Assessment of Knowledge of Obstetrics Danger Signs Among Pregnant Women Receiving Antenatal Care in Health Care Facilities in Enugu State, Nigeria

Ngozika Karen Enemuo
Department of Health and Physical Education
University of Nigeria, Nsukka

Jacinta Ejiaka Ugbelu*
Department of Health and Physical Education
University of Nigeria, Nsukka

Eyuche Lawretta Ozoemena
Department of Health and Physical Education
University of Nigeria, Nsukka

Chukwuebuka Nnagozie Bosah
Department of Health and Physical Education
University of Nigeria, Nsukka

Veronica Okwuchi Charles-Unadike
Fred. N.Binka School of Public Health
University of Health and Allied Sciences, Ho, Ghana

Kalu Mgbo Okeke
Department of Health Education, Alvan Ikoku
Federal University of Education Owerri

Benedeth Anulika Obayi
Department of Health and Physical Education
University of Nigeria, Nsukka

Samuel I. C. Dibia
Department of Health and Physical Education
University of Nigeria, Nsukka

Abstract

Background: Obstetrics danger signs indicate an immediate hazard which, if not avoided, will result in serious injury.The study investigated knowledge towards obstetrics danger signs among pregnant women receiving antenatal care in health care facilities.

Methods: Cross-sectional survey research design was adopted for the study. The population for the study consisted of 3940 pregnant women receiving antenatal care in Nsukka Health Centre, Bishop Shanahan Hospital and General Hospital Nsukka. The sample for the study comprised of 380 pregnant women drawn using multi-stage sampling procedure. The instrument used for data collection was a researcher-designed questionnaire titled Knowledge of Obstetric Danger Signs Questionnaire (KODSQ). The instrument was validated by three experts from the Department of Human Kinetics and Health Education. Split-half method was used to test the reliability of the instrument. Frequencies and percentages were used to answer the research questions while the null hypotheses were tested using Chi-square test of independence at 0.5 level of significance.

Results: The results showed that overall, level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities was 90.0%, by age was 95.3%, 85.2% and 83.8% respectively for 25-34, 35 years and above and 15-24 years. Level of education was 94.6%, 93.9%, 59.1% and 47.1% respectively for tertiary, secondary, primary and no formal education. Parity was 93.7%, 90.9%, 87.6% and 61.5% respectively for 2-5 children, 1 child, none and above 5 children. Significant difference existed in knowledge based on age, education and parity $\chi 2 = 12.226$, $p= .02 < .05$, $\chi 2 = 65.129$, $p= .00 < .05$ and $\chi 2 = 14.681$, $p= .002 < .05$ respectively. Conclusions: The overall level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities was very high. Health centers should establish antenatal programs to educate all pregnant women about the clinical dangers of pregnancy and when it is best to see a doctor.

Key words: Knowledge, Obstetrics Danger Signs, Pregnant Women, Health Care Facilities

Introduction

Pregnancy is a natural process in which non predictable complications can occur. Maternal deaths from preventable causes remain a public health challenge particularly in developing countries. According to United Nations Children's Fund (UNICEF), 2021), women and newborns are the most vulnerable during and immediately after childbirth. An estimated 2.8 million pregnant women and newborns die every year, or 1 every 11 seconds, mostly of preventable causes, according to new mortality estimates released by UNICEF (2019). Globally, majority of maternal deaths occur due to direct obstetric complications. These includes hemorrhage, unsafe abortion, pregnancy induced hypertension, infection, and obstructed and prolonged labor (Venn, 2013). According to (World Health Organization [WHO], 2019) 295000 women died during pregnancy and child birth in 2017 with over 94 per cent of these deaths occurring in developing countries. Southern Asia alone accounted for approximately (86%) of

the estimated global maternal deaths in 2017, most of which are preventable (WHO, 2019). WHO (2023) data from 2017, approximately (66%) of global maternal deaths occurred in sub-Saharan Africa, which includes Nigeria.

