Pica Practice among Childbearing Women in Kwara State Nigeria

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Abstract: **Pica is a phenomenon that is common among childbearing women and children. This study however, investigated the knowledge, awareness and practice among childbearing women in Kwara State, Nigeria. This study was designed as a descriptive survey with the questionnaire as instrument for data collection. Anchored on the knowledge, attitude and practice (KAP) model, it studied 400 childbearing women in Kwara State. The findings indicate that 55% of the women had knowledge of pica while 48.50% had experienced pica practice. The major period of pica practice was during pregnancy (59.5%). The study recommends sensitization of women to the pica practice and the need to take steps to minimize the rate because of the dangers it poses to a pregnant woman and her unborn child.**

Keywords: **pica, childbearing, disorder, health risk**

I. INTRODUCTION

In the world today, there are several challenges confronting mankind. The health challenge, however, seems to be the most persistent. One such health-related challenge is pica disorder. Pica disorder is a health risk that is affecting the childbearing population, especially women during pregnancy. This disorder has not gained much attention like other health-related challenges such as HIV/AIDs, breast and ovarian cancer, tuberculosis, malaria, etcetera. Pica which is also described as a corrupt appetite derives from "magpie," a Latin word that refers to a species of bird that feeds on anything in sight. Pica is associated with the "manifestation of false or craving appetite and deliberate ingestion of bizarre selection of foods, non-nutritive substances, and non-food items (Parry-Jones, 1991). Those believed to be at high risk of pica disorder are pregnant women and unborn child whose life is endangered as a result of the would-be mother's strange craving and feeding (Singh, 2013; Parry-Jones & Parry-Jones, 1992).

Pica disorder represents a real health risk ranging from minor disorders to some severe health conditions (Encyclopedia of Mental Disorders, 2015; Singh, 2013; Parry-Jones & Parry-Jones, 1992). American Psychiatric Association (1994) describes pica as eating characterized by the persistent ingestion of non-nutritive substances for at least one month, at an age when the behaviour is considered inappropriate. Encyclopedia of Mental Disorders (2015) describes the health risks associated with pica such as lead poisoning, perforation of bowels and infectious diseases, depending on the substance ingested. Gastric pain may result from the eating of sand or

soil while chewing ice blocks, results in abnormal wearing of the teeth, and lead consumption can lead to severe consequences such as mental retardation and kidney damage. Pica is not a recent phenomenon as it has been recognized since the early days of man and among ethnic groups across the globe in both primitive and modern cultures (Singh, 2013). This disorder is often not reported or underreported. Women especially pregnant ones may feel embarrassed to admit these unusual eating habits; thereby hiding such from their physicians. Little wonder Bhatia and Kaur's (2014) submission that the exact prevalence of pica is underreported. Pica disorder, though puzzling (Singh, 2013) seems to be neglected among researchers in our clime as the focus has always been on other areas of reproductive health. This situation, therefore, becomes very worrisome as poor knowledge of pica disorder and its implications would make women of childbearing age more vulnerable to the disorder.

To raise awareness and seek control of the practice, measures have been put in place. One such measure is health communication. According to Centre for Disease Control and Prevention (2015), research into health communication seeks to refine communication strategies to inform individuals about ways to enhance health or avoid certain health risks. The need, therefore, arises for proper awareness and knowledge among this category of individuals which will place them in good stead for healthy choices and practices vis-à-vis pica disorder.

Research Objectives

Pica practice in Kwara State seems to have been understudied as there was no documentary evidence; hence, its prevalence in the state remains unverified. This study, therefore, was aimed at identifying the knowledge, awareness and attitude of childbearing women in Kwara State of Nigeria to the incidence of pica. Specifically, the objectives include:

1. To determine the level of knowledge and awareness of pica disorder associated with pregnancy among childbearing women in Kwara State
2. To find out the attitude of childbearing women toward pica
3. To unveil the period in the lives of these childbearing women when pica practice is most pronounced

Research Questions

Based on the objectives, the following questions were investigated in this study:

1. What is the level of knowledge and awareness of pica disorder associated with pregnancy among childbearing women in Kwara State?
2. What is the attitude of childbearing women in Kwara State to pica?
3. What stage/period in life do most childbearing women in Kwara State practice pica?

