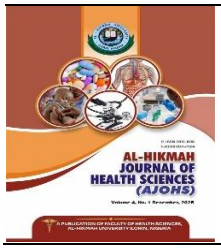
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Original Article

Safe Motherhood Knowledge and Under-Five Health-Seeking Behaviour among Women in Ilorin West, Kwara State, Nigeria

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ABSTRACT

Background: Safe motherhood knowledge is relevant to maternal and child health practices, including appropriate healthcare-seeking for under-five children. Evidence on their relationship remains limited in Ilorin West, Kwara State.

Objective: To assess safe motherhood knowledge and under-five health-seeking behaviour among women in Ilorin West and determine their relationship.

Methods: A descriptive cross-sectional study was conducted among women of childbearing age attending primary health care centres in Ilorin West Local Government Area. Participants were selected using multistage sampling. Data were collected using an interviewer-administered questionnaire and analysed using IBM SPSS Statistics version 27. Descriptive statistics and Pearson Product-Moment Correlation were used, with significance set at $p < 0.05$.

Results: A total of 392 women participated. Safe motherhood knowledge was high (mean = 1.93, SD = 0.14), while under-five health-seeking behaviour was favourable (mean = 3.57, SD = 0.75). Knowledge of family planning as a component of safe motherhood was lower (61.2%). A significant positive relationship was observed between safe motherhood knowledge and under-five health-seeking behaviour ($r = 0.632$, $p = 0.001$).

Conclusion: Higher safe motherhood knowledge was associated with more favourable under-five health-seeking behaviour among women attending primary health care centres in Ilorin West.

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Introduction

Safe motherhood promotes appropriate care during pregnancy, childbirth, the postnatal period, and early childhood, encompassing family planning, antenatal care, skilled birth attendance, and postnatal care (Ricci, 2020; WHO, 2022; Canton, 2021; WHO, 2023). Knowledge of these services may influence women's decisions about when and where to seek care (Ajayi & Jeremiah, 2018). Maternal and child mortality remains a major public health concern in sub-Saharan Africa, which accounted for about 70% of global maternal deaths in 2020, with a maternal mortality ratio of 545 deaths per 100,000 live births (WHO, 2023; Chima-Oduko et al., 2026). Nigeria also bears a substantial burden, with a reported maternal mortality ratio of 512 deaths per 100,000 live births and under-five mortality rate of 117 deaths per 1,000 live births (NMEP, 2022). These outcomes have been linked to limited access to skilled health personnel, poor PHC utilization, socioeconomic and

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sociocultural barriers, and inadequate maternal and child health knowledge (Adedokun *et al.*, 2023).

PHC centres provide essential maternal and child health services, including antenatal and postnatal care, immunization, growth monitoring, nutrition counselling, family planning, and health education (Ogu *et al.,* 2023; WHO & UNICEF, 2018). Appropriate under-five health-seeking behaviour includes timely care-seeking, use of trained health workers, treatment adherence, immunization, growth monitoring, child welfare attendance, and compliance with health advice (Adeoti *et al.*, 2022; Torgbor-Anaman, 2025).

Maternal knowledge may influence these behaviours. Fagbamigbe *et al.* (2021) reported that maternal knowledge of recommended immunization schedules was positively associated with complete childhood immunization. However, findings vary across conditions. Oluchi et al. (2019) found that caregiver knowledge did not significantly predict appropriate care-seeking for childhood fever, while Bakare et al. (2023) reported that pneumonia knowledge did not independently predict care-seeking after adjustment for other factors.