Nigeria is the most populous country in Africa. It has a population of 201 million people (World Bank, 2019) with more than 250 ethnic identities. It has one of the highest maternal mortality ratios in the world. WHO (2015) report that Nigeria accounted for over one third of all estimated global deaths in 2015. The situation indicates that Nigeria had approximately 58,000 maternal deaths which translate into 19 per cent of global total. The global maternal mortality ratio (the number of maternal deaths per 100,000 live births) decreased between 1990 and 2015 but the pace of reduction has been much slower in Nigeria compared to the rest of Africa (WHO, 2015). Obstetrics is concerned with human reproduction. Freund (2011) defined obstetrics as the field of study concentrated on pregnancy, childbirth and the postpartum period. Freund also defined obstetrics as the care of women during pregnancy and childbirth and in the diagnosis and treatment of diseases of the female reproductive organs. Steven et al., (2016) opined that obstetrics is a medical specialty that focuses on the care of pregnant women, childbirth, and the postpartum period, including the management of related complications. In this study, obstetric is defined as the essential care given to pregnant women to ensure safety of the unborn child and the mother. In the field of obstetrics, healthcare professionals are trained to recognize and respond to obstetric danger signs.

Obstetrics danger signs indicate an immediate hazard which, if not avoided, will result in death or serious injury. Bintabara et al. (2017) asserted that danger signs of obstetrics are complications that women encounter during pregnancy, child birth and postpartum. Many of the complications that result in maternal deaths contributing to prenatal deaths are unpredictable, and their onset can be both sudden and severe (Kabakyenga et al., 2011). In low income countries maternal mortality due to childbirth related complication could be prevented if pregnant women recognize danger signs and seek immediate obstetric care. In this context, obstetrics danger signs refer to pregnancy complications or dangers signs pregnant women undergo during pregnancy. One of the key strategies for reducing maternal deaths is increasing the knowledge on obstetric danger signs among women, their families and the community. It is important, to know this warning signs for women and health care providers to rule out serious complications and initiate treatment immediately (Hussein et al., 2012).

Obstetric danger signs could be prevented significantly if women and their families promptly seek health care. According to Bintabara et al. (2017), obstetric danger (ODS) signs are unexpected obstetric signs that can lead to maternal health complications. These obstetric danger signs during pregnancy include; vaginal bleeding, convulsions/fits, severe headaches with blurred vision, fever and too weak to get out of bed, severe abdominal pain and fast or difficult breathing (Teng et al., 2015). Obstetric danger signs also refers to the loss of consciousness; persistent vomiting; severe persistent abdominal pain; vaginal bleeding; swelling of face, fingers and feet; blurring of vision; fits of pregnancy; severe recurrent frontal headache; and high-grade fever (Nega et al., 2020). Knowledge of obstetrics danger signs during pregnancy, is crucial for safe motherhood.

Knowledge is important to man’s quality of life. According to Simpson (2015), knowledge represents facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject. Odo et al. (2015) viewed knowledge as information, facts or ranges of what has been perceived, discovered or learned. Furthermore, James (2016) defined knowledge as the awareness or familiarity gained by experience of a

person, fact, or thing. Knowledge of danger signs during pregnancy, childbirth and the postpartum may improve timely recognition of these signs, a vital step towards addressing the delay in deciding to seek care and delay in reaching health care facilities (Omari et al., 2016). In this study, knowledge refers to acquisition of facts or information about obstetrics danger signs through education or experience. Knowledge of danger signs during pregnancy is vital to the pregnant mother.

A pregnant woman is a female who is carrying an embryo. McLemore (2020) defined pregnant women as individuals who self-identifies as female and is undergoing a process of pregnancy, regardless of their biological sex assigned at birth or current reproductive capacity. Shehan (2016) asserts that although assisted reproductive technology procedures can result in pregnancy, sexual activity is the most common way for this to happen. In this study, a pregnant woman is a female of reproductive age who is currently carrying an embryo in the development phase and receiving antenatal care in health care facilities in Nsukka local government area. A pregnant woman who receives antenatal care is more likely to know obstetric danger signs during pregnancy.

Antenatal care (ANC) is a type of preventive healthcare. According to Ekabua et al. (2011) antenatal care is an umbrella term used to describe medical care and procedures that are carried out to and for the pregnant women. According to Pattinson (2018), ANC benefits both the mother and the baby; it assists in screening, diagnosing and managing or controlling the risk factors that might adversely affect the pregnant women and/or the pregnancy outcome. In this study, antenatal care is the care given to pregnant women so that they have safe pregnancy and healthy babies. Knowledge towards obstetrics danger signs among pregnant women may be influenced by certain factors.

