This study aims to assess essential newborn care among nurse/midwives in tertiary hospitals in Port Harcourt metropolis.

**Method:** The study employed a cross-sectional descriptive design; study instrument was a self-structured questionnaire, which was administered to obtain data from respondents in the study area.

Sampling of all 955 nurse/midwives in both hospitals was done, using purposive sampling, census sampling was done to recruit all the 109 nurse/midwives working in the labour, post natal and unbooked lying-in wards of both hospitals. Data was analyzed using excel spread sheet and statistical package for social sciences version 25. A standard structured instrument likert scale was adopted on a 4point rating scale. Percentages (%), mean (X) and standard deviation (SD) were used. From the result, approximately 80% of respondents practice wiping of the face, nose and mouth at the delivery of the baby. 87.6% of respondents nursed mother and baby together in the same room with the baby placed directly on the mother's bare chest. 82.7% of respondents agreed to cut the cord at 1-3min after birth. Approximately 91% disagreed to application of local herbs on the cord. 85.7% disagreed that colostrums be discarded.

**Conclusion:** There is high practice of essential newborn care among the study participants, in-service training, level of education, presence of supportive supervision and provision of drugs and medical equipments are all factors affecting the practice of essential newborn care, and should be given priority attention.

**Key words:** Birth asphyxia, colostrum, cord care, mortality, neonatal infection, newborn, obstetric, post natal, prematurity.

## Background to the study

Over the years, neonatal mortality has been on the increase. According to WHO reports, about 3.1 million neonatal deaths occur globally, each year. Newborns born in Sub-Saharan Africa or in Southern Asia are at higher risk of death within the first 30days of life than those born in high income country (Abebe et al, 2021). Current neonatal mortality rate in Nigeria is 36 per 1000 live births and infant mortality rate is 69.8 per 1000 live births. This is suggestive of the fact that 20% of child deaths in Sub-saharan Africa still occur in Nigeria (Esan et al, 2020).

## STATEMENT OF THE PROBLEM

From personal observation and practice as a midwife, neonatal mortality has been a thing of regular occurrence. This was confirmed by media excerpts from the last maternal and child health week which also stated that neonatal mortality is apparent. The reason for this increase

may be attributed to high patronage of traditional birth attendants, late ANC bookings, poor attendance to ANC clinics and non-compliance to ANC instructions. This increase has persisted despite global decrease in under-five mortality and despite the provision of health facilities across the state to render obstetric services by skilled birth attendants.

### **STUDY AREA**

This research work was carried out in the labour, post natal and unbooked lying-in wards of the Rivers State University Teaching Hospital (RSUTH) and the University of Port Harcourt Teaching Hospital (UPTH).

Is situated at numbers 5-8 Harley street old GRA, Port Harcourt. Established in 1925, it was originally a health facility for senior civil servants in Rivers State, later a general hospital, consequently a specialist hospital and in 2018, it was upgraded to gain its teaching hospital status for the Rivers State University. It has 371 beds, 731 staff and various departments. It provides obstetric services to about 5860 women and conducts about 2148 births yearly, making the area well suited for the study.

The University of Port Harcourt Teaching Hospital is located along the East West road, Choba. It was founded in April, 1980. It is a major tertiary health care hospital for teaching and research in Rivers State, which was established to satisfy the desire of the federal government to provide excellent health services in each of the geopolitical zones.

It started off as the Emohua general hospital with a capacity of 60 bed space, thereafter; it became 160 bedded Port Harcourt General Hospital, befitting its status as a teaching hospital. From 1983 till date, there has been major expansion in infrastructure and physical equipment to meet the accreditation requirements of the medical and dental council of Nigeria and two post graduate medical colleges. The hospital currently has a 800 bed capacity, it also has in its employment list 182 specialist staff in various specialties and sub-specialties. It treats well over 10,000 in-patients and well over 400,000 out-patients as well as 3000 surgeries annually.

### **Aim and Objectives of the study**

The aim of this study was to examine essential newborn care practice among nurse/midwives in Port Harcourt metropolis. The objectives of the study were to:

- (1) Ascertain the extent of newborn care given by nurse/midwives in tertiary hospitals in Port Harcourt Metropolis (UPTH and RSUTH), in respect to the following:
  - Establishment of respiration
  - Thermal care
  - Cord care
  - Early and exclusive breast feeding
  - Immunization
  - Eye care
- (2) Evaluate the extent to which essential newborn care is being practiced by nurse/midwives in UPTH and RSUTH
- (3) Identify the factors affecting essential newborn care practices by nurse/midwives in UPTH and RSUTH.
- (4) Ascertain the availability of supportive supervision regarding essential newborn care practice by nurse/midwives UPTH and RSUTH.
- (5) Investigate the relevance of in-service training by nurse/midwives in ENC in UPTH and RSUTH

### **Research questions**

The research questions guiding this study include:

- (1) What are the components of essential newborn care?
- (2) To what extent is essential newborn care practiced?
- (3) What are the factors affecting essential newborn care?

### **Hypothesis (Ho)**

The null hypotheses generated for this study was:

- 1) There is no significant difference in the components of essential newborn care practice among nurses/midwives in UPTH and RSUTH in Port Harcourt Metropolis, in respect to the establishment of respiration, thermal care, early and exclusive breastfeeding, immunization and eye care.
- 2) There is no significant difference in the extent to which essential newborn care is practiced among the Nurses/Midwives in both UPTH and RSUTH
- 3) There is no significant difference in the factors affecting essential newborn care practices by Nurses/Midwives in both UPTH and RSUTH in Port Harcourt Metropolis.
- 4) There is no significant available supportive supervision to essential newborn care practices among Nurses/Midwives in UPTH and RSUTH in Port Harcourt Metropolis.
- 5) There is no significant extent in the impact of in-service training by the Nurses/Midwives in ENC in UPTH and RSUTH

### **Methodology**

**Study Design:** The study used a quantitative descriptive design to assess the practice and factors affecting the practice of essential newborn care among nurse midwives in UPTH and RSUTH.

### **Population of the study**

The study involves all the 955 nurse/midwives working in the University of Port Harcourt Teaching Hospital and the Rivers State University Teaching Hospital. 603 nurse/midwives from the UPTH and 352 nurse/midwives from the RSUTH.

### **Sampling/sampling technique**

Purposive sampling of all the 955 nurse/midwives working in UPTH and RSUTH was done, out of which census sampling was done to recruit all the 109 nurse/midwives working in the labour, post natal and lying-in wards of the two university teaching hospitals, who meet the eligibility criteria.

### **Data collection method**

Data was obtained from the respondents by giving them structured questionnaire to answer, which was designed by the researcher. Clarifications were given where necessary and the questions checked for completeness after answering. Filling of the questionnaire was based on availability and willingness of the respondents. They were also thanked for responding.

### **Data Analysis**

The quantitative data were analyzed using the Microsoft Office suite (MS Word/Excel spread sheet) and statistical product and service solution, version 25 (IBM SPSS 25) soft ware. Descriptive statistics was used to present, percentages, arithmetic mean, frequency and standard deviation of analytical data.

**Ethical Consideration**

The procedure for this study was reviewed for ethical compliance and approved by the University of Port Harcourt Research Ethics Committee, (Approval: G2020/PUT/M.Sc./MMW/FT/043). Permission was sought and obtained by the researcher from the ethical committee of RSUTH and UPTH, including the Head of department, the management board of the hospital and from the midwives/personnel in charge of the labour, posts natal and unbooked lying-in wards of both hospitals. Verbal and written consent were obtained from all participants who gave consent to participate in the study, after explaining the purpose and processes involved in filling the questionnaire and interview to them.

Names and addresses were not added to the questionnaire to ensure confidentiality; questionnaire can be answered in choice location. The researcher assured respondents that no risk comes to them, and the information gathered were strictly for academic and research purposes only. Respondents were also given the liberty to opt out of the study at any time they deem necessary.

**Results**

**Establishment of Respiration:** Result shows 79.21% of respondents always wipe baby’s face, nose and mouth immediately the baby is born, approximately 52% always suck baby’s nose and mouth with bulb syringe or mucous extractor and 50% of respondents sometimes stimulate baby by flicking the feet and rubbing the back.

**Establishment of respiration adopted among nurse/midwives in both RSUTH and UPTH**

S/N	STATEMENT	Always	Sometimes	Seldom	Rarely	N	X	SD	Decision Rule	
		(%)	(%)	(%)	(%)				Good (%)	Poor (%)
1	Do you wipe baby’s face, nose and mouth immediately the head is born	80 (79.21)	17 (16.83)	4 (3.96)	0 (0)	101	3.75	0.34	96	4
2	Do you suck baby’s nose and mouth with suction bulb/mucus extractor immediately baby is born	52 (51.49)	41 (40.59)	8 (7.92)	0 (0)	101	3.47	0.29	92	8
3	Do you stimulate baby alongside suctioning by rubbing the back and flicking the feet.	38 (37.62)	50 (49.51)	13 (12.87)	0 (0)	101	3.25	0.27	88	12
<b>Total</b>		<b>170</b>	<b>108</b>	<b>25</b>	<b>0</b>	<b>33</b>				

N = 101,  $\chi = 3.49$

**Thermal Care:**

Approximately 49% of respondents agreed to clean the baby with a dry clean clothe immediately baby is born. Forty eight percent of respondents confirmed always placing baby directly on mother’s bare chest, while approximately 37% agreed to sometimes delay bathing of the baby till 6-24hrs after birth. This result suggests that respondents have a good practice of thermal care.

**Table 4.3: Thermal care adopted among nurse/midwives in RSUTH and UPTH**

S/N	STATEMENT	Always (%)	Sometimes (%)	Seldom (%)	Rarely (%)	N	X	SD	Decision Rule	
									Good	Poor
4	Do you practice drying baby with a warm clean cloth immediately after delivery	49 (48.52)	40 (39.60)	8 (7.92)	4 (3.96)	101	3.33	0.28	89	11
5	Does Warm clothing help to prevent heat loss in the baby	56 (55.45)	34 (33.66)	11 (10.89)	0 (0)	101	3.44	0.29	89	11
6	Do you practice placing baby directly on the bare skin of mother’s chest after delivery	48 (47.52)	37 (36.64)	16 (15.84)	0 (0)	101	3.32	0.28	84	16
7	Do you encourage nursing mother and baby together in the same room	54 (53.47)	42 (41.58)	5 (4.95)	0 (0)	101	3.49	0.30	95	5
8	Do you consider delaying bathing of the baby till 30-60mins after birth evidence-based?	34 (33.66)	39 (38.61)	25 (24.76)	3 (2.97)	101	3.03	0.25	72	28
<b>Total</b>		<b>241</b>	<b>153</b>	<b>49</b>	<b>5</b>	<b>505</b>				

**N = 101,       $\chi =$**

**Early and Exclusive Breastfeeding**

**Table 4.5:** Result from the study show that 67.33% always put their babies to breast within one hour after delivery, 50.50% of them always feed baby on demand and 36.68% of them sometimes discourage giving of water and other feeds to the baby before 6months.

**Early and exclusive breastfeeding among nurse/midwives in both RSUTH and UPTH**

S/N	STATEMENT	Always (%)	Sometimes (%)	Seldom (%)	Rarely (%)	N	X	SD	Decision	
									Good	Poor
14	It is advisable to put baby to breast within the first 60mins after delivery?	68 (67.33)	30 (29.70)	3 (2.97)	0 (0)	101	3.64	0.32	97	3
15	Do you give Baby pre-lacteal feeds immediately after birth	13 (12.87)	10 (9.90)	32 (31.68)	46 (45.55)	101	1.90	0.25	23	77
16	Do you encourage mothers to give colostrum to the baby.	7 (6.93)	7 (6.93)	15 (14.85)	72 (71.29)	101	1.5	0.30	14	86
17	Can the baby be fed on demand	51 (50.50)	19 (18.81)	23 (22.77)	8 (7.92)	101	3.12	0.25	69	31
18	Baby should be fed with breast milk alone for the first 6 months of life.	70 (69.31)	18 (17.82)	13 (12.87)	0 (0)	101	3.50	0.30	87	13
19	Do you discourage the addition of water and other feeds to the baby before 6 months	28 (27.72)	32 (31.68)	30 (29.71)	11 (10.89)	101	2.76	0.23	59	41
<b>TOTAL</b>		<b>237</b>	<b>116</b>	<b>116</b>	<b>137</b>	<b>606</b>				

**N = 101,  $\chi = 2.73$**

**Table 4.10:** Result from the study shows that 68.32% of respondents agreed that the knowledge of skilled birth attendants require regular updates through in-service training, 44.55% of them agreed that supportive supervision be given to those who are less



knowledgeable. Approximately 52% and 61.39% of respondents agreed that provision of drugs and medical equipment for ENC, sometimes and always affect their practice of ENC respectively.

**Factors affecting ENC practice among nurse/midwives in both RSUTH and UPTH**

S/N	ITEMS	Always (%)	Sometimes (%)	Seldom (%)	Rarely (%)	N	X	SD	Decision	
									Good	Poor
25	The knowledge of skilled birth attendants requires regular update through in-service training.	69 (68.32)	30 (29.70)	2 (1.98)	0 (0)	101	3.66	0.32	98	2
26	Obstetric care givers who have knowledge of ENC can give supportive supervision to those who are less knowledgeable.	45 (44.55)	41 (40.59)	12 (11.88)	3 (2.98)	101	3.27	0.27	85	15
27	The level of education of caregivers has a lot to do with the practice of ENC.	64 (63.37)	25 (24.75)	12 (11.88)	0 (0)	101	3.51	0.30	88	12
28	Interest in working in labour ward has a lot to do with the practice of ENC	65 (64.36)	34 (33.66)	1 (0.99)	1 (0.99)	101	3.61	0.32	98	2
29	Provision of drugs for ENC can affect its practice.	25 (24.75)	52 (51.49)	16 (15.84)	8 (7.92)	101	2.93	0.24	77	23
30	Provision of medical equipment is key in ENC.	62 (61.39)	38 (37.62)	2 (1.98)	0 (0)	101	3.62	0.31	98	2

**Discussion of Findings**

This work achieved its aim of assessing the practice of essential newborn care (ENC) among nurse/midwives in tertiary hospitals in Port Harcourt metropolis. The result revealed that (96.00%) of nurse/midwives in UPTH and RSUTH practice wiping of the face, nose and mouth base on the weighted rate for good practice, at the delivery of baby’s head and sucking of the mouth and nose immediately after birth, (92.00%) with suction bulb, and even strokes the back of the baby (88.00%) to stimulate the baby and help the baby to establish respiration. These findings corroborates with the work done by Negussie et al, (2016) on practice and

knowledge of ENC and related factors among nurses and midwives working at health centres in Jimma zone, Ethiopia, where 47.1% of respondents agreed to wiping the baby's face and eyes always, whereas, (66.5%) of respondents agreed to applying the principle of checking and sucking the airway for all babies they delivered, and (73.9%) of respondents agreed to always check for breathing while drying the babies. The results meet my expectation because both studies were conducted in health facilities and respondents are all health professionals.

Approximately eighty seven percent (87%) of respondents agreed to placing baby directly on mother's bare chest, nursing mother and baby in the same room and delaying bathing for at least six hours after delivery, thereby providing thermal care and helping baby establish respiration. This finding is in agreement with findings from the work done by Aseb and Zana (2019) to assess essential newborn care knowledge and associational factors among nurses/midwives. This result is expected, as the participants in both studies are all health professionals who may be working in the labour and delivery room with some years of experience in neonatal care.

The result from this study shows that (88.00%) of respondents did not agree to the use of herbs and local concoctions on the cord. (80.00%) of respondents agreed to delaying cutting of the cord for 3-5 min after birth or cessation of pulsation of the cord, while approximately (78.00%) of respondents agreed to identifying the application of chlorhexidine gel on the cord as evidence-based. This clearly indicates that the nurse/midwives in the RSUTH and the UPTH have good practice of various components of cord care.

From the result, study respondents displayed awareness of the importance of colostrum. Ninety six percent (96%) of respondents agreed to put baby to breast within one hour after delivery. This finding is in agreement with previous studies done by Abebe et al, (2021) and findings from another study by Maahama and Iddrisu (2014) which indicated that post natal mothers adopted good neonatal feeding practices; (84.00%) of respondents agreed to feeding their babies with colostrum, (85.00%) of respondents agreed to have breastfed their infants exclusively.

Findings from this study suggest that (98.00%) of respondents agreed that regularly updating their knowledge through in-service training, positively affected their practice of essential newborn care, this is higher compared to studies conducted by Negussie et al (2016) to assess the practice and knowledge of ENC and its determinant factors among nurses and midwives working at health centres in Jimma zone but findings from the studies done by Semanew et al (2018) to evaluate newborn care practices and its determinants in Dessie Referral Hospital, NorthEast Ethiopia contradicts this finding as their result associates the practice of ENC with the mode of delivery, antenatal care (ANC) attendance and the level of income of the mothers. The discrepancy in the level of practice may be due to the difference in the characteristics of the respondents. From this study, 88.00% of respondents agreed that their level of education greatly affected their practice of essential newborn care, this is in conformity with the findings by Alemu and Eshete (2020), who examined ENC practices and related factors among lactating mothers at home in the rural area of Gedeo, Southern Ethiopia, who found that educated mothers were 2.6 times higher, as compared with non-educated mothers to have good ENC practices, another work done by Misgna et al (2014) suggested that education and marital status of women are importantly associated with knowledge, whereas mothers that reside in urban areas are with good ENC knowledge and

employment status of mothers are importantly related with ENC practice. For availability of medical equipment, 100.00% of the respondents agreed that, with the availability of medical equipment and interest in working in delivery room, their practice of ENC is facilitated. This finding is in lieu with the study done by Ashenef et al (2021) on ENC among health care providers in Northeast Ethiopia which opines that the presence of supportive supervision and the interest of health care provider to work in labour room were significantly associated with the practice of ENC. The result is not unexpected because both studies used the health facility as the environment for their study and the respondents from both studies are all health care providers.

**Conclusion:** The overall practice of essential newborn care is good; interest in working in delivery room, presence of supportive supervision, receiving in-service training, level of education of respondents and availability of drugs and medical equipment are all factors which affect the practice of ENC positively or negatively.

**Limitations:** The following were the limitations of this study:

- 1) The study was conducted in the RSUTH and UPTH, all in Rivers State. This may limit the generalization of the findings to facilities outside of Rivers State.
- 2) Participants may give biased answers, and this may affect the accuracy of the collected data.

### **Recommendation**

Strengthening in-service training should be given priority attention.

There should be step down of knowledge among the members of staff, each time new knowledge is acquired through seminars, lectures or in-service trainings.

There should be continuous health education of mothers on essential newborn care by the health care providers, especially nurses and midwives, during their ANC sessions

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## **Maternity Care: Perspective of Mothers and Midwives in Primary Health Center Obio/Akpor Local Government Area, Rivers State.**

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### **Abstract**

*Maternity care (MC) is a measure of providing evidence-based care that is empathetic and women-centered throughout the period of childbirth which comprises antenatal care, childbirth care, and postnatal care services. It is a life-saving service that prevents maternal mortality and morbidity that could arise from pregnancy and childbirth. Midwives are said to be skilled towards the provision of this care. This study addresses mothers' and midwives' perspective of maternity care in primary health centers in Obio/Akpor Local Government Area, Rivers State. Specifically, the objectives of the study assessed midwives' perceptions of maternity care, ascertained attitude of midwives towards provision of maternity care, determined mothers' opinions about midwives' attitude towards provision of maternity care, and the barriers to satisfactory maternity care. The design employed for the study was qualitative. An in-depth interview was conducted. Twenty-four participants comprising twelve registered midwives and twelve mothers were sampled from two Primary Health Centers using purposive and convenient sampling techniques. Data collection instrument was Interview Guide Questions. Data collected were presented using thematic analysis. This was achieved by summarizing the interview discussions through generation of codes to capture recurrent themes. These themes are midwives' perception, midwives' attitude, mothers' opinions about midwives perception, and the barriers to satisfactory provision of maternity care. In recommendations, midwives should develop positive perception and attitude towards maternity care, knowing that it has the potential to reduce maternal/infant mortality and morbidity. Hospital management leaders should ensure that midwives consistently and satisfactorily provide maternity care in all healthcare facilities. More midwives should be recruited into healthcare facilities.*

**Keywords:** Maternity Care, Midwives, Mothers, Respectful Maternity Care

### **Introduction**

#### **Background of the Study**

The issue of maternity care has attracted global attention in recent years. Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period (World Health Organization, 2020) Maternity care therefore encompasses the care given to women, children and families during pregnancy, labour and childbirth and after birth. Each stage of maternity care should provide the women with positive experience, ensuring women and their babies reach their full potential for health and well-being as contained in the Sustainable Development Goals (United Nations, 2015), which is to provide all with good health and wellbeing as well as reduce the global maternal, neonatal and infant mortality.

Midwives take the lead in providing maternal care to women. Midwives may deliver babies at birthing centers, at home, or in hospital. It is on record that in 2017, about 295 000 women, which is approximately 810 women died daily from preventable pregnancy and childbirth complications (WHO, 2019). Most of these deaths are preventable with timely management by midwives and other skilled healthcare professional working in a supportive environment (WHO, 2021).

Addressing the challenges that affect health outcomes, especially maternal and reproductive health is essential in ensuring all women have access to high-quality maternity care (WHO, 2021). Even though remarkable progress has been recorded over the last two decades, in the area of reducing maternal, neonatal and infant deaths, many women across the globe, do not have access to maternal healthcare services because they have previously experienced disrespectful, reviling or neglectful treatment during antenatal care, childbirth and postnatal care in healthcare institutions, where they ought to have been treated respectfully (Freedman, Ramsey, Abuya, Bellows, Ndwiga & Warren, 2014).

Maternity Care (MC) is a measure of providing evidence-based care that is empathetic and women-centered throughout childbirth. It is a life-saving service that prevents deaths from pregnancy and childbirth complications. Implementing excellent maternal care will lead to improvement in the quality of care for mothers and newborn infants in health care facilities (WHO 2016). As essential as maternity care is, and despite the World Health Organization advocating and recommending MC to reduce mortality rate from pregnancy and childbirth complications, accessing antenatal and childbirth services is still reported to be low, mostly in the developing countries, especially in primary health care centers located in rural areas, where patronage for traditional birth attendant (TBA) homes is high (Allou, 2018). Women's experience with maternity caregivers has the tendency of creating positive or negative impact thereby increasing or decreasing the women's confidence and self-esteem. It is a fact that all women are entitled to a dignified, respectful and attainable standard of healthcare throughout pregnancy and childbirth (WHO, 2014).

UNICEF (2018) puts the figure of babies born in health facilities in Nigeria at 38%, while National Population Commission/Nigeria Demographic and Health Survey, 2017; and WHO, 2017 put it at 36% (23% in public sector facilities and 13% in private sector facilities). These low percentages imply that skilled attendance at labor is low, especially in rural communities (WHO, 2017). Many women who are pregnant or in labor do not utilize health care facilities because of experiences by self or others in some healthcare facilities.

Many women find it difficult to assess maternity care services due to poor attitudes of nurses and midwives, shortage of nurses, midwives and paramedic staff, prolong hospital waiting time and cultural barriers (National MC Task Force, 2019). Also, midwives providing maternity care (MC) have different perspectives regarding the practice. Midwives have different opinions, perception, attitude and assumptions about maternity care. A qualitative study by Cleeve, *et al*, (2019), revealed that midwives in Uganda were committed to saving women's lives but had conflicting perspectives about maternity care and this negatively affected their sense of professional duty and quality of care. Other studies (Idris, Sambo, and Ibrahim, 2017; Emelumadu, Onyeonoro, Ukegbu, Ezwama, Ifeadike, and Okezie 2014) have attributed this low utilization of maternity services in Nigeria to negative attitude of the attending midwives; but Adde, Darteh, Kumi-Kyereme and Amu (2018) reported that midwives had positive perspectives and were committed to maternity care. According to Rivers State Ministry of Health annual report (2017), maternal mortality ratio in Rivers State, Nigeria is 2,000 deaths per every 100,000 live birth recorded. This may be as a result of poor access to health services, inadequate facilities or low manpower in the state's health sector adequate knowledge of maternity care as well as the attitude of midwives towards disposition of this care are contributory factors to provision of satisfactory maternity care.

### **Statement of the Problem**

Maternal mortality rate has continued to rise, especially in the developing countries despite advancements in health technology. Most of these deaths result from hemorrhage. In 2016, the World Health Organization reported that globally, approximately 850 women die daily from preventable causes related to pregnancy, childbirth and unsafe abortion; and 99% of these deaths occur in developing countries. Nigeria constitutes 2% to the world's population but contributes 10% to the world's maternal mortality. In 2014, the Federal Ministry of Health (FMOH) reported that maternal mortality is higher in the rural areas than in the urban areas. In 2017, it was reported that about 145 women of childbearing age die daily in Nigeria, indicating that the country has the highest maternal mortality rate in the world. Majority of these deaths could have been prevented if proper maternity care, which is a life-saving service, is provided to women accessing maternal healthcare services.

Despite recognition that maternity care is an effective way to reducing and preventing maternal, neonatal and infant deaths, the level at which some nurses and midwives provide maternal care services is unsatisfactory. Some nurses and midwives have negative attitudes and perceptions towards provision of maternal healthcare, and this contributes to maternal mortality as a result of high patronage for traditional birth attendant (TBA), delivery at home and churches instead of health facilities, for fear of disrespectful maternity care. If this trend is not given due consideration, it may hamper the realization of the Sustainable Development Goal of reducing maternal mortality by the year 2030. Hence, there is need to explore midwives' perspectives on maternity care in Obio/Akpor Local Government Area, Rivers State, Nigeria.

### **Study Area**

The study was conducted in Obio/Akpor Local Government Area (LGA). Obio/Akpor is one of the 8 local government areas that make up Rivers East senatorial district. The headquarters of Obio/Akpor LGA is Rumuodomaya. The LGA consists of 17 electoral wards administered by the Obio/Akpor Local Government Council. It is located between latitudes 4°45'N and 4°60'N and longitudes 6°50'E and 8°00'E. Obio/Akpor is bounded by Port Harcourt LGA; to the south, Oyigbo and Eleme to the east, Ikwerre and Etche to the north, and Emohua to the west. Obio/Akpor LGA covers a land space of about 260 km<sup>2</sup> containing about 464,789 people (Federal Republic of Nigeria, 2006). The language spoken by the populace of Obio/Akpor LGA is predominantly Ikwerre and English. Their major occupations include fishing, business, and also the white collar jobs. The people are mostly Christians besides other traditional worshipers.

### **Research Design**

The research design adopted for this study is qualitative. Qualitative research design or non-numeric data collected were analysed using grounded theory or thematic analysis (Hughes, 2016). The design was considered appropriate because it enabled the researcher to assess midwives perspectives on maternity care in primary health centres in Rivers State, Nigeria using qualitative individual in-depth interviews.

### **Sampling**

Twenty-four (24) participants were conveniently selected: twelve (12) registered nurses/midwives (RN, RM) and twelve (12) mothers receiving maternity care at two (2) PHCs in Obio/Akpor LGA of Rivers State, Nigeria while two health facilities were purposively sampled; primary health center, Elenwo and primary health center, Rumueme.

### **Collection of Data**

Data was collected from primary sources. The primary sources of data were face to face in-depth interview session with individual participants per 30-45 minutes which was guided by a structured interview guide questions.

All responses were made anonymous right from the beginning of the study by using a unique identity code for each participant. The identification key was securely stored in a separate folder from the main data. All in-depth interview reports were electronically recorded with duly signed participants' consent. The interview was held with twelve (6) registered nurses/midwives and twelve (6) mothers receiving maternity care in each of the selected primary health center.

