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PUBLIC PERCEPTION OF PICA PRACTICE AMONG WOMEN IN NORTH-CENTRAL NIGERIA

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ABSTRACT: This study, titled Public Perception of Pica Practice Among Women in North-Central Nigeria, falls within the domain of health communication and is anchored in the Health Belief Model (HBM). A descriptive survey design was employed, with a questionnaire as the primary data collection instrument. The study sampled 400 women across the three senatorial districts of Kwara State, North-Central Nigeria. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS), employing descriptive and inferential statistics. Findings from the socio-demographic analysis revealed a higher proportion of Muslim women compared to Christians in the sample. Socio-demographic variables were shown to significantly influence the knowledge, attitude, and practice (KAP) of pica among respondents. The study identified a pica prevalence rate of 48.5%. Based on these findings, the study recommends targeted and coordinated awareness campaigns through various media outlets in North-Central Nigeria.

Keywords: Pica Preactice, Women, Knowledge, Attitude and Practice (KAP), Health Belief Model (HBM),

INTRODUCTION

Human existence on earth is plagued by several health challenges. These challenges are, however, being tackled on several fronts through many measures. One such measure is health communication, which aims, among other things, to inform and educate the members of society of not only the existence of health problems but also the proffered means of containing them (Ogungbamigbe & Uche, 2022). Badr (2009) avers that communication is central to public health programmes, including disease prevention, health promotion, and quality of life. Nonetheless, pica is quite puzzling (Singh, 2013), it is seen as a phenomenon that seems to be underreported or studied in Nigeria by health communicators.

Pica disorder represents a real health risk ranging from minor disorders to some severe health conditions (Konlan et al., 2020; Encyclopaedia of Mental Disorders, 2015; Singh, 2013). The American Psychiatric Association (1994) describes pica as eating characterised by the persistent

ingestion of non-nutritive substances for at least one month at an age when the behaviour is considered inappropriate. Pica is not a recent phenomenon as it has been recognised since the early days of man and among ethnic groups across the globe in both primitive and modern cultures (Singh, 2013). It is a disorder that affects people all over the world, especially women and children (Ahmed et al., 2023; Hartmann et al., 2022; Ogungbamigbe & Uche, 2022; Anthonia, 2019).

Therefore, there is a need to communicate this phenomenon to increase audience awareness and knowledge to influence their behaviour and attitude, correct misconceptions, and increase demand for health support and assistance for suspected cases of pica disorder. Since pica practice among pregnant women is rife across the globe, women in North-Central Nigeria are not spared of this craving for non-food substances, especially during pregnancy. The practice, however, seems to have been understudied as its prevalence in the region remains unverified; hence, this present study.

Maternal health has been a major concern around the world. Oftentimes, some practices are inimical to a pregnant woman and even the unborn child. This study, therefore, has both theoretical and socio-cultural significance. Its study highlights the importance of the Health Belief Model, which is relevant in the study of pica disorder and thus contributes to the expansion of the field of theoretical practice and framework, thereby increasing the scope of knowledge. The study also has sociocultural relevance as it unveils the practices of women that are deep-seated but often shrouded in secrecy as a result of societal expectations and cultural practice. Pica practice has been from time immemorial, and yet people are often ignorant of its implications both on the health of the would-be-mother and that of the unborn baby. The elderly mothers wink at the practice among younger women and often pretend as though they, too, did not indulge in a similar practice. Some are often ashamed to disclose it. This study has, therefore, broken this hidden indulgence by also unveiling the rate of prevalence among women in North-central Nigeria.

Objectives of the study

The study has the following objectives:

1. To determine the rate of pica prevalence in North-central Nigeria
2. To identify the most preferred non-food item craved for by pregnant women in North-Central Nigeria
3. To determine the prevalence of Pica in North-central Nigeria
4. To ascertain if there is a significant relationship between socio-demographic variables and knowledge, attitude, and perception of health implications on pica practice

Research Questions

Arising from the objectives of the study are the following research questions:

1. What is the rate of pica prevalence in North-central Nigeria?
2. What is the most preferred non-food item craved by pregnant women in North-central Nigeria?
3. What is the prevalence of Pica in North-central Nigeria?

4. What is the level of relationship between socio-demographic variables and knowledge, attitude, and perception of health implications on pica practice?

Hypotheses

To further strengthen the study, the following hypotheses were also tested for statistical significance:

H_1: There is no significant relationship between age bracket, knowledge of pica, attitude to pica, and perception of health implications of pica.