Certain socio-demographic differences may be associated with the knowledge towards obstetrics danger signs among pregnant women receiving antenatal care. These include: age, education level, gender, class level, place of residence, marital status, religion, income level, school type, occupation, parity among others. In this study, socio-demographic variables of interest include: age, level of education and parity.

Age refers to the length of time during which a human being has existed; length of life or existence to the time being referred to. Fingerman et al. (2019) defined age as a multidimensional concept encompassing biological, cognitive, emotional, and social dimensions that interact and influence each other. The authors further reported that this may be because of the poor knowledge that may be common at a younger age partly due to the tendency for poorer or lower levels of education and lower parity with associated poor pregnancy experience.

Level of education is another socio-demographic factor that influences the knowledge towards obstetrics danger signs. According to Neiger (2017), there is significant association between pregnancies related diseases and complications and educational level. The author further reported that mothers with higher educational level (secondary and tertiary) have better knowledge about obstetric danger signs than those with lower educational level (primary). This is because they gain more knowledge through reading articles and interviews through which they understand the importance and benefits of antennal care. This implies that level of education has a significant influence in the knowledge of obstetrics danger signs.

Parity is also a factor that may be associated with knowledge towards obstetrics dangers signs among pregnant women. Parity is the number of times that a woman has given birth to a foetus with gestational age of 20 weeks or more, regardless of whether the child was born alive

or was stillborn (Tidy, 2019). This implies that parity has a significant association in the knowledge of obstetrics danger signs.

This study was conducted in Nsukka Local Government Area (LGA), Enugu State. Nsukka is a town and a Local Government Area in Enugu State, Nigeria. Nsukka shares a common border as a town with Edem, Opi (archaeological site), Ede-Oballa, and Obimo. The postal code of the area is 410001 and 410002 respectively referring to University of Nigeria Campus, and Nsukka Urban. Nsukka LGA has its administrative headquarters in the town of Nsukka. Nsukka LGA falls within Enugu North Senatorial Zone alongside Igbo Etiti, Igbo Eze North, Igbo Eze South, Udenu and Uzo Uwani LGAs. Nsukka LGA also forms a Federal Constituency alongside Igbo Eze South LGA. Nsukka LGA covers an area of 486km². With a population of 444,100 according to the 2022 National Bureau of Statistics, Nsukka LGA is the largest LGA by population in Enugu State. Nsukka people are rooted in tradition and socio-cultural belief with a unique custom; hence the motivation to conduct a study of knowledge towards obstetrics danger signs among pregnant women in the area. It is speculated that they have always held on to elements of their culture and not letting go certain superstitious and primordial belief system. As Opata and Asogwa (2017) opined, the Nsukka Igbo of Southeastern Nigeria have numerous ways of recreating and upholding their cultural beliefs and inheritances. Women are at the center of maternal mortality; therefore, their perspectives are critical in identifying areas in which maternal healthcare could be improved. The purpose of this study was to investigate the knowledge and attitude towards obstetrics danger signs among pregnant women receiving antenatal care in health care facilities in Nsukka Local Government Area. The following research questions guided the study**:**

1. What is the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities?
2. What is the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age?
3. What is the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education?
4. What is the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on parity?

Hypotheses

1. There is no significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age.
2. There is no significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education.
3. There is no significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on parity.

Methods

The study adopted the cross-sectional survey research design. A cross-sectional survey is one that produces a snapshot of a population at a particular point in time. A cross-section of the subjects of varying ages and other socio-demographic factors are sampled and studied at the same time, and data are obtained at one time from groups or at different stages of development (Cohen, Manion, & Morrison, 2011). The design was successfully used by Rabiu and Habiba (2019) to access knowledge of obstetric danger signs among pregnant women attending antenatal

clinic in Murtala Muhammad Specialist Hospital, Kano, Nigeria. The design was therefore considered appropriate for the use in the present study since it helped to describe knowledge and attitude towards obstetrics danger signs among pregnant women receiving antenatal care in health care facilities in Nsukka Local Government Area. The population for the study consisted of pregnant women receiving antenatal care in health care facilities in Nsukka LGA. The population of pregnant women receiving antenatal care in Nsukka Health Centre, Bishop Shanahan Hospital and General Hospital Nsukka was 3940.