### **Data Analysis**

Verbatim of data collected through in-depth interviews were transcribed, coded and analyzed using thematic analytical method (Braun and Clarke 2007).

### **Ethical Approval**

Ethical clearance for the study was obtained from the Ethics Committee of University of Port Harcourt. Permission to conduct the study was obtained from the ethical committees of Rivers State Primary Healthcare Management Board and the health care facilities. Informed consent was also obtained from all participants after explanation of the purpose of study and requisition for their willingness to participate in the study.

### **Results**

Four themes which answered the four research questions were used for the study.

#### **Theme 1: Midwives' perception**

Conceptualization of maternity care was stated by a participant thus: *"As a midwife I perceive maternity care to be the totality of health care services provided to women during pregnancy"* (MW1). A participant stated: *"Maternity care refers to health services provided to women, children and families during pregnancy, labor and childbirth, and after birth"* (MW2).

The conceptualization of maternity care was revealed thus by the participants; *"as a trained midwife, I certainly know that maternity care consists of all healthcare services provided to women during pregnancy, which is antenatal care, care during the monitoring of labor, and the care provided to women and their newborn babies during postnatal care to prevent maternal and infant mortality"* (MW8). Similarly another participant also stated: *"For me, maternity care relates to care aimed at preventing maternal and child deaths, therefore I think it encompasses the sum of care provided to pregnant women such as antenatal and care during delivery, and care provided to newborn after birth during postnatal care"* (MW9).

#### **Theme 2: Attitude towards maternity care**

A study participant, while affirming a general positive attitude asserted: *"My opinion is that most nurses and midwives have positive attitude towards provision of maternity care. Only a few have negative attitude towards provision of such care"* as asserted by Oppong-Darko *et al* (2017).



A participant stated: *“Most midwives have good intension about providing satisfactory maternity care, but to be frank, some midwives have very poor attitude in the process of rendering such care”*(MW12). A participant stated; *“Really not all of us are doing well, some of us will just shout, go and lie down in your bed, close your leg and wait; without minding if the baby’s head is approaching cervix. Such attitude maybe discouraging for some women, hence they may decide to deliver at the TBAs’* (MW6).

*“there are times two to three pregnant women are calling on you to assist them deliver their babies and by the time one baby is out another woman is screaming for help then another...I just move from here to there catching the baby’s head...so as a midwives, I felt I have not really done well because I cannot give enough time to their (mothers’) care”*(MW8).

*“Midwives are very bad (M7)...talk and treat you anyhow without dignity...”*(M10). With such premonitory mindset the woman arrives expecting to be mistreated. This then causes tension on the midwives-patient relationship right from reception thereby influencing provision of quality health care services (MW5). Again a participant narrated *“at times you want to stress the instructions, some mothers would rather understand it as if you are shouting...like you want the woman to push the baby out during contractions so that you can get the baby as early as possible without complications yet women take that to be shouting or rudeness”* (MW11).

*“For me, no knife, no cuts, no surgical operation of any kind...I must deliver like the ‘Hebrew women’, according to prophesy. So even when the perineum is tight, and the woman is eligible for episiotomy, and you have rightly explained the situation to her in such a good way; some women will not still give consent. They do what they believed from their homes. It is really very hard and that is what makes a lot of the midwives to shout”* (MW1).

*“I have worked in this facility for years...but have not receive any reprimanding letter or seen a negative complaint about midwives’ provision of maternity care in the suggestion box”* (MW4).

**Theme 3: Mothers’ opinions about midwives’ attitude towards provision of maternity care.** The study revealed that most participants had encouraging attitude towards the provision of maternity care as narrated, *“Midwives are really trying when it comes to providing maternity care. They take their work seriously by ensuring that we receive the health care services we deserve.”*(M1). Also, another participant added: *“Midwives are very determined and committed to their work. They work tirelessly to make sure that they provide women with essential maternity care that will save lives and reduce both maternal and infant deaths”* (M3). Another stated thus: *“In my opinion as a mother of three (3) who has been accessing both antenatal and postnatal care in this health center, some midwives have very poor attitude to provision of healthcare services. At times they treat you as if you are less important. For instance, you have to spend a lot of time in the health center before being attended to, even when midwives are less busy”* (M9). Another participant stated; *“ I cannot help coming to the health facility during delivery ... but I do that very late ...after laboring for a while in my house...this will shorten my time in the facility in the health facility and I will also avoid their (midwives) bad mouth”*(M10).

**Theme 4: Barriers to satisfactory provision of maternity care:** A study participant said “*I think the number of available registered midwives in primary health facilities to provide maternity care is too small. This often leads to excess work load on the few available midwives, leading to provision of poor quality primary healthcare services to women and their babies*”(MW4). Another study participant maintained that poor funding constrains the provision of quality maternity care as narrated: “*Maternity care services to families, mothers and children has the potential to prevent and reduce maternal and infant deaths, but one of the greatest challenges is poor funding, which has led to low manpower, low incentive for staff, lack of materials and equipment and poor health infrastructural facilities*”(MW5). A participant responded “*we work like the elephants and eat like the ant (MW3)....working overtime, night and day and are exposed to all manner of danger but the pay we receive cannot be compared to the work*” (MW5). “*The most annoying aspect of it is that most times the allowances provided will not be paid as due... the arrears will take some months before it will be redeemed. How can we be happy in such condition?*” (MW2). A participant stated: “*Some women and mothers are illiterate and ignorant of the importance of primary healthcare services. Consequently, some do not register for antenatal care or register very late when they are experiencing complications that could result in maternal and neonatal deaths*”(MW2).

### Discussion of Findings

The statements made by the participants on midwives’ perception of maternity care revealed that they had full understanding of the components of maternity care. This finding is in line with the qualitative study by Paul *et al.* (2014) in Uganda, and Moridi, Pazandeh, Hajian & Ebadi (2019), which revealed that participants have good perceptions of maternity care as this is necessary in reducing maternal and infant mortality. Bwalya *et al.* (2017) and UNICEF, (2021) also agreed on the conceptualization of maternity care by women.

Midwives have the understanding that health care facilities are generally not interesting and an appealing place for anyone. More so, pregnant women or women of childbearing age are reluctant to patronize it mostly because of the attitude health care providers in the maternity section. This belief influence midwives’ behavior hence the attitude as manifested in women receiving unwelcoming address or greeting in harsh tones, delay, not being properly attended to at the labor ward, and sometimes poor care especially in situations where women are left to labor/deliver all alone. The result from this study reveals midwives’ negative attitudes as opposed to Adinma *et al.* (2018) who asserted to the fact that majority of midwives have positive attitude towards provision of maternity care. midwives believed that the negative attitude emanates as a result of women coming late (in their active phase) to the maternity unit such that there was no opportunity to communicate extensively with the women before delivery was eminent, large influx of pregnant women in active phase, many emergency obstetric cases, shortage of staff or communication error. This is in line with the result of a previous qualitative study by Oppong-Darko, AmponsaAchino & Dari (2017) among Ghanaian midwives, which revealed that even though majority of the respondents believed that maternity Care was a good practice that could save the lives of women, some have negative attitude towards the practice because they felt their job was too stressful. The study support Bulto, Demissie & Tulu (2020) opinion that some mothers believe midwives have negative attitude as opposed what Adde, *et al.* {2018} deduced from his study. Barriers to satisfactory provision of maternity care were identified. Many health care facilities lack the ability to provide quality services due to the fact that the health system does not have adequate facilities, skilled manpower or encouraging enumeration. Mathibe-Neke, Lebeko &

Motupa(2017), asserted to it that the factors contributing to poor and inefficient provision of maternity care include shortage of skilled manpower and insufficient knowledge of the strategy; which can be addressed through the provision of training programs for midwives (Dzomeku *et al.* 2021). In addition, this study revealed that mothers' related barriers such as illiteracy, negative perceptions about antenatal clinic, high patronage of the TBAs, delivering in churches and the use of traditional herbs are barriers to the utilization of maternity care services. This finding is in line with that of Nwaneri, Ndie, Ehiemere, Okafor & Ezenduka (2017).

## CONCLUSION

Although provision of quality maternity care to women during pregnancy, labor and postpartum period is an effective way of preventing and reducing maternal and infant morbidity and mortality, accessing antenatal and childbirth services is still reported to be low, especially in developing countries like Nigeria. This study had revealed that although majority of midwives in Primary Health Centers in Obio/Akpor Local Government Area, Rivers State, Nigeria have good understanding and positive attitude towards provision of maternity care, some midwives have discouraging attitude.

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# Prevalence and Knowledge of Episiotomy during Childbirth and Associated Factors among Pregnant Women in Yenagoa, Bayelsa State

Oruwori, Ayebaene Felicia

## Abstract

**Background:** Perineal injury occurs in 70% of women who give birth vaginally. It could happen naturally or as a result of an episiotomy. An episiotomy is a surgical incision made at the perineum to widen the introitus and facilitate delivery. This research aimed to assess the prevalence and knowledge of episiotomy during vaginal childbirth and associated factors among pregnant women at Diète-Koki Memorial Hospital, Yenagoa, Bayelsa State.

**Method:** Quantitative data from hospital records for episiotomies performed the year prior and focus group discussions were used in the methodology. Descriptive statistics were used in the data analysis.

**Result:** According to the socio-demographic information on the participants, 72.3% of them were between the ages of 24 and 34, and 56.9% had completed tertiary education. According to hospital records, DKMH had a lower than-recommended percentage of episiotomies, at 7.57% (64 of 846 births registered in the last year), compared to the WHO's 10% recommendation. Episiotomies were performed for various reasons, including tight perineum, primip mothers, large babies, instrumental findings, and inadequate maternal effort. The results showed that only 13.5% of these women had good knowledge of episiotomy as a childbirth procedure, while 53.7% had fair knowledge and 33% had poor knowledge.

**Conclusion:** According to the study's findings, the women's education and occupation level at DKMH were factors in their fair knowledge of episiotomy. In addition to making sure that women's educational aspirations are strengthened, policymakers should encourage a higher level of procedure knowledge to adhere to the WHO's suggested 10% usage.

**Keywords:** Episiotomy, Knowledge, Women, Childbirth, Bayelsa.

## Introduction

Episiotomy has grown into one of the most commonly executed obstetric procedures. However, it was familiarized in clinical practice lacking solid scientific proof of its benefits, and hence, it is a topic of much debate (Carroli and Mignini, 2009). Depending on the type of restrictive or routine procedure, episiotomy rates vary widely worldwide (Goueslard *et al.*, 2018). The rates increased substantially during the 20<sup>th</sup> century due to the movement for women to give birth in hospitals and for medical practitioners to be more engaged in normal and uncomplicated birth processes (Clémence, 2015). Episiotomy rates vacillate from as low as 9.7% (Sweden) to 100% (Taiwan), and they include both primiparous and multiparous women (Woretaw, et al., 2021). The deviations in rates seen globally can be attributed to the fact that professional norms seriously drive episiotomy—some medical practitioners favouring the procedure, different experiences in training, individual provider preference, and not physiological consideration (Ahmed, 2016). These alterations could also be a product of varying personal opinions concerning the benefits of episiotomy and an irregularity in their acquaintance with the reports from the literature. Degrees of episiotomies remain high, particularly in developing countries, notwithstanding guidelines homogeneously agreeing that delimited use of episiotomy is superior (Kartal, et al., 2017).

A perineal incision characterizes an episiotomy to expand the vulva, instituting itself as a practice routinely used in childbirth (Chang, 2011). The World Health Organization (WHO) recommends restricted use of episiotomy, not greater than the rate of 10% of cases, and it is only designated in cases of signs of fetal distress; unsatisfactory labour progress, or the threat or history of a third-degree tear (Carvalho, 2010). Scientific pieces of evidence indicate that the repetitive procedure of episiotomy is linked with numerous side effects such as the extension of the section to the anal sphincter, poor anatomic results, vaginal prolapse, rectal, vaginal fistula, increase in blood loss and bruising, pain and swelling, infection and dehiscence, and sexual dysfunction (Graziele Figueiredo, 2015; Naidoo et al., 2021; Umoiyoho, 2012). Nevertheless, proper and restrictive use presents good results, such as a lower risk of vaginal and perineal trauma, fewer healing complications, urinary incontinence, dyspareunia, and others (Handa, 2012).

The Middle East as a region and some other regions have a significantly high percentage of episiotomies, often over 50% (Hussein, 2014). Similar rates are reported in the USA (Willyard, 2020). In some Eastern European states, rates as high as 99% have been reported (Hussein, 2014). In divergence, the Netherlands has an episiotomy rate of only 15% (Seijmonsbergen-Schermers, 2020), while 15% is in the U.K. (Tidy, 2014). In Australia in 2008, the middling rate of episiotomies was 14.4%, with a variation oscillating from 8.5% in the Northern Region to 20.4% in Victoria (Laws, Tracy, & Sullivan, 2010). The data on episiotomy rates for Sub-Saharan Africa as a region is almost nonexistent. However, a study conducted by Belihu *et al.* (2017) showed that the East African region has an episiotomy rate of 30.5%; in Ethiopia, the rate is pegged at 44% (Woretaw et al., 2021); and in South Africa, the reported rate is 63.3% (Woretaw et al., 2021). In Nigeria, the episiotomy rate among Nigerian parturients varies from 20.8% to 54.9% (Suleiman, 2015). The specific percentage and locations are 20.8% at the Jos University Teaching Hospital, 34.3% at Bowen University Ogbomoso, 35.4% at Ahmadu Bello University Teaching Hospital Zaria, 40.1% at the University of Port Harcourt, 45% at the Abia State University Teaching Hospital, and 54.9% at the University of Benin Teaching Hospital, respectively.

Subjective research indicates that lifelong post-episiotomy perineal traumas affect the mothers' psychological and social state, mother-child bonding, and sexual life. (Stankovic, 2017). A mixed-methods survey of primiparous mothers by Henriksen et al. (2017) highlighted that mothers regularly complained of an unjustified need for episiotomy procedures. Nevertheless, the subjects also complained about inadequate preparation for the episiotomy procedure. Despite routine episiotomy being substituted with restrictive episiotomy practice, some women still accept that episiotomy is essential for their safety and the safety of their newborns during normal vaginal delivery (Jiang et al., 2017).

As a result of the little accessible evidence, it is evident that most women have a fair knowledge of episiotomy as a procedure due to the postpartum pain and discomfort associated with sutured perineal incisions. The aim of this study was to increase knowledge among women about the use of episiotomies during childbirth.

## Materials and Methods

**Ethical statement:** Ethical clearance was obtained from the Research and Ethics Committee (REC) of the University of Port Harcourt, and permission to conduct this study at the DKMH was also granted by the Management of the DKMH. Confidentiality in adherence to the ethical approval was maintained throughout the process, and only pregnant women who

consented verbally or in written format were included in the study. To ensure the anonymity and confidentiality of the data, the transcribed data was password protected and only accessible by the researcher; every identifying detail of the researcher's participants was also taken out of the transcribed data. All the data gathered was then stored in a locked drawer that only the researcher could access.

**Study area:** The study was conducted in Bayelsa State, particularly in the southern part of Nigeria. Bayelsa State was carved out of Rivers State in 1996. The name Bayelsa is a mixture of the initials of the major local government areas within its borders: Brass LGA (BALGA), Yenagoa LGA (YELGA), and Sagbama LGA (SALGA). There are eight (8) local government areas that make up the state: Ekeremor, Kolokuma Opokuma, Yenagoa, Nembe, Ogbia, Sagbama, Brass, and Southern Ijaw. While English is the official language, Izon, Nembe, Ogbia, and Epie-Atissa are the primary languages spoken. The state boundaries are Rivers State, Delta State, and the Atlantic Ocean to the east and south. Although being a contributing site of one of the country's enormous crude oil and natural gas deposits contributes to local economic development, the state remains inundated by rampant poverty and pollution stemming from oil spills (Ratcliffe, 2019). The study site for this research was in Opolo, a district/suburb in the capital city of Bayelsa that houses two of the primary health facilities in the state.

The case study for this research is Diете-Koki Memorial Hospital in Opolo, Bayelsa State. The Bayelsa State Government owns Diете-Koki Memorial Hospital. This health institution is central, as it serves the health needs of both urban and rural populations within and outside the state. A recent study shows that Diете-Koki Memorial Hospital has one of the highest delivery rates among health institutions in Bayelsa State (Otovwe Agofure *et al.*, 2019).

**Calculation of sample size:** The sample size was drawn from the total population of women that gave birth at the DKMH in the past 12 months using the Yamane Formula shown in the figure below.

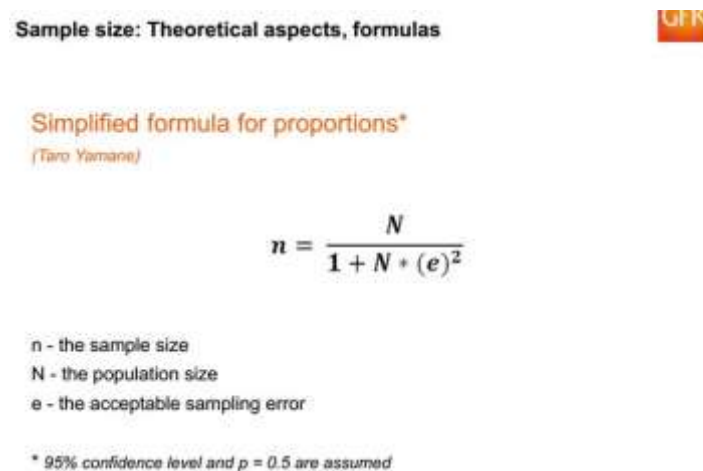


Figure 1: The Yamane Formula

Source: <https://www.quora.com/What-is-Yamane-sample-calculation>

N= 846

n =?

e= 0.5

Applying the above formula to the population of 846,

$$\begin{aligned}n &= 846/1 + 846* (0.5)^2 \\ &= 846/1+846*0.0025 \\ &=846/1+2.115 \\ &= 846/3.115 \\ n &= 271.5\end{aligned}$$

The sample size then becomes 272 pregnant women. Questionnaires were administered to the population. Considering this was not a longitudinal study, there was no provision for attrition.

**Eligibility criteria:** The research was conducted on pregnant women attending antenatal clinics at DKMH. The respondents were above the age of 18 and were able to provide informed consent to participate in the study. Traumatized women from episiotomy needing professional counselling and pregnant women that were too ill to participate in the research were excluded.

**Sampling method:** A systematic sampling method was used to select the respondents. The ANC runs on Mondays and Wednesdays, and on average, about 120 pregnant women attend the clinic each day. Data was collected over a period of 4 weeks, i.e., 8 clinic days. On each clinic day, 272/8, i.e., 34 pregnant women, were selected out of the 120 using the systematic sampling method. The sampling interval (k) was  $120/34 = 3.5$ . From the ANC register, one of the first four women was selected by a simple random sampling method of balloting, and the remaining 33 pregnant women were selected at intervals of 4 until the 33<sup>rd</sup> woman was selected for each of the 8 clinic days. Consent was thereafter obtained, and data was subsequently collected using the questionnaire.

**Data analysis:** The quantitative data was imputed into SPSS, and the generated data were presented using descriptive frequency statistics and other SPSS-aided analyses. Participants, after completing the questionnaire, were then scored as either poor, fair, or good, with poor representing 0-3, fair being 4-6, and good being 7-9 correct answers. Only 143 of the respondents scored between 4 and 6. Records reviewed and collected through the extraction sheet are summarized to provide coherent answers to the research questions posed.

## Results

Out of 293 questionnaires distributed, 267 were returned by the respondents, giving a response rate of 91.1%. Based on the socio-demographic characteristics of the respondents, it was found that most of the respondents (193) (72.3%) were aged between 25 and 34 years, 261 were married (97.8%), and 258 were Christians (96.6%). Most of the respondents had also received tertiary education as the highest level of education (152, or 56.9%). The largest proportion of the respondents and their spouses were partly skilled: 74 (27.7%) and 69 (26.4%), respectively.

On the overall knowledge of episiotomy, the majority of the respondents had a fair level of knowledge, as shown in the table below.



*Table 1: Overall knowledge of episiotomy among the respondents*

<b>Level of Knowledge</b>	<b>Frequency (n=267)</b>	<b>Percentage (%)</b>
Poor (0-4)	88	33.0
Fair (5-8)	143	53.6
Good (9-12)	36	13.4

Most of the respondents answered fairly to the individual questions to elicit their knowledge of episiotomy. Only 43.4% of the respondents correctly identified the episiotomy as a deliberate incision to enlarge the vulva during delivery, while 56.6% thought it was a perineal tear during delivery. It was inferred that the majority of the respondents (66.3%) believed that episiotomy stitches take about a month to heal completely, while only 33.7% believed it takes one week. In addition, only 10.1% of the respondents correctly identified mediolateral episiotomies as a type of episiotomy, while 47.2% identified midline and 4.1% identified lateral. Interestingly, 38.6% of the respondents identified all of the above as types of episiotomies, which is not accurate. The vast majority of the respondents (86.1%) correctly believed that episiotomy is not always mandatory during delivery, while only 13.9% believed that it is always mandatory. However, 65.9% of the respondents incorrectly identified episiotomy as a tear that occurs spontaneously during childbirth, while only 34.1% correctly identified it as a deliberate incision done to enlarge the vulva during delivery.

Furthermore, 47.9% of respondents correctly identified perineal massage as a measure to prevent episiotomy, while 52.1% believed that praying for divine intervention could prevent it. 72.7% correctly identified taking a sitz bath as a way to care for the episiotomy site after delivery, while only 27.3% believed that using a mixture of herbs to dress the site was appropriate. Only 9.7% of the respondents correctly identified the possible complication of an episiotomy as the cut healing quickly, while 41.6% correctly identified the cut becoming larger during delivery as a possible complication. According to the respondents, the most common reasons why a woman might need an episiotomy are the baby being large or having a large head or shoulder (68.2%), the phase of labour lasting too long (6.4%), and the need for instruments to help get the baby out (6.0%). Only a small percentage (4.5%) identified the baby being breech as a reason, while 15.0% thought all of the above were possible reasons.

### **Factors associated with the knowledge of episiotomy**

As shown in the table below, the educational qualifications of the respondents, as well as the occupational status of the respondents and their spouses, and the income of their spouses, had statistically significant associations with their knowledge of episiotomy. Mothers who had received tertiary education were two times more likely to have fair or good knowledge of episiotomy than those who had received either only primary or secondary education ( $p = 0.001$ ; O.R.: 2.477, 95% C.I.: 1.47-4.18). Working mothers were 7 times more likely to have fair or good knowledge of episiotomy than those who were not working ( $p = 0.008$ ; O.R.: 2.860, 95% C.I.: 1.28-6.41). In the same vein, mothers who had spouses that were not working were twice as likely to have fair or good knowledge of episiotomy as those who were working ( $p = 0.034$ ; O.R.: 1.509, 95% C.I.: 1.38-1.65), and women with spouses whose monthly incomes were below ₦30,000 were less likely to have poor knowledge of episiotomy than those whose incomes were above or equal to ₦30,000 monthly ( $p = 0.021$ ; O.R.: 0.493, 95% C.I.: 0.27-0.91).

**Table 2: Socio-demographic factors associated with the knowledge of episiotomy**

Factors	Knowledge of episiotomy			X <sup>2</sup> (p-value)	OR (95% CI)
	Poor f (%)	Good/fair f (%)	Total f (%)		
Age (years)					
18-34	80 (34.9)	149 (65.1)	229 (85.8)	2.842 (0.092)	0.497 (0.22-1.13)
> 35	8 (21.1)	30 (78.9)	38 (14.2)		
Total	88 (33.0)	179 (67.0)	267 (100.0)		
Marital status					
Married	85 (32.6)	176 (67.4)	6 (2.2)	0.807 (0.369)	2.071 (0.41-10.47)
Single	3 (50.0)	3 (50.0)	261 (97.8)		
Total	88 (33.0)	179 (67.0)	267(100.0)		
Educational					
Qualification					
Primary/Secondary	51 (44.3)	64 (55.7)	115 (43.1)	11.858 (0.001)*	2.477 (1.47-4.18)
Tertiary	37 (24.3)	115 (75.7)	152 (56.9)		
Total	88 (33.0)	179 (67.0)	267(100.0)		
Working status					
Not working	15 (55.6)	12 (44.4)	27 (10.1)	6.941 (0.008)*	2.860 (1.28-6.41)
Working	73 (30.4)	167 (69.6)	240 (89.9)		
Total	88 (33.0)	179 (67.0)	267(100.0)		
Working status (spouse)					
Not working	0 (0.0)	9 (100.0)	9 (3.4)	4.502 (0.034)*	1.509 (1.38-1.65)
Working	85 (33.7)	167 (66.3)	252 (96.6)		
Total	85 (32.6)	176 (67.4)	261 (100.0)		
Income					
< 30,000	61 (34.9)	114 (65.1)	175 (65.5)	0.828 (0.363)	1.288 (0.75-2.22)
> 30,000	27 (29.3)	65 (70.7)	92 (34.5)		
Total	88 (33.0)	179 (67.0)	267(100.0)		
Income (spouse)					
< 30,000	18 (22.8)	61 (77.2)	79 (29.6)	5.322 (0.021)*	0.493 (0.27-0.91)
> 30,000	67 (37.4)	112 (62.6)	179 (70.4)		
Total	85 (32.9)	173 (67.1)	258 (100.0)		

Table 3 below shows that a statistically significant association existed between the age of the respondents at menarche and their knowledge of episiotomy. Women who experienced menarche before 15 years of age were less likely to have poor knowledge of episiotomy than those who experienced this event after 15 years of age. (p = 0.001; O.R.: 0.189, 95% C.I.: 0.07–0.55).

**Table 3: Clinical factors associated with the knowledge of episiotomy**

Factors	Knowledge of episiotomy			X <sup>2</sup> (p-value)	OR (95% CI)
	Poor f (%)	Good/fair f (%)	Total f (%)		
Age at Menarche (years)					
>15	4 (1.5)	36 (13.5)	40 (15.0)	11.224 (0.001)*	0.189 (0.07-0.55)
<15	84 (31.5)	143 (53.6)	227 (85.0)		
Total	88 (33.0)	179 (67.0)	267 (100.0)		
Number of pregnancies					
Primigravida	24 (34.3)	46 (65.7)	70 (26.6)	0.242 (0.623)	1.157 (0.65-2.07)
Multi	60 (31.1)	133 (68.9)	193 (73.4)		
Total	84 (31.9)	179 (68.1)	263(100.0)		

Grandmultigravida					
Total					
Place of delivery					
Hospital/maternity	56 (33.5)	111 (66.5)	167 (91.3)	0.482	0.661
Home/TBAs	4 (25.0)	12 (75.0)	16 (8.7)	(0.487)	(0.20-2.14)
Total	60 (32.8)	123 (67.2)	183(100.0)		
Had an Episiotomy in					
the past					
Yes	28 (31.1)	62 (68.9)	90 (34.1)	0.303	0.858
No	60 (34.5)	114 (65.5)	174 (65.9)	(0.582)	(0.50-1.48)
Total	88 (33.3)	176 (66.7)	264(100.0)		

## Discussions

The aim of this study was to describe the knowledge of women about the use of episiotomy during childbirth. As a result, the knowledge of pregnant women about the use of episiotomy in DKMH was ascertained. The women were given a set of nine questions to test their level of knowledge as regards the use of episiotomy during childbirth. They were then scored as either poor, fair, or good, with poor marks representing 0-3, fair being 4–6, and good being 7–9 correct answers. Only 143 of the respondents scored between 4 and 6. Discussions at the FGD also revealed the knowledge of some women to support the quantitative data.