H_2: There is no significant relationship between Marital Status, knowledge of pica, attitude to pica, and perception of health implications of pica.

H_3: There is no significant relationship between Education qualification, knowledge of pica, attitude to pica, and perception of health implications of pica.

REVIEW OF LITERATURE

Pica is a global phenomenon spanning all races, continents, and colours. It cuts across different age brackets, gender, culture, education, and religion. Pica practice is often associated with pregnant women (Ahmed et al., 2023; Hartmann et al., 2022; Ogungbamigbe & Uche, 2022; Anthonia, 2019; Singh, 2013; Young, 2010). Nonetheless, most women are not bold enough to admit their unusual cravings and eating habits, thereby hiding them from their physicians. This factor is also responsible for the underreporting associated with pica practice and its prevalence (Ali, 2001; Bhatia & Kaur, 2014; Ogallo, 2008).

Researchers have reported a high incidence of pica across countries in Africa such as Botswana, Kenya, South Africa, Tanzania, Namibia, Ghana and Nigeria (Ogungbamigbe & Uche, 2022; Anthonia, 2019; Ekwenchi, et al., 2015; Ngozi, 2008; Nyaruhucha, 2009; Antelman, et al., 2000; Kawai, et al., 2009; Luoba, et al., 2004; Louw, et al., 2007; Ekosse, et al., 2012; Thomson, 1997).

In North-eastern Nigeria-Bauchi, 14.7% craved sand, while 18.7% craved ice (Aminu et al., 2019). In Ghana, their major craving was for soil/clay (89.1%; Abu et al.,2017). In Tanzania, the findings showed that 29% of pregnant women regularly consumed soil (Kawai et al., 2009). In Iran, the percentage that ate dirt stood at 25.3% while 60.9% ate ice, clay, chalk, tea stuff, freezer frost and other non-food substances (Mortazavi & Mohammadi (2003).

In Rivers State, South-South Nigeria, Anthonia (2019) carried out a study at the Obio Cottage Hospital in Port Harcourt to assess pica practices among pregnant women receiving antenatal care. The study reported a high prevalence of pica, with 62.86% of participants engaging in the behaviour. Clay consumption was the most common form, followed by nail biting and the ingestion of sour foods. The primary motivations included the pleasant taste or smell of the substances, cravings, and the belief that pica could control nausea during pregnancy. The study

recommended improving female education, correcting misconceptions about the positive effects of pica, and raising awareness about its negative health implications, particularly anemia.

In a review survey by Okunoye, Head, and Issa (2013), among 56 consecutive pregnant women attending a joint antenatal diabetes clinic, 23% of them were found to have indulged in pica. The most consumed non-food items among them were ice and raw starch. Other items consumed include paper, sponge, sand, and gloss paint.

In a study in the Tanzanian capital, Dares Salam, aimed at determining the frequency, and duration of cravings, and pica practice among 204 pregnant women who were attending two health facilities in the city, it was found that 63.7% of the women indulged in pica. The non-food substances consumed include ice, soil, and ash. The first trimester was found to be the period of intense cravings among women (Myaruhucha, 2009).

Corbett, Ryan, and Weinrich (2003) carried out a study to discover pica prevalence, its documentation on medical records, and its relationship to pregnancy outcomes in rural pregnant women who were socioeconomically disadvantaged. The percentage of them that practised pica was 38. Of this group, 30 African-American women were found to have reported having the disorder more often than others. The study found that the ingested items include ice, corn starch, laundry starch, clay dirt, baked clay dirt, and freezer frost.

In Bondo district in Western Kenya, Luoba et al. (2004) studied pica practice among 827 pregnant women during and after pregnancy as it relates to soil-eating. Findings indicate that 65% of the respondents reported ingesting earth/soil before pregnancy, out of which 42.8% preferred eating earth from termite mounds. A sample of 204 stools was collected from the respondents and analysed to track the incidence of earth-eating; it was found that those who had ingested earth had a higher mean silica content than those who had not indulged in eating earth/soil.