The participants comprised of 380 pregnant women. This was derived using the suggestion of Cohen, Manion and Morrison (2011), that when a population size is between 2500 and above at 95 per cent confidence level (5% intervals), the sample size should be 333 or above. The multi-stage sampling technique was used to draw the sample for the study. Stage one involved simple random sampling of balloting without replacement to select three health facilities out of the twenty-nine health facilities in Nsukka LGA. Stage two involved the stratification of the health care facilities into three strata. The first stratum was Nsukka Health Centre with a population of 1100 pregnant women, the second stratum was Bishop Shanahan Hospital with a population of 2239 and the third stratum was General Hospital Nsukka with a population of 601 pregnant women. Stage three involved the use of proportional stratified sampling technique to draw 380 pregnant women from the three strata. Precisely, 106 pregnant women were drawn from Nsukka Health Centre, 216 pregnant women were drawn from Bishop Shanahan Hospital and 58 pregnant women were drawn from General Hospital Nsukka. Stage four involved the use of convenience sampling to assess the pregnant women during antenatal care in the health care facilities. Convenience because it is the only pregnant women who visited the facility at that time was used.

The instrument for data collection was a researcher-designed questionnaire titled Knowledge of Obstetric Danger Signs Questionnaire (KODSQ). The KODSQ was designed based on thorough review of related literature and the specific objectives of the study. The questionnaire was structured in close-ended form requesting the respondents to place a tick (√) against the options that best applied to them. It consisted of Thirteen (13) items classified into sections A and B. Section A contained three items on demographic characteristics (age, level of education and parity) of the respondents. Section B contained 10 (ten) items on knowledge of obstetric danger signs with response options of True or False.

The face and content validity of the instrument was established by three experts. The drafted copies of the questionnaire accompanied with the specific objectives, research questions and the postulated hypotheses was given to three research experts in the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The experts critically examined the instrument to ascertain whether the contents of the questionnaire covered the objectives of the study. The constructive criticisms, corrections and suggestions from the validation were used to modify and improve the instrument before it was used for the study.

The reliability of instrument was established by administering of the questionnaire to twenty pregnant women receiving antennal care in Igbo-Eze North LGA. The spilt-half method utilizing Spearman's Brown correlation coefficient was used to establish the reliability of the Section B (Knowledge of obstetric danger signs). The reliability coefficient of .71 was obtained, which was deemed high and reliable for use in this study. This is in line with the guidelines of Cohen, Manion and Morrison (2011) that if the reliability coefficient yields .70 and above, the instrument should be considered reliable for the study.

In order to get access to the respondents, a letter of introduction of field work was obtained from the Head, Department of Human Kinetics and Health Education, University of Nigeria, Nsukka, seeking permission and co-operation to carry out a study were presented to the Chief Medical Directors and Officer in charge of the health care facilities used for the study. The chief medical director introduced the researcher and the research assistant to the matron who then introduced the researcher and the research assistant to the respondents. Copies of the instrument were administered directly to the pregnant women who had provided consent to participate in the study. Every respondent given the questionnaire was encouraged to complete and return on the spot.

Copies of the questionnaire returned by respondents were properly cross-checked for completeness of the responses. Invalid or improperly filled copies were discarded. The information from the questionnaire was coded using the Statistical Packages for the Social Sciences (SPSS), IBM-SPSS (version 24 statistics for windows). Frequencies and percentages were used to answer research questions 1, 3, 4 and 5. Scores below 40 per cent was considered low level of knowledge, 40-59 per cent was considered average level, 60-80 per cent was considered high level while above 80 per cent was considered very high level of knowledge. The null hypotheses 2, 3 and 4 were tested using Chi-square at 0.5 level of significance.

Results

The results in Table 1 showed that overall, level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities was very high (90.0%).