Overall, there was a fair level of knowledge of episiotomy among the women; however, when it came to individual questions testing their knowledge, it was interesting to see that even those who had episiotomy in the past confused a tear with episiotomy. This can be attributed to the fact that little or no prior information session was conducted for the mothers. It was also striking that more than half of the respondents stated they would pray for divine intervention as regards their healing from the procedure rather than seek medical solutions. This can be attributed to the fact that the majority of them were religious; however, in addition to spirituality, it is important that they seek medical attention. The fair level of knowledge among these women can also be explained by the fact that the majority of them are first-time, experienced mothers. Despite the fact that around a third of those who had heard about episiotomy had first-hand experience with the surgery, more than half of those who had heard about it were likely to discourage their friends from taking it if it was needed. This can be attributed to the painful experiences of some of these women and the associated risk factor of sexual dysfunction.

The knowledge of episiotomy among parturients in DKMH is similar to that reported in a 2012 report from Calabar (Inyang-Etoh & Umoiyoho, 2012) and a 2017 report from Ibadan (Oluwashola & Bello, 2017) but lower than that discovered in a 2015 report from Kano (Abubakar & Suleiman, 2015), indicating a likely status quo in efforts to raise awareness among pregnant women. The episiotomy was not disclosed to most of the participants at any point prior to delivery. Those who stated they had some prior knowledge said it came from friends and relatives who had been through it. The women exhibited a lack of understanding of the procedure's indications as well as their own bodies. The study also revealed that experts have complete control over the mother's body, highlighting the need to restore women's autonomy in the delivery process.

The women in this study were given little or no information on episiotomy, even during labour and prenatal care, demonstrating a lack of understanding of the technique. This fact reflects the quality of information and guidelines that are provided during prenatal care regarding childbirth and birth processes. Prenatal care is the time to prepare women to

experience pregnancy and childbirth in a positive and integrative way. This fact reflects the quality of information and guidelines that are provided during prenatal care. It is essential for women to have access to information relevant to possible interventions during the process of childbirth as part of their health education that is provided by professionals during prenatal care. This is essential not only for the acquisition of knowledge about being pregnant and giving birth but also for the strengthening of their identities as human beings.

Prenatal care that is offered in a manner that is contextualized and qualified has the potential to prevent difficulties during the labour and delivery process. In addition, pregnant women have the right to be informed about the medical treatment that they will get, which gives them the opportunity to participate in the decision-making process regarding matters that have an impact on their lives. Women's autonomy in the process of giving birth and delivery can be recovered through access to information, and this is one of the greatest difficulties facing women's health care today.

Women look forward to receiving information during their prenatal care, and at the same time, they end up becoming multipliers of knowledge by exchanging information with other women, thereby becoming transformers of opinions. This is because when women acquire information, it will result in them having more control over their bodies and more decision-making power regarding their pregnancy.

According to the testimonies made by the postpartum ladies, the vast majority were not contacted about the surgery, which brings up another significant problem that needs to be considered: the absence of prior consent. In addition, several of them were unaware that they had been subjected to an episiotomy until the expert was doing the stitching procedure on them.

Episiotomy is the only surgical treatment that can be performed without the consent of the woman who is giving birth, according to the majority of medical professionals. However, because an episiotomy is a surgical procedure, women are required to be informed about it and give their consent before it can be performed. In addition, the potential risks and benefits of the procedure are required to be presented in a way that does not violate their sexual or reproductive rights. The labour and delivery plan should include preparation for both this operation and any other interventions that may be necessary.

The major source of information that impacted women's knowledge regarding the use of episiotomy was family and friends—a clear deviation from previous reports, which found health professionals to be the commonest sources of information. It also agrees with some studies that family and friends are the main sources of information.

### **Conclusion**

In conclusion, this study has shown that pregnant women in DKMH have a fair level of knowledge about the use of episiotomy during childbirth, but there is still room for improvement in their comprehension of the technique. Family and friends were the main sources of information, which demonstrated the lack of prior knowledge and education regarding the procedure during prenatal care. Healthcare providers should actively educate and inform women about episiotomies, including their indications, potential risks, and advantages. For women to be able to make educated decisions about their health and the health of their unborn children, they must have access to accurate and thorough information. In the end, regaining women's autonomy during childbirth.

The magnitude of episiotomy practised in DKMH is below the 10% WHO recommendation; only 64 cases (7.57%) from 846 births required the procedure. The main factors for episiotomy were a tight perineum, primip mothers, big babies, instrumental deliveries, and poor maternal effort.

### Recommendations

1. Health policymakers should create strategies to promote good episiotomy knowledge and reduce the WHO recommended rate.
2. Health practitioners should be trained on respectful maternal care and the need to gain patients' consent before the procedure is administered.
3. Through the Ministry of Health, the government should develop a standard operating procedure for when and how the procedure should be conducted on women.
4. The government and corporate organizations, especially hospitals, should design and deliver educational programs to increase awareness and knowledge about episiotomy among women and girls.

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## **Assessment of Nutritional Status of Pregnant Women and Nursing Mothers Resident in Ibaa Community of Rivers State, Nigeria**

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### **Abstract**

#### **Background:**

Malnutrition among pregnant women and nursing mothers critically affects the women, mostly their foetuses or newborns that depend on them for survival. Thus, assessing the nutritional status of pregnant and nursing mothers is essential.

#### **Objective:**

To assess the nutritional status of pregnant women and nursing mothers in Ibaa, Rivers State, Nigeria.

#### **Materials and method:**

A cross-sectional qualitative study was conducted among 99 pregnant women and nursing mothers attending clinics in Ibaa. These women were randomly selected and they consented to an interview. Ethical clearance was obtained from the Post-graduate Ethical Committee. Data used to assess the nutritional status of these women were obtained from a predesigned structured questionnaire, anthropometric measurements, biochemical investigations, and clinical and dietary evaluations. Data were expressed in percentages and analyzed using IBM, SPSS version 23.0.

#### **Results:**

The mean age of the women was 26.9±7.8years, and the levels of education among the participants were primary, 17 [17.2%]; secondary, 68 [68.7%]; tertiary (first degree), 14 [14.1%]. The result also showed that 97% of the women had a monthly family income below ≥ ₦30,000. The proportion of gravidity among the women was 38.4% [1-2 gravida], 39% [3-4], 14.1% [5-6], 7.1% [7-8], and 1% [9-10]. BMI value shows that 41.4% of the women were underweight, and 10.1% were overweight. Thirty-four (34.3%) of these women were hypertensive. An average of 13.13% of the pregnant and nursing mothers skipped a meal daily, and they had a daily calory-intake and protein intake below the Recommended Dietary Allowance (RDA).

#### **Conclusion:**

Underweight and low dietary nutrients were nutritional problems in Ibaa community. Therefore, effective nutrition intervention, mostly calory-, protein-, minerals-, and vitamins-based should be directed towards pregnant women and nursing mothers in Ibaa to improve maternal nutritional status.

**Keywords:** *Assessment, nutritional status, nursing mother, pregnant woman, Recommended Dietary Allowance (RDA).*

## Introduction

Pregnancy is the term used to describe the period in which a foetus develops inside a woman's uterus. Pregnancy usually lasts about forty weeks or just over nine months, as measured from the last menstrual period to delivery. During this period a woman changes clearly in appearance and body physiology in view of the presence of the developing foetus in the uterus, she requires a lot of care as the foetus gets nutrients from her completely through the placenta (Prodhan et al., 2016). The pregnant woman requires adequate or exceptional weight and to achieve this, she needs to feed or be fed optimally with a well-balanced diet. (Mudambi, 2012).

An optimum level of nutrition is the amount of healthy diet consumed that enables the highest level of health. An adequate diet is a meal that includes a sufficient amount of nutrients such as fats, protein, vitamins and minerals. Optimum nutrition has a significant implication on the health of an individual throughout life especially when a person is at a stage of rapid growth mostly during pregnancy and childhood (Black et al, 2013).

This period of rapid development of a foetus and neonate is called 'the first 1000 days of life' (Black et al., 2013). Upon fertilization, the zygote cleaves and becomes filled with fluid to be called a blastocyst. The blastocyst is made of two layers of cells; the inner layer (embryoblast) develops to become the foetus while the outer layer of cells (trophoblast) becomes the foetal portion of the placenta. This developmental process is influenced by nutrition and hormones (Kleeman et al., 1994; Walker et al., 1996). Any slight compromise of the mother's and child's diets either in the form of undernutrition or overnutrition has been documented to affect optimal growth and increase the chances of disease susceptibility (e.g., metabolic syndrome) later as the child grows (Marsal, 2002). Undernutrition of a mother at the time of conception has shown that the embryoblast presents fewer cells in experimental animal studies, which is associated with low birth weight and poor postnatal growth, altered organ/body weight ratios and the development of chronic diseases such as type 2 diabetes mellitus, hypertension, coronary artery disease etc. (Kwong et al., 2000). Studies investigating the critical period of foetal development have shown that maternal malnutrition in early pregnancy is associated with the occurrence of coronary artery disease (CAD) in the offspring (Eriksson et al., 2001). Studies have shown that exposure to malnutrition, especially in late gestation, is linked to impaired glucose tolerance, while exposure in early gestation is linked to atherogenic lipid disorders and obesity (Eriksson et al., 2001).

A nutritional intervention aimed at women's health during their reproductive age has been proven to assist in ensuring sufficient nutritional status for newborns and this reflects in the health of the child as he/she grows (World Health Organization [W.H.O.], 2016). Birth weight is a parameter that is crucial for the survival of infants, and babies born less than 2.5 kg are considered low in weight. Most low birth weight in developing countries is due to intrauterine growth retardation which is caused predominately by maternal malnutrition, either before conception or during pregnancy. The effects of malnutrition during childhood and adolescence also have an additive negative influence on birth weight. In a Nigeria study, women with a pre-pregnancy weight under 59kg were over two times as likely to have low birth weight infants when compared to a pregnancy weight over 59kg (Taffel, 2010).

A study by Martorell et al., (2014) on growth and stunting in developing countries has also exposed that maternal micronutrient status may also have an effect on the growth of young offspring. A study in Malawi showed that vitamin A deficiency in mothers' diet was related



to linear and ponderal growth of children after adjusting for confounding factors, including gender and maternal body mass index (BMI). At the age of a year, the children of vitamin A-deficient-mothers were lighter and shorter when compared to the children of non-deficient mothers (Semba et al., 2017). Low protein in mothers' diets has also been associated with low birth weight, while a diet rich in fat has been shown to affect adipocyte metabolism, foetal growth, and fat mass in offspring (Khan et al., 2014).

Monitoring nutritional status during pregnancy by measuring anthropometric assessment is a promising way of boosting the development of a foetus (Padilha et al., 2019). Although, it might not give full information on the nutritional status of a person, especially when such individual mostly children (reproductive women not exempted), suffer from chronic liver diseases (CLDs), therefore, biochemical and clinical analyses will be good methods to complement the error that might arise using anthropometric assessment (El Koofy et al., 2019).

In Nigeria, 40.1% of people are poor according to the 2018/19 national monetary poverty line, and 63% are multidimensionally poor according to the National Multidimensional Poverty Index 2022. (National Bureau of Statistics, 2022), a fact that proves that Ibaa a community in Nigeria is not exempted. Extreme poverty primarily caused by communal crisis has been implicated as the major cause of undernutrition in Ibaa (Nwabueze & Elem, 2020). This crisis particularly affected women because they suffered social, economic and nutritional deprivation much more than men (Giashuddin et al., 2013). Although from 2000 to 2017, stunting among children under five years of age has fallen by  $\approx 10\%$  and there has also been a slight decrease ( $\approx 2\%$ ) in underweight women (UNICEF, 2018). Maternal undernutrition has also decreased in Ibaa during the last decade from 53% in 2006 to 32% in 2015, this progress is slow and patchy as such it is still a matter of concern to ensure a healthy future generation. Hence, this study was conducted to assess the nutritional status of pregnant women and nursing mothers resident in Ibaa community of Rivers State.

## Materials and Method

### Ethical statement

Ethical approval was obtained from the Africa Centre of Excellence, Centre for Public Health and Toxicological Research, University of Port Harcourt, Rivers State, Nigeria. Sensitive information concerning this study was particularly avoided, and written informed consent was obtained from each respondent.

### Study area

The study was conducted between January and March 2022, the study area was Ibaa community, Rivers State, Nigeria. Ibaa is in the heart of Ikwerre, in Emohua Local Government Area of Rivers State. The study population was about 200 pregnant and lactating mothers that visited different government and private hospitals monthly.

### Calculation of sample size

The sample size of this cross-sectional study was determined using the formula for estimating the sample size for cross-sectional descriptive studies (Charan & Biswas, 2013):

$$n = \frac{Z^2 p (1 - p)}{d^2}$$

Where:

$n$  = sample size

$Z$  = value of standard normal deviate set at 1.96 corresponding to 95% confidence level.

$p$  = expected proportion in population based on previous studies or a pilot study. The prevalence of malnutrition in Nigeria is set at 6.9% in a previous study (United Children's Fund, 2020).

$d$  = desired degree of precision = 5% = 0.05

Therefore,  $n = [1.96^2 \times 0.069(1 - 0.069) / 0.05^2]$

$n = (1.96^2 \times 0.069 \times 0.931) / 0.0025$

$n = 0.2467805424 / 0.0025$

$n = 98.71$

$n \sim 99$  respondents

### Eligibility criteria

The respondents included pregnant and nursing mothers visiting these hospitals and residing in the study area who agreed and consented to participate in the study. This study ensured that the mothers were 18 years and above, and they present signs of pregnancy or lactation.

### Sampling method

Respondents were selected by simple random sampling and they were requested to pick one from several folded small pieces of paper with "yes" and "no" inscriptions. Women who picked "yes" and consented were measured, clinically assessed and their 24-hour dietary intake recorded. Women that pick "no" were excluded.

### Data collection

Data was collected by the administration of a well-structured questionnaire, weighing scale, stadiometer and a fibre-glass non-flexible tape for weight, height, and mid-upper arm circumference (MUAC) respectively (anthropometric parameters). A checklist and direct observation were used to assess the clinical findings such as skin condition, thyroid gland, hair, eyes, mouth, nails, muscles, etc. A confidential interview was conducted to assess their dietary assessment (24-hour meal recall method).

### Data analysis

All the data were expressed in percentages while age, anthropometric and gravidity values were further expressed in mean  $\pm$  standard deviation. Data analysis was done using IBM, SPSS (statistical package for social sciences) version 23. BMI was calculated using the formula: weight in kilogram/square of height in meter [ $\text{kg}/\text{m}^2$ ] (Sann et al., 1988). The level of significance was set at  $p < 0.05$  as Chi-square was used to test for significance.

### Results

The response rate was 100% as ninety-three pregnant and nursing mothers were interviewed. Results presented in this study are demographic data of the respondents illustrated in table 1, gravidity and parity illustrated in Table 2, anthropometric data in Table 3, clinical findings associated with respondents in Table 4, and dietary assessment using 24-hour recall parameters in Table 5.

The result of this study shows that the mean age was 26.9 ±7.8years. The majority of the women 68 (68.7%) stopped education at the secondary school level. Most of the women were self-employed 34 (34.4%) and unemployed 44 (44.5%). More so, out of the 99 women, 44 (44.5%) and 38 (38.4%) had a monthly family income below ₦ 10000 and ₦10000 - ₦20000 respectively [Table 1]. Only 20.2% of the women were primigravida or primipara [Table 2]. Most of the women (41.5%) were 156cm to 160cm tall [Table 3]. BMI shows that 41.4% and 10.1% of the women were underweight and overweight respectively [Table 3].

Table 4 shows that only 41.4% of the women looked healthy by general body examination. Healthy-looking gingiva, normal blood pressure, and healthy-looking skin were observed in 57.5%, 65.7%, and 50.5% of the women respectively.

The major meal consumed by these women daily was carbohydrates, mostly gotten from cassava, at a proportion of 82%, 75.8%, and 67.7% for breakfast, lunch, and dinner [Table 5].

**Table 1: Demographic Information of Respondents in Ibaa, n=99**

Variables	Options	Frequencyn (%)
<b>Age</b>	18-24 years	38 (38.4)
	25-31 years	41 (41.4)
	32-38 years	17 (17.2)
	39-45 years	3 (3)
	45 and above	-
	<b>Total</b>	<b>99 (100)</b>
<b>Mean age = 26.9±7.8</b>		
<b>Educational qualification</b>	FSLC	17 (17.2)
	SSCE	68 (68.7)
	OND/HND/BSC	14 (14.1)
	MSC/PGD/MBA/PHD	-
	Others	-
	<b>Total</b>	<b>99 (100)</b>
<b>Work status of respondents</b>	Civil Servant	4 (4)
	Self-employed	34 (34.4)
	Students	14 (14.1)
	Unemployed	44 (44.5)
	Farmer	3 (3)
	<b>Total</b>	<b>99 (100)</b>
<b>Monthly family income</b>	Below ₦10,000	44 (44.5)
	₦10,000 – ₦19,999	38 (38.4)
	₦20,000 - ₦29,999	14 (14.1)
	₦30,000 and above	3 (3)
	<b>Total</b>	<b>99 (100)</b>
<b>Marital Status</b>	Single	7 (7.1)
	Married	92 (92.9)
	Divorced	-
	Widowed	-
	<b>Total</b>	<b>99 (100)</b>

Source: Field Survey

**Table 2: Gravidity and Parity Characteristic of Respondents in Ibaa, n=99.**

Variables	Options	Frequency n (%)
First pregnancy or child	Yes	20 (20.2)
	No	79 (79.8)
	<b>Total</b>	<b>99 (100)</b>
Number of times gotten pregnant	1-2	38 (38.4)
	3-4	39 (39.4)
	5-6	14 (14.1)
	7-8	7 (7.1)
	9-10	1 (1)
	<b>Total</b>	<b>99 (100)</b>
	<b>Mean±SD = 3.36 ± 2.828</b>	
Number of parturition or children had	0-1	31 (31.3)
	2-3	34 (34.4)
	4-5	31 (31.3)
	6-7	3 (3)
	<b>Total</b>	<b>99 (100)</b>
	<b>Mean±SD = 2.62 ± 2.236</b>	

Source: Field Survey

**Table 3: Anthropometric data of respondents, n=99.**

Variables	Options	Frequency, n=99.
Height in 'cm'	151-155	24 (24.2)
	156-160	41 (41.5)
	161-165	14 (14.1)
	166-170	14 (14.1)
	≥171	6 (6.1)
	<b>Total</b>	<b>99 (100)</b>
	<b>Mean±SD = 159.26 ± 7.088</b>	
Weight in 'kg'	40-50	42 (42.5)
	51-60	48 (48.5)
	61-70	3 (3)
	71-80	3 (3)
	≥81	3 (3)
	<b>Total</b>	<b>99 (100)</b>
<b>Mean±SD = 52.076 ± 14.142</b>		
Body mass index	<18.5	41 (41.4)
	18.5-24.9	48 (48.5)
	25-29.9	10 (10.1)
	≥30	-
	<b>Total</b>	<b>99 (100)</b>
Mid-upper arm circumference(MUAC) 'cm'	<23	40 (40.4)
	≥23	59 (59.6)
	<b>Total</b>	<b>99 (100)</b>

Source: Field Survey

**Table 4: Clinical findings Associated with Respondents in Ibaa, n (%)**

<b>Area of Examination</b>	<b>Observations</b>	<b>Frequency, n (%)</b>
<b>General</b>	Underweight	46(46.4)
	Overweight	12 (12.1)
	Healthy looking appearance	41(41.4)
	<b>Total</b>	<b>99 (100)</b>
<b>Hair</b>	Sparse	20(20.2)
	Depigmented	15(15.1)
	Healthy looking hair	64(64.6)
	<b>Total</b>	<b>99 (100)</b>
<b>Skin (general)</b>	Xerosis (dry skin)	35(35.4)
	Follicular keratosis	14(14.1)
	Healthy looking skin	50(50.5)
	<b>Total</b>	<b>99 (100)</b>
<b>Subcutaneous tissue</b>	Decreased	40(40.4)
	Increased	10(10.1)
	Healthy looking tissue	49(49.4)
	<b>Total</b>	<b>99 (100)</b>
<b>Lips</b>	Angular stomatitis	4(4)
	Healthy looking lips	95(95)
	<b>Total</b>	<b>99 (100)</b>
<b>Gingiva</b>	Reddened gingiva	28(28.3)
	Bleeding gingiva	14(14)
	Healthy looking gingiva	57(57.5)
	<b>Total</b>	<b>99 (100)</b>
<b>Teeth</b>	Stained teeth	33(33.3)
	Healthy looking teeth	66(66.7)
	<b>Total</b>	<b>99 (100)</b>
<b>Tongue</b>	Altered taste	29(29.3)
	Normal taste	70(70.7)
	<b>Total</b>	<b>99 (100)</b>
<b>Muscles</b>	Decreased muscle mass	40(40.4)
	Healthy looking muscles	59(59.6)
	<b>Total</b>	<b>99 (100)</b>
<b>Endocrine gland</b>	Goiter	2(2)
	Healthy-looking thyroid gland	97(97)
	<b>Total</b>	<b>99 (100)</b>
<b>Blood pressure</b>	Normal blood pressure	65(65.7)
	Elevated blood pressure	20(20.2)
	High blood pressure I	11
	High blood pressure II	(11.1)
		3(3)
	<b>Total</b>	<b>99 (100)</b>

Source: Field Survey

**Table 5: Dietary Assessment using 24-hour Recall Parameters, n=99.**

Variables	Options	Frequency, n (%)
<b>Dinner</b>	Carbohydrates (mostly from cassava)	65 (65.7)
	Protein (mostly from milk, fish, and meat)	17 (17.2)
	Fat (mostly from cooking oil)	68 (68.7)
	Calcium (mostly from beverages)	14 (14.1)
	Vitamins (mostly from beverages)	17 (17.2)
	No meal	14 (14.1)
<b>Breakfast</b>	Carbohydrates (mostly from cassava)	82 (82.8)
	Protein (mostly from milk, fish, and meat)	34 (34.3)
	Fat (mostly from cooking oil)	78 (78.8)
	Calcium (mostly from beverages)	17 (17.2)
	Vitamins (mostly from beverages)	17 (17.2)
	No meal	10 (10.1)
<b>Lunch</b>	Carbohydrates (mostly from cassava)	75 (75.8)
	Protein (mostly from milk, fish, and meat)	24 (24.2)
	Fat (mostly from cooking oil)	44 (44.4)
	Calcium (mostly from beverages)	30 (30.3)
	Vitamins (mostly from beverages)	13 (13.1)
	No meal	15 (15.2)
<b>Average consumer per day</b>	Carbohydrates (mostly from cassava)	74 (74.7)
	Protein (mostly from milk, fish, and meat)	25 (25.3)
	Fat (mostly from cooking oil)	63 (63.6)
	Calcium (mostly from beverages)	20 (20.2)
	Vitamins (mostly from beverages)	16 (16.2)
	No meal	13 (13.1)

Source: Field Survey

## Discussion

This study assessed the nutritional status of these women using anthropometric, clinical and dietary assessment methods simply to compensate for the limitations presented by any of the methods. Maternal age is an important determinant of nutritional status for pregnant women (Wemakor et al., 2018). The mean age of  $26.9 \pm 7.8$  years is similar to the mean age ( $26.86 \pm 4.16$  years) in Adikari et al study. Ibaa community has a good percentage of very young mothers. The data gotten in this study, shows that thirty-eight (38.4%) and forty-one (41.4%) of these women are between ages 18-24 years and 25-31 respectively, this means that the women residing in Ibaa get married early, a finding similar to Prodhan et al., (2016) and Hossain et al., (2013) studies., in Bangladesh where 88% and 94% of the women were  $\leq 30$  years respectively.

As 17% and 68% of these women only earned a primary and secondary education respectively, it can be inferred that there is poverty in Ibaa, and this makes the girls opt for early married or get pregnant since they cannot further their education. This finding is similar to the Hossain et al., (2013) study, which discovered that the majority of the pregnant rural women were either illiterate (15%), had primary education (44%), or had secondary education.

Work status is a primary factor in determining the living standard of a family. A total of Forty-four (45.5%) of the respondents are unemployed, and this can be attributed to their poor academic qualifications. Most of the women 97% of these women are dependent on monthly family income below the national minimum wage (₦30,000) in Nigeria, with this

income and the inflation rate in the country, it might be true to say that these women and their children will feed poorly and will be malnourished. In similar studies by Prodhand et al (2016) 90% of the participants had low family income (<15000 Taka), and Hossain et al. (2013) found that the majority of rural pregnant women's monthly family expenses for food was <3000 Taka. On gravidity, 68.7% of these women had given birth 2-7 times, a family size that a monthly earning of ₦30,000 can barely cater for.

Using the standard World Health Organization's Body mass index (BMI) scale, 41.4% of the pregnant and nursing mothers were underweight, and 10.1% were overweight. This result is similar to the finding of Madhavi and Singh (2011), where 23.94% of the women were malnourished and 4.27% were overweight. According to the work status of the women in Ibaa, we can state that the unemployment rate and low family income in the community is the reason for malnutrition. Mean Upper Arm Circumference (MUAC) showed that 40.4% of the women were undernourished because they had MUAC <23cm and 59.6% had MUAC >23cm showing good nutrition. Using BMI and MUAC, approximately 40% of the women are undernourished.

Clinical assessment is the simplest and most practiced method in nutritional assessment (Park, 2009). The presence of physical signs of a specific nutritional deficiency associated with malnutrition confirms other assessment techniques (Park, 2009; Whitney & Royles, 2016). By physical appearance, 46.4% and 40.4% of the women appeared underweight and have low muscle mass respectively. Overweight mothers were 12.1%, supporting the anthropometric result and this implies that both underweight and overweight (oedematous) women fed on low calories and low-protein diets. This supports Madhavi and Singh's (2011) study that states that 80.34% and 90.60% of pregnant women did not consume adequate calories & protein respectively. Sparse or depigmented hair on the women (35.3%) indicates feeding on low protein. With 49.5% of the women presenting observable dry skin (xerosis) and follicular keratosis, it indicates a lack of vitamin A. The subcutaneous examination showed that 50.5% of the women had thin subcutaneous tissue meaning their diet lack sufficient calories. Angular stomatitis, reddened gingiva, bleeding gingiva and poor tasting sense was seen in these women which implies that 4%, 28.3%, 14.1% and 29.3% of them low riboflavin and iron, low vitamin A, low vitamin C, and low zinc in their diet respectively. Thirty-four (34.3%) of these women were hypertensive, a value much higher than the 4.62% stated by Taleb et al (2011). This present study shows that one out of every three nursing or pregnant women in Ibaa is hypertensive which could be attributed to low minerals and protein-energy malnutrition (PEM) aside from genetic predisposition.

From the meal record, 65.7%, 82.8%, and 75.8% had carbohydrate which was mostly 'garri' for dinner, breakfast, and lunch respectively. Shockingly, 14.1%, 10.1%, and 15.2% of the women missed dinner, breakfast and lunch respectively. Because the women fed on low-calorie meals like 'soaked' garri and pap, a good percentage (41.4%) of them were underweight by physical appearance. Also because of the poverty in Ibaa, it can be suggested that they use poorly refined oil in making their meal which can still be a reason for hypertension among the women.

## Conclusion

This study has shown that malnutrition is a menace in Ibaa community as many of the pregnant and nursing mother are malnourished. For this reason, there is an urgent need for intervention from the government and non-governmental organizations (NGOs) to alleviate poverty incidence and malnutrition situation in Ibaa, as this will boost the nutritional status of women of childbearing age.