Delimitation of the study

This study covers only childbearing women in Kwara State. The study centred on the level of knowledge and awareness about pica practice among childbearing women. It targeted pregnant women who attend antenatal clinics in government-owned General Hospitals (GHs). It further looked at their attitude to pica disorder.

II. LITERATURE REVIEW

It is common knowledge that women especially during pregnancy usually exhibit some sort of strange idiosyncrasies. Some of which sometimes are difficult to explain especially to a layperson. Such strange behaviours include craving and eating uncommon and often, unhealthy substances such as earth (soil), chalk, charcoal, paper, ice-block etcetera.

The concept of Pica

Pica is generally described as an unusual craving for non-consumables, non-food items, and or an instance of corrupt appetite. Pica derives from the Latin word for "magpie", which is a species of bird that feeds on anything that comes its way. In other words, magpies do not discriminate about what they consume. According to Parry-Jones (1991), pica is associated with instances and depiction of a craving appetite. This is often manifested in the deliberate ingestion of bizarre selection of foods, non-nutritive substances and non-food items. It is a feeding disorder in which the individual has a craving for inedible substances such as sand, paper, charcoal, wood, paste, clay, and chalk, among others.

The American Psychiatric Association (1994) describes pica as a feeding disorder that is characterised by the constant ingestion of non-nutritive substances for upward of one month and beyond at an age considered awkward for such behaviour. Although pica is often associated with disorderly food behaviour, some other scholars seem to have divergent views as they see it as a behaviour that is predicated on the interaction of biological, psychological, and environmental factors (Gupta & Gupta, 2005; Bhatia & Singhal, 2012).

Pica practice generally involves eating various substances. Thirty-six such substances were identified by Danford and Huber (1982). Some of the substances are food while others are non-food substances. Their classifications include: geomelophagia (raw potatoes), amylophagia (starch),

pagophagia (ice), emetophagia (vomit), coprophagia (faeces), mucophagia (mucus), hyalophagia (glass), lithophagia (stones), trichophagia (hair), urophagia (urine), geophagia (dirt, soil, clay) and xylophagia. Others are chalk, vinegar, grass, leather, baby powder, baking soda, cloth, coffee grounds, crayons, detergents, insects, newspaper, pencils, soap, string, toilet tissue, hair, animal droppings, pebbles, and many others (Bhatia & Kaur, 2014; Mensah, Twumasi, Amenawonyo, Larbie & Baffo, 2010; Danford & Huber, 1982; Parry-Jones, 1991; Parry-Jones & Parry-Jones, 1992).

Causes of Pica

The practice of pica dates back to antiquity. It has been noted to be a practice that dates back to the time of Greek civilization about 40 BC when clay was used in the treatment of diseases (Woywodt, 2002). A major factor responsible for the lack of knowledge about the cause and prevalence of pica practice especially in Africa is underreporting (Ali, 2001; Bhatia & Kaur, 2014). Ogallo (2008) avers that the causes of pica have eluded researchers since it is hardly disclosed by those who indulge in it. Pica is often associated with depression, developmental disorders, anxiety, and high-stress levels. Researchers and medical experts have identified some factors that trigger pica practice including iron and zinc deficiency, especially during pregnancy, sexual frustration, digestive disorders and cosmetic reasons (Khan & Tisman, 2010; Parry-Jones & Parry-Jones, 1992).

Effects of Pica

Pica practice is noted to have various and varied effects on those who indulge in it. Some of which include changes in the soft and hard tissues of the oral cavity. This can in turn lead to ulcerations and pulpal pain (Nayak, Kini, Shetty, Rao, Kashyap, & Bhandarkar, 2017). It is noted to also interfere with the absorption of some vital dietary nutritional substances. Pica practice is also associated with the shortage of blood in the body (anemia) and zinc and iron deficiency syndrome. Other effects include lead poisoning, gastrointestinal and dental infestations, constipation, tooth decay, abrasion, and abfraction (Barker, 2005; Johnson, Shynett, Dosch, & Paulson, 2007; Ashcroft & Milosevic, 2007; Khan & Tisman, 2010).