Table 1. Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities (n=371)

S/N	Knowledge of obstetric danger signs	True f(%)	DEC	False f(%)	DEC
1.	Severe vaginal bleeding is a sign of a problem in pregnancy	339(91.4)	VHK	32(8.6)	VLK
2.	Swelling of the fingers, face and legs are signs of a problem in pregnancy	269(72.5)	HK	102(27.5)	LK
3.	Severe headache is a sign of a problem in pregnancy	225(60.6)	HK	146(39.4)	LK
4.	Sudden weight gain during pregnancy is an obstetric danger sign	226(60.9)	HK	145(39.1)	LK
5.	Convulsion is a problem in pregnancy	312(84.1)	VHK	59(15.9)	VLK
6.	Fast breathing is a sign of a problem in pregnancy	295(79.5)	HK	76(20.5)	LK
7.	The absence of fetal movements is a potential obstetric danger sign during pregnancy	325(87.6)	VHK	46(12.4)	VLK
8.	Obstetrics danger signs indicate an immediate hazard which, if not avoided, will result in death or serious injury	328(88.4)	VHK	43(11.6)	VLK
9.	Premature onset of contraction is an obstetric danger sign	320(86.3)	VHK	51(13.7)	VLK
10.	Discharges from the vagina with bad odour is an obstetric danger sign	315(84.9)	VHK	56(15.1)	VLK
	Overall %	**90.0**	**VHK**	**10.0**	**VLK**

Key: below 20% = very low knowledge (VLK), 20-39% = low knowledge (LK), 40-59% = average knowledge (AK), 60-80% = high knowledge (HK), 80% and above = very high knowledge (VHK). ***DEC: DECISION***

The results in Table 2 showed that pregnant women aged 25-34 years (95.3%) had very high level of knowledge of obstetrics danger signs than those aged 35 years and above (85.2%) and 15-24 years (83.8%).

Table 2. Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities Based on Age (n=371)

S/N	Items	15 – 24 years (n=99)	DEC	25 – 34 years (n=191)	DEC	35 years and above (n=81)	DEC
		True f(%)		True f(%)		True f(%)	
1	Severe vaginal bleeding is a sign of a problem in pregnancy	86(86.9)	VHK	178(93.2)	VHK	75(92.6)	HK
2	Swelling of the fingers, face and legs are signs of a problem in pregnancy	56(56.6)	AK	147(77.0)	HK	66(81.5)	HK
3	Severe headache is a sign of a problem in pregnancy	64(64.6)	HK	117(61.3)	HK	44(54.3)	AK
4	Sudden weight gain during pregnancy is an obstetric danger sign	56(56.6)	AK	124(64.9)	HK	46(56.8)	AK
5	Convulsion is a problem in pregnancy	71(71.7)	HK	172(90.1)	VHK	69(85.2)	VHK
6	Fast breathing is a sign of a problem in pregnancy	72(72.7)	HK	162(84.8)	VHK	61(75.3)	HK
7	The absence of fetal movements is a potential obstetric danger sign during pregnancy	73(73.7)	HK	183(95.8)	VHK	69(85.2)	VHK
8	Obstetrics danger signs indicate an immediate hazard which, if not avoided, will result in death or serious injury	81(81.8)	VHK	178(93.2)	VHK	69(85.2)	VHK
9	Premature onset of contraction is an obstetric danger sign	73(73.7)	HK	179(93.7)	VHK	68(84.0)	VHK
10	Discharges from the vagina with bad odour is an obstetric danger sign	74(74.7)	HK	173(90.6)	VHK	68(84.0)	VHK
	Overall %	**83.8**	**VHK**	**95.3**	**VHK**	**85.2**	**VHK**

Key: below 20% = very low knowledge (VLK), 20-39% = low knowledge (LK), 40-59% = average knowledge (AK), 60-80% = high knowledge (HK), 80% and above = very high knowledge (VHK). ***DEC: DECISION***

Results in Table 3 showed that pregnant women with tertiary education (94.6%) had very high level of knowledge of obstetrics danger signs than those with secondary education (93.9%), primary education (59.1%) and no formal education (47.1%).