## Conflict of Interest

The authors guarantee responsibility for all information in this manuscript. They also assure the absence of conflict of interest and the absence of their financial interest in conducting this study and writing this manuscript. This manuscript was written from an original research work and has neither been published nor is it under consideration for publication elsewhere.

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# Midwives and Spouse Psychological Support during Pregnancy and Birth in Selected Hospitals in Aba, Abia State

Ezeigbo, Chigbo Nelson

## Abstract

*The aim of the study was to assess midwives and spouse psychological support to women during pregnancy and childbirth in selected hospitals in Aba, Abia State. The study adopted descriptive survey design. A sample size of 352 women attending antenatal was selected using simple random sampling techniques. A self-developed instrument was used to collect data for the study. Descriptive statistics was used to analyze the data. Hence, measure of central tendency statistics (mean), simple percentage to present the findings of the result. The result revealed that 51 respondents representing 18.3% were between 20 – 30years, 124 respondents corresponding to 41.3 % were between 31 – 40 years, 103 respondents representing 34.4% were between 41 – 50 years while 18 (6%) were between 51 years and above, 86% respondents received maximum support from their spouses during pregnancy, labour, and delivery. Psychological support such as encouragement, massage and accompany to labour room were given by their spouses. Some of the respondents also revealed that they felt a little relief immediately the saw their partners during labour and that the presence of their spouse helped them get out of depression. It also revealed that the support women expected from their spouse was financial provision and taking care of other children. Pearson Chi- square showed a significant difference in spousal psychological support of pregnant women  $\chi^2 (2) = 27.894, p < .001$ . The study concluded that spousal support during pregnancy was high for women in Aba, Abia State, Nigeria, and it impacted positively on them during pregnancy, labour, and delivery. Therefore, the researcher recommends that men should be encouraged to support their wives during pregnancy, and delivery in order to promote family bonding and development as well as reduce maternal and child mortality.*

**Keywords:** *Midwives, Spouse, Psychological Support, Women during Pregnancy, Childbirth.*

## 1.0 Introduction

Pregnancy and childbirth are normal physiological processes that bring joyful experiences to individuals and families. However, in many parts of the world, pregnancy constitutes a perilous journey, a risky and potentially fatal experience for millions of women especially in developing countries (Chitra, 2015) Pregnancy imposes a great deal of physical, psychological, and emotional pressure on women. Its outcome is often unpredictable; thus, a pregnant woman requires a lot of support from people around her, especially her spouse and midwives. Pregnancy is a period of increased vulnerability and women most times face new challenges during this period (Biaggi et al., 2016). The period of pregnancy could be characterized by several disorders such as depression and anxiety and even death (Alipour et al., 2012). Death resulting from pregnancy-related conditions, otherwise known as maternal mortality, is currently a global health concern. Reports have it that about 295,000 women died as a result of pregnancy and childbirth issues in the year 2019, and a majority (94%) of these deaths were from low- and middle-income countries which could have been prevented. World Health Organization (2019), report further showed that 86% of maternal deaths were from Sub-Saharan Africa and Southern Asia and that sub-Saharan Africa alone accounted for two-thirds of maternal deaths. Nigeria is currently among the 15 countries considered as ‘very high alert’ or ‘high alert’ with maternal mortality rates (MMR) between the range 31

and 11,580 (WHO, 2020). Nearly 20% of all global maternal deaths occur in Nigeria (WHO, 2020). Nigeria's estimated MMR was over 512 per 100,000 in 2019 (NDHS, 2018).

About 70% of these deaths are largely treatable or at least preventable (UNICEF, 2010). A woman's lifetime risk of dying during pregnancy and childbirth is over 400 times higher than in developed countries (Audu et al., 2010). However, maintaining good psychological health during pregnancy also has important health implications for the unborn child (Brown, Douglas & Flood, 2017). One important risk factor affecting maternal well-being during and after pregnancy is lack of social support (Audu et al., 2010). Social support is said to be a transactional communicative process, including verbal and non-verbal communication, which aims to improve an individual's feelings of coping, competence, belonging and/or esteem (Olanrewaju, 2012). It has also been defined as the perception and actuality that one is cared for and has assistance available from other people as well as be part of a supportive social network (Mattson & Hall, 2011).

Social support is essential for the mother and the unborn baby's health. Providing emotional, material, and informational supportive resources can alleviate pregnancy-related changes and encourage mothers to change their behaviors and select a healthy lifestyle (Feldman et al., 2015). At a basic level, social support comprises help offered to a person by their family and/or midwives. Psychologically, social support includes emotional support, material assistance, empathy, guidance, positive feedback, social participation, and intimate interaction is suitable for those people who experienced or confronted with stressful events. Family support and avoidance from feeling loneliness, as well as understanding their grief and life circumstances, make it easier for pregnant women to cope with these situations (Nasiri & Abdolmaleki, 2017). The results of previous studies have shown a significant negative relationship between social support and psychological distress (i.e. anxiety, depression, and stress) during pregnancy and after childbirth. Furthermore, the type and levels of social support can result in pregnancy being either a pleasant or an unpleasant experience (Nasiri & Abdolmaleki, 2017). Therefore, one of the most important factors in helping in dealing with psychological stressors during pregnancy is emotional support provided by the spouse and midwives (Bahadoran et al., 2010).

In different parts of the world, more especially in developed countries such as UK and Denmark, spousal and midwives' participation is common practice during labor and delivery with about 95% attendance (Reed et al., 2016). Studies conducted in these developed countries shows that women who had continuous spousal and midwives labor support are reassured, comforted and emotionally encouraged to overcome pain associated with labor and delivery (Hardin & Buckner, 2014). Furthermore, a similar review has shown that women with continuous support by spouses and midwives also experience shorter labors, reduced need for oxytocin, anesthesia, analgesia, instrumental deliveries and decreased by 50% their chances of being admitted to a cesarean section (Hodnett et al., 2017).

Therefore, there is a need for adequate support for a woman during pregnancy, especially from the spouse and midwives. Spousal and midwives' presence may serve as a pain relief for a woman in labour or during childbirth, and spousal support is necessary, in that spouses are preferred companions for women in labour (Reed et al., 2016).

However, the study tends to investigate mother's account of midwives and spouse psychological support during pregnancy and birth among women attending antenatal clinic in

Aba, Abia State. In Nigeria, a patriarchal society, spouses are meant to play an important role in maternal and child health care. With their perceived positions in the family as head and decision makers, spouses have tremendous control over their partners due to their economic and social status. From the prenatal to post-delivery period, they have a strong influence over their partners and decide the timing and conditions of sexual relations, family size, and most importantly access to health care (Porrett et al., 2013). Furthermore, a spouse behavior can significantly affect the childbirth outcomes of the woman. With the authority and power accorded to the spouse, due to the fact that they are an important partner for improving and achieving adequate maternal health care, their involvement has been promoted as a promising new strategy for improving maternal and child health (Singh et al., 2014).

### **1.2 Objectives of the Study**

The main objective of this study is to examine midwives and spousal psychological support to women during pregnancy and child birth in selected hospitals in Aba, Abia State. Specific objectives include;

1. To ascertain spousal psychological support given to pregnant women in selected hospitals in Aba, Abia State
2. To determine the effect of spousal psychological support on pregnant in selected hospitals in Aba, Abia State.
3. To ascertain midwives psychological support on pregnant in selected hospitals in Aba, Abia State.

### **1.3 Research Hypotheses**

The following hypothesis will be tested in this study:

1. There are no significant relationship between age and pregnant women perception of psychological support.

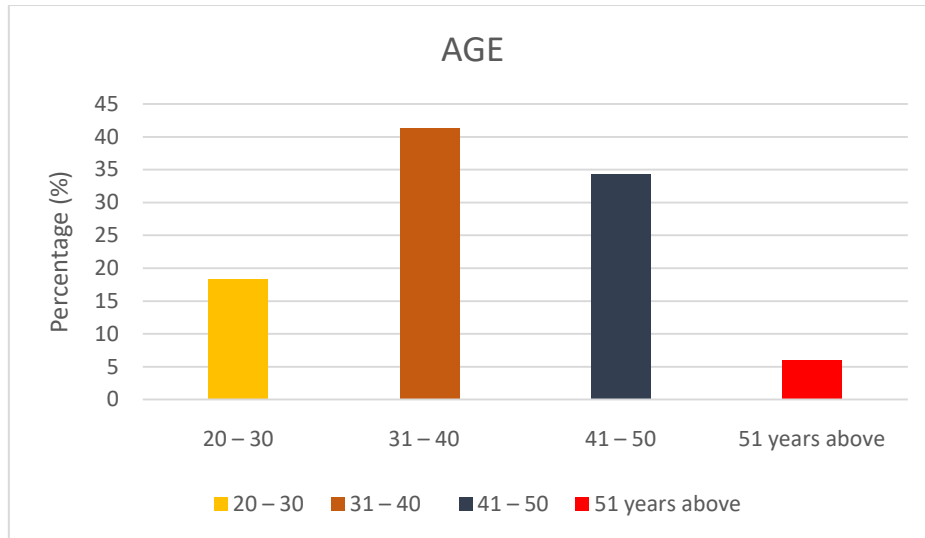
## **2.0 Methodology**

This study adopted the descriptive survey design. Descriptive survey design is a type of survey design that is aimed at depicting the participants in an accurate way (Enarebebe-Emberru *et al.*, 2019). The descriptive survey research design was used to examine mother's account of midwives and spousal psychological support during pregnancy and birth among women attending antenatal clinic in Aba, Abia State. The descriptive survey research design is one in which a group of people is studied by collecting and analyzing data from only a few people considered to be representative of the entire group (Nhlapo, 2017). The population of this study was 3000 women attending antenatal in Abia State University Teaching Hospital (ASUTH) and two government hospitals in Aba. The sample size of 352 women attending antenatal were selected from the total population of 3000. Simple random sampling techniques was used to select the sample. The instrument for data collection was a self-structured questionnaire developed by the researcher. The questionnaire was divided into two (2) parts. The first part consisted of personal data while the second part consisted of items designed to measure midwives and spousal psychological support during pregnancy and birth among women attending antenatal clinic in Aba, Abia State. In order to get a concrete result, the researcher administered the instrument by herself with the help of a research assistant to the women and collect it after it has been filled. Descriptive statistics was used as data analysis method. Hence, measure of central tendency statistics (mean), simple percentage and charts was used to answer the research questions.

### 3.0 Results

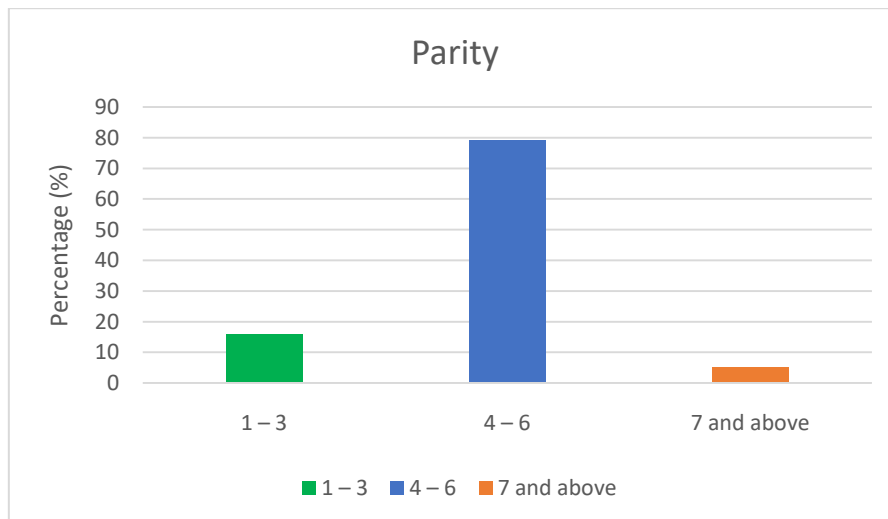
#### Demographic Analysis

**Table 4.2:** percentage and frequency of Demographic data



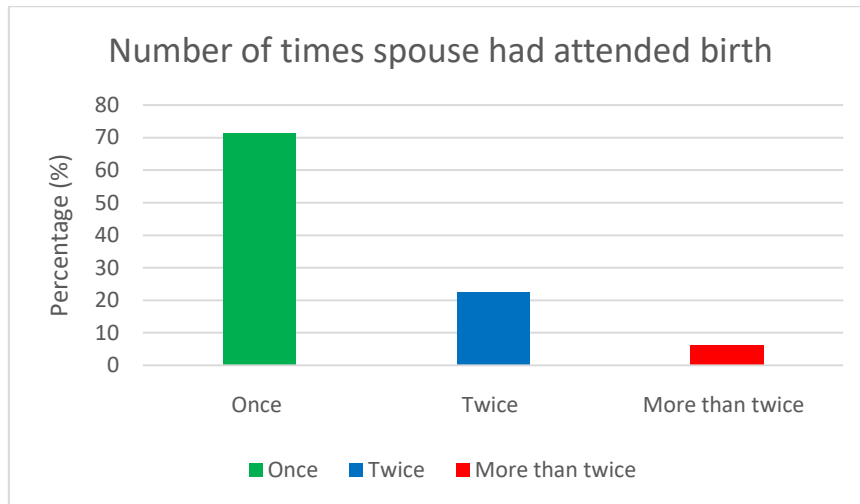
**Fig 4.1: Age distribution of respondents**

In Fig 4.1, it was shown that 51 respondents representing 18.3% were between 20 – 30years, 124 respondents corresponding to 41.3 % were between 31 – 40 years, 103 respondents representing 34.4% were between 41 – 50 years while 18 (6%) were between 51 years and above.



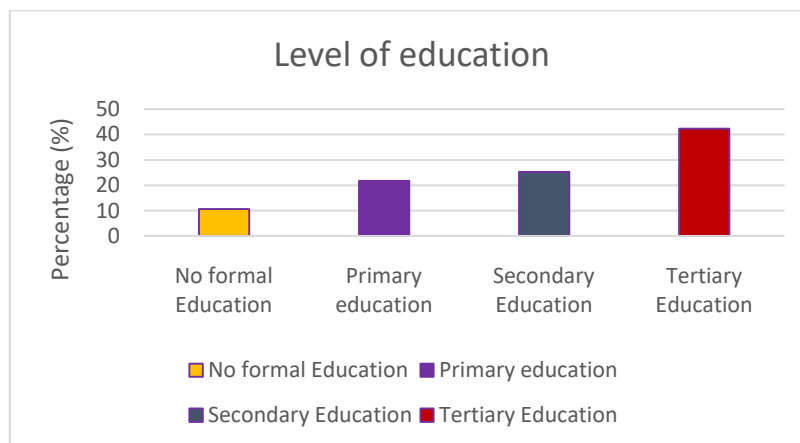
**Fig 4.2: Parity distribution of respondents**

In Fig 4.2, it was shown that 15.7% of the respondents had 1 -3 children, 79.3 % of the respondents had 4 – 6 children while 5.0% of the respondents had more than 7 children.



**Fig 4.3: Number of times spouse had attended birth distribution of respondents**

In Fig 4.3, it was shown that 71.3% of the respondents had spouse had attended birth once, 22.4% of the respondents had spouse had attended birth twice while 6.3% of the respondents had spouse had attended birth more than twice.



**Fig. 4.4:** age distribution of the educational qualification of respondents

The outcome showed in Figure 4.2 demonstrated that 127 (42.3%) of respondents had tertiary education, 76(25.3%) had secondary education, 65 (21.7%) had primary education, while 32 (10.7%) had no formal education.

**Research Questions**

**Research Question 1:** What are the spousal psychological support giving to pregnant women in selected hospitals in Aba, Abia State?

**Table 4.3** Mean and standard deviation of spousal psychological support giving to pregnant women in selected hospitals in Aba, Abia State.

Items	N	Min	Max	Mean	S.D.	Resolve
<b>Spousal psychological support giving to pregnant women attending antenatal clinic in Aba</b>						
Encouragement	300	1.00	4.00	2.52	.801	Accept
Massage	300	1.00	4.00	2.61	.852	Accept
Sitting beside	300	1.00	4.00	3.72	.762	Accept
Praying and fasting	300	1.00	4.00	3.19	.765	Accept
Understanding	300	1.00	4.00	3.03	.931	Accept
Accompany to labour room	300	1.00	4.00	3.08	.924	Accept
Accompany to delivery room	300	1.00	4.00	2.82	.873	Accept
Financial provision	300	1.00	4.00	2.93	.532	Accept
<b>Grand mean</b>	<b>300</b>	<b>1.00</b>	<b>4.00</b>	<b>3.05</b>	<b>.085</b>	<b>Accepted</b>

Table 4.2 shows mean ratings and standard deviations of the kind of psychological support spouse gives to their pregnant wives attending antenatal clinic in Aba. The mean value ranges from 2.52 to 3.72 with a grand mean value of 3.05 which is above the criterion mean of 2.5 thereby showing that the kind of psychological support spouse gives to their pregnant wives attending antenatal clinic in Aba are encouragements, massages, prayers and fasting financial provision among others.

**Research Question 2:** What are the effect of spousal psychological support on pregnant in selected hospitals in Aba, Abia State?

**Table 4.4** Mean and standard deviation of the effect of spousal psychological support on in selected hospitals in Aba, Abia State.

Effect of spousal psychological support on pregnant women attending antenatal clinic in Aba	N	Min	Max	Mean	S.D.	Resolve
The presence of my spouse is very important during your partner's birth	300	1.00	4.00	3.44	.954	Accept
I felt a little relief immediately I saw my partner	300	1.00	4.00	3.37	.656	Accept
My spouses presents is everything to me	300	1.00	4.00	3.55	.908	Accept
The presence of my spouse helped me get out of depression	300	1.00	4.00	3.48	1.003	Accept
Pregnancy, labour and delivery were very easy during maximum support	300	1.00	4.00	3.37	.656	Accept
<b>Grand Mean and Standard deviation</b>	<b>300</b>	<b>1.00</b>	<b>4.00</b>	<b>3.44</b>	<b>.84</b>	<b>Accepted</b>

Table 4.4 shows mean ratings and standard deviations of the effect of spousal psychological support on pregnant women attending antenatal clinic in Aba. The mean value ranges from 3.44 to 3.55 with a grand mean value of 3.44 which is above the criterion mean of 2.5 thereby showing that effects of spousal psychological support on pregnant women attending antenatal clinic in Aba includes women feeling relief immediately they saw their partner, pregnancy, labour and delivery being very easy during maximum support and presence of spouse helping them get out of depression.

**Research Question 3:** What are the midwives psychological support on pregnant in selected hospitals in Aba, Abia State?

**Table 4.5** Mean and standard deviation of the midwives psychological support on pregnant in selected hospitals in Aba, Abia State.

Midwives psychological support on pregnant women attending antenatal clinic in Aba	N	Min	Max	Mean	S.D.	Resolve
Gentle words	300	1.00	4.00	2.51	.69781	Accept
Encouragements	300	1.00	4.00	3.22	.79632	Accept
Counselling	300	1.00	4.00	3.56	.79534	Accept
Courtesy	300	1.00	4.00	3.32	.80459	Accept
<b>Grand mean and Standard deviation</b>	<b>300</b>	<b>1.00</b>	<b>4.00</b>	<b>3.15</b>	<b>.77</b>	<b>Accept</b>

Table 4.5 shows mean ratings and standard deviations of the midwives psychological support on pregnant in selected hospitals in Aba, Abia State. The mean value ranges from 2.51 to 3.56 with a grand mean value of 3.15 which is above the criterion mean of 2.5 thereby showing that Gentle words, Counselling, Courtesy among others are the midwives psychological support on pregnant women attending antenatal clinic in Aba.

**4.3: Test of Hypothesis**

**Ho:** There are no significant relationship between age and pregnant women perception of psychological support.

**Table 4.5:** Chi-Square Analysis of the relationship between age and pregnant women perception of psychological support

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.894 <sup>a</sup>	24	.202
Likelihood Ratio	4.231	24	1.000
Linear-by-Linear Association	.008	1	.927
N of Valid Cases	25		

Table 4.5, the Pearson chi-square calculated is 35.00, while p value is .202 which is greater than the alpha level significance of 0.05. Thus, the hypothesis is accepted and the null hypothesis rejected.

**4.0 Discussion**

**Socio-demographic characteristics of respondents**

Majority of the respondents were in the 31-40 years age group. This is somewhat in contrast to the reported mean age of  $26.5 \pm 3.3$  by (Ago et al., 2012). The contrast may be from the different sample size used in the studies where 352 and 72 was used in the present study and Ago et al., (2012) study respectively. Ekabua et al., (2015) finding was also similar to the finding in the present study in that the predominant age group observed was those aged 30-39 years even though they grouped the women differently. The age group demonstrated in the present study reflects the women who are actively bearing children as was also observed in other related studies (Ekabua et al., 2015). Majority (93%) of the respondents already between 1 to 3 children. This finding is comparable to Ago et al., (2012) finding of 90.3% of their adult respondents being having 1 – 3 children, Ekabua et al., (2015) finding of 78.9% of their respondents already having 1 – 3 children and that of Enang et al., (2017) who reported majority (61.3%) of their female respondents as having 1 – 3 children. From this study, it was



observed that the majority of the respondents agreed that their partners gave them support during childbirth once. This finding agreed with the finding from (Enang et al., 2017). More than three quarter of the respondents had tertiary or postgraduate education. Low level of education was reported by Naik et al., (2018) to be significantly associated with poor pregnancy outcome. This high level of education may be the reason why most respondents in the present study had good pregnancy outcomes. A similar level of education was noted among respondents in Ekabua et al., (2016) study on awareness of birth preparedness and complication readiness in Southeastern Nigeria. In that study, most of the women had attained tertiary education. Enang et al., (2012) also corroborated the finding from this study. However, findings from Ago et al., (2012) contrasted findings from this study in that more of their respondents had attained only secondary education.

The result of the study revealed mean ratings and standard deviations of the kind of psychological support spouse gives to their pregnant wives attending antenatal clinic in Aba. The mean value ranges from 2.52 to 3.72 with a grand mean value of 3.05 which is above the criterion mean of 2.5 thereby showing that the kind of psychological support spouse gives to their pregnant wives attending antenatal clinic in Aba are encouragements, massages, prayers and fasting financial provision among others. As a result, a pregnant woman not only expects support from her partner but also from her own family members and those of her partner/husband. More so, during pregnancy, because of the specific features, changes, and needs of this period, pregnant women receive special attention from their family and friends. In comparing the finding from this study to that of Abdollahpour et al., (2015) they found that two third of the population studied perceived their social support as adequate in their study on perceived social support in pregnant women.

There were many reasons for pregnant women to be expecting support from their spouses during pregnancy and some of which were that such support enhances mothers' health, it eases pregnancy, labour, and delivery periods, and that it is the husbands' responsibility to support their wives, among others. When women expect and receive support from their husbands, it makes them happy and this, in turn, enhances their wellbeing which has a capacity of improving the overall mental health of both the mother and the baby since happiness results from the experiences of individuals as well as their satisfaction in life including their family. Receiving support from husbands during pregnancy, therefore, has a positive effect on women and baby's overall wellbeing, and such always makes pregnancy, labour, and delivery easier. This makes spousal support a vital requirement for pregnant women's mental health and wellbeing. Existing studies have also shown that spousal support is necessary in that husbands are preferred labour companions for women in labour, and that spousal presence makes delivery less painful but more life-fulfilling (Xue et al., 2018).

The findings of the study shows mean ratings and standard deviations of the effect of spousal psychological support on pregnant women attending antenatal clinic in Aba. The mean value ranges from 3.44 to 3.55 with a grand mean value of 3.44 which is above the criterion mean of 2.5 thereby showing that effects of spousal psychological support on pregnant women attending antenatal clinic in Aba includes women feeling relief immediately they saw their partner, pregnancy, labour and delivery being very easy during maximum support and presence of spouse helping them get out of depression. The findings is in line with that of Olugbenga-Bello et al., (2013) who said that there are numerous sustainable pain relief methods such as spousal presence. Spousal presence contributes to pain relief during childbirth through psychological and physical support for their partner. For proper utilization

and positive outcome for spousal presence as a pain relief method during childbirth, the views of spouses about the beneficial impact of their involvement in the birthing process of their partners should be ascertained, explored, and adopted as part of maternal care policy and pain relief practices by health-care professionals and their facilities (Pestvenidze & Bohrer, 2017).

## 5.0 Conclusion

This study has provided an insight into the views and perception women vis-a-vis the participation of their spouses during childbirth and pain relief. Findings in this study have demonstrated a paradigm that there are indications of a positive trend in spousal participation during childbirth as against the old statuesque of believing that childbirth is all a woman affair. This positive willingness to participate is commendable, as most of the spouses are willing to go through the birthing process with their partners over again when the need arises. It is trite that the spouse is willing to share his partner's pain and be part of the pain relief and pain support mechanism. Furthermore, the fact that the positive views of the spouses on their key role in providing emotional labour support for the woman and the positive contribution they make to labour pain relief cuts across social barriers, economic, or educational standing of spouses that participated in this study. The widespread acceptance of the relevance of spousal participation during childbirth calls for it to be adopted as a deliberate health-care policy and nursing practice in Nigeria and other developing countries where the practice is yet to be fully adopted. Consequently, this study recommends that health-care facilities and professionals should acknowledge and highlight the importance of spousal presence in labour pain relief and thus create an enabling environment for the participation of spouses during childbirth. Spousal presence during childbirth is not only beneficial to the woman and the supporting spouse but also to the family, society, and the health-care burden of developing countries.

## 6.0 Recommendations

1. High level of spousal support should be sustained to promote family bonding and development.
2. Since the study was limited to spousal support among married women?, we recommend that further studies be done on the impact of spousal support among women in urban areas, as well as polygamous families from other ethnic groups in Nigeria.
3. Although presently weak, the spousal participation in labor and delivery in Nigeria should be encouraged and promoted as a deliberate health-care policy through creation of enabling environment and dissemination of information highlighting the pivotal role that spouses could play in labor and delivery.

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## **Catastrophic Health Expenditure among Health Insured Patients: A Review**

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### **Abstract**

**Background:** Healthcare cost globally is on the rise and countries are expected to use health insurance to reduce out-of-pocket payment which is the main culprit in Catastrophic Health Expenditure (CHE). The CHE which is defined at 10% and 40% thresholds have been implicated in pushing citizens below the poverty line and impoverishment following unexpected health care spending. The World Health Organization (WHO) have advised that health insurance could reduce health care cost through aggressive population enrolment, attainment of universal health coverage and reduction in CHE.

**Aim:** To systematically examine catastrophic health expenditure among health insured patients using a review of related literature.

**Design:** A systematic review

**Data Sources:** Systematic search for worldwide published literature from Google Scholar, MEDLINE and EMBASE, PUBMED, CINAHL, SCOPUS, WHOLIS POPLINE, SCIENCE DIRECT and WOK.

**Study eligibility criteria:** Studies included in this review reported catastrophic health expenditure among health insured patients.

**Data extraction:** Data was extracted with a template prepared in accordance with the review objectives, and narrative reports were presented.

**Findings:** The review found a total of 1,443 records which were screened and 102 full publications were retrieved, yielding 13 studies that met inclusion criteria. The sensitivity analysis of CHE at 10% and 40% thresholds revealed an increased out-of-pocket health care payment leading to poverty and impoverishment even among health insured clients.

**Conclusion:** Health insured clients are not completely protected from financial hardship in the events of unexpected health care spending with consequential catastrophic health expenditure. But it is clear from studies that health insurance has the capacity to ameliorate catastrophic health expenditure if implemented with majority of the citizens covered, which will increase universal health coverage and reduce or eliminate out-of-pocket health care payment.