III. EMPIRICAL REVIEW

In a study of 422 women aged 11-45 who were attending Abubakar Tafawa Balewa University Teaching Hospital Bauchi State on the prevalence of pica among the pregnant women who were attending the antenatal clinic, the prevalence rate of pica practice was 38.9%. Out of this number, 14.7% craved sand while 18.7% craved ice. It was found that most of the women who practiced pica had a low level of education. The period of pica practice was mainly in the noon and evenings (Aminu, Mohammed, Muhammed, Abdulrazak, & Chinedu, 2019).

In a study that centred on the prevalence of pica practice among women in Zaria; 50% of the women had practiced

pica. The survey employed a structured questionnaire for data collection, administered within two weeks to mothers who were newly delivered in Ahmadu Bello University Teaching Hospital Zaria, Kaduna State. The researchers among other things recommended the need to raise the awareness level of women concerning pica disorder (Sule & Madugu, 2001).

In a survey of 400 antenatal attending women across three major cities in Anambra State; Awka, Nnewi, and Onitsha, the study findings indicate that 90.4% out of the total sampled women had experienced pica during pregnancy. The level of awareness of the danger of pica to a pregnant woman's health was however low, as only 23% were found to be aware. The study also found that 69.5% of the women who experienced pica did not seek medical advice for solving the problem. On the health risk of pica on their unborn baby, awareness level was also found to be low as only 29% of the respondents were informed about the danger (Ekwenchi, Duru, Ononiwu & Ezeigbo, 2015).

In a study by Mortazavi and Mohammadi (2003) in Zahedan, the capital of Sistan and Baluchestan Province in Iran among 560 pregnant women who were attending various health centres, findings indicate that pica prevalence among the women was 15.5%. 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.

In a cross-sectional quantitative study in Ghana by Abu, van den Berg, Raubenheimer, and Louw (2017), pica was reported to have been practiced by 26.6% of the women during pregnancy. Their major craving was for soil/clay (89.1%). the study was conducted in two randomly selected districts in Northern Ghana. The study however involves mothers and their young children. Regarding the children, 91.7% were reported to have craved and or ingested soil/clay/dust.

In a similar study in Kumasi Ghana on the prevalence of pica among pregnant women in Kumasi, the various forms of pica among them, the effect of education, and place of residence on the practice of pica, findings indicate 47% of the pregnant women practice pica. 17.4% of the women identified a close relation and also practiced pica. The findings also showed that the level of education and age did not significantly affect the practice of pica (Mensah, Twumasi, Amenawonyo, Larbie, & Baffo, 2010).

In a study in Tanzania that examined the association of eating earth, soil, or clay (geophagy) with anemia and helminth infection among 971 HIV-positive pregnant women, the findings showed that 29% of the pregnant women regularly consumed soil and Ascarislumbricoides infection was associated with geophagy (Kawai, Saathoff, Antelman, Msamanga & Fawzi, 2009).

In a study in Nairobi Kenya with the objectives of establishing the prevalence of pica among women that attend Pumwani Maternity Hospital, Nairobi, Kenya, and the most commonly ingested substance and frequency of pica practice, findings indicated that 74 of the participants reported pica practice on a daily basis. Most women who reported pica also experienced strong cravings prior to ingestion of pica items, i.e. childhood pica, pica before pregnancy, pica in a previous pregnancy, and a history of pica in family members and others in the community (Ngozi, 2008).

Theoretical Framework

This study is underpinned by the knowledge, attitude, and practice model (KAP). This model explores and analyzes a particular group of individuals as they relate to a given phenomenon. It seeks to identify their response to a stimulus, their level of knowledge, and their practice within the group or community to which they belong. This stimulus or phenomenon in the context of this study is pica. Felix and Guntt (2000) aver that the knowledge, attitude and practice model (KAP) unveils what a given people feel, know and act towards a given phenomenon. This presupposes that when people, a given community or group is highly knowledgeable about a thing, they often exhibit the expected response unlike when their level of knowledge is limited or low. Attitudes are not constant. Knowledge has a great influence to one's attitude, response and or practice regarding issue(s) of immediate concern. Therefore, a high level of knowledge about pica would invariably affect how childbearing women respond to it. In other words, knowledge of pica affects their pica practice and attitude towards even others who are affected either directly or indirectly by the pica disorder.