Table 3. Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities Based on Level of Education (n=371)

S/N	Items	NFE (n=17)	DEC	PE (n=22)	DEC	SE (n=165)	DEC	TE (n=167)	DEC
		True f(%)		True f(%)		True f(%)		True f(%)	
1	Severe vaginal bleeding is a sign of a problem in pregnancy	9(52.9)	AK	16(72.7)	HK	161(97.6)	VHK	153(91.6)	VHK
2	Swelling of the fingers, face and legs are signs of a problem in pregnancy	2(11.8)	VLK	12(54.5)	AK	129(78.2)	HK	126(75.4)	HK
3	Severe headache is a sign of a problem in pregnancy	7(41.2)	AK	12(54.5)	AK	72(43.6)	HK	134(80.2)	VHK

4	Sudden weight gain during pregnancy is an obstetric danger sign	7(41.2)	AK	11(50.0)	AK	112(67.9)	HK	96(57.5)	AK
5	Convulsion is a problem in pregnancy	4(23.5)	LK	12(54.5)	AK	149(90.3)	VHK	147(88.0)	VHK
6	Fast breathing is a sign of a problem in pregnancy	7(41.2)	AK	11(50.0)	AK	146(88.5)	VHK	131(78.4)	AK
7	The absence of fetal movements is a potential obstetric danger sign during pregnancy	8(47.1)	AK	12(54.5)	AK	158(95.8)	VHK	147(88.0)	VHK
8	Obstetrics danger signs indicate an immediate hazard which, if not avoided, will result in death or serious injury	6(35.3)	LK	15(68.2)	HK	153(92.7)	VHK	154(92.2)	VHK
9	Premature onset of contraction is an obstetric danger sign	8(47.1)	AK	14(63.6)	HK	157(95.2)	VHK	141(84.4)	VHK
10	Discharges from the vagina with bad odour is an obstetric danger sign	9(52.9)	AK	15(68.2)	HK	147(89.1)	VHK	144(86.2)	VHK
	Overall %	**47.1**	**AK**	**59.1**	**AK**	**93.9**	**VHK**	**94.6**	**VHK**

Key: below 20% = very low knowledge (VLK), 20-39% = low knowledge (LK), 40-59% = average knowledge (AK), 60-80% = high knowledge (HK), 80% and above = very high knowledge (VHK).
Note: NFE-No formal education; PE-Primary education; SE-Secondary education; TE-Tertiary education. ***DEC: DECISION***

The analysis in Table 4 showed that pregnant women with 2-5 children (93.7%) had very high level of knowledge of obstetrics danger signs than those with 1 child (90.9%), none (87.6) and above 5 children (61.5%).

Table 4. Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities Based on Parity (n=371)

S/N	Items	NP (n=105) True f(%)	DEC	PP (n=110) True f(%)	DEC	MP (n=143) True f(%)	DEC	GMP (n=13) True f(%)	DEC
1	Severe vaginal bleeding is a sign of a problem in pregnancy	89(84.8)	VHK	102(92.7)	VHK	137(95.8)	VHK	11(84.6)	VHK
2	Swelling of the fingers, face and legs are signs of a problem in pregnancy	55(52.4)	AK	90(81.8)	VHK	118(82.5)	VHK	6(46.2)	AK
3	Severe headache is a sign of a problem in pregnancy	69(65.7)	HK	75(68.2)	HK	77(53.8)	AK	4(30.8)	LK
4	Sudden weight gain during pregnancy is an obstetric danger sign	58(55.2)	AK	77(70.0)	HK	84(58.7)	AK	7(53.8)	AK
5	Convulsion is a problem in pregnancy	83(79.0)	VHK	94(85.5)	VHK	127(88.8)	VHK	8(61.5)	HK
6	Fast breathing is a sign of a problem in pregnancy	76(72.4)	VHK	90(81.8)	VHK	121(84.6)	VHK	8(61.5)	HK
7	The absence of fetal movements is a potential obstetric danger sign during pregnancy	87(82.9)	VHK	103(93.6)	VHK	127(88.8)	VHK	8(61.5)	HK
8	Obstetrics danger signs indicate an immediate hazard which, if not avoided, will result in death or serious injury	89(84.8)	VHK	98(89.1)	VHK	131(91.6)	VHK	10(76.9)	HK
9	Premature onset of contraction is an obstetric danger sign	86(81.9)	VHK	98(89.1)	VHK	126(88.1)	VHK	10(76.9)	HK
10	Discharges from the vagina with bad odour is an obstetric danger sign	85(81.0)	VHK	95(86.4)	VHK	122(85.3)	VHK	13(100.0)	VHK
	Overall %	**87.6**	**VHK**	**90.9**	**VHK**	**93.7**	**VHK**	**61.5**	**HK**

Key below 20% = very low knowledge (VLK), 20-39% = low knowledge (LK), 40-59% = average knowledge (AK), 60-80% = high knowledge (HK), 80% and above = very high knowledge (VHK).
Note: *Nulliparity(NP)- None; Primipairy(PP)- I child; Multiparity(MP)- 2-5 children; Grandmultiparity(GMP)- above 5 children.* ***DEC: DECISION***

The analysis in Table 5 showed the Pearson Chi-square value with the corresponding p-value for hypothesis of no significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age. (χ^2 = 12.226, p= .02 < .05). Since the p-value was less than .05 level of significance, the null hypothesis was therefore rejected. This implies that there was a significance difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age.