**Key Words:** *Catastrophic; Health Expenditure; Insured Patients.*

## 1. Introduction

One of the basic functions of a health system in any country is to establish a health financing system that safeguards her people from the financial risks associated with medical illnesses. A departure from health can lead to illnesses, diseases, disability, and eventually death (Gordis, 2004). Every person is at risk of falling ill at one point or the other in their lifetime. Diseases are usually unpredictable necessitating a health-seeking behaviour in the individuals or by the household with varied treatment provider options: local dispensary, drug store, pharmacy, alternative healer or spiritualist, traditional birth attendant or herbalist, health centres, clinics, hospitals and other places (Onwujekwe *et al.*, 2010). In the health facilities, payment for healthcare services can either be direct or indirect; examples of the payment options include direct out-of-pocket (OOP) payment, government subsidies, taxation, private and social health insurance schemes, donation and other means (Buiquit *et al.*, 2015). It is the direct out-of-pocket (OOP) payment and other direct expenditure which might led to catastrophic health expenditure (CHE) (Buiquit *et al.*, 2015).

Catastrophic health expenditure occurs when the hardship of health care expenditure made through out-of-pocket payments has crossed a threshold such that the household must give up expenditure on other basic requirements of life so as to meet the health cost of one or more member(s) of the household (Olatunya *et al.*, 2015). The World Health Organization (WHO) defines household catastrophic health expenditure (HCHE) as health expenditure (HE) greater than or equal to 40% of the household's non-subsistence income (Ke *et al.*, 2005 and Xu *et al.*, 2003). Despite the increase in the amount spent on health globally, the prevalence of HCHE is increasing especially in developing countries (Arce, 2019; WHO, 2016). The global average health expenditure per person is 948USD (WHO, 2012) while that of Nigeria is about one-eighth of the global average; 118USD (WHO, 2016). Also, the Nigerian population was about 182.2 million in 2015 with a gross domestic product (GDP) of 481.1 billion USD and per capita GDP of 2,640 USD (World Bank, 2016). In Nigeria, the private expenditure on health accounts for about 70% of total health expenditure with out-of-pocket payment on health, making up 90-96% of the private expenditure on health (Onwujekwe, Uzochukwu, Onoka, 2011; Adisa, 2015).

Low- and middle-income countries make up about 84% of the world's population, and have 90% of the world's disease burden but they account for only 12% of the world's resources spent on health (Brinda, *et al.*, 2014). Most of the governments in the developing countries failed to spend adequately on health, spending less than 9% of their budget on health,<sup>13</sup> which

is not in line with the Abuja declaration (WHO, 2011). This, therefore push the majority of the populace to spend a larger part of their income on health (Brinda, *et al.*, 2014). The lack of adequate prepayment or health insurance system in many developing countries has allowed members of households with illnesses or diseases to experience CHE, and in the worst cases, they experience poverty and impoverishment (Rashad & Sharaf, 2015). There have been several definitions of household catastrophic health expenditure (HCHE) in the past, but the 10% and 40% thresholds have been accepted as working references in catastrophic health expenditure. Wagstaff and Doorslear, in a World Bank study described CHE as healthcare expenditure that is greater than and beyond the critical threshold of 10% of household total income Wagstaff and Doorslear (2003). World Health Organization (WHO) multi-countries study described HCHE using the household's capacity to pay for healthcare rather than on total income. Capacity to pay was described as income left after removing food consumption. The critical threshold was set at 40% or more of the non-food consumption or non-discretionary income (Xu *et al.*, 2003). This study's operational definition of HCHE is the percentage of direct health cost exceeding 10% of the household expenditure of the income over a one-year period (CHE1); and CHE2: the percentage of the direct health cost greater than or equals to 40% of the non-food income over a one-year period (Knaul *et al.*, 2011).

According to the multi-countries WHO study in 2003, HCHE2 prevalence ranges from 0.01% to 10.5% (Xu *et al.*, 2003). It was observed that most of the developed countries had advanced health that protects the household from CHE2 (Xu *et al.*, 2003). A comparative analysis among 12 Latin American and Caribbean countries revealed a prevalence ranging between 0.4% to 11 % (Knaul *et al.*, 2011), also CHE2 prevalence among older people in six low- and middle-income countries (LMIC) ranges on average between 3.2% in Mexico to 15% in China (Brinda *et al.*, 2014). In Turkey, a study revealed only 0.6% developed CHE2 (Yardim *et al.*, 2010). Not much is known about the prevalence of HCHE however, in developing countries (Xu *et al.*, 2003; Adisa, 2015). The prevalence of HCHE within the African region reported by Buiquit in Kenya's slum ranges between <1.52% for CHE2 to 22.80% for CHE1 (Buiquit *et al.*, 2015) and this was in corroboration with Brinda report of HCHE2 prevalence at 18% among his study population in Tanzania (Brinda *et al.*, 2014). In the southern part of Africa, a study in Botswana and Lesotho revealed the percentage of people with household CHE2 was 7% and 1.25% respectively (Akinkugbe *et al.*, 2012). In Burkina Faso in the western part of Africa, study there revealed 8.66% of the people had CHE2.

The prevalence of household CHE2 in Nigeria from a study in Anambra and Enugu reveals a prevalence of 27% (Onwujekwe *et al.*, 2011; Onwujekwe *et al.*, 2012). Another study in Anambra and Enugu States of Nigeria revealed household CHE2 prevalence was 15% (Onoka *et al.*, 2010). Meanwhile, among the elderly, CHE1 was found to be 9.6% in household in Nigerin (Adisa, 2015). Amakom & Ezenekwe (2012) research revealed the prevalence of HCHE2 to be 27% in Nigeria. Among TB patient, 44% of them experienced HCHE2 in a study by Ukwaja *et al* (2013).

Over 150 million people or 44 million households suffer annually from financial catastrophe mainly because of out-of-pocket (OOP) expenditure on healthcare services (WHO, 2016). Worldwide, 32% of total healthcare expenditure is derived from OOP payments (WHO, 2016). It should be noted that monitoring of HCHE is one of the key indicators for measuring Universal Health Coverage (UHC), and National Health Insurance Scheme (NHIS) coverage; high level of it can serve as a strong reason for the policymakers to embark on a wider

coverage of universal healthcare and NHIS; whose primary aim is to reduce HCHE (WHO, 2016). There is an urgent need to have a healthcare financing policy guide in Nigeria to help protect indigenes from the financial hardship caused by the cost of seeking healthcare. Policymakers in Nigeria at large equally need adequate data to take action and informed decisions. Hence, this review intends to give an impression of the magnitude of HCHE, and search for the gaps in Nigeria. It is expected that from this research there will be interest in the catastrophic health expenditure and work out a modality to ameliorate it in Nigeria. And it would also add to the existing body of knowledge on HCHE, which will assist policy makers in identifying and targeting vulnerable groups with appropriate and evidence-based interventions. The purpose of this study therefore is to systematically examine catastrophic health expenditure among health insured patients using a review of related literature.

**2. Method**

A systematic review of literature was applied as the research method in the study. Which is referred to as a systematic and rigorous method of bringing together and filtering articles published recently to formulate the empirical knowledge base from where inferences can be made? In the methods, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement for conducting and reporting study was used (Liberati *et al.*, 2009). The data were drawn out following systematized approach and standard studies were critically evaluated using the known recognized criterion - Critical Appraisal Skills Programme, (CASP, 2013) and Best Evidence Topics (BESTBETs, 2013).

**2.1 Study Eligibility Criteria**

Inclusion and exclusion criteria were set to act as a guideline to obtain literature using a search that is sensitive and retrieve specific literature needed to address the aim of the study, regardless of how many studies may be available. Date for searching was not limited to any date in order to obtain relevant data. Language restriction was however set due to the cost of obtaining a translator. The inclusion and exclusion criteria are shown in Table 1.

**Table 1: Studies inclusion Criteria**

Review Protocol	Inclusion Criteria	Exclusion Criteria
Population	Catastrophic health expenditure among health insured patients (18-65 years)	Only catastrophic health expenditure among health insured patients who have experience such challenges
Exposure	Studies dealing with risk factors related to catastrophic health expenditure	Studies not dealing with risk factors related to catastrophic health expenditure
Outcome	Studies dealing with catastrophic health expenditure complications	Studies dealing with non-catastrophic health expenditure complications



Study Design	Primary research such as primary studies, articles. Reports	Editorials, discussion, expert opinion, reviews. Dissertations (due to the cost of obtaining data)
Language	English	Not English
Humans	Human based studies	Not human

## 2.2 Information Sources

Electronic databases MEDLINE through OvidSP, CINAHL, POPLINE, EMBASE, OvidSp were developed for use in the searches. This also included non-governmental databases, WHO regional database - African Index Medicus (AIM), WHO library database (WHOLIS), WHO's institutional repository for information sharing (IRIS). Numerous others like the international non-governmental organizations (NGOs); such as United Nations and UNICEF, Web of Knowledge (WOK) and Google Scholar were activated through the websites. Meanwhile, where databases generate voluminous quantity of literature despite specific and sensitivity search approaches or get feedbacks suggesting lack of data suitable for the subject matter under study; those databases were removed at the last stage of the search. There are allowances for the identification of meaningful publications that were missed through electronic database searches by applying the manual approach of searching for suitable journals by way of doing a more dutiful searching. Conclusively, MEDLINE and EMBASE through OvidSp, POPLINE, CINAHL, WHOLIS and WHO IRIS were the databases through which suitable publications used for this research were obtained.

## 2.3 Search Strategy

The MEDLINE and EMBASE have more robust and elaborate searching, while other databases such as WHOLIS had some limitations as they allowed only two keywords and Boolean searching operator. All included studies had all their reference lists and citations reviewed. The initial review of the identified studies from the search was on their titles and abstract. Subsequently, all possibly suitable studies had their full text retrieved and reviewed separately. A compilation list of all the studies that met the inclusion criteria was done and this following numerous searches. Search terms were normally used in databases searches and in this study, the search terms were healthcare expenditure, out-of-pocket expenditure, health insured patients.

The bibliographic database management method used in this study was the Mendeley reference manager software, version 19.2 which was used to record references obtained from the search and also useful in identification of duplicates which might result from the combination of different databases. When exportation tool was provided, selected databases were directly exported into the reference manager from identified literature. But literatures can be manually entered once the database sources are without this exportation tool.

## 2.4 Data Extraction

All required important information in all the studies that were finally included in this research were extracted appropriately into a prepared data extraction table (Aveyard, 2007). The eligibility criteria were used to screen the selected studies which were recorded accordingly based on the title, abstract, and the full-text. All discovered inconsistencies were resolved through consensus with an independent third reviewer. The relevant information from selected studies were extracted by two independent reviewers using a specially designed data collection form. This specially designed data collection form was used to get the following

important information from the selected studies: author(s) name, year of publication, study design, target population, sample size, sampling method, place of publication, period of data collection, questionnaire type, insurance model and ratio of CHE exposure. The information generated using the data collection form were double checked for possible error occurring and prevention of such by a third party.

**2.5 Quality Appraisal**

The Joanna Briggs Institute checklist for cross-sectional studies was used for appraising the quality of included studies (The Joanna Briggs Institute, 2017). Two research reviewers separately examined the selected studies. Potential discrepancies were resolved through consensus with a third reviewer. The studies were divided into three categories according to quality. As this checklist had eight items, studies with a score of less than three were weak, between three and five were moderate and more than six were strong.

**2.6 Data Synthesis**

All the retrieved articles literature could be heterogeneous and therefore a systematic filtration was done on all data extracted for this study. This was put in place with the aim of achieving the research objectives; also, all the studies included in this review were compared and contrasted so as to combine and interpret all suitable information in getting a well robust description. Subject matters were chosen and instituted as areas of the systematic synthesis to aid the interpretation of result.

**3. RESULTS**

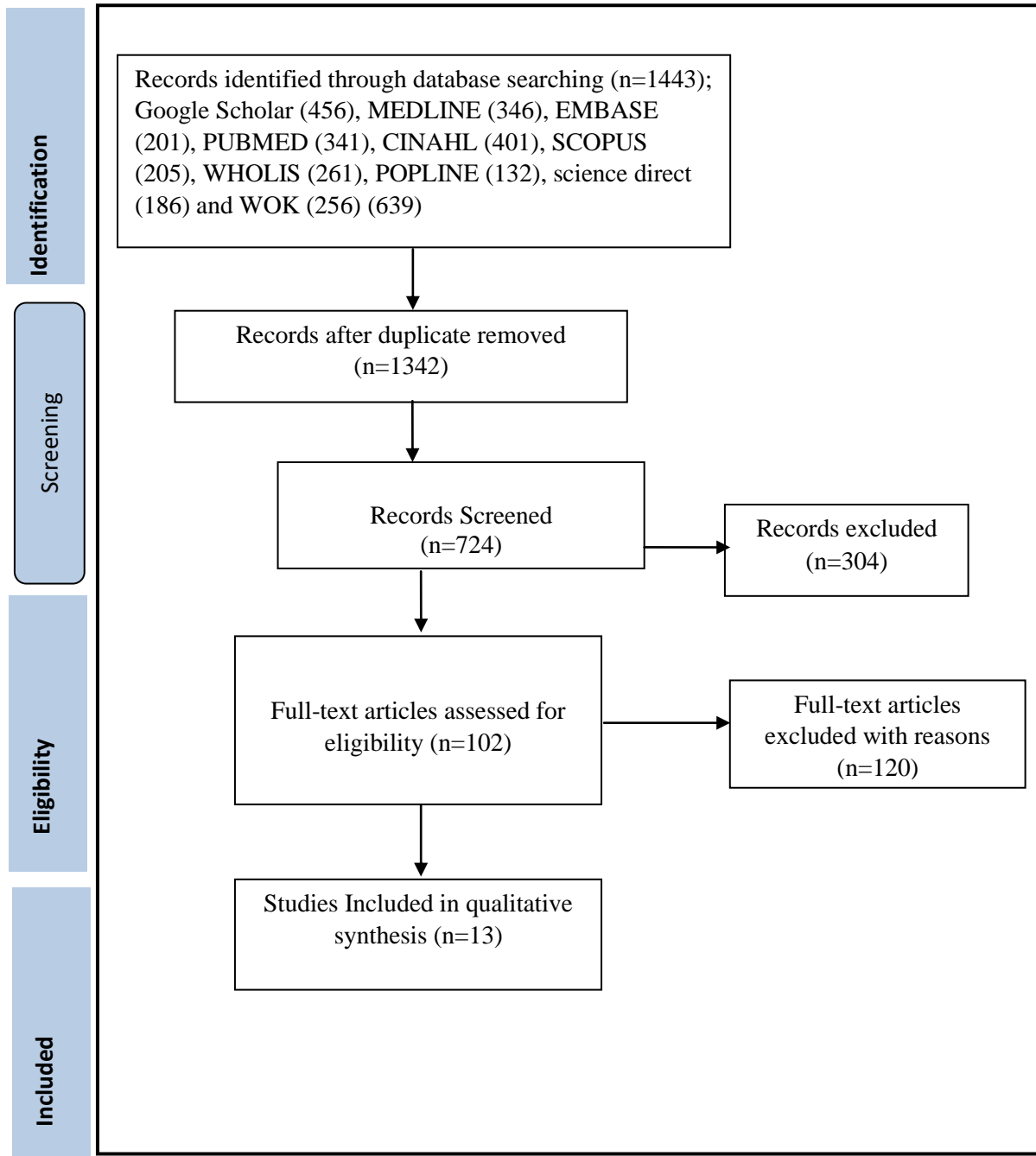
Initially, a total of 1,443 records were screened and 102 full publications were retrieved, which later produced 13 studies that met inclusion criteria (Ghiasvand *et al.*, 2010; Amery *et al.* 2014; Karami *et al.*, 2009; Kavosi *et al.*, 2009, 2012; Mobaraki *et al.*, 2018; Moghadam *et al.*, 2012; Soofi *et al.*, 2013). The table 2 show data extraction and overview of included studies and Figure 1 shows the study selection process and the reasons for exclusion.

**Table 2: Data Extraction and Overview of Included Studies**

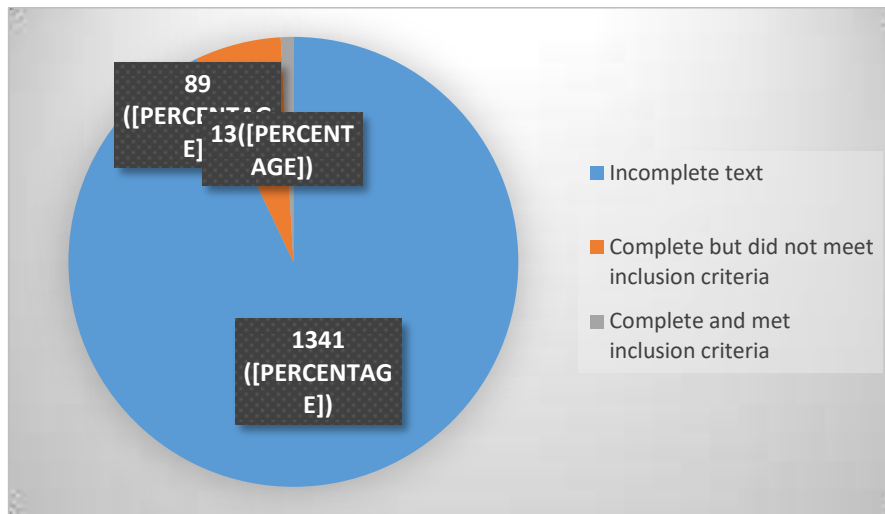
Author & date	Topic	Methodology	Findings	Sample Size	Study design
Liberati <i>et al.</i> , (2009)	The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions	Systematic Reviews and Meta-Analyses	Concluded that the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement for conducting and reporting the study will be used		Systematic review and narrative study
BestBETs, 2013	BETs CA Worksheets	Several evaluation instruments were used, including the World Health Organization	Discovered that Data were extracted in a standardized manner and the quality of studies was critically appraised		Population-based cohort study
CASP UK, 2013	Making sense of evidence	Systematic Reviews	Discovered that the Data were extracted in a standardized manner and the quality of studies was		Systematic review

			critically appraised		
Aveyard, 2007	Why Do a Literature Review in Health and Social Care?	Literature review	A data extraction table was developed to acquire relevant information from the final included studies appropriately.		A review
The Joanna Briggs Institute. 2017	The Joanna Briggs Institute Critical Appraisal Tools for Use in JBI Systematic Reviews Checklist for Analytical Cross-Sectional Studies	Systematic Review	Discovered that the JBI checklist for cross-sectional studies was used for appraising the quality of included studies		Systematic Review
Amery, <i>et al.</i> (2014)	Determining Households Exposure to Catastrophic Health Expenditure in Households of Torbat Heydariyeh University of Medical Sciences.	A review on historical and recent efforts for improving P management for lowland rice production in SSA together with their limitations and prospects for future research.	Discovered that an example is the proper management of hospital waiting times.		Review
Ghiasvand, <i>et al.</i> (2010)	Determinants of Catastrophic Medical Payments in Hospitals Affiliated to Iran University of Medical Sciences 2009.	The data were collected using Demographic Questionnaire, Time Management Questionnaire (TMQ), Spielberger State-Trait Anxiety Inventory (STAI) and Academic Motivation Scale (AMS) that was completed by self-report	Concluded that wait time scored the worst of all the major quality indicators measured by the study.	400	Quantitative and cross-sectional study
Karami, <i>et al.</i> (2009)	Catastrophic Health Expenditures in Kermanshah, West of Iran: Magnitude and Distribution	Literature review and interview	Found out that lack of planning, coordination, and communication in the delivery of health services is also the reason why resources and needs are not synchronized	120	Qualitative and descriptive

Kavosi, <i>et al.</i> (2012).	Inequality in Household Catastrophic Health Care Expenditure in a Low-Income Society of Iran.	A cluster-sampled survey was conducted in 2003 using the World Health Survey questionnaire.	Discovered that patient waiting time is the time it takes for a patient to be serviced at each service point, the total time it takes for the patient to arrive at the facility, arrive at the registration counter, and exit the facility or last service.	590	Quantitative and descriptive design
Mobaraki <i>et al.</i> , (2018)	Catastrophic Health Expenditure and Its Determinants in Older Adults in Tehran, Iran	Laboratory studies of biocompatibility of Hydrogel	These factors and the resulting long wait times are not only in Africa, but also in other developing nations such as Malawi, where other factors such as inadequate equipment, long registration procedures, patient overload, and inadequate human resources, which are the main causes of long wait times		Experimental
Kavosi, <i>et al.</i> (2009).	Measuring Household Exposure to Catastrophic Health Care Expenditures	A cluster-sampled survey was conducted in 2003 using the World Health Survey Questionnaire.	Discovered that the average patient waiting time in an institution is a measure used to determine the efficiency of delivery of health care in health facilities	600	Quantitative and descriptive study
Moghadam <i>et al.</i> (2012).	Iranian Household Financial Protection against Catastrophic Health Care Expenditures	Interviews through random sampling	Concluded that in a Malaysian public hospital, patients were found to wait more than two hours from registration time till collection of drugs.	15	Qualitative and Descriptive
Soofi <i>et al.</i> 2013	Measuring the Exposure of Households to Catastrophic Healthcare Expenditures in Iran in 2001	Survey using questionnaire. Data was analyzed with regression method	Discovered that staff shifts have little effect on the average waiting time, until a decision to admit is made	300	Quantitative study



**Figure 1:** PRISMA flow chart of the systematic review process

**Synthesized and filtered published articles outcomes.****Figure 2:** Summary of Selected Published Articles**4. Discussion**

In China, factors affecting catastrophic health expenditure and impoverishment following medical services cost were empirically studied by research conducted by Li et al (2012). The global health insurance policy implications were assessed in this study. The aim of the research was to determine the level at which Chinese households were safeguarded from catastrophic health expenditure and impoverishment from health care services cost, and to search for the structural and health system factors which could influence these outcomes. There was an astronomical rise in Chinese health insurance coverage in the last decade, recorded 15% in 2000 to 96% in 2011 within a 12-year period (Keqiang, 2012). The Medical Insurance for Urban Employees (MIUE) scheme was for risk pooling management at the municipal level and was based on sharing costs between employers and employees; formulated as a mandatory programme designed exclusively for urban employees (WHO, 2011). While those dwelling in urban areas but were not covered by the Medical Insurance for Urban Employees (MIUE) were made to register under the Medical Insurance for Urban Residents Scheme (MIURS) which is co-financed by enrollees and local government council (Hu *et al.*, 2008). There is what is called the New Cooperative Medical Scheme (NCMS) which is a voluntary programme and exclusively based on cost sharing between government and farmers, and it is made to handle mainly inpatient services with occasional outpatient care (WHO, 2009). Although, China have made great inroad into health insurance coverage (Meng, *et al.*, 2003), but in a more comprehensive thinking, this Chinese coverage is not universal. It did not hold firm to what was defined by the World Health Organization (WHO) for universal health coverage. The WHO principle was meant for equitable access to health services for all at an affordable cost and has three schematic areas of: breadth, depth and height. Breadth refers to population coverage, depth refers to the scope of services covered and height refers to the cost coverage by the health services (WHO, 2009). Despite China's repeated cycles of health territory improvement programmes over the last thirty years, there is still rising public dissatisfaction, especially in the area of healthcare costs, which lead to the 2009 round of healthcare reform. Even though there are recorded progressive positive effects from these recurrent reforms, but there remain unclear, to what degree increased public health expenditure and expanded universal coverage have in reducing the people's financial barriers. The percentage of out-of-pocket payment to total health expenditure in China rose from 20%

in 1978 to 60% in 2001, then there was dropping to 40% in 2008. Since there are weak expenditure controls in China, an increased universal coverage, with low benefit levels, will actually add up to a higher health services utilization rates and therefore lead to an increased burden of out-of-pocket payments. Under the Chinese experience increasing the breadth of coverage will not be enough in protecting the people from catastrophic health expenditure or impoverishment from health services expenses. Using secondary data from the Fourth National Health Service Survey, an analysis of catastrophic health expenditure and impoverishment from health services expenses was carried out with a sample size of 55,556 households having separate attributes and both in rural and urban settings but in separate areas of the country. When logistic regression was used to assess the determinants of catastrophic health expenditure, the results indicated that the rate of catastrophic health expenditure and impoverishment were 13.0% and 7.5% respectively. On the rates analysis, it was found that catastrophic health expenditure was higher with households where members were hospitalized, elderly, or chronically ill, and also in households living in rural or poorer regions. These are set of known adverse factors that tend to raise the risk of catastrophic health expenditure. It is observed that families enrolled in the urban employee or resident insurance schemes had lower rates of catastrophic health expenditure than those enlisted in the newly launched alternative rural corporative scheme. From this study it was concluded that the determinants of catastrophic health expenditure were; type of health services needed, demographics, type of benefit package and type of provider payment mechanisms. In China, there is an emphatic expansion of health insurance coverage, but financial protection remains questionable. The lesson to be learnt by policy makers from this research should be on how to focus on designing improved insurance plans by broadening the health care benefit package, amend the cost sharing formula and payment plans for healthcare providers and design a more efficient expenditure control approaches.

Soofi *et al.* (2021) conducted a study on health insurance protection against catastrophic health expenditures in Iran. It was a systematic review and meta-analysis. The aim of the meta-analysis was to summarize all existent evidence. Fair financing is a critical issue in health systems. Murray & Julio stated that efficient financial mechanisms in health systems can protect households from facing catastrophic health expenditures (Murray & Frenk, 2000). According to the World Health Organization (WHO) definition, CHE occurs when a household's total out-of-pocket expenditures on health are equal to or exceed 40 percent of households' capacity to pay or non-subsistence spending. The households' capacity to pay is defined as the income left after all basic subsistence needs are met (Xu *et al.*, 2003). Globally, more than 150 million people face CHE every year because of health care spending (Wagstaff *et al.*, 2018). A study reported the wide range of prevalence of CHE (1 to 25 percent) in Latin America and the Caribbean countries and based on that study health insurance was recognized as one important factor in preventing households from CHE in these countries (Knaul *et al.*, 2011). In general, the proportion of households facing CHE in different countries is extensively varied, and developed countries have a much lower incidence of catastrophic payments than developing ones (Xu *et al.*, 2003). Evidence shows that the health insurance schemes for the poor can result in a significant reduction in CHE and financial hardship (Galárraga, *et al.*, 2010). However, some health insurance programmes are weak in coverage of services and their related costs and therefore, insured people have to pay a considerable fraction of health expenditures in form of out-of-pocket (OOP) payment when using the health care services that they needed (Preker *et al.*, 2002). There are four main social health insurance funds in Iran. The most important health insurance organizations in Iran are the Iran Health Insurance Organization (IHIO) and Social Security Organization

(SSO). The effect of health insurance on the financial protection of Iranian households has been investigated in several studies (Mobaraki *et al.*, 2018). However, different and conflicting results have been reported by them. Most of the studies indicated that having health insurance reduced CHE (Soofi *et al.*, 2013). On the other hand, in some studies having health insurance did not have a significant effect on reducing CHE (Kavosi *et al.*, 2012). In Soofi *et al.* (2021) the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement for conducting and reporting the study was used as the methodology. Using a Mantel–Haenszel random-effects model, the pooled odds ratios (OR) were calculated. Subgroup meta-analyses were performed considering the type of insurance and study population. The pooled OR for the protective effect of health insurance risk on facing CHE was 0.93 [95% confidence interval (CI), 0.68–1.28]. It was found that the protective effect of the two types of insurance was not statistically significant. In Iran, health insurance was not found to be effective in providing financial protection against catastrophic health expenditure. A good strategy that might protect clients seeking health care services from catastrophic health expenditure will be by expanding the prepayment plans and merging health insurance funds. There is a clarion call that more attention should be given to formulation of benefit package that will cover chronic diseases under the health insurance programme.