An understanding of one's or group's level of knowledge including their attitude and practice will ensure a heightened awareness or consciousness and as such, will allow programmes to be appropriately tailed to their needs (Felix & Guntt, 2000). This study, therefore, seeks to unveil the level of knowledge and explore the consciousness of the childbearing women in Kwara state to pica and their response (attitude) towards it. Thus, the KAP model is deemed apt for this study.

IV. AREA OF THE STUDY

The study was conducted in Kwara State. The State of Harmony-Kwara State was created on 27 May 1967. The state was created by the then Military Head of State, General Yakubu Gowon. Kwara State came into being when the four regions that constituted the Federation of Nigeria were split into 12 states. Kwara (though initially named West Central State) at its creation was made up of the former Kabba and Ilorin provinces of the then Northern Region of Nigeria. Kwara State has Ilorin as its capital. It is located in the North-central geopolitical zone of Nigeria. Its total land mass is 36,825 km2 (14,218 sq mi). Kwara State is one of the 36 states in Nigeria. It shares boundaries with Kogi State to the east, Niger State to the north, Ekiti State to the south, and Osun State to the west. Kwara State has a total population of Two million, Three Hundred and Sixty-Five Thousand, Three Hundred and Fifty-Three (2,365,352) according to the 2006 National Population Census. Kwara State has 16 local

government areas (LGAs). The 16 Local Government Areas include Asa, Baruten, Edu, Ekiti, Ifelodun, Ilorin East, Ilorin South, Ilorin West, Irepodun, Isin, Kaiama, Moro, Offa, Oke Ero, Oyun, and Pategi.

There are various ethnic nationalities living in Kwara State such as Yoruba (the dominant ethnic group), Nupe, Fulani, Bariba, Busa, and Hausa. The economy of the state is based mainly on agriculture. Crops grown in the state include cocoa, kola nut, groundnut, sweet potatoes, and coffee among others. The state has important features such as the part of the River Niger flowing within the northern flanks into Lake Jebba. Other small rivers and rivulets include Oyun, Awun, Aluko, and Asa which flow in the interior of the state.

In terms of education, Kwara State has the highest number of tertiary institutions in North Central Nigeria. There are many public and privately owned educational institutions. Some of the government or publicly owned institutions include Kwara State University, Malete; the University of Ilorin; the Federal Polytechnic Offa; Kwara State Polytechnic; Kwara State College of Education Ilorin; College of Education Oro; Kwara State College of Education (Technical) Lafiagi; Nigeria Army School of Education; Nigerian Navy School of Health Science, Irra Road, Offa; Kwara State College of Health Technology Offa; National Open University of Nigeria study centres across different towns in the state. Privately owned institutions include Summit University; Al-Hikmah University; Landmark University; Crown Hill University; Thomas Adewumi University; Ahman Pategi University and the University of Offa. Others are the Polytechnic Igbo Owu; Lens Polytechnic; International Aviation College, Ilorin; Pan-African College of Health Technology; Graceland Polytechnic; College of Education Ilemona; Muhyideen College of Education; Kinsey College of Education, Ilorin; Imam Hamzat College of Education; ECWA College of Education; College of Education Offa; Nana Aisha College of Education; Adesina College of Education; Pan African College of Education and Moje College of Education Erin-Ile.

Population and Sample size

The population for this study is One Million, One Hundred and Seventy-One Thousand, Five Hundred and Seventy (1,171,570) women in Kwara State (NPC, 2006). This population however includes all manners and ages of women such as young and aged women. To arrive at the sample size for the study, the researchers adopted the Taro Yamene sample size determination technique. The formula is hereunder presented:

According to Yamane (1967),

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

Where: n = Sample Size

N = Population of the study

1 = constant

e = error margin allowed (i.e. 0.05)

$$n = \frac{1171570}{1 + 1171570 (0.05)^2}$$

$$n = \frac{1171570}{1 + 1171570 (0.0025)}$$

$$n = \frac{1171570}{1 + 2,928.925}$$

$$n = \frac{1171570}{2,929.925}$$

n = 399.86 which is approximately, 400. Thus, the sample size for this study is 400 childbearing women.