Table 5. Chi-Square Test of No Significant Difference in the Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities Based on Age (*n=371*)

Age	N	True O(E)	False O(E)	χ^2	Df	p-value
15-24 years	99	83(89.1)	16(9.9)			
25-34 years	191	182(172.0)	9(19.0)	12.226	2	.02
35 years +	81	69(72.9)	12(8.1)			

Key: *O = Observed frequencies; E = Expected frequencies*

Results in Table 6 showed the Pearson Chi-square value with the corresponding p-value for hypothesis of no significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education. (χ^2 = 65.129, p= .00 < .05). Since the p-value was less than .05 level of significance, the null hypothesis was therefore rejected. This implies that there was a significance difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education

Table 6. Chi-Square Test of No Significant Difference in the Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities Based on Level of Education (*n=371*)

Level of Education	N	True O(E)	False O(E)	χ^2	Df	p-value
NFE	17	8(15.3)	9(1.7)			
PE	22	13(19.8)	9(2.2)	65.129	3	.00
SE	165	155(148.5)	10(16.5)			
TE	167	158(150.3)	9(16.7)			

Key: *O = Observed frequencies; E = Expected frequencies*

Table 7 showed the Pearson Chi-square value with the corresponding p-value for hypothesis of no significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on parity. (χ^2 = 14.681, p= .02 < .05). Since the p-value was less than .05 level of significance, the null hypothesis was therefore rejected. This implies that there was a significance difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on parity

Table 7. Chi-Square Test of No Significant Difference in the Level of Knowledge of Obstetrics Danger Signs among Pregnant Women Receiving Antenatal Care in Health Care Facilities Based on Parity (*n=371*)

Parity	N	True O(E)	False O(E)	χ^2	Df	p-value
NONE	105	92(94.5	13(10.5)			
1 CHILD	110	100(99.0)	10(11.0)	14.681	3	.02
2-5 CHD	143	134(128.7)	9(14.3)			
ABOVE 5	13	8(11.7)	5(1.3)			

Key: *O = Observed frequencies; E = Expected frequencies*

Discussion

We discovered that the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities was very high. The finding was expected and therefore not surprising. This is because pregnant women are being health educated during every antenatal session and are also being tested to detect abnormalities while receiving antenatal care in health care facilities. The findings agree with findings of Rabiu and Habiba (2019) that pregnant women were aware that unforeseen problems related to pregnancy can occur during any pregnancy that can endanger the life of the woman. The findings also agree with the findings of Olatoye et al. (2022) that more than half of the pregnant women receiving antenatal care in selected health facilities, Ile-Ife, Osun State had good knowledge about obstetric danger signs. The similarities could be attributed to good teachings on obstetric danger signs during antenatal clinics given by the midwives in the health centres in Nigeria. However the findings were inconsistent with the findings of Bililign and Mulatu (2017) that more than half 53.3 per cent of mothers were not knowledgeable about danger signs during pregnancy. The reason for this disagreement in the findings may be because of the limited knowledge of key danger signs by health workers in healthcare facilities. Findings from the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities have implication to pregnant women in understanding the importance and need of obtaining good and adequate knowledge of obstetrics danger signs which may help them to focus their attention on maternal complications and ways of prevention.