Ravangard *et al.* (2021) did a study in which they used Iran as a reference, it was on household catastrophic health expenditure and its effective factors. The World Health Organization (WHO) goal on health care expenditures had always placed prominence on households' protection against catastrophic health expenditures. The major sources or attributes of catastrophic health expenditure on households are the combination of economic poverty and cost of health care services payments. This study which was aimed at measuring the degree of households' catastrophic health expenditure and the associated factors in household having catastrophic health expenditure in Shiraz, Iran was carried out in 2018. It was a cross-sectional study using 740 randomly selected households from different districts of Shiraz, Iran in 2018 with application of the multi-stage sampling method. The data were collected using the Persian version of the "WHO Global Health Survey" questionnaire. Catastrophic health expenditure was categorically stated as health expenditures exceeding 40% of households' capacity to pay following the WHO principle. Exclusion criteria for the study were households known to be living below the poverty line before accessing health care services. The associations between the households' characteristics and those facing CHEs were assessed using the Chi-Square test and the multiple logistic regression at significance level of 0.05. The findings indicated that 16.48% of households used for the study had faced CHEs. It was also noted that there are higher odds of facing CHEs which were observed in the households living in rented houses (OR = 3.14, P-value < 0.001), households with disabled members (OR = 27.98, P-value < 0.001), households with children under 5 years old (OR = 2.718, P-value = 0.02), and those without supplementary health insurance coverage (OR = 1.87, P-value = 0.01). The author in his conclusion stated that there could be lower CHEs by raising the use of health insurance, increasing Social Security support and the State Welfare Organizations for households with disabled family members, formulating programme like the Integrated Child Care Programmes, and setting home rental/housing policies for vulnerable households.

In India, Joglekar (2008) carried out research in which he requested to know if health insurance will have a lowering effect on out-of-pocket payments which had been known to be causing catastrophic health expenditure. According to the Government of India (GoI), that in 2005 households' health care out-of-pocket spending constituted about 75 percent of India



total expenditure on health. Generally, sources of healthcare financing in India includes government, insurance, and others are grants and loans from international agencies. The contributions by the India government in the total health expenditure had been perpetually low. It had nosedived downwards from 18.4 percent to 17.9 percent in 1998 and 2001 respectively (IIPS & WHO, 2006). These statistics from India might be due to the re-introduction of user fees in public health facilities for clients/households known to be above India's statutory poverty line as part of the health sector reforms by most states in India in the early 1990s. The introduction of user fees coupled with the low government percentage contributions in the total health care expenditure in public health sector will implies that households will have to bear the financial burden in the event of sudden health challenges. This cumulatively caused drastic fall in consumption expenditure below subsistence level leading to catastrophic out-of-pocket health expenditure. Research have established the facts that health insurance can provide households financial risk protection in the event of health challenges and lower out-of-pocket payments in health care services and thereby reducing catastrophic health expenditure. Health insurance coverage in India by the year 2003 was still very low with about 1.6 percent only of the general population covered (WHO, 2006). The implication was that majority of the households have to pay for health care services by relying on informal approaches which commonly led to catastrophe. In the India city of Hyderabad for instance, 24 percent of its households had to pay for health care services in 2006 through borrowing of fund to finance their health care cost (Banerjee & Duflo, 2007). There was an initiative by the government to increase health insurance coverage to enroll poor households with the aim of lowering out-of-pocket payment, and by extension reducing catastrophic health expenditure. But if health insurance had been proven to have significant reduction effect on catastrophic out-of-pocket payments, it will be expected that a more robust policy to expand health insurance coverage should be the best way to go. However, little is known about the efficiency of health insurance in lowing out-of-pocket payments in India as few research have assessed the effect of health insurance on household's health care expenditure. It is however, common knowledge that huge out-of-pocket payments can reduce consumption expenditure on subsistence goods and services, and force households below the poverty line. Health insurance has been reviewed and recently considered as one of the possible tools that have the lowering effects on massive out-of-pocket health expenditure, and therefore capable of reducing impoverishment. In India, health insurance has been known to record poor coverage; and therefore, in the research paper, the authors argued that for poor households, any expenditure on health is catastrophic as they are already unable to achieve the subsistence consumption level. Consequently, the researchers took zero percent as a threshold level to categorize catastrophic health expenditure and then assess the effects of health insurance on the chances of experiencing catastrophic health expenditure.

## 5. Conclusion

The study has examined the impact of health insurance on catastrophic health expenditures. This issue has received little attention in the past. It had revealed that at both 10% and 40% thresholds of catastrophic health expenditure, the health insured are not currently completely protected from financial hardship following excessive out-of-pocket spending due to the shortcomings of health insurance and its poor population coverage in countries analyzed. This situation is worse in developing countries like Nigeria than in developed countries of the world. But it is clear from various studies that health insurance has the capacity to ameliorate CHE if properly implemented in terms of coverage, benefit packages and healthcare providers payment methods.

## 6. Recommendation

It is recommended that policymakers with strong government political will should be adopted with the aim of abolishing user fees, and enforce health insurance implementation that is functional with reasonable population coverage which will ultimately increase universal health coverage and reduce or eliminate catastrophic health expenditure.

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# Knowledge and Attitude of Midwives Towards Ethico-Legal Standards of Patients' Rights in Primary Health Centres in Obio/Akpor Local Government Area

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## Abstract

*The study was performed to determine the knowledge and attitude of midwives towards ethico-legal standards in primary health centres in Obio/Akpor Local Government Area. Four research questions and four hypotheses were used to guide the study. The research was hinged on deontology, principlism and teleology theories and uses descriptive survey design. Data was collected through a questionnaire which were distributed to 126 midwives in Obio/Akpor LGA. The study instrument was a questionnaire that was literature developed. Consent was obtained from the midwives before questionnaire administration. Data were analyzed using mean, standard deviation, and spearman ranking on SPSS. The study result revealed that the midwives possess high level of knowledge ( $3.5 \pm 0.585$ ) with 58% having good knowledge while 42% have poor knowledge. They also have positive attitude ( $3.4 \pm 0.607$ ); 54% have positive attitude. A significant relationship was found between knowledge and attitude of midwives towards ethico-legal standards primary health centres in Obio/Akpor Local Government Area ( $R=0.789$ ,  $p=0.000$ ). Base on this the study recommend refreshers courses for all midwives so as to improve their knowledge on the tenets of the ethico-legal standards of patient right, continuation of the culture and structure in place at the various health centers which has been found to be effective, provision of a mentorship programme where more experienced midwives will mentor less experienced midwives.*

**Keywords:** Knowledge, Attitude, Ethico-Legal Standards.

## 1.0 Introduction

The midwife as a health care professional exercises specialized knowledge and skill in the discharge of her/his duty to her clients. The way the use of this knowledge should be applied when providing service to the clients can be considered a moral issue which the midwife owes each client. "Duty of care implies that the licensed midwife consent to practice midwifery makes her owe her clients the duty of care, thus a midwife -patient relationship is established and a contract to provide care is established. A duty of care is therefore paramount in the relationship between a clinician and patient (Chukwunke 2016, Charles, 2020). In the course of duty, Midwives owes her client the obligation to render safe and ethically sound care always, even in the face of adverse situations, the midwife is aware of the basic human rights, equity in care, values, dignity of patients before making decisions or taking action.as responsibility forms the basis of ethical decisions in clinical practice.

Ethical standards are based on human rights and wrongs, patient rights are those basic rules of conduct between patients and medical caregivers as well as the institution that supports them (Davis, 2020). Ethico-legal standards then can be said to be the standards of conduct of behavior that are measurable and enforceable which have consequences if the standards are not met (Osaro, 2021). Yousefzadeh et al., (2017) opined that the most important ethical principle and human rights in the realm of medical practice is observance of patients right; respecting patients right is mandatory for all members of the medical team. Considering that the norms of professional ethics and patients' rights require knowledge of the general concept of medical ethics, the first step in respecting patients" right is being aware of their rights because not being aware of such rights may lead to unethical practices attracting legal sanctions. This relates with what Yousefzadeh et al (2017) opined, that applying the

knowledge acquired when in real life situations with the patient makes it important to address observation of patients right during training stressing that the advancement in medical information and technology has an ever increasing ethical problem. For instance, there are a lot of advancement in the fields of midwifery (gyneacology) in the areas of abortion, contraception, infertility, artificial reproductive therapy and of course the ethical considerations are getting more complex thus it behooves on the midwife to step up her knowledge of ethical issues and forensic ordinances associated with obstetrics and gynecology as new trends and technological advancement in midwifery are getting more complex and the midwife must be versed in such knowledge as ignorance of the law is no excuse. It is important to note that traditional medical ethics is no longer able to respond to more recent gyneacology and obstetrics needs of patient.

Furthermore, several factors that influence the practice of the ethico-legal standard of patients' right by medical personnel have been identified in literature. Some of them are individual character and responsibility, communication challenges, organizational preconditions, support systems, educational and cultural development (Dehghani et al., 2015).

### **1.1 Aim**

The study aimed was to assess level of knowledge and attitude of Midwives towards ethico legal standards of patients' rights in primary health centres in Obio/Akpor Local Government Area.

### **1.2 Objectives**

The objectives of the study are to;

5. assess the level knowledge of Midwives on ethico-legal standards of patients' rights in primary health centres in Obio/Akpor LGA, Rivers State
6. ascertain the attitude Midwives towards the ethico-legal standards of patient rights in primary health centres in Obio/Akpor LGA, Rivers State.

### **1.3 Research Hypothesis**

H<sub>0</sub>1: There is no significant difference in the knowledge of Midwives of the ethicolegal standards of patient right in primary health centres in Obio/Akpor Lga, Rivers State

H<sub>0</sub>2: There is no significant difference in the attitude of Midwives towards the ethicolegal standards of patient right in primary health centres in Obio/Akpor LGA, Rivers State

## **2.0 Methodology**

This study adopted descriptive survey research design. The study's participants included all of the midwives who worked at Primary Health Centers in the Obio/Akpor Local Government Area, bringing the total number of participants to 185. The study sample size was 126 which was divided among the health centres in the local government area using proportionate sampling method. 68% of the midwives' population in each health centre was drawn as the sample size for each health centre. A modified instrument of Nwachukwu (2011) and Koshy (2015) titled "Knowledge and Attitude of Midwives Ethico-Legal Standard Patient Rights (KAMELSPR)" was used for the study. The copies of the questionnaire were administered by the researcher to respondents and retrieved after completion. It took a respondent an average of fifteen minute for a questionnaire to be properly filled. Furthermore, all the questionnaires were filled at the point of administration and retrieved immediately afterwards. The responses collected for the study were analyzed with statistical package for social science (SPSS) 25.

This was statistically presented in tables using standard deviation and mean ( $\bar{x}$ ) for the research question. One sample independent t-test and Chi-Square ( $X^2$ ), were used to resolve the condition of the Null hypotheses at 0.05 significant level.

### 3.0 RESULT

**Table 1: Demographic analysis of sampled midwives' at primary health centres in Obio/Akpor Lga, Rivers State**

	Frequency	Percentage
<b>Gender</b>		
Male	0	0
Female	126	100
<b>Total</b>	<b>126</b>	<b>100</b>
<b>Years of experience</b>		
1- 5	55	43.7
6 -10	43	34
11- 15	15	11.9
15 and above	13	10.4
<b>Total</b>	<b>126</b>	<b>100</b>
<b>Religion</b>		
Christianity	105	83.3
Muslim	21	16.7
<b>Total</b>	<b>126</b>	<b>100</b>
<b>Ethnicity</b>		
Ijaw	29	23
Igbo	34	27
Effik/Ibibio	25	19.8
Yoruba	17	13.5
Others	21	16.7
<b>Total</b>	<b>126</b>	<b>100</b>

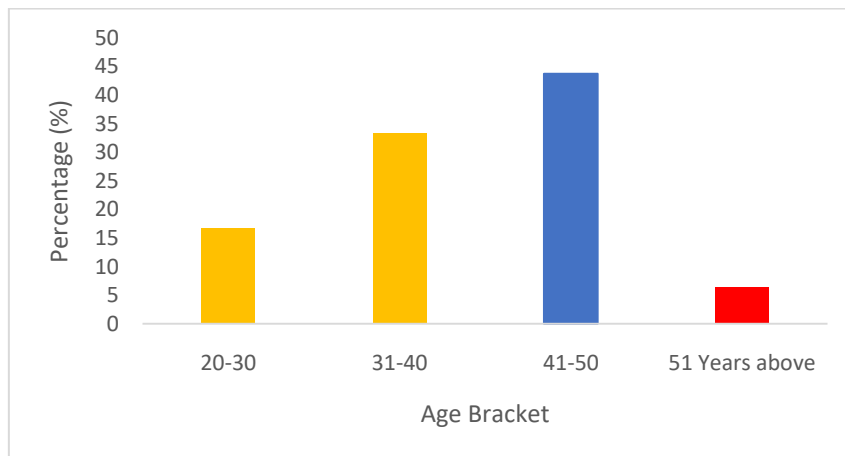


Fig. 1: age of respondents



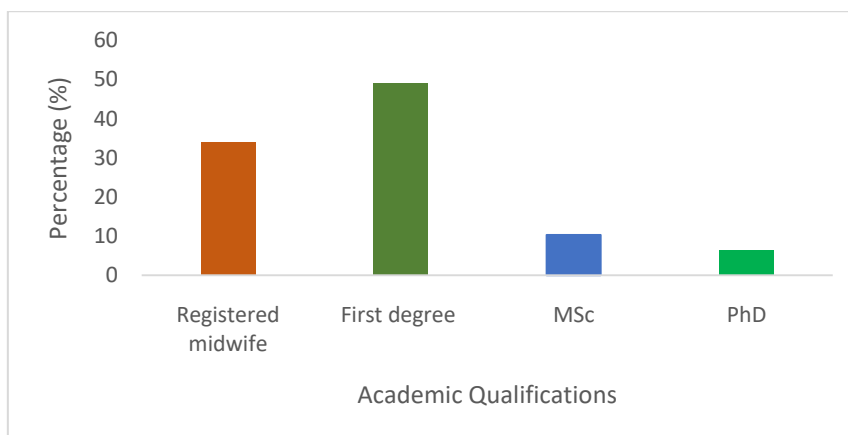


Fig. 2: academic qualifications of respondents

In table 1, fig. 1 & 2 it was shown that 21 respondents representing 16.7% were aged 20-30 years, with 42 respondents corresponding to 33.3 % were aged 31-40, while 55 respondents representing 43.7% were aged 41-50 years. 8 respondents corresponding to (6.3%) are 51 years and above. 9 respondents representing All 126 respondents representing 100% are female. This shows that majority of the respondents are within the age bracket 31-50 (77%). The table also indicated that 43 respondents corresponding to 34.1% have RM as their highest educational qualification, 62 respondents corresponding to 49.2% have first degree, 13 respondents corresponding to 10.3% are MSc degree holders, while 8 respondents corresponding to 6.4% are PhD holders. Based on the analysis most of the midwives are first degree holders. Furthermore, 105 respondents corresponding to 83.3% are Christian, 21 respondents corresponding to 16.7% are Muslim. 29 respondents corresponding to 23% are from the Ijaw ethnic group, 34 respondents corresponding to 27% are Igbo, 25 respondents corresponding to 27% are Effik/Ibibio, 17 respondents corresponding to 13.5% are Yoruba, while 21 respondents corresponding to 16.7% are grouped into other unspecified ethnic group. Although the ethnic groups with the most respondents are Igbo and Effik/Ibibio (27%), other ethnic groups are equally represented with some reasonable percentage. This allowed for diverse opinion on the culture items. For years of experience, 55 respondents corresponding to 43.7% have between 1-5 years' experience, 43 respondents corresponding to 34% have between 6-10 years' experience, 15 respondents corresponding to 11.9% have 11-15 years' experience, while 13 respondents corresponding to 10.4% have 15 and above years' experience. Although most of the respondent are in the 1-5 years' experience group (43.7%), a good percentage (22.3%) have 11 and above years of experience as a midwives.

**Research Question One:** To what extent is the knowledge of Midwives on ethico-legal standards of patients' rights in primary health centres in Obio/Akpor Lga, Rivers State?

**Table 2: Analysis of the knowledge of nurses and midwives of Ethico-Legal Standard of Patients' Bill of Right in Obio/Akpor Lga Rivers State**

S/N	Item	Mean	Std. Deviation
1	I have heard of Professional Ethics in Nursing/ Midwifery	3.4	.489
2	I am aware of the Ethical Legal Aspect of Nursing/Midwifery	3.2	.585
3	I am well informed of the Ethical Legal Implication of Nursing and Midwifery Professional Practice	3.3	.493
4	I have heard about the Patients' Bill of Rights	3.5	.560

5	I believe patients have the right to be treated with respect, courtesy, and seen as individual with self-dignity and protect their privacy	3.7	.470
6	Patients possess the right of response to questions and request raised by them promptly	3.7	.582
7	Patients possess the right to know their service provider responsibility for his/ her care	3.5	.678
8	Patients possess the right to information concerning their health (diagnosis, planned treatment, alternatives, risks and prognosis of care	3.6	.553
9	Patients possess the right to refuse treatment, except as provided by law	3.7	.479
10	Patients possess the right to refuse full information as regards medical care	3.7	.470
11	Patients possess the right to be aware of financial resources for their care	3.4	.695
12	Patients possess the right to be aware of the estimate of their financial bill on request and charges explained	3.6	.699
13	Patients possess the right not to be discriminated against by reason of race, nationality or religion in access to healthcare	3.5	.701
14	Patients possess the right to emergency treatment of any form that may worsen from lack of treatment	3.5	.615
15	Patients possess the right to be informed if medical care involves experimental research and the right to refuse participation in such research	3.4	.674
16	Patients possess the right to express grievance for violation of fundamental rights	3.5	.615
	<b>Grand Mean</b>	<b>3.5</b>	<b>.585</b>

An observation of table 2 which outlines the extent of the knowledge of Midwives on ethico-legal standards of patients' rights in primary health centres in Obio/Akpor Lga, Rivers State; it revealed that items 1-16 have mean values of  $3.4 \pm 0.489$ ,  $3.5 \pm 0.585$ ,  $3.3 \pm 0.493$ ,  $3.5 \pm 0.560$ ,  $3.7 \pm 0.470$ ,  $3.7 \pm 0.582$ ,  $3.5 \pm 0.678$ ,  $3.6 \pm 0.553$ ,  $3.7 \pm 0.479$ ,  $3.7 \pm 0.470$ ,  $3.4 \pm 0.695$ ,  $3.6 \pm 0.699$ ,  $3.5 \pm 0.701$ ,  $3.5 \pm 0.615$ ,  $3.4 \pm 0.674$ , and  $3.5 \pm 0.615$  respectively. Using our already established criteria which stated that the criterion mean is 2.5; all the items possess mean values which enabled them to be accepted.

The implication of these mean values is that midwives in primary health centres in Obio/Akpor LGA, Rivers State have heard of Professional Ethics and are aware of the Ethical Legal Aspect of Nursing/Midwifery; they are well informed of the Ethical Legal Implications of Nursing and Midwifery Professional Practice, and have heard about the Patients' Bill of Rights. They believe patients have the right to be treated with respect, courtesy, and seen as individual with self-dignity and protect their privacy; those patients have the right of response to questions and request raised by them promptly; that patients have the right to know their service provider responsibility for his/ her care.

Furthermore, they affirmed that patients have the right to information concerning their health (diagnosis, planned treatment, alternatives, risks and prognosis of care; patients have the right to refuse treatment, except as provided by law; those patients have the right to refuse full information as regards medical care; patients have the right to be aware of financial resources for their care. They stated that patients have the right to be aware of the estimate of their financial bill on request and charges explained; that patients have the right not to be discriminated against by reason of race, nationality or religion in access to healthcare; patients have the right to emergency treatment of any form that may worsen from lack of

treatment; patients have the right to be informed if medical care involves experimental research and the right to refuse participation in such research; and that patients have the right to express grievance for violation of fundamental rights.

Furthermore, the grand mean calculated is  $3.5 \pm 0.585$ . Following the already established criteria; the grand mean falls within the high level of knowledge. Therefore we can conclude that Midwives at primary health centres in Obio/Akpor LGA, Rivers State possess high level of knowledge on ethico-legal standards of patients' rights.

Table 3: Analysis of the determination of the level of knowledge

Level of knowledge	Knowledge score range	Frequency	Percentage
Poor	0-55	53	42
Good	56-80	73	58
<b>Overall</b>	<b>0-80</b>	<b>126</b>	<b>100</b>

Overall mean score= $56.1 \pm 4.93$ , median score=56

The table above shows the analysis result which determine the level of knowledge of midwives on ethico-legal standards of patients' rights in primary health centres in Obio/Akpor LGA, Rivers State. It revealed that 42% of respondents expresses poor knowledge of the ethico-legal standards of patients' rights; while 58% expressed good knowledge of the ethico-legal standards of patients' rights. The mean score of the respondents is  $56.1 \pm 4.93$  while the median score is 56. Based on the analysis we can conclude that majority of the midwives in primary health centres in Obio/Akpor LGA, Rivers State (58%) possess good knowledge of the ethico-legal standards of patients' rights.

**Research Question Two:** To what extent is the attitude of Midwives towards the ethico-legal standards of patient rights in primary health centres in Obio/Akpor LGA, Rivers State?

Table 4: Analysis of the attitude of nurses and midwives toward observing Ethico-Legal Standard of Patients' Bill of Right Obio/Akpor Lga, Rivers State

S/N	Item	Mean	Std. Deviation
17	I treat patients with respect, courtesy, and see them as individual with self-dignity and protect their privacy while discharging your duties	3.7	.450
18	I respond to the questions and request raised by patients promptly	3.5	.500
19	I assist patients to know their service provider responsibility for his/ her care	3.5	.546
20	I permit patients' right to support services and interpreter when he or she does not understand the language of interaction	3.5	.502
21	I allow patients' right to information concerning their health (diagnosis, planned treatment, alternatives, risks and prognosis of care)	3.5	.561
22	I allow patients execute their right to refusal of treatment, except as provided by law	3.3	.622
23	I authorize patients right to refusal of full information as regards medical care	2.7	.871
24	I grant patients right to be aware of financial resources for their care	3.3	.505
25	I always have the estimate of patients financial bill on request and charges explained to them	3.1	.854
26	I discriminate patients against access to healthcare by any reason of race, nationality or religion	3.6	.536
27	I allow patients right to emergency treatment of any form that may	3.3	.799

	worsen from lack of treatment		
28	I execute patients right to be informed if medical care involves experimental research and the right to refuse participation in such research	3.3	.541
29	I acknowledge Patients right to express grievance for violation of fundamental rights	3.3	.602
	<b>Grand Mean</b>	<b>3.4</b>	<b>.607</b>

An observation of table 4 which outlines the extent of the attitude of Midwives towards the ethico-legal standards of patient rights in primary health centres in Obio/Akpor LGA, Rivers State; it revealed that items 17-29 have mean values of  $3.7\pm0.450$ ,  $3.5\pm0.500$ ,  $3.5\pm0.502$ ,  $3.5\pm0.561$ ,  $3.3\pm0.622$ ,  $2.7\pm0.872$ ,  $3.3\pm0.505$ ,  $3.1\pm0.854$ ,  $3.6\pm0.536$ ,  $3.3\pm0.799$ ,  $3.3\pm0.541$ , and  $3.3\pm0.602$  respectively. Using our already established criteria which stated that the criterion mean is 2.5; all the items possess mean values which enabled them to be accepted.

The implication of these mean values is that midwives in primary health centres in Obio/Akpor LGA, Rivers State treats their patients with respect, courtesy, and see them as individual with self-dignity and protect their privacy while discharging your duties; respond to the questions and request raised by patients promptly; help patients know their service provider responsibility for his/ her care; permits patients' right to support services and interpreter when he or she does not understand the language of interaction; allow patients' right to information concerning their health (diagnosis, planned treatment, alternatives, risks and prognosis of care).

They allow patients to execute their right to refusal of treatment, except as provided by law; authorize patients, right to refusal of full information as regards medical care; grant patients right to be aware of financial resources for their care; always have the estimate of patients financial bill on request and charges explained to them. Also, they discriminate patients against access to healthcare by any reason of race, nationality, or religion; allow patients right to emergency treatment of any form that may worsen from lack of treatment; execute patients right to be informed if medical care involves experimental research and the right to refuse participation in such research; and acknowledge patients right to express grievance for violation of fundamental rights.

Furthermore, the grand mean calculated is  $3.4\pm0.607$ . Following the already established criteria; the grand mean falls within the moderate level of attitude/practice. Therefore, we can conclude that midwives at primary health centres in Obio/Akpor LGA, Rivers State possess moderate level of positive attitude/practice on ethico-legal standards of patients' rights.

Attitude	Attitude range	score	Frequency	Percentage
Negative	0-43		58	46
Positive	44-65		68	54
<b>Overall</b>	<b>0-65</b>		<b>126</b>	<b>100</b>

Table 5: Analysis of the determination of the level of attitude

Overall mean score= $43.7\pm4.81$ , median score=44

The table above shows the analysis result that determine the attitude/practice of midwives towards the ethico-legal standards of patients' rights in primary health centres in Obio/Akpor LGA, Rivers State. It revealed that 46% of respondents expresses negative attitude/practice of

the ethico-legal standards of patients' rights; while 54% expressed positive attitude/practice towards the ethico-legal standards of patients' rights. The mean score of the respondents is  $43.7 \pm 4.81$  while the median score is 44. Based on the analysis we can conclude that majority of the midwives in primary health centres in Obio/Akpor LGA, Rivers State (54%) possess positive attitude/practice towards the ethico-legal standards of patients' rights.

**Hypothesis**

The following null hypotheses were tested at 0.05 significant levels using one sample independent t-test and chi-test as applicable:

**Ho<sub>1</sub>:** There is no significant difference in the knowledge of Midwives of the ethicolegal standards of patient right in primary health centres in Obio/Akpor Lga, Rivers State

Table 6: t-test of the level of knowledge of the midwives of the Ethico-Legal Standard of Patients' Bill of Right in Obio/Akpor, Lga

	t	t <sub>table</sub>	Df	Mean difference	Sig.
Knowledge of Ethico-legal standard Bill of Right	121.6	1.660	125	16.165	.000

Table 6: t-test table shows that at degree of freedom of (125), the calculated t-test value is 121.6, p-value obtained is 0.000 while the t<sub>table</sub> value is 1.660. The t<sub>cal</sub>>t<sub>table</sub> while the p-value obtained (0.000) is less than the 0.05. The researcher rejects the null hypotheses and concludes that in the Obio/Akpor LGA of Rivers State, there is a substantial differential in midwives' awareness of the ethico-legal principles of patient rights in primary health centers. The significance difference mean is 16.165.

**Ho<sub>2</sub>:** There is no significant difference in the attitude of Midwives towards the ethicolegal standards of patient right in primary health centres in Obio/Akpor Lga, Rivers State.

Table 7: t-test of the level of attitude of the midwives of the Ethico-Legal Standard of Patients' Bill of Right

	t	t <sub>table</sub>	Df	Mean difference	Sig.
Attitude of Midwives towards the ethico-legal standards of patient right	62.1	1.660	125	32.590	.000

Table 8 t-test table shows that at degree of freedom of (125), the calculated t-test value is 62.1, p-value obtained is 0.000 while the t<sub>table</sub> value is 1.660. The t<sub>cal</sub>>t<sub>table</sub> while the p-value obtained (0.000) is less than the 0.05. The researcher rejects the null hypotheses and concludes that in the Obio/Akpor LGA of Rivers State, there is a substantial variation in midwives' attitudes about the ethico-legal principles of patient rights in primary health centers. The significance difference mean is 32.590.