Administration and Collection of Data

This study was designed as a descriptive survey with the questionnaire as an instrument for data collection. Nine research assistants (RAs) were recruited and trained on the methods and objectives of the study. 400 copies of the questionnaire were administered one-on-one basis (other administered) to the 400 respondents to ensure uniformity in the interpretation of concepts. The research assistants (RAs) are literate both in English and Yoruba. Most of the questionnaire respondents had the questions explained and interpreted in Yoruba by the RAs who ticked their choice of answers in the structured questionnaire accordingly. Those who are literate and yet unable to fill the questionnaire as a result of discomfort because of their pregnant state and stage also had their answers ticked for them by the research assistants (RAs).

Sampling technique

This study adopted the multi-stage sampling technique. Ali (2006) observed that a multi-stage sampling technique is a sampling technique that involves two or more stages of sample selection in a study. Thus, the first stage of the sampling process of this study was the systematic stratification of all the General Hospitals in Kwara State using the variable of location. In this case, the general hospitals were stratified into the Local Government Areas where they are located. In other words, all the Local Government Areas

(LGAs) were first listed alongside the General Hospitals located in them. These were placed in a sampling frame.

The second stage involved the selection of four General Hospitals out of the fourteen General Hospitals located in Kwara State. Four General Hospitals were selected using purposive sampling technique. Consequently, from Ilorin-West LGA, General Hospital Ilorin was selected. Offa LGA had General Hospital Offa selected; from Irepodun LGA, General Hospital Omu-Aran was selected while Oyun LGA had General Hospital Erin-Ile selected. In selecting the respondents, simple random sampling technique was employed.

The selected GHs and their corresponding LGAs are presented below:

Sampling Frame of selected LGAs & GHs

| S/N	LOCAL GOVERNMENT AREA (LGA)	LOCATION OF THE GENERAL HOSPITAL
1	OYUN	General Hospital Erin-Ile, Elerin way
2	ILORIN/WEST	General Hospital, Ilorin, AbdulAzeez Attah Road, Ilorin
3	IREPODUN	General Hospital Omu-Aran, 65, Danel Bamigboye RD Omu-Aran
4	Offa	General Hospital Offa, No 1 Atan-Oba off Ibrahim Taiwo Road Offa

Data Presentation and Analysis

The data generated from this study were analysed using descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) version 25.0. The results are presented via graphic illustrations which entail the use of bar charts.

Figure 1: Age Bracket of the Respondents
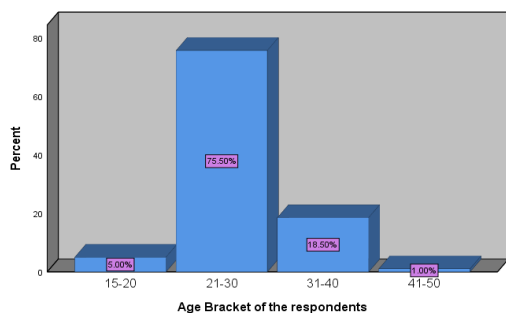
From fig. 1, we observed that 75.5% of the respondents fall within the age bracket of 21-30 followed by those of in the age bracket of 31-40 (18.5%). 5% of the respondents fall in the age bracket of 15-20 while only 1% of the respondents fall in 41-50 years with none of the respondents observed to be 50 years and above. This observation suggests that the study target population that is; women of childbearing age were indeed the ones sampled in the survey.

Fig. 2: Chart showing percentage distribution of the respondents Marital Status
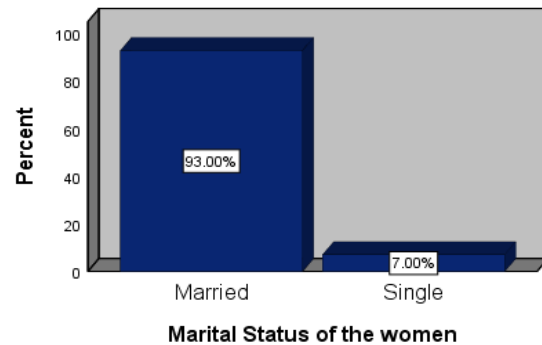
From fig. 2, we observed that 93% of the respondents are married while 7% are single. None was observed to be divorced or cohabiting; thus, their percentage is 0. This however suggests that the information obtained about pica was from experienced respondents who are mostly married women.

Aside from the demographic analysis above, the analyses below are specifically done to address the research questions in this study. The research questions were recalled and the responses are presented below:

RQ 1: What is the level of knowledge and awareness of pica disorder associated with pregnancy among childbearing women in Kwara State?