Safe motherhood knowledge encompasses antenatal care, skilled birth attendance, postnatal care, exclusive breastfeeding, recognition of danger signs, supplementation, tetanus vaccination, family planning, and emergency care-seeking (Anastasi et al., 2015; WHO, 2022). Despite evidence from different parts of Nigeria, limited empirical evidence exists on its relationship with under-five health-seeking behaviour among women attending PHC facilities in Ilorin West, Kwara State. Existing studies have focused largely on maternal healthcare utilization, disease-specific knowledge, or settings outside North-Central Nigeria (Aderoba & Adu-Bonsaffoh, 2022; Ajayi-Lowo, 2024). Therefore, this study assessed safe motherhood knowledge and under-five health-seeking behaviour among women in Ilorin West and examined the relationship between the two variables

Materials and Methods

Study Design and Setting

A descriptive cross-sectional study design was used. The study was conducted among women of childbearing age attending selected Primary Health Care (PHC) centres in Ilorin West Local Government Area (LGA), Kwara State, Nigeria. Ilorin West is one of the three LGAs that constitute Ilorin, the capital city of Kwara State, and comprises urban and peri-urban populations with diverse socioeconomic, educational, and cultural backgrounds. The selected PHC centres provide maternal and child health services, including antenatal care, immunization, delivery services, and postnatal care.

Study Population and Eligibility

The target population comprised women aged 15-49 years attending the selected PHC centres in Ilorin West LGA. Eligible participants were women aged 15-49 years who had at least one child under five years of age or were pregnant, had voluntarily provided informed consent, and had attended at least one of the selected PHC centres within the three months preceding the study. Women who were seriously ill, bedridden, or unable to provide informed consent were excluded.

Sample Size and Sampling

The minimum sample size was determined using Cochran's formula for cross-sectional studies. A prevalence of 50% was adopted because the prevalence of safe motherhood knowledge and under-five health-seeking behaviour in the study population was not known beforehand. At a 95% confidence level and 5% margin of error, the initial sample size was 384. A finite population correction was subsequently applied using an estimated population of 10,000 eligible women attending the selected PHC centres, giving an adjusted sample size of approximately 369. A 10% contingency allowance was added, resulting in a final sample size of 406 respondents.

A multistage sampling technique was employed. Seven wards were selected from Ilorin West LGA. Fifty-eight respondents were allocated to each selected facility. Eligible women present during the clinic days were consecutively recruited until the allocated number for each facility was attained. Of the 406 questionnaires administered, 392 were correctly completed and retrieved, giving a response rate of 96.6%.

Data Collection Instrument and Procedure

Data were collected using a structured interviewer-administered questionnaire by two trained research assistants with backgrounds in public health and nursing. The questionnaire was administered in English or Yoruba according to respondents' preference during antenatal, immunization, and child welfare clinic days at selected PHC facilities.

The questionnaire comprised four sections. Section A collected sociodemographic information, including age, education, marital status, occupation, religion, number of children, household income, and presence of a child under five years. Section B assessed safe motherhood knowledge using 10 questions covering key maternal and child health practices. Correct responses scored 2 points and incorrect responses 1 point, with mean scores of 1.00-1.49 classified as low knowledge and 1.50-2.00 as high knowledge. Section D assessed under-five health-seeking behaviour using 10 items covering immunization, growth monitoring, care-seeking, treatment adherence, child welfare

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attendance, illness management, and nutrition practices. Responses were rated on a four-point scale from Always to Never, with higher scores indicating better health-seeking behaviour.

Validity and Reliability

Content validity was established through review by the research supervisor and experts in public health and maternal and child health, focusing on the clarity, relevance, appropriateness, and comprehensiveness of the questionnaire items. Face validity was assessed through a pilot study among women of childbearing age excluded from the main study, with feedback used to improve the instrument.

Reliability was assessed through a pilot study involving approximately 10% of the calculated sample size at a PHC facility outside the study area with similar characteristics. Cronbach's alpha was used to assess the internal consistency of the questionnaire sections measuring safe motherhood knowledge, perception, and under-five health-seeking behaviour, with a coefficient of 0.70 or higher considered acceptable. Necessary revisions were made before the main data collection.