## 4.0 Discussion

### **Knowledge of Midwives on ethico legal standards of patients' rights in primary health centres in Obio/Akpor LGA, Rivers State**

The study can infer that the midwives in primary health centres in Obio/Akpor LGA, Rivers State have a high level of knowledge on Ethico-Legal Standard of Patients' Bill of Right. The conclusion was made from the grand mean of the knowledge items which is  $(3.5 \pm 0.585)$ .

This deduction was made from the result of the study which shows that midwives in primary health centres in Obio/Akpor Lga, Rivers State have heard and are aware of the Ethical Legal Aspect of Midwifery of the Patients' Bill of Rights, and understands its implication to midwives. Furthermore, they respects all the sections of the Patients' Bill of Rights (respect and appreciation, sufficient and timely information, consent, privacy and confidentiality, care and treatment, and participation). Study reveals that 58% of the midwives shows good knowledge, while 42% of the midwives showed poor knowledge. This finding affirmed the conclusion of Sheikhtaheri, Jabali, & Dehaghi (2016) who stated that Iranian nurses' knowledge of the patients' bill of rights was acceptable. Al-Saadi, et. al. (2019) in their study also stated that awareness of the importance of patients' rights among Omani nurses was high (91.51%). It however contradicts the findings of Abdalla, et. al. (2019) who stated that Nurses' in Sudan lack the knowledge of the existence of the Sudanese Charter of patients' rights adopted in 2009.

### **Attitude of Midwives towards the ethicolegal standards of patient rights in primary health centres in Obio/Akpor Lga, Rivers State**

From the analysis outlined in table 4.4; the researcher concluded that midwives in primary health centres in Obio/Akpor LGA, Rivers State possess a positive attitude towards the Ethico-Legal Standard of Patients' Bill of Right, and also practice all the section of Bill that relates to patients. The conclusion was made from the grand mean of the attitude items which is  $(3.4 \pm 0.607)$ . This positive attitude may be attributed to the culture of the health centres. This deduction was made from the result of the study shows that the midwives in primary health centres in Obio/Akpor LGA, Rivers State have a positive attitude towards all the sections of the Patients' Bill of Rights (respect and appreciation, sufficient and timely information, consent, privacy and confidentiality, care and treatment, and participation), and also practice them when attending to pregnant women in their various health centres.

Furthermore, the study revealed that 54% of the midwives shows positive attitude towards the ethico-legal standards of the patient rights in primary health centres in Obio/Akpor LGA, Rivers state while 46% of the midwives showed negative attitude. This finding affirmed the conclusion of Sheikhtaheri, Jabali, & Dehaghi (2016) who stated that Iranian nurses' performance in observing the patients' rights was relatively acceptable. However, finding contradicts the conclusion of. Al-Saadi, et. al., (2019) who stated that Omani nurse's adherence to patients' rights in practice was low.

## 5.0 Conclusion

Using the findings from the result analysis, the researcher, therefore can conclude that:

1. Midwives in primary health centres in Obio/Akpor Lga, Rivers State possess a high level of knowledge of Ethico-Legal Standard of Patients' Bill of Rights  $(3.5 \pm 0.585)$ . 58% of the midwives showed good knowledge of the Ethico-Legal Standard of

Patients' Bill of Right while 42% of the midwives showed poor knowledge of the Ethico-Legal Standard of Patients' Bill of Right.

2. Midwives in primary health centres in Obio/Akpor Lga, Rivers State possess a moderate level of positive attitude towards the Ethico-Legal Standard of Patients' Bill of Right ( $3.4 \pm 0.607$ ). 54% of the midwives possess positive attitude/practice of the Ethico-Legal Standard of Patients' Bill of Right while 46% of the midwives possess negative attitude/practice of the Ethico-Legal Standard of Patients' Bill of Right.

### 5.1 Recommendations

Based on the aforementioned conclusion, the following recommendations were made by the researcher:

1. Although the most of midwives at the primary health centre expresses high level of knowledge, there is a significant number (42%) with below average level of knowledge; therefore the local government hospital authority should as a matter of priority organize refresher courses for all the midwives so as to improve their knowledge on the tenets of the ethico-legal standards of patient right.
2. The hospital authorities should continue with the culture and structure in place at the various health centres has it has been found to be very effective in educating the midwives on the tenets of the ethico-legal standards of patient right and also help improve their attitude towards it.
3. A significant number of the midwives (46%) possess negative attitude towards the ethico-legal standards of patient right; this figure is quite high and may be the reason why the pregnant women have shun the primary health centres. The healthcare authority should educate the midwives on the importance of having a positive attitude towards the ethico-legal standards of patient right, and also organize class and lectures that will help improve the attitude of the midwives.
4. Since a correlation has been found between years of service and attitude toward the ethico-legal standards of patient right; there should be a mentorship programme where more experienced midwives will mentor less experienced midwives on the importance of the ethico-legal standards of patient right. This will be leapfrog the gap created by the inexperience among the less-experienced midwives

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# **Burnout Associated Factors among Nurse-Midwives in Tertiary Hospitals in Rivers State**

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## **Abstract**

*This study investigated burnout and associated factors among Nurse-Midwives in tertiary hospitals in Rivers State. A descriptive cross-sectional survey design was used for the study. Five objectives and their corresponding research questions and hypotheses guided the study. The population of the study comprised all 1337 Nurse-Midwives in the two tertiary hospitals in Rivers state. A total of 419 Nurse-Midwives representing 31.34% of the population was used as the sample size for the study. A self-structured validated questionnaire titled, "Burnout and Associated Factors among Nurse-Midwives Questionnaire" (BAFNMQ) was used for data collection. Face and content validity was ensured by four experts including the researcher's supervisor. The reliability coefficient of the instrument was calculated to be 0.81 using Cronbach Alpha method. Descriptive statistics involving simple percentages, bar charts, mean and standard deviation were used to answer the research questions while inferential statistics involving z-test analysis was used to test the null hypotheses at 0.05 level of significance. Results showed that majority (89.07%) of the respondents had full-time work status with over 60% of the respondents having 5 to 10 years of work experience. Further analysis of data revealed that excessive workloads and environmental risks were leading causes of burnout among Nurse-Midwives working in tertiary hospitals in Rivers state. Based on the results, it was concluded that the associated factors of burnout are multidimensional and still very much present with nurse-midwives working in these hospitals. It was therefore recommended among others that both the federal and state governments should employ more qualified Nurse-Midwives and increase the hazard allowance of Nurse-Midwives.*

**Keywords:** *Midwives, Nurse, Burnout, Tertiary Hospitals, Factors.*

## **1.0 Introduction**

There is no better way to describe the predicament of nurse-midwives as a result of their work demands than burnout (Atallah, et al., 2016). Burnout can be referred to as a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job, or feelings of negativism or cynicism related to one's job and reduced professional efficacy. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life (Valeras, 2020).

In a situation where a nurse-midwife is expected to attend to 10 patients daily or per shift without any meaningful extrinsic motivation is actually worrisome and a major factor facilitating nurse-midwives burnout (Ayamolowo, 2013). For instance, a nurse-midwife is expected to spend a minimum (standard working hours) of 37.5 and maximum of 40 hours per week on duty which is about a maximum of 8-hour periods of time per shift will end up spending 24-hour periods of time per shift and up to 100-hour periods of time per week because childbirth is unpredictable, and babies are not always born during business hours (Edet, et al., 2015). Some nurse-midwives are therefore constrained to be at work in the hospital for 24-hour periods. Additionally, nurse-midwives have been part of vanguard

healthcare workers combating the pandemic of Coronavirus-2019 (COVID-19) with series of variant, which demands that they go beyond their call of duty and risk their own lives to provide the essential healthcare service. Amidst these challenges, nurse-midwives are providing quality midwifery care to women and newborns in health facilities or the field, safeguarding public health. Uninterestingly, the ratio of nurse-midwives available in Nigeria to carry out all of these routines to members of the population is approximately 1:1361 (Onyedinefu, 2020).

It was reported in a State in the southwest region of Nigeria that 22.6% of the nurse-midwives experienced a high level of emotional exhaustion while 47.8% of the nurse-midwives experienced moderate emotional exhaustion in the domain of burnout—this implies that 70.4% of the nurse midwives experienced burnout at different degrees. Also, in a national survey in the United States, it was reported that out of 3.9 million (3,900,000) nurse-midwives, approximately 1.2 million (1,228,500) representing 31.5% experienced burnout which led to feelings of dread about work, sleep issues, depression, overwhelming mental and physical exhaustion (Shah, et al., 2021). The effects of burnout among the nurse-midwives also include compassion fatigue, causing the nurse-midwives to disengage from the patients. Burnout among nurse-midwives therefore, appeared to generate undesirable consequences for the nurse-midwives, their families, the work environment and the organization (Salvagioni, et al., 2017).

Burnout is not normal and when ignored overtime can lead to the death of personnel involved and a rise in shortage of nurse-midwives in the country because whatever health situation that have the capacity of affecting mental health can as well lead to sudden death when left unexamined or unattended to with a long term solution approach (Costa & Pinto, 2017). It is premised on the forgoing that the issue of burnout among nurse-midwives in the tertiary hospitals in Rivers State is not in doubt but what has been in doubt is the associated factors that facilitate burnout because each health facility in the country is manned by administrators and they are in charge of policy direction as it relates to the handling, coordinating and controlling of human, material, financial and technical resources.

Obviously, factors such as lack of human resources, material resources, poor remuneration, improper professional recognition, ineffective leadership, poor working environment, excessive workload, and family pressure are common among nurse-midwives as reasons provided during assessment on associated factors of burnout (Albendín-García, et al., 2021; Chipeta, et al., 2016). The lack of human resources in nurse-midwifery practice, especially in Nigeria has been described as having poor number of certified nurse-midwives who are expected to ensure commitments to the 2018 Astana Declaration on Primary Health Care, which is bringing patient-centered care close to the community. Thus, more members of the population within the local communities may have been left out of healthcare services or under-served thereby giving room for quacks to gain undue prominence in rendering quasi or pseudo healthcare services to populations in the rural and semi-urban areas.

It is important to note that the COVID-19 pandemic has exposed the level of inefficiency in Nigeria's healthcare system that has been masked for years. One of such inefficiencies is the healthcare facility. Nurse-midwives have for so long been subjected to carrying out their job roles with high levels of risk due to poor material resources (Atallah, 2016). During the COVID-19 response, nurse-midwives were expected to be provided with kits such as personal protective equipment (PPE), hemostats, lancets, syringes, blood pressure monitors,

needle holders, surgical scissors, infrared thermometers, forceps, and resuscitation equipment, which were either grossly short in supply or not available. There is also the dimension of poor remuneration. Poor remuneration of nurse-midwives in the Nigerian healthcare system has become a parable. It is a parable because it is no longer news. It has been observed as one of the associated factors causing burnout among nurse-midwives in Nigeria because the Nigeria economy as at today is experiencing hyperinflation and the nurse-midwives are not exempted from the reality of the economy. They have responsibilities across personal and family life they are expected to cater for and yet their purchasing power is at an abysmal level.

In saner climes, the average remuneration of nurse-midwives per month is 8,000 United State Dollars (USD). However, in Nigeria, the average earnings per month for a nurse-midwife is 743 USD (Salary-Explorer, 2021). This situation is coupled with poor working environment, incessant union strikes and family pressure. Nevertheless, our nurse-midwives are still thriving and on top of the situation the truth must be told, a good number of our nurse-midwives are also losing their lives on a daily basis due to consequences of burnout-related health maladies (Aluko, et al., 2019). So, while a few could weather the storm, some others were either leaving the profession or seeking greener pastures. This situation is actually unclear in the tertiary hospitals in Rivers state. Hence, the need to know whether the nurse-midwives here have different experiences or are among those who moderately experience the level of burnout. Notably, scholars in nursing education and practice in the past decade organized several conferences and symposiums to theoretically and empirically to proffer intellectual resources and support to government and other relevant bodies but the impact is yet to be felt and there is a need to update existing knowledge and literature on burnout and associated factors among nurse-midwives in tertiary hospitals in Rivers state. It is to this end that this study set out to investigate burnout and associated factors among nurse-midwives in tertiary hospitals in Rivers state.

### **1.1 Aim of the study**

This study was aimed at investigating burnout and associated factors among nurse-midwives in tertiary hospitals in Rivers State.

### **1.2 Objectives of the Study**

Specifically, the objectives were to:

1. determine the extent nurse-midwives working in tertiary hospitals in Rivers state experience burnout.
2. identify the extent excessive workloads is associated with burnout among nurse-midwives working in tertiary hospitals in Rivers state;

### **1.3 Hypotheses**

The following null hypotheses were formulated for this study.

1. There is no significant difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent excessive workload is associated with burnout among nurse-midwives in tertiary hospitals in Rivers state.
2. There is no significant difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent inadequate working materials is associated with burnout among nurse-midwives in tertiary hospitals in Rivers state.

## 2.0 Methodology

This study adopted a descriptive cross-sectional survey design. The population comprised all the nurse-midwives in the 31 departments of UPTH and 10 departments of RSUTH. -By estimate, based on 2020 record, in UPTH, there are 899 nurse-midwives while in RSUTH, there are 438 nurse-midwives. Thus, 1337 nurse-midwives make up this study population. The sample size of 394 was selected from the total population of 1337 representing 29.47%. The study adopted a self-structured validated instrument titled, “Burnout and Associated Factors among Nurse-Midwives Questionnaire” (BAFNMQ). The instrument was divided into two (2) sections: A, and B. Section A consisted of demographic information of the respondents, while section B sought information on research variables of this study. The instrument consists of a-25 questionnaire items, which was structured on a two-type of four-point Likert scale. The first-type of four-point Likert scale require the respondents to respond on the options of: Strongly Agree (A), Agree (A) Disagree (D) and Strongly Disagree (SD) while the second-type Likert scale require the respondents to respond on the options of: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). The two types of the Likert scale have ratings of: 4, 3, 2, and 1 respectively. The researcher self-administered the instrument (BAFNMQ) with the assistance of two trained research assistants. They were pre-informed on the need and modalities for administering the instrument (BAFNMQ). The administered copies were filled in an average of 6 minutes and were retrieved immediately. Out of the 419 copies of the instrument administered, 302 copies were retrieved and completely filled representing 72.08% return rate. The research questions were answered using frequency, charts, mean, simple percentage, and standard deviation. The mean of 2.5 was used as criterion mean. Thus, a mean of 2.5 and above was remarked as ‘agreed’ for response to items measured with agreed and disagreed while it was remarked as ‘high extent’ for items measured with extent and mean below 2.5 as disagreed and low extent respectively. Additionally, inferential statistics (z-test analysis) was used to test the null hypotheses at 0.05 level of significance.

## 3.0 Results

### 3.1 Answers to Research Questions

**Research Question 1:** To what extent do nurse-midwives working in tertiary hospitals in Rivers State experience burnout?

Table 1: Weighted mean scores and standard deviation on the extent nurse-midwives working in tertiary hospitals in Rivers State experience burnout.

S/N	Items	UPTH (x)	Sd	RSUTH (x)	Sd	Mean Set (xx)	Sd	Decision
1	I feel emotionally drained from my work.	2.75	1.66	2.41	1.55	2.58	1.24	High Extent
2	At the end of my shift, I still feel unfulfilled because I do not have enough time to give adequate attention.	2.51	1.58	2.49	1.58	2.50	1.29	High Extent.
3	I feel unhappy whenever I am working at my workplace because of the pressure	2.50	1.58	2.10	1.45	2.30	1.15	Low Extent.

	of work.								
4	I often missed vital information about patients.	2.56	1.60	3.74	1.93	3.15	1.19	High Extent.	
5	I feel I treat some recipients as if they were impersonal objects.	2.53	1.59	2.67	1.63	2.60	1.25	High Extent.	
<b>Cluster Mean and Standard Deviation Scores</b>		<b>2.57</b>	<b>1.60</b>	<b>2.68</b>	<b>1.63</b>	<b>2.63</b>	<b>1.62</b>	High Extent	

Results in Table 1 showed the mean and standard deviation on the extent nurse-midwives working in tertiary hospitals in Rivers State experience burnout. The mean scores of the respondents showed that items 1, 2, 4, and 5 to a high extent make up their experiences of burnout with the items' mean set score greater than the criterion mean score of 2.5. Notably, the results showed that the nurse-midwives in RSUTH have a higher (high) extent of burnout experience when compared to the burnout experience of their counterparts in UPTH. More so, the cluster mean set of 2.63 showed that generally, respondents have high extent of burnout experience as nurse-midwives working in tertiary hospitals in Rivers State. This is shown in figure 2.

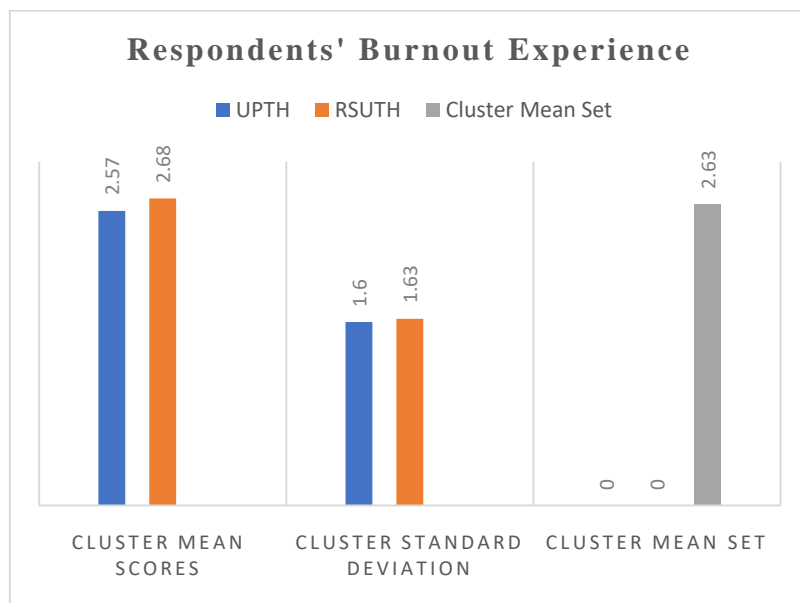


Figure 2: Bar chart on nurse-midwives' burnout experience in UPTH and RSUTH.

**Research Question 2:** To what extent does excessive workload is associated with burnout among nurse-midwives working in tertiary hospitals in Rivers state?

Table 4.2: Weighted mean scores and standard deviation on the extent excessive workloads is associated with burnout among nurse-midwives working in tertiary hospitals in Rivers State.

S/N	Items	UPTH (x)	Sd	RSUTH (x)	Sd	Mean Set (xx)	Sd	Decision
6	Working with too many people all day is really a strain for me.	2.03	1.43	2.37	1.54	2.20	1.48	Low Extent.
7	I find it difficult to effectively deal with the problems of my recipients due to lack of adequate time.	2.70	1.64	2.50	1.58	2.60	1.61	High Extent.
8	I feel burned out having to work without rest all day long.	2.75	1.66	2.85	1.69	2.80	1.67	High Extent.
9	I feel I am doing more at the clinic than my capacity.	3.15	1.78	2.71	1.65	2.93	1.71	High Extent.
10	I feel that I am no longer working to satisfy the need for the profession but working excessively due to shortage of nurses.	2.20	1.48	2.30	1.23	2.25	1.36	Low Extent.
<b>Cluster Mean and Standard Deviation Scores</b>		<b>2.57</b>	<b>1.60</b>	<b>2.55</b>	<b>1.54</b>	<b>2.56</b>	<b>1.57</b>	High Exten

Results in Table 2 showed the mean and standard deviation on the extent excessive workloads is associated with burnout among nurse-midwives working in tertiary hospitals in Rivers state. The mean scores of the respondents showed that items 7, 8, and 9 are, to a high extent, related to how excessive workloads is associated with burnout among nurse-midwives working in tertiary hospitals in Rivers State with the items' mean set score greater than the criterion mean score of 2.5. Notably, the results showed that the nurse-midwives in UPTH have a higher (high) extent of excessive workloads when compared to the excessive workloads of their counterparts in RSUTH. More so, the cluster mean set of 2.56 showed that generally, excessive workloads is a leading associated factor with burnout among the respondents working in tertiary hospitals in Rivers State. This is shown in Figure 3 in the next page.

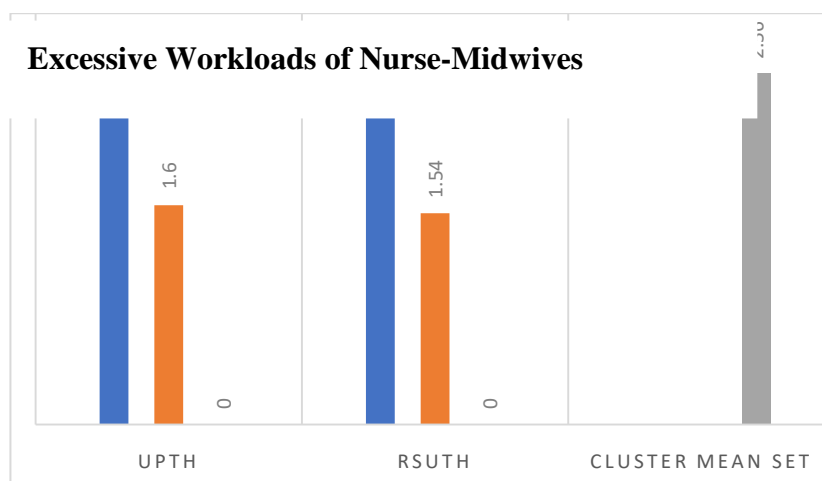


Figure 3: Bar chart on the extent of excessive workloads of nurse-midwives in UPTH and RSUTH.

### 3.2 Test of Hypotheses

**Hypothesis 1:** There is no significant difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent excessive workload is associated with burnout among nurse-midwives in tertiary hospitals in Rivers State

Table 3: z-test analysis on the mean difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent excessive workload is associated with burnout among nurse-midwives in tertiary hospitals in Rivers State.

Status	N	$\bar{x}$	sd	Df	z-cal	z-crit value	Level of significance	Decision
UPTH Nurse-Midwives	179	2.57	1.60	300	4.08	1.96	0.05	Significant difference
RSUTH Nurse-Midwives	123	2.55	1.54					

Results in Table 3 showed that UPTH Nurse-Midwives have mean and standard deviation scores of 2.57 and 1.60 while RSUTH Nurse-Midwives has mean and standard deviation scores of 2.55 and 1.54. With a degree of freedom of 300, the z-calculated value of 4.08 was higher than the critical z-test value of 1.96. Therefore, the null hypothesis was not retained. By implication, there is a significant difference between the mean responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent excessive workload is associated with burnout among nurse-midwives in tertiary hospitals in Rivers state

**Hypothesis 2:** There is no significant difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent inadequate working materials are associated with burnout among nurse-midwives in tertiary hospitals in Rivers State

Table 4: z-test analysis on the mean difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent inadequate working materials is associated with burnout among nurse-midwives in tertiary hospitals in Rivers state.

Status	N	$\bar{x}$	sd	Df	z-cal	z-crit value	Level significance	of Decision
UPTH nurse-midwives	179	3.22	1.79	300	9.11	1.96	0.05	Significant difference
RSUTH nurse-midwives	123	3.07	1.75					

Results in Table 4 showed that UPTH Nurse-Midwives have mean and standard deviation scores of 3.22 and 1.79 while RSUTH Nurse-Midwives has mean and standard deviation scores of 3.07 and 1.75. With a degree of freedom of 300, the z-calculated value of 9.11 was higher than the critical z-test value of 1.96. Therefore, the null hypothesis was not retained. By implication, there is a significance difference between the mean responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent inadequate working materials is associated with burnout among nurse-midwives in tertiary hospitals in Rivers State.

**Hypothesis 3:** There is no significant difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent environmental risks is associated with burnout among nurse-midwives in tertiary hospitals in Rivers State

Table 5: z-test analysis on the mean difference between the responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent environmental risks is associated with burnout among nurse-midwives in tertiary hospitals in Rivers State.

Status	N	$\bar{x}$	sd	Df	z-cal	z-crit value	Level significance	of Decision
UPTH nurse-midwives	179	3.04	1.73	300	6.75	1.96	0.05	Significant difference
RSUTH nurse-midwives	123	2.62	1.61					

Results in Table 5 showed that UPTH Nurse-Midwives have mean and standard deviation scores of 3.04 and 1.73 while RSUTH Nurse-Midwives has mean and standard deviation scores of 2.62 and 1.61. With a degree of freedom of 300, the z-calculated value of 6.75 was higher than the critical z-test value of 1.96. Therefore, the null hypothesis was not retained. By implication, there is a significance difference between the mean responses of University of Port Harcourt Teaching Hospital nurse-midwives and Rivers State University Teaching Hospital nurse-midwives on the extent environmental risks is associated with burnout among nurse-midwives in tertiary hospitals in Rivers state.



## 4.0 Discussion

### **Nurse-Midwives Work Burnout Experience in Tertiary Hospitals in Rivers State**

The findings revealed nurse-midwives work burnout experience in tertiary hospitals in Rivers state as follows: feelings of being emotionally drained from work, treating some recipients as if they were impersonal objects and feeling of poor accomplishment at the end of the shift. This is in line with the findings of Chiara et al.. (2019) who maintained that burnout is a common phenomenon in healthcare organisations because health professionals are continually exposed to the physical and emotional needs of their patients and are involved in complex relationships with patients' families and have long working hours and are overloaded. Also, it consists of three symptoms: emotional exhaustion, that is, the feeling of not being able to give anything to others on an emotional level, depersonalisation, such as an excessively detached attitude towards patients and low personal accomplishment such as a negative work-related self-evaluation (Chiara et al., 2019). This was corroborated by Sidhu et al., (2020) that studies utilizing burnout inventories were able to expand on their findings by describing the prevalence of burnout subdomains. Of those using the Maslach Burnout Inventory (MBI), the 'emotional exhaustion' subscale emerged as the most frequently cited dimension of burnout, followed by 'depersonalization', and then 'personal accomplishment'. As such, respondents with a high score in emotional exhaustion and depersonalization, and a low score in personal accomplishments are considered severely burnt-out.

### **Excessive Workloads as an Associated Factor with Work Burnout among Nurse-Midwives in Tertiary Hospitals in Rivers State**

The findings revealed excessive workloads as an associated factor with work burnout among nurse-midwives in tertiary hospitals in Rivers state as follows: doing more at the clinic than my capacity leading to poor service delivery, feeling of being burned out from work, feeling of exhaustion at work. This is closely related to the findings of Edward (n.d.) who remarked that burnout is linked to under-performance, low self-esteem, and feelings of hopelessness and the brains of people who are chronically burnt-out show similar damage as people who have experienced trauma. Thus, burnout reduces the connectivity between different parts of the brain which can lead to decreased creativity, working memory and problem solving skills.

## 5.0 Conclusion

Based on the findings of this study, it is concluded that burnout is still very much experienced by nurse-midwives in the two public tertiary health institutions in Rivers State. However, a good number of the nurse-midwives were resilient by adopting different strategies to reduce and manage work burnout. Thus, the associated factors of burnout are multidimensional and very much present with nurse-midwives working in these hospitals. Notwithstanding, the Nurse-Midwives are passionate about their job and as such are able to manage these associated factors from crippling the service delivery in the public tertiary hospitals in Rivers state.