Fig. 3: knowledge of pica practice among childbearing women
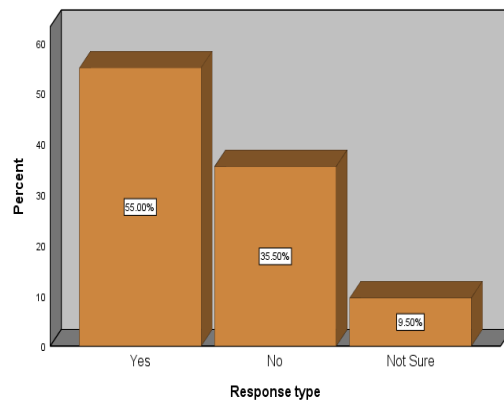
From fig. 3, it was found that 55% of the respondents had knowledge about pica; hence, they agreed that pregnant women often crave (hunger) for non-food items such as chalk, ice-block, charcoal, sand, paper, wood, etc while 35.5% of the women said no. Only 9.5% of the women were not sure if pregnant women do crave non-food items. This is an indication that it is not compulsory that every pregnant woman must practice pica.

Fig. 4: Experience of pica among pregnant women
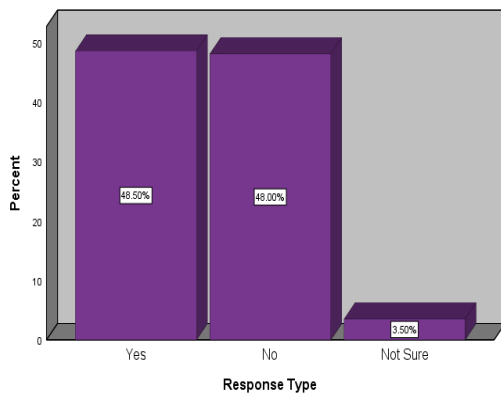
from fig. 4, it was observed that 48.50% of the women agreed that they had practiced pica while 48.00% said no. Only 3.50% of the women said they were not sure about having a hunger for non-food items. This suggests that hunger for non-food items exists among pregnant women.

**RQ 2:** What is the attitude of childbearing women in Kwara state to pica?

To provide answers to the above question, two tables addressing it are presented and analyzed.

Fig. 5: Attitude to pica among childbearing women in Kwara State
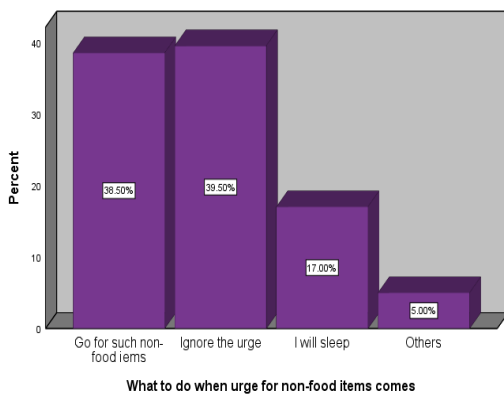
From fig. 5, it was observed that 38.50% of the women would give in to pica when the urge for non-food items comes. 39.50% of them would ignore the urge while 17.00% of the women would prefer to sleep just to avoid the temptation of eating non–food items whenever the urge comes. 5.00% of the women could not specify what they would do each time the urge for non-food items comes. From the findings, it is obvious that the health implication of pica practice is lacking among the women hence, pica indulgence.

Fig. 6: Report status of pregnant women to health workers/Doctors regarding Pica
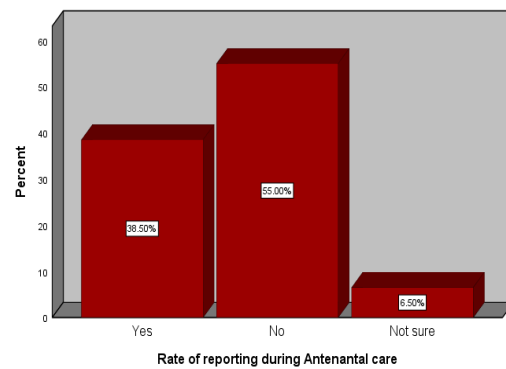
From fig. 6, it was observed that 38.50% of the women reported their craving experience for non-food items to their doctors or health workers attending to them in the health facilities. While 55.00% said they did not report their non-food item cravings to their doctors. 6.50% were not sure whether or not they reported such an experience. This is in line with the findings of Ekwenchi et al. (2015) that most women are not aware of the effect of pica disorder on their health and that of their unborn babies. If there were to be aware, they would not hesitate to report their cravings and pica indulgence.