In another similar study in Kenya by Geissler, Shulman, Prince, Mutemi, Mnazi, Friis, and Lowe (1998), of 275 pregnant women surveyed who attended the antenatal clinic at Kilifi District Hospital, Coast Province, 56% of the women reported eating soil regularly. In a focus group discussion session (FGD) involving 38 pregnant women, it was also observed that the most ingested substance was earth from walls of houses. Of this number, 27 helped in collecting soil samples for analysis to determine their zinc, iron, and aluminium contents. It was found that those who ingested soil were invariably consuming 4.3 milligrams of iron, which corresponds to 14% of the recommended dietary allowance of iron in pregnant women.

In a study by Mensah et al. (2010) in Kumasi, Ghana, aimed at determining pica prevalence, the effect of education on pica practice, and the different non-food items consumed by the sampled pregnant women, it was found that the prevalence rate of pica among pregnant women in Kumasi was 47%. Findings also showed that the respondents' level of education and age did not have a significant effect on pica indulgence.

Adam, Khamis, and Mustafa (2005) studied 744 antenatal-attending Sudanese women to determine the risk factors for anaemia. The findings indicate that pica practice was one of the

major factors causing anaemia among the women. The study sampled only pregnant Sudanese women who attended the antenatal clinic between October 2003 and April 2004 at the New Halfa Teaching Hospital, Eastern Sudan.

Theoretical Underpinning

This study is underpinned by the Health Belief Model (HBM). Stock (1977) was the main proponent of the Health Belief Model. The major tenet of this model is that people are often motivated towards positive action aimed at promoting their health to avoid unwanted health outcomes (Jerome, 2013). Individuals who resort to media for health education and enlightenment, more often than not, take informed actions to enhance their health. Their readiness to take positive steps is predicated on the precautionary measures specified via the media of information. The COVID-19 pandemic remains a pointer to this model where individuals and nations across the globe adopted necessary measures tagged COVID-19 protocols to mitigate the infectious rate of the pandemic and curtail the surging mortality. So, women who are exposed to media messages about pica disorder and its health implications are, by this model, expected to take steps towards its curtailment.

METHOD AND INSTRUMENT FOR DATA COLLECTION

This study was designed as a descriptive survey with a structured questionnaire as the instrument for data collection. The study sample was four hundred women randomly selected across the three senatorial districts in the state out of a female population of one million, one hundred and seventy-one thousand, five hundred and seventy. The sample size was determined via Krejcie and Morgan's (1970) sample size determination table. Questionnaire copies were administered directly to the randomly selected sample across different towns in Kwara State with the help of research assistants. The copies of the questionnaire were collected on the spot, which ensured a 100% return rate.

Study Area

The study area is north-central Nigeria, but it is delimited to only Kwara State. The three senatorial districts covered are Kwara North, Kwara South, and Kwara Central. Other states in the North-central are Kogi, Benue, Plateau and Niger. Kwara state shares boundaries with Osun, Oyo, Niger and Kogi states. Ethnic groups existing in the state include Yoruba, Bariba, Nupe, and Fulani.

PRESENTATION AND ANALYSIS

The collected data were analysed using the Statistical Package for Social Sciences (SPSS), which used descriptive and inferential statistics.

Socio-demographic Characteristics

The socio-demographic characteristics of the respondents are presented in Tables 1-4. As indicated below:

Table 1: Age Range of the respondents

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	15-25	20	5.0	5.0	5.0
	26-35	302	75.5	75.5	80.5
	36-45	74	18.5	18.5	99.0
	46-55	4	1.0	1.0	100.0
	Total	400	100.0	100.0	

Table 1 shows that 20 respondents (5%) fall within the age bracket of 15–25, followed by those aged 26–35, who constitute the majority with a frequency of 302 (75.5%). The 36–45 age group comprises 74 respondents (18.5%), while the 46–55 age group consists of only 4 respondents (1%). This clearly indicates that most of the respondents are young women.

Table 2: Frequency Distribution of Respondents' Academic Attainment

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	FSLC	4	1.0	1.0	1.0
	O'Level	70	17.5	17.5	18.5
	OND	90	22.5	22.5	41.0
	NCE	52	13.0	13.0	54.0
	HND	108	27.0	27.0	81.0
	B.Sc	56	14.0	14.0	95.0
	Master's Degree	10	2.5	2.5	97.5
	PhD	4	1.0	1.0	98.5
	None	6	1.5	1.5	100.0
	Total	400	100.0	100.0	

Table 2 reveals that all respondents possess at least one educational qualification. A higher proportion of respondents were trained in polytechnics compared to other institutions. Specifically, 27% hold Higher National Diplomas (HND), followed by 22.5% with Ordinary National Diplomas (OND). Additionally, 17.5% possess O-Level certificates, while 14% are university graduates with a Bachelor of Science (B.Sc.) degree. Regarding advanced degrees, 2.5% of respondents have a master's degree, and 1% hold a Ph.D. Meanwhile, only 1% possess a First School Leaving Certificate, and 1.5% have no formal educational qualification. This suggests that the respondents are literate enough to understand what pica is and to provide informed responses.