Data Analysis

Completed questionnaires were checked for completeness, coded, and entered into IBM SPSS Statistics version 27. Descriptive statistics were used to summarize sociodemographic characteristics and study variables, with results presented as frequencies, percentages, means, standard deviations, tables, and charts. Safe motherhood knowledge was scored using the specified 2-point system and categorized as high or low based on predetermined cut-offs.

Pearson Product-Moment Correlation was used to examine the relationship between safe motherhood knowledge and under-five health-seeking behaviour. Statistical significance was set at the 5% level, with $p < 0.05$ considered statistically significant..

Ethical Considerations

Ethical approval for the study was obtained from the Kwara State Ministry of Health Ethics Review Committee (Approval No. ERC/MOH/2025/06/765). Approval was also obtained from the management of the selected primary health-care facilities and the Kwara State Primary Health Care Development Agency. Written informed consent was obtained from all participants before data collection. Participation was voluntary, and participants were informed of their right to decline participation. No personally identifiable information was collected, and all completed questionnaires and study data were securely stored to maintain confidentiality.

Results

Characteristics of the Respondents

Table 1: Sociodemographic Characteristics of Respondents (n = 392)

Variables	Frequency	Percentages
Religion		
Christianity	20	5.1
Islam	372	94.9
Total	392	100

A total of 392 women participated in the study. Nearly half of the respondents had tertiary education (188; 48.0%), while 168 (42.9%) had secondary education. Most respondents were married (388; 99.0%). The largest proportion were aged 25-30 years (164; 41.8%), followed by those aged 31-36 years (109; 27.8%).

Safe Motherhood Knowledge

Table 2: Safe Motherhood Knowledge

Knowledge of Safe Motherhood	YES	NO	
	Freq (%)	Freq (%)	Mean
Antenatal care (ANC) should begin in the first trimester of pregnancy.	375 (95.7)	17 (4.3)	1.96
A pregnant woman should attend a minimum of four antenatal care visits.	383 (97.7)	9 (2.3)	1.98
Delivery should be conducted by a skilled birth attendant (doctor, midwife, or nurse).	388 (99.0)	4 (1.0)	1.99
Postnatal care is important for both mother and child after delivery.	392 (100.0)	0 (0.0)	2.00
Exclusive breastfeeding is recommended for the first six months of a child's life.	346 (88.3)	46 (11.7)	1.88

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Excessive bleeding during pregnancy or after delivery is a danger sign requiring immediate medical attention.	375 (95.7)	17 (4.3)	1.96
Iron and folic acid supplements are recommended during pregnancy.	387 (98.7)	5 (1.3)	1.99
Tetanus toxoid vaccination is an important component of safe motherhood.	384 (98.0)	8 (2.0)	1.98
Family planning services are part of safe motherhood practices.	240 (61.2)	152 (38.8)	1.61
A woman should seek emergency care if she experiences severe headache or swelling of the hands and face during pregnancy.	392 (100.0)	0 (0.0)	2.00
Mean Score			1.93

Decision Value: =1.00 - 1.49 = *Low,* 1.50 - 2.00 =*High*

The respondents had a high level of safe motherhood knowledge, with a mean score of 1.93. All respondents (392; 100.0%) knew that postnatal care is important for both mother and child and that severe headache or swelling of the hands and face during pregnancy requires emergency care. Knowledge was also high regarding skilled birth attendance (388; 99.0%), iron and folic acid supplementation (387; 98.7%), tetanus toxoid vaccination (384; 98.0%), and attending at least four antenatal care visits (383; 97.7%). The lowest level of knowledge was recorded for family planning as a component of safe motherhood, with 240 (61.2%) respondents answering correctly.