RQ 3: What stage/period in life do most childbearing women practice pica?

Fig. 7: Percentage distribution of preferred period for non-food items among women
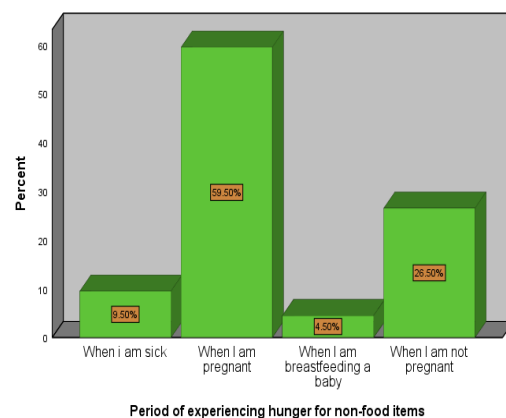
From fig. 8, it was observed that these women experienced hunger for non-food items at different periods peculiar to them. 59.5% experienced pica during pregnancy. 9.50% said their craving for non-food items was when they were sick while 4.50% said it was when they were breastfeeding. The remaining 26.5% of the women said their own craving was not during the pregnancy period. In addition, we could see

that the women indeed battle with eating of non-food items during pregnancy.

V. DISCUSSION OF FINDINGS

The findings of the study indicate that 55% of the respondents had knowledge about pica. Of the entire respondents, 48.5% agreed that they practiced pica during pregnancy. This agrees with the findings of other researchers in Africa and Nigeria in particular that pregnant women indulge in pica (Sule & Madugu, 2001; Ngozi, 2008; Kawai et al., 2009; Mensah et al., 2010; Ekwenchi et al., 2015; Abu et al., 2017; Aminu et al., 2019). The implication of the above is that pica practice is also a reality in Kwara State. Many reasons have often been adduced to the causes of pica practice among pregnant women. Some of these include deficiencies of some vital elements, depression, anxiety, heightened stress levels, digestive and sex-related issues, among others (Parry-Jones & Parry-Jones, 1992; Johnson et al., 2007; Khan & Tisman, 2010; Nayak et al., 2017). It was also deduced from the study that the pica prevalence of 48.50% in Kwara State is lower than those of Anambra (90.4%; Ekwenchi et al., 2015) and Kaduna states (50%; Sule & Madugu, 2001) while higher than the rate of prevalence in Bauchi (38.9%; Aminu et al., 2019). It was also observed that the main period of pica practice by women is during pregnancy (59.5%). This is in tandem with the findings of several researchers on the subject matter (Ali, 2001; Sule & Madugu, 2001; Ogallo, 2008; Young, 2010; Singh, 2013; Bhatia & Kaur, 2014; Ekwenchi et al., 2015; Abu et al., 2017; Aminu et al., 2019). From the findings, it is obvious that the health implication of pica practice is lacking among the women hence, pica indulgence and non-report of their pica experience to doctors and health workers during their antenatal visits. This is seen as a negative response and attitude to pica.

VI. CONCLUSION

The study noted that while several childbearing women in Kwara State practice pica during pregnancy, the majority of them did not see the need to report their unusual cravings to health authorities. Pica being a disorder has health implications for the pregnant woman and her unborn child. This study, therefore, has raised the level of awareness and brought to the front burner the need for health consciousness among childbearing women in the state.

VII. RECOMMENDATIONS

Arising from the findings of this study are the following recommendations:

- ❖ Childbearing women who indulge in pica practice should report the matter to medical personnel during their antenatal visits.
- ❖ Level of awareness should be heightened in the interest of all especially the childbearing women.
- ❖ Childbearing women should imbibe a positive attitude towards matters that concern their health especially when pregnant without any feeling of guilt.
- ❖ There should be sensitization of women to the pica practice and the need to take steps to minimize the rate because of the dangers it poses to a pregnant woman and her unborn child.

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