### 5.1. Recommendations

In the light of the discoveries made in this study, the following recommendations were made:

1. The management of tertiary institutions in Rivers state should employ more qualified and experienced nurse-midwives should be employed in UPTH and RSUTH to ease their workload.

2. Both the State and Federal government should review the hazard allowance of nurse-midwives for a possibility of increasing it so as to assist the nurse-midwives in managing work burnout such as having enough money to eat balanced diet and so forth.
3. The chief medical directors of the tertiary hospitals in Rivers State should ensure that the environmental risks is constantly reviewed for a possibility of reducing these risks so as to reduce nurse-midwives' work burnout.
4. Government at both state and federal levels should endeavour to create a more enabling work environment in the two tertiary hospitals in Rivers state.
5. Non-governmental organisations should partner with the government to provide standard and sufficient working materials in the tertiary health institutions in Rivers state.
6. There should be a periodic offer of awards of excellence to outstanding nurse-midwives so as to encourage others to put up the right attitude in overcoming work burnout.

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# **Knowledge and Practice of Ethical Decision Making on the Care of Newborn Infants among Nurses and Midwives in the University of Port Harcourt Teaching Hospital**

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## **Abstract**

*This study was aimed at investigating knowledge and practice of ethical decision making in the care of newborn infants among Nurses and Midwives in the University of Port Harcourt Teaching Hospital. The descriptive survey design was adopted for the study. Three objectives with its corresponding hypotheses guided the study. The population of the study comprised all 75 Nurses and Midwives in the Department of Paediatrics and Child Health, University of Port Harcourt Teaching Hospital. Total census sampling technique was used to select 75 sample size for the study. A self-structured validated instrument titled, “Knowledge and Practice of Ethical Decision Making in the Care of Newborn Infants among Nurses and Midwives Questionnaire” (KPEDMCNINMQ) was used for data collection. Descriptive statistics involving simple percentages, charts, mean and standard deviation were used to answer the research questions while inferential statistics involving Analysis of Variance was used to test the null hypotheses at 0.05 alpha level. It was found that majority of the respondents were in the age bracket of 31 to 40 years with most of them having only B.NSc and within 5 to 10 years of experience in neonatal care. Also, there is a significant difference between the knowledge and practice of ethical decision making in the care of newborn infants among the nurse-midwives with regard to the measurement parameters. Based on the findings, it was concluded that nurse-midwives working in the University of Port Harcourt Teaching Hospital possess good level of knowledge on ethical decision making in the care of newborn infants. However, they lack sufficient experience on ethical decision making in the care of newborn infants that could provide evidence that they actually put the knowledge into practice. It was therefore recommended among others that the nurse-midwives should be provided with capacity development programmes and be given better recognition in their role as neonatal specialist.*

**Keywords:** *Knowledge, Ethical-Decision, Newborn.*

## **1.0 Introduction**

The responsibility of caring for newborn infants in healthcare practice is often within the scope of neonatal nurses/midwives (Disu, 2015). In the practice of care of newborn infants, a neonatal nurse is expected to work with newborn infants as well as their parents, helping them care for their infants. They ethically help new parents hold, bathe, and feed their infants so as to act as a bridge between the parent and the specialists working with the infants. Thus, the ethical demonstration of capacity by the nurses/midwives goes beyond doing what everybody knows and has been doing (Aliyu, et al., 2015). Rather, it involves accurately applying the knowledge of professional ethics in determining what is good, right, and fair in the care of newborn infants. Hence, they need to be professionally abreast of the scientific developments in newborn infants care as well as the sociocultural tenets of the people from which the family having the newborn infants is expected to be catered for. In a recent study published in the United States, the authors pointed out that knowing the characteristics of the population and the structure of the institutions where newborn infants care is provided is paramount for ethical decision making in newborn infants care so as to reduce adverse

events. This is the real essence of knowledge going hand in glove with practice in the making of ethical decision by nurse and midwives in the care of newborn infants (Webb et al., 2014).

Most importantly, there is no-one-size-fits-all approach to the practice of nursing and midwifery. The nursing/midwifery profession evolves and demands that for the personnel to be professional in practicing their profession, they need to update their knowledge base of ethical decision making with regards to the care of newborn infants, it is much more vital for nurse-midwives to be highly circumspect in ethical decision making. This is because wrong ethical decision in newborn infants care may lead to the following: generate additional treatments, more investigation and procedures, prolong hospitalization, increase hospitalization costs, and possible irreparable damage to the newborn infants (Liu, et al., 2016).

In addition, it is very important to identify Nurses/Midwives knowledge of ethical decision making on newborn infants care. With increasing demand for accountability in healthcare practices, there is a growing expectation that neonatal nurse-midwives explore their profession's ethics, discarding those without merit and consequently developing adequate knowledge to care for newborn infants in a competent manner without which may lead to ethical issues (McKenna & Pugno, 2016). Ethical issues occur when choices need to be made, the answers may not be clear and the options are not ideal (Catlin, et al., 2008). The result could lead to decline in the quality of newborn infant care; problematic clinical relationships; and moral distress, which is defined as knowing the right thing to do but not being allowed or able to do it (Gyngell et al., 2019). Neonatal nurse-midwives, in particular, are susceptible to ethical issues in their practice and moral distress because of their roles in tender, loving care. The medical doctors and other healthcare specialists look to neonatal nurse-midwives for appropriate and ethical decisions in newborn infants care. That is more reason why neonatal nurse-midwives need proper knowledge of ethical decision making in their practice which will, for instance, enable them to justify actions or indeed stop unsafe or poor practices in newborn infants care.

Furthermore, this knowledge can literally mean the difference between life and death for parents of newborn infants. In some situations, neonatal nurse-midwives with inadequate knowledge will be called to answer to the Nursing and Midwifery Council of Nigeria (N&MCN) for their decisions if the results are inconsistent with contemporary ethical decisions of newborn infants care. Some of those who have been judged to have inadequate knowledge have been removed from the professional register and are no longer able to practice as registered nurse-midwives (Nwozichi, 2015). The situation is complex, partly because neonatal nurse-midwives are expected to have a wide range of knowledge. For example, it has been suggested that some neonatal nurse-midwives have been found to have inadequate knowledge of a medical condition (Esan, 2019; Ingwu, et al., 2018), although this type of knowledge has traditionally been the domain of doctors rather than neonatal nurse-midwives.

Therefore, in terms of practice, all contemporary knowledge of ethical decision making in newborn infants care are expected to be incorporated appropriately into neonatal nursing and midwifery (Hodges, et al. 2018). A vital part of this is that nurse-midwives evaluate what they are told or what they read or observe in practice. It is crucial that they question practices and do not undertake care for which they do not understand the rationale. Most nurse-midwives should now understand the implications of professional accountability. This is a

responsibility that unites knowledge and practice of ethical decision making in newborn infants care, yet part of the richness and the reward of neonatal nursing and midwifery originates in the need for the wide variety of knowledge required in order to provide excellent neonatal care. There is the added challenge of the need for continuous professional development as Nurses and Midwives' knowledge and practice of ethical decision making on newborn infants care is constantly evolving. Based on the foregoing, reports have it that the N&MCN has raised concerns about the need for nurse-midwives to embark on continuing professional development programme which led to the establishment of Mandatory Continuing Professional Development Programme (MCPDP) with the inauguration of committees in all the states of the Federation to update all Practicing Nurses on current trends in nursing education and practice for effective client care.

It is pertinent to state that by anecdotal findings, ethical issues arise every day in the care of newborn infants, and parents/guardians in partnership with nurse-midwives have combinations of roles to play in ensuring the ethical delivery of care. Thus, Professional Code of Ethics in Nursing and Midwifery are largely designed to protect population in need of healthcare from misgivings from caregivers and to ensure that the inherent inequality in the client-caregiver relationship is not abused. Ethics, as perceived by scholars (Soltys, et al. 2020) are rules or principles which govern correct conduct, personal and social values.

Conventionally, healthcare ethical decision making, whether in clinical, educational, research, school, home, or other settings, requires careful compliance with professional and where applicable, institutional ethical standards and legal mandates (Doherty, 2020; Botkin, et al. 2015). As with legal requirements, ignorance of ethical responsibilities is no excuse for non-compliance. By these, it is expected that each practitioner upon entering the neonatal nurse and midwife profession is also vested with the responsibility to adhere with the standards of ethical decision making in conduct and practice set by the Nursing/Midwifery profession through the acquisition of contemporary knowledge on ethics of care for newborn infants. In ensuring that knowledge and practice of ethical decision making in the care of newborn infants among nurse-midwives are observed for analysis, this study will consider parameters such as knowledge and practice of clinical judgment, knowledge, and practice of communication with parents/guardians, as well as knowledge and practice of conflict resolution.

### **1.1 Aim of the study**

The aim of this study is to investigate knowledge and practice of ethical decision making in the care of newborn infants among Nurses and Midwives in the University of Port Harcourt Teaching Hospital.

### **1.2 Objectives of the Study**

Specifically, the objectives are to:

1. Ascertain the knowledge of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital;
2. Determine the practice of clinical judgment in the care of newborn infant among nurse-midwives in the University of Port Harcourt Teaching Hospital;
3. Assess the knowledge of communication with parents/guardians on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital;

**1.4 Hypotheses**

The following null hypotheses were formulated and tested at 0.05 alpha level.

3. There is no significant difference between knowledge and practice of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital.

**2.0 Methodology**

This study used a cross-sectional descriptive survey design. The population comprised all the Nurses and Midwives in the Paediatrics and Child Health Department. By estimate, based on 2020 record, in UPTH, there are 75 Nurses and Midwives in the department of Paediatrics and Child Health (Source: UPTH Portal 2022). A total population census sample technique was used to select 75 Nurse-Midwives representing 100 percent of the population. The study adopted a self-structured instrument titled, “Knowledge and Practice of Ethical Decision Making in the Care of Newborn Infants among Nurses and Midwives Questionnaire” (KPEDMCNINMQ). The instrument was divided in two (2) sections: A, and B. Section A consists of demographic information of the respondents, while section B sought information on research variables of this study. The instrument consists of a-30 questionnaire item, which was structured on a four-point Likert scale. The four-point Likert scale require the respondents to respond on the options of: Strongly Agree (A), Agree (A) Disagree (D) and Strongly Disagree (SD) with ratings of: 4, 3, 2, and 1 respectively. The researcher self-administered the instrument (KPEDMCNINMQ) with the assistance of two guided research assistants. They were pre-informed on the need and modalities for administering the instrument (KPEDMCNINMQ). The research questions were answered using frequency, mean, simple percentage, and standard deviation. The mean of 2.5 was used as criterion mean. Thus, mean of 2.5 and above was remarked as ‘agreed’ and mean below 2.5 as ‘disagreed’. Additionally, inferential statistics were used to test the null hypotheses at 0.05 level of significance. Below is the formula that was used in calculating the benchmark for analysis.  $\frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$ .

**3.0 Results**

**4.1 Results of Data Collection**

**Table 1: Age Distribution of Respondents**

Value Labels	F	%
20 -30 years	15	20.00
31 - 40 years	31	41.33
41 - 40 years	20	26.67
51 years & above	9	12.00
<b>Total</b>	<b>75</b>	<b>100.00</b>

**Table 2: Distribution of Respondents with regards to Educational Qualification**

Value Labels	F	%
B.NSc	42	56.00
M. Sc	29	38.67
Ph.D	4	5.33
<b>Total</b>	<b>75</b>	<b>100.00</b>

Results in Table 1 showed the age distribution of the respondents. 15 respondents representing 20 per cent of the respondents were within 20 to 30 years of age, followed by 31 respondents representing 41.33 percent of the respondents were in the age bracket of 31 to 40 years of age. Additionally, 20 respondents representing 26.67 per cent were in the age bracket of 41 to 50 years of age, followed by 9 respondents representing 12 per cent of the respondents were in the age bracket of 51 and above years of age. This is shown in the figure in the next page.

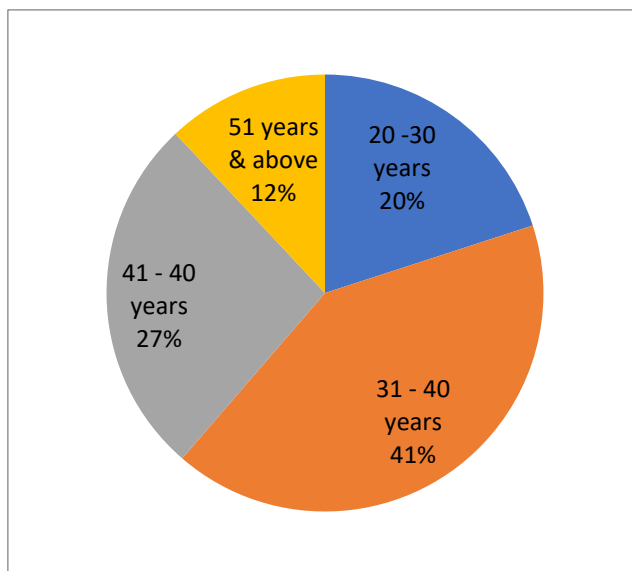


Figure 2: Pie chart on the age distribution of the respondents.

Results in Table 2 showed the distribution of respondents with regards to educational qualification. 42 respondents representing 56 percent of the respondents had B.NSc, followed by 29 respondents representing 38.67 percent of the respondents had M.Sc. While 4 respondents representing 5.33 percent of the respondents had Ph.D. This is shown in the figure in the next page:

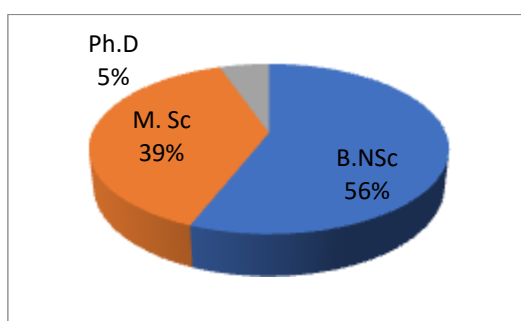


Figure 3: Pie chart on the distribution of respondents with regards to educational qualification.

**Table 3: Distribution of Respondents with regards to Type of Employment**

Value Labels	F	%
Full Time	62	82.67
Part Time	13	17.33
<b>Total</b>	<b>75</b>	<b>100.00</b>



**Table 4: Distribution of Respondents with regards to Years of Work Experience**

Value Labels	F	%
5 – 10 years	38	50.67
<11years	37	49.33
<b>Total</b>	<b>75</b>	<b>100.00</b>

Results in Table 3 showed the distribution of respondents with regards to type of employment. 62 respondents representing 82.67 percent of the respondents had fulltime employment, followed by 13 respondents representing 17.33 percent of the respondents who had part time employment. This is shown in the figure in the next page.

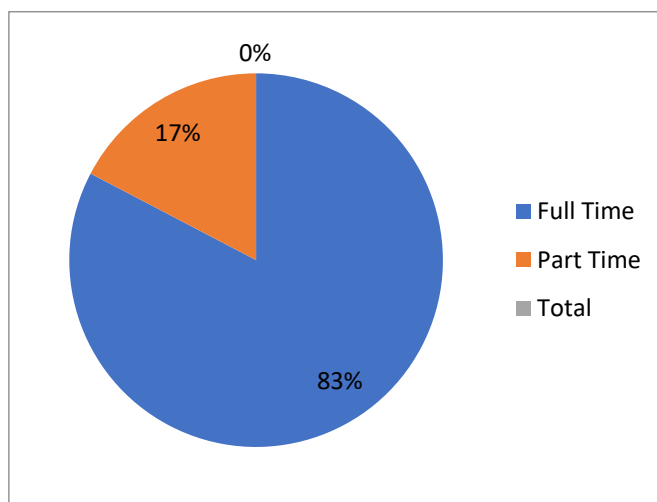


Figure 4: Pie chart on the distribution of respondents with regards to type of employment.

Results in Table 4 showed the distribution of respondents with regards to years of work experience. 38 respondents representing 50.67 percent of the respondents were within 5 to 10 years of work experience, followed by 37 respondents representing 49.33 percent of the respondents within the bracket of above 11 years of work experience. This is shown in the figure in the next page.

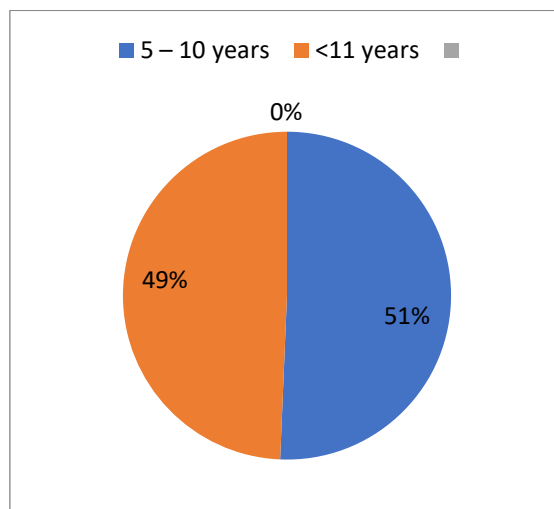


Figure 5: Pie chart on the distribution of respondents with regards to years of work experience.

**Table 5: Distribution of Respondents with regards to Experience in Neonatal Care**

Ages	F	%
1 – 5 years	14	18.67
6 – 10 years	32	42.66
<11years	29	38.67
<b>Total</b>	<b>75</b>	<b>100.00</b>

Results in Table 4 showed the distribution of respondents with regard to experience in neonatal care. 14 respondents representing 18.67 percent of the respondents were within 5 to 10 years of experience in neonatal care, followed by 32 respondents representing 42.66 per cent of the respondents within the bracket of 6 to 10 years of experience in neonatal care. In addition, 29 respondents representing 38.67 percent of the respondents were within the bracket of 11 years and above of experience in neonatal care. This is shown in the figure in the next page.

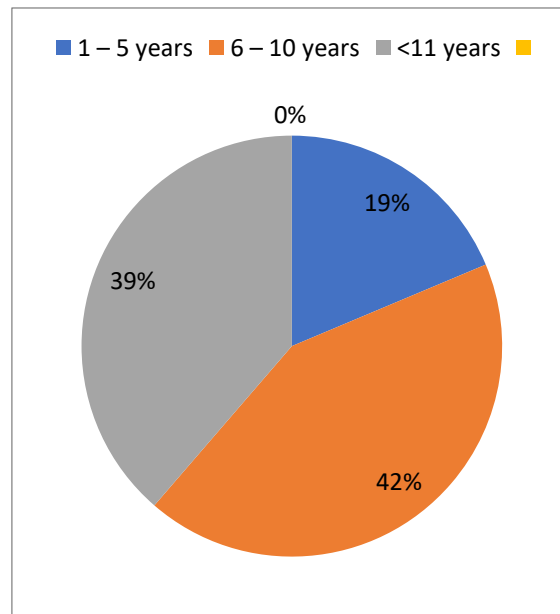


Figure 6: Pie chart on the distribution of respondents with regards to experience in neonatal care.

**Answers to Research Questions**

**Research Question 1:** In what ways can the knowledge of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital be ascertained?

Table 6: Weighted mean scores and standard deviation on the ways in which knowledge of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital can be ascertained.

S/N	Items	X (2.5)	Sd	Decision
1	I am aware that there is a need to recognize individual autonomy in neonatal care.	2.93	1.71	Agreed
2	I am aware that in assumption, I am in the position	3.15	1.78	Agreed

	of the parents when caring for newborn infants.			
3	I am aware that I do not to feel disturbed when parents are divided over the care of their newborn infant	1.84	1.36	Disagreed
4	I am aware that I need to take time in counseling parents on newborn infant care before concluding or initiating the process.	3.16	1.78	Agreed
5	I am aware that parents do not need to have a say in the care of their newborn infants all the time.	1.76	1.33	Disagreed
<b>Cluster Mean and Standard Deviation Scores</b>		<b>2.57</b>	<b>1.59</b>	Agreed

Results in Table 6 showed the mean and standard deviation on nurse-midwives’ knowledge of clinical judgment on ethical decision making in the care of newborn infant in the University of Port Harcourt Teaching Hospital. The mean scores of the respondents showed that items 1, 2, and 4 were agreed with the items’ mean score greater than the criterion mean score of 2.5. More so, with a cluster mean score of 2.57, it showed that most of the nurse-midwives in the University of Teaching Hospital have some level of knowledge on ethical decision making in the care of newborn infant.

**Research Question 2:** What is the practice of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital?

Table 7: Weighted mean scores and standard deviation on the practice of clinical judgment on ethical decision making in the care of newborn infant among nurse-midwives in the University of Port Harcourt Teaching Hospital.

S/N	Items	X (2.5)	Sd	Decision
6	I only give priority to parents who are educated to inform me on what to do in the care of their newborn infants.	1.88	1.37	Disagreed
7	I am only concerned about the decisions of parents who can afford the bills to give consent in the care for their newborn infant.	1.91	1.38	Disagreed
8	I guide against negligence of duty even though no neonatal nurse-midwife has been charged to court in my place of work for negligence.	3.57	1.89	Agreed
9	I ensure that parents’ dissatisfaction are addressed in the care of their newborn infant.	2.96	1.72	Disagreed
10	In the case of preterm baby, I ignore parents’ consent in the neonatal care. .	1.80	1.34	Disagreed
<b>Cluster Mean and Standard Deviation Scores</b>		<b>2.42</b>	<b>1.54</b>	Disagreed

Results in Table 7 showed the mean and standard deviation on nurse-midwives’ practice of clinical judgment on ethical decision making in the care of newborn infant in the University of Port Harcourt Teaching Hospital. The mean scores of the respondents showed that all the items were disagreed, except item 8. The disagreed items had their mean scores less than the criterion mean score of 2.5. More so, with a cluster mean score of 2.42, it showed that only a handful of nurse-midwives in the University of Teaching Hospital are able to clearly demonstrate the practice of clinical judgment on ethical decision making in the care of newborn infant.

**Research Question 3:** What is the knowledge of communication with parents/guardians on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital?

Table 8: Weighted mean scores and standard deviation on the knowledge of communication with parents/guardians on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital.

S/N	Items	X (2.5)	Sd	Decision
11	I am aware of contraindications of breastfeeding.	3.85	1.96	Agreed
12	I am aware that parents’ decision on breastfeeding is not relevant.	1.71	1.31	Disagreed
13	I am aware that mothers of newborn infants should be encouraged to breastfeed the newborn infants from the point of delivery.	3.60	1.90	Agreed
14	I am aware that parents’ decision on circumcision does not count.	1.91	1.38	Disagreed
15	I am aware that parents of newborn infants should be provided with available options on the circumcision of their male newborn infants.	2.96	1.72	Agreed
<b>Cluster Mean and Standard Deviation Scores</b>		<b>2.81</b>	<b>1.65</b>	Agreed

Results in Table 8 showed the mean and standard deviation on the knowledge of communication with parents/guardians on ethical decision making in the care of newborn infants in the University of Port Harcourt Teaching Hospital. The mean scores of the respondents showed that items 11, 13, and 15 were agreed with the items’ mean score greater than the criterion mean score of 2.5. More so, with a cluster mean score of 2.81, it showed that most of the nurse-midwives in the University of Teaching Hospital have high level of knowledge of communication with parents/guardians on ethical decision making in the care of newborn infants.

**Test of Hypotheses**

**Hypothesis 1:** There is no significant difference between knowledge and practice of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital.

Table 9: ANOVA on the mean difference between knowledge and practice of clinical judgment on ethical decision making in the care of newborn infant among nurse-midwives in the University of Port Harcourt Teaching Hospital.

Variable	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	12.527	1	12.527	13.412	.000	Significant
Within Groups	68.160	73	.934			
Total	80.687	74				

Results in Table 9 showed that the calculated F-value for knowledge and practice of clinical judgment on ethical decision making in the care of newborn infant among nurse-midwives in the University of Port Harcourt Teaching Hospital is 12.527 at degrees of freedom of 1 and 73 and the probability value of 0.000 which is less than 0.05 level of significance ( $F_{(1/73)}=12.527$ ;  $P<.05$ ). The hypothesis was therefore not retained. Therefore, there is a significant difference between knowledge and practice of clinical judgment on ethical decision making in the care of newborn infant among nurse-midwives in the University of Port Harcourt Teaching Hospital as indicated in the figure in the next page.

## 5.0 Discussion

### **Knowledge and Practice of Clinical Judgment on Ethical Decision Making in the Care of Newborn Infants among Nurse-Midwives in the University of Port Harcourt Teaching Hospital**

The findings revealed the knowledge and practice of clinical judgment on ethical decision making in the care of newborn infants among nurse-midwives in the University of Port Harcourt Teaching Hospital as follows: the nurse-midwives recognize the need for individual autonomy in neonatal care, the nurse-midwives assume the position of the parent when caring for newborn infants and they take time to counsel parents on newborn infant care before concluding on initiating the process. However, the nurse-midwives do not feel disturb when parents are divided over the care for their newborn infant, they do not think parents have a say in the care of their newborn infants and they are not aware of the repercussion of parents' dissatisfaction in the care of their newborn infants. This is in the same vein as the findings of World Health Organization (2016) that the evidence shows us the vital roles played by nurse-midwives which confirms that when midwifery is provided by educated, trained, regulated, licensed midwives, it is associated with improved quality of care and rapid and sustained reductions in maternal and newborn mortality. In terms of ethical decision making in the care of newborn infant with regards to individual autonomy as discovered in this findings, British Medical Association (2020) remarked that exercising patient autonomy empowers patients to feel more in control and confident in their ability to make educated health decisions and choose the right health specialist. It requires nurse-midwives to respect patients' autonomy by giving them the information needed to understand the risks and benefits of a proposed intervention, as well as the reasonable alternatives (including no intervention), so that they may make informed decisions. Thus, autonomy leads to positive health outcomes.

### **Knowledge and Practice of Communication with Parents/Guardians on Ethical Decision Making in the Care of Newborn Infants among Nurse-Midwives in the University of Port Harcourt Teaching Hospital**

The findings revealed knowledge and practice of communication with parents/guardians on ethical decision making in the care of newborn infant among Nurse-Midwives in the University of Port Harcourt Teaching Hospital as follows: the nurse-midwives are aware of contraindications to breastfeeding and they take time to listen to parents' concern during newborn infant care. Also, the nurse-midwives ensure that mothers of newborn infant breastfeed the newborn infant from the point of delivery while also providing parents of newborn infants with available options on the circumcision of their male newborn infants. However, they do not regard parents' decision on circumcision; they do not regard parents' decision on breastfeeding, they do not consult with senior colleagues on evidence about the medical justification for male circumcision.

## 5.0 Conclusion

Based on the findings of this study, it can be concluded that nurse-midwives working in the University of Port Harcourt Teaching Hospital possess good level of knowledge on ethical decision making in the care of newborn infants. However, they lack sufficient experience on ethical decision-making in the care of newborn infants that could provide evidence that they actually put the knowledge into practice. Thus, gap exists between what they know on ethical decision making in the care of newborn infants and the practice of ethical decision making in the care of newborn infants.

## 5.1 Recommendations

In light of the discoveries made in this study, the following recommendations were made:

7. The chief medical director should endeavor to provide the nurse-midwives with consistent capacity development programmes by liaising with other stakeholders. This will improve the knowledge of the nurse-midwives and further encourage them to practice ethical decision making in the care of newborn infants
8. Nurses and midwives should be given better recognition in their role as neonatal specialist by the Nigerian health council so as to ensure specialisation and increase their confidence in ethical decision making in the care of newborn infants.
9. The ministry of health should consistently employ more qualified nurses and midwives. By so doing, the impediment of poor human resources in number and quality with regards to ethical decision making in the care of newborn infants will be addressed.

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