Under-Five Health-Seeking Behaviour

Table 3: Under-5 Health-Seeking Behaviour among child bearing Age Women

Item	A (%)	O (%)	R (%)	N (%)	Mean	Std. D
I take my under-5 child to a health facility for routine immunization as scheduled.	371 (94.6)	13 (3.3)	4 (1.0)	4 (1.0)	3.92	0.40
I visit the PHC for my child's growth monitoring and weighing sessions.	333 (84.9)	37 (9.4)	18 (4.6)	4 (1.0)	3.78	0.57
When my under-5 child falls ill, I seek care from a trained health worker first.	315 (80.4)	35 (8.9)	26 (6.6)	16 (4.1)	3.66	0.78
I complete the full course of treatment prescribed for my under-5 child at the health facility.	337 (86.0)	39 (9.9)	4 (1.0)	12 (3.1)	3.79	0.61
I use orthodox (modern) medicine rather than traditional remedies when my under-5 child is sick.	340 (86.7)	44 (11.2)	4 (1.0)	4 (1.0)	3.84	0.47
I attend child welfare clinic (CWC) sessions at the PHC for my under-5 child.	169 (43.1)	37 (9.4)	28 (7.1)	158 (40.3)	2.55	1.39
I seek medical attention within 24 hours when my under-5 child shows signs of illness.	305 (77.8)	49 (12.5)	21 (5.4)	17 (4.3)	3.64	0.77
I administer oral rehydration solution (ORS) to my under-5 child during episodes of diarrhoea.	339 (86.5)	40 (10.2)	4 (1.0)	9 (2.3)	3.81	0.56
I ensure my under-5 child sleeps under an insecticide-treated bed net to prevent malaria.	234 (59.7)	35 (8.9)	12 (3.1)	111 (28.3)	3.00	1.33
I follow health worker advice on nutrition and feeding practices for my under-5 child.	326 (83.2)	49 (12.5)	8 (2.0)	9 (2.3)	3.77	0.60

Key; *A* = Always, O = Often, R = Rarely, N = Never

Decision Value: = 0 – 2.49 = *Negative*, 2.50 and above = *Positive*

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Respondents generally reported favourable under-five health-seeking behaviour. The highest-rated practice was taking the child to a health facility for routine immunization as scheduled (Mean = 3.92), followed by the use of orthodox medicine rather than traditional remedies when the child was sick (Mean = 3.84), administration of oral rehydration solution during diarrhoea (Mean = 3.81), and completion of prescribed treatment (Mean = 3.79). Attendance at child welfare clinic sessions recorded the lowest mean score (Mean = 2.55), while all measured behaviours remained above the decision value of 2.50.

Table 4: Relationship between Safe Motherhood Knowledge and Under-Five Health-Seeking Behaviour among Women in Ilorin West, Kwara State, Nigeria

Variable	Mean	Std. D	N	r	Sig(p)	Remark
Safe Motherhood Knowledge	1.93	0.14	392	.632	.001	Significant
Under-5 Health-Seeking Behaviour	3.57	0.75				

The mean safe motherhood knowledge score was 1.93 (SD = 0.14), while the mean under-five health seeking behaviour score was 3.57 (SD = 0.75). There was a significant positive relationship between safe motherhood knowledge and under-five health-seeking behaviour among the respondents (r = 0.632, p = 0.001).