The findings revealed that pregnant women aged 25-34 years 95.3 per cent had very high level of knowledge of obstetrics danger signs than those aged 35 years and above 85.2 per cent and 15-24 years 83.8 per cent. The corresponding hypothesis in Table 6 showed that there was a significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age. The findings are expected and not surprising. This is because it is believed that the more one add years to life, the more knowledge she acquires, and the more exposed to situations that can lead to complications in pregnancy. The findings agree with the findings of Hibstu and Siyoum, (2017) that a significant association was observed concerning maternal age. It was figured out that knowledge of obstetric danger signs was more likely to increase among women with the age group 25–34 years old. The findings also agree with the findings of Ali et al. (2020) found that there was a statistically significant difference between women's age and their knowledge about obstetrics danger signs. The similarities is in line because increased knowledge of obstetrics danger signs among older women may be related to their own prior experiences of pregnancy and labor, which serve as an important source of information. Findings from the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age have implication to pregnant women at older pregnant women having a heightened awareness of health risks due to their age, which will lead to increased attention to obstetric danger signs and

younger women should be properly educated in other to be more alarmed by the potential risks associated with pregnancy and birth complications, which will lead to increased vigilance and willingness to seek care.

The findings showed that pregnant women with tertiary education 94.6 per cent had very high level of knowledge of obstetrics danger signs than those with secondary education 93.9 per cent, primary education 59.1 per cent and no formal education 47.1 per cent. The corresponding hypotheses in Table 7 showed that there was a significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education. The findings were expected and not surprising because it is considered that an educated woman has more chances to seek services than a non-educated one. The findings is consistent with the findings of Ali et al. (2020) which showed that women's level of education was significantly associated with their knowledge about obstetrics danger signs. The result also agreed with Tsegaye et al. (2017) which reported that pregnant women who attended tertiary education were more knowledgeable about obstetrics danger signs than women who attended no formal education. The similarities are in line because pregnant women who attended highest educational level have more knowledge and more access to information than pregnant women who have less or no formal educational level. Findings from the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education have implication to pregnant women in women with higher education levels should have a deeper understanding of medical concepts, allowing them to grasp the importance of obstetric danger signs more readily and women with low education levels should have unlimited awareness about danger signs because they might have limited exposure to health information, leading to lower awareness of obstetric danger signs and their significance.

Pregnant women with 2-5 children 93.7 per cent had very high level of knowledge of obstetrics danger signs than those with 1 child 90.9 per cent, none 87.6 per cent and above 5 children 61.5 per cent. The corresponding hypotheses in Table 8 showed that there was a significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on parity. This finding is not expected and very surprising because increase in number of pregnancies and childbirth exposes mothers to more knowledge about obstetrics danger signs. This is in line with findings of Imani Ramazani et al. (2023) that found that knowledge increased significantly for pregnant women who delivered once twice, three to five times, and more than five times. The result also agree with the findings of Kare et al. (2021) that this could be due to their prior experiences with obstetric complications during the ante-, peri-, and postpartum periods. They may have received information from their social community (old women and traditional birth attendants). The similarities are in line because pregnant women have more experience of obstetrics danger signs in regards to multiple deliveries. Findings from the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities in Nsukka Local Gover based on parity have implication to pregnant women at addressing the knowledge of obstetric danger signs among pregnant women of different parity levels which is crucial for promoting maternal and fetal health. Healthcare facilities should provide tailored health education that considers the experiences, concerns, and needs of women at various parity levels. Continuous reinforcement of the importance of recognizing and responding to danger signs, regardless of previous pregnancy experience, can help ensure better maternal and child outcomes.

Conclusion

The study investigated the knowledge and attitude towards obstetrics danger signs among pregnant women receiving antenatal care in health care facilities in Nsukka Local Government Area. The finding have showed that overall, level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities was very high. Pregnant women aged 25-34 years had very high level of knowledge of obstetrics danger signs than those aged 35 years and above and 15-24 years. Pregnant women with tertiary education had very high level of knowledge of obstetrics danger signs than those with secondary education, primary education and no formal education. Pregnant women with 2-5 children had very high level of knowledge of obstetrics danger signs than those with 1 child, none and above 5 children.

There was a significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on age. There was a significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on level of education. There was a significant difference in the level of knowledge of obstetrics danger signs among pregnant women receiving antenatal care in health care facilities based on parity. Based on the findings of the study, the following recommendations were made;

1. Health care providers should educate the women about ODS during their antenatal visits as they are the primary source of women's knowledge
2. Health centers should establish antenatal programs to educate all pregnant women about the clinical dangers of pregnancy and when it is best to see a doctor.
3. Government and ministry of health can provide an Interventions that should be aimed at improving maternal health taking into account

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