Table 3: Frequency Distribution of Marital Status

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Married	372	93.0	93.0	93.0
	Single	28	7.0	7.0	100.0
	Total	400	100.0	100.0	

Table 3 indicates that 372 respondents (93%) are married, while 28 (7%) are single. There were no reports of divorce among the respondents. This suggests that the majority of participants are married women who are more likely to experience pica during pregnancy.

Table 4: Frequency Distribution of Respondents' Religion

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Islam	246	61.5	61.5	61.5
	Christianity	154	38.5	38.5	100.0
	Total	400	100.0	100.0	

Table 4 shows that Islam is the predominant religion among respondents (61.5%), followed by Christianity (38.5%). No respondents identified with African Traditional Religion or other faiths, indicating that Islam and Christianity are the two dominant religions in the study area.

Table 5: Frequency Distribution on Pica Practice

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Yes	194	48.5	48.5	48.5
	No	192	48.0	48.0	96.5
	Not Sure	14	3.5	3.5	100.0
	Total	400	100.0	100.0	

Table 5 reveals that 194 respondents (48.5%) admitted to engaging in pica, while 192 (48%) denied any involvement. Additionally, 14 respondents (3.5%) were unsure whether they had ever engaged in the practice. The close percentage between those who practise pica and those who do not suggests that pica is a significant, though not universal, behaviour among the respondents.

Table 6: Frequency Distribution of Most Consumed Non-food Substance

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Ice-block	142	35.5	35.5	35.5
	Clay	20	5.0	5.0	40.5
	Charcoal	18	4.5	4.5	45.0
	Paper	14	3.5	3.5	48.5
	Sand	48	12.0	12.0	60.5
	Wood	157	39.3	39.3	99.8
	Others	1	.3	.3	100.0
	Total	400	100.0	100.0	

Table 6 indicates that 39.25% of women prefer to consume wooden items over other non-food substances. The second most commonly consumed item is ice, preferred by 35.50% of respondents. Sand is the third most consumed item, with 12% of respondents engaging in its consumption. Additionally, 5% prefer clay, 4.5% consume charcoal, and 3.5% favour paper. Only

0.25% of respondents indicated consuming other unspecified non-food items. This suggests that these women are familiar with pica and have firsthand experience with it.

Table 7: Understanding of the danger of eating non-food items in pregnant women

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Yes	247	61.8	61.8	61.8
	No	97	24.3	24.3	86.0
	May be	56	14.0	14.0	100.0
	Total	400	100.0	100.0	

Table 7 shows that 61.75% of respondents believe that consuming non-food items poses significant health risks to pregnant women. Meanwhile, 14% were uncertain about the potential negative effects, and 24.25% believed that pica does not harm pregnant women. This suggests that a majority of respondents recognize the dangers of pica, reinforcing the need for interventions that promote healthier alternatives.

Hypotheses Testing and Analysis

Table 8: Table showing the Correlation between Age bracket, Knowledge of pica (KP), Attitude to Pica (AP), and Perception of Health implications of Pica (PHI).

	Age Bracket	KP	AP	HIP
Age Bracket	1.000	.739**	.717**	.727**
KP		1.000	.978**	.977**
AP			1.000	.968**
HIP				1.000

**. Correlation is significant at the 0.01 level (2-tailed).

Statement of Hypothesis

H_0: There is no significant relationship between age bracket, knowledge of pica, attitude to pica, and perception of health implications of pica.

H_1: There is a significant relationship between age bracket, knowledge of pica, attitude to pica, and perception of health implications of pica.

Table 8 presents correlation data on age and knowledge of pica. At a 0.01 significance level, the correlation coefficient (0.739) is statistically significant, with a two-tailed probability value of 0.000, which is less than 0.01. Similarly, a strong correlation exists between age and attitude toward pica (correlation coefficient: 0.717, p-value: 0.000). Additionally, a strong correlation is observed between age and perception of the health implications of pica (correlation coefficient: 0.727, p-value: 0.000). These findings indicate a statistically significant relationship between age, knowledge of pica, attitudes toward the practice, and awareness of its health risks.