Discussion

The study found a high level of safe motherhood knowledge among the respondents, with a mean score of 1.93. Knowledge was particularly high for postnatal care, recognition of severe headache and swelling during pregnancy as danger signs, skilled birth attendance, iron and folic acid supplementation, antenatal care attendance, and tetanus toxoid vaccination. However, knowledge of family planning as a component of safe motherhood was lower at 61.2%. The high level of knowledge is consistent with Mseu et al. (2024), who reported good maternal and child-care knowledge among women participating in the Safe Motherhood Project in Malawi. It also agrees with Arinze & Okafor (2023), who reported fair knowledge of safe motherhood services among childbearing mothers attending healthcare facilities in Anambra State. The present level of knowledge was higher than that reported by Arinze & Okafor (2023). In contrast, Oni et al. (2025) found that only 34.4% of postpartum women had adequate knowledge of postpartum warning signs and complications in Ibadan. The difference may reflect differences in the areas of knowledge assessed and the characteristics of the study populations. The respondents also reported generally good under-five health-seeking behaviour. Routine immunization attendance had the highest mean score (3.92), followed by the use of orthodox medicine when a child was sick (3.84), administration of oral rehydration solution during diarrhoea (3.81), and completion of prescribed treatment (3.79). Attendance at child welfare clinic sessions had the lowest mean score (2.55), although it remained above the decision value of 2.50. This pattern indicates that the respondents generally practised the recommended child health behaviours assessed in the study. The finding is consistent with Tariah et al. (2025), who reported that caregivers with better knowledge demonstrated more appropriate treatment practices and timely healthcare utilization for childhood diarrhoea. It differs from Okpokowuruk (2024), where only 12.5% of caregivers sought appropriate care by presenting at a formal health facility within 24 hours of fever onset. The difference may be related to the present study's broader assessment of preventive and curative health-seeking behaviours among women attending PHC services, compared with Okpokowuruk's focus on care-seeking for febrile illness. A significant positive relationship was found between safe motherhood knowledge and under-five health seeking behaviour (r = .632, p = .001). Women with higher safe motherhood knowledge had better reported health-seeking behaviour for their under-five children. This finding agrees with Tariah et al. (2025), who found that better caregiver knowledge was associated with more appropriate treatment and healthcare-seeking practices among caregivers of children with diarrhoea in Rivers State. It also supports the role of maternal health knowledge reported by Fagbamigbe et al. (2021), who found that maternal knowledge of the recommended immunization schedule was positively associated with complete childhood immunization in Nigeria. The present finding differs from Oluchi et al. (2019), who found that caregiver knowledge of childhood fever and malaria was not a significant predictor of appropriate healthcare-seeking behaviour in Imo State. It also differs from Bakare et al. (2023), who reported that knowledge of childhood pneumonia did not independently predict care-seeking behaviour after adjustment for other factors. Adamu and Ango (2024) similarly reported poor health-seeking behaviour among mothers of under-five children in Sokoto Metropolis, with 61.7% of sick children not taken to a health facility. These differences are relevant because the present study assessed broader safe motherhood

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knowledge and a wider range of under-five health-seeking practices, rather than knowledge and care-seeking related to a single childhood illness. The positive association found in this study supports the importance of integrating maternal health education with child health promotion at the PHC level. The result also provides local evidence that knowledge acquired through maternal and child health services is associated with favourable healthcare practices for under-five children. However, because the study used a cross-sectional design, the observed relationship should be interpreted as an association and not as evidence of a causal effect.

Conclusion

The study found that women in Ilorin West had high safe motherhood knowledge and generally favourable under-five health-seeking behaviour. There was a significant positive relationship between safe motherhood knowledge and under-five health-seeking behaviour ($r = .632$, $p = .001$). Women with higher safe motherhood knowledge reported better health-seeking behaviour for their under-five children. The findings indicate the importance of strengthening safe motherhood education as part of maternal and child health services at the primary healthcare level, particularly in areas where knowledge gaps were identified.

Recommendation

Safe motherhood education should be strengthened during maternal and child health clinic sessions, with emphasis on identified knowledge gaps, particularly family planning. Primary healthcare providers should integrate safe motherhood education with messages on appropriate healthcare-seeking for under-five children, while community-based maternal and child health education should also be strengthened.

Limitation

The cross-sectional design limits causal interpretation. Self-reported responses may have introduced recall or social desirability bias. The findings may also have limited generalizability beyond women attending the selected PHC centres in Ilorin West

Declarations

Declaration of Conflict of Interest: The authors declare that no known conflict in this paper.

Declaration of Data Availability: The data that are used in this research are available upon request from the corresponding author through (first author)

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