Table 9: Table showing the Correlation between Marital Status, Knowledge of Pica (KP), Attitude to Pica (AP), and Perception of Health Implications of Pica (PHI).

	Marital Status	KP	AP	HIP
Marital Status	1.000	.441**	.453**	.416**
KP		1.000	.978**	.977**
AP			1.000	.968**
HIP				1.000

**. Correlation is significant at the 0.01 level (2-tailed).

Statement of Hypothesis

H_0: There is no significant relationship between marital status, knowledge of pica, attitude to pica and perception of health implications of pica.

H_1: There is a significant relationship between marital status, knowledge of pica, attitude to pica and perception of health implications of pica.

Table 9 examines the correlation between marital status and knowledge of pica. At a 0.01 significance level, the correlation coefficient is 0.441, with a p-value of 0.000, indicating statistical significance. A fairly strong correlation is also observed between marital status and attitudes toward pica (correlation coefficient: 0.453, p-value: 0.000). Similarly, the correlation between marital status and awareness of pica's health implications is moderate but significant (correlation coefficient: 0.416, p-value: 0.000). These findings suggest that marital status has a statistically significant impact on knowledge, attitudes, and awareness of pica's health effects.

Table 10: Table showing the Correlation between Education Qualification, Knowledge of pica (KP), Attitude to Pica (AP), and Perception of Health implications of Pica (PHI).

	Education Qualification	KP	AP	HIP
Education Qualification	1.000	.965**	.957**	.976**
KP		1.000	.978**	.977**
AP			1.000	.968**
HIP				1.000

Statement of Hypothesis

H_0: There is no significant relationship between education qualification, knowledge of pica, attitude to pica, and perception of health implications of pica.

H_1: There is a significant relationship between education qualification, knowledge of pica, attitude to pica, and perception of health implications of pica.

Table 10 presents correlation data on educational qualification and knowledge of pica. At a 0.01 significance level, the correlation coefficient is 0.965, with a p-value of 0.000, indicating a very strong statistical relationship. A similarly strong correlation exists between educational qualification and attitude toward pica (correlation coefficient: 0.957, p-value: 0.000). Additionally, there is a strong correlation between educational qualification and perception of pica's health implications (correlation coefficient: 0.976, p-value: 0.000). These findings suggest that higher education levels are associated with increased knowledge of pica, a more informed attitude toward the practice, and greater awareness of its potential health risks.

DISCUSSION OF FINDINGS

Regarding prevalence, this study found a pica prevalence rate of 48.50% in North-Central Nigeria. This is higher than the prevalence rate in North-Eastern Nigeria (38.9%; Aminu et al., 2019) but lower than rates reported in South-Eastern Nigeria (90.4%; Ekwenchi et al., 2015), South-South Nigeria (62.8%; Anthonia, 2019), and North-Western Nigeria (50%; Sule & Madugu, 2001).

Age was found to significantly impact respondents' knowledge and attitudes toward pica, implying that as women grow older, their awareness and perceptions of the practice evolve. Marital status also played a significant role, as 93% of respondents were married, suggesting a possible link between marital status and knowledge of pica. Additionally, education was a strong influencing factor, indicating that higher levels of education correlate with greater knowledge and awareness of pica's health implications, which in turn affects attitudes toward its practice.

Demographic factors such as age, education, and marital status were found to significantly influence knowledge, attitudes, and behaviours related to pica. All null hypotheses were rejected, leading to the acceptance of the alternative hypotheses. This means that the tested relationships were statistically significant, confirming strong correlations between age, marital status, education level, knowledge of pica, attitudes toward the practice, and perceptions of its health effects.

Conclusion

Pica is a practice that cuts across nations and races. The study has established that women in North-central Nigeria also indulge in pica practice. However, the prevalence rate is low compared with some other geo-political zones in the country. The need for education and maturity before marriage has also been established since there is a significant relationship between the level of education and age and the knowledge and practice of pica.

Recommendations

The researchers make the following recommendations: firstly, there should be deliberate and concerted enlightenment across media outlets in North-central Nigeria about pica disorder. Secondly, young women should be allowed to acquire tertiary-level education before marriage. Thirdly, health workers should, among other duties, educate women on the health implications of pica practice. Fourthly, more studies should be carried out about pica effects on pregnancy and the health of women.

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