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## Knowledge, practice and prevalence of pica among pregnant women in Ikenne and Sagamu local government areas, Ogun

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### Abstract

The study assessed the knowledge, practice and prevalence of pica behavior in pregnant women in Ikenne and Sagamu local government areas, Ogun state. A total of 149 pregnant women who attend selected primary health care centres in the local government areas. A structured questionnaire was used to collect data on their knowledge and practice of pica. SPSS version 20.0 was used to analyze the data. The results revealed that 43.6% of the respondents were between the ages of 21-30 and 84.6% of them were married. At least 30.9% had secondary school education, Over half (63.8%) of the respondents were Yoruba. 46.3% of the respondents were in their second trimester, the respondents had pregnancy symptoms such as nausea, vomiting, headache, loss of appetite, dizziness and spitting. 63.1% of the respondents craved non-food items while 58.4% of them ate non-food items. 59.8% of the respondents practice pica with about 49% practicing pagophagia (ice), 10.1% practice geophagia (nzu-white sand). About 16.1% said they ate non-food items because they craved it while 19.5% take it for satisfaction. 40.9% of them take these substances every other day. Almost 38.3% practiced pica during childhood and adolescence and 28.2% practiced during previous pregnancies. While 10.1% of them feel uncomfortable if they do not take the non-food items, 6.0% feel both sick and uncomfortable if they do not take the non-food items. It was discovered from this study that more than half of the respondents practice pica most especially pagophagia and geophagia even though almost all the respondents do not know what pica is and if there are negative effects associated with the practice of pica.

**Keywords:** Pica; Pagophagia; Geophagia; Pregnancy; Non-food items

## Introduction

Pica is the compulsive or pathological craving and ingestion of “non-food” (Blinder *et al.*, 2008; Placek and Hagen 2013). The term pica comes from the Latin word for magpie, a bird that is reputed because of its unusual eating behaviors. It is known to eat almost everything and shows an indiscriminate preference for foods and non-foods (Thyer and Wodarski 2007). Pica is an eating disorder in which non nutritional objects are frequently eaten and may have serious side effects on both the mother and neonate (Khoushabi *et al.*, 2014). Pica is a medical disorder identified with the pathological act of eating non-food items (Callahan, 2003). Generally, it is defined as the repeated ingestion of items with no nutritive value over a continuous period of time (Khoushabi *et al.*, 2014). Pregnancy is a very vital stage in the human life cycle which in the long run affects the wellbeing of future generations and during this stage, women are faced with a lot of challenges such as pica, food cravings and or food aversions (Agarwal, 2017). Proper nutrition is necessary during pregnancy because the health and nutritional status of the mother and foetus depend on it. Most pregnant women have no idea what pica means or what its side effects are, yet they practice it. Evidence from studies carried out in different parts of the world has established pica practices during pregnancy to be a worldwide occurrence and the type of substances consumed to vary in different parts of the world (Lin, Temple, *et al.*, 2016). Food provides all nutrients for growth, survival and reproduction. In other words, understanding the knowledge of pica is important in ensuring a mother and foetus attains adequate health and nutrition (Khoushabi *et al.*, 2014). There are many indications that pica poses health risks associated with malnutrition, sanitation, and personal injury-all among the usual concerns of public health. As a public health and nutritional problem, it is most timely to examine these issues of concern (Lacey, 1990). The study therefore assessed the knowledge, practice and prevalence of pica behavior in pregnant women and to investigate substances that are commonly consumed by pregnant women who practice pica in Ikenne and Sagamu local government areas, Ogun state.

## Methodology

The study was a cross-sectional and descriptive survey. It was carried out in Ogun State, Nigeria. One of the thirty-six states in Nigeria, Ogun state is a

Yoruba speaking state which is located in the South-Western region of the country. The study population involved pregnant women in Ikenne and Sagamu local government areas who attend antenatal clinics of selected primary health centers in these local government areas of Ogun state. These health centers are; Community Hospital, Ilishan, Ipoji Community Health Centre, Sagamu, Batoro Health Centre, Sagamu and; Sagamu Local Government Primary Health Centre, Ajaka Oja-Awolowo, Sagamu

The sample size of the study was calculated using Taro Yamane formular

Where  $n$  is the sample size,  $N$  is the population size and  $e$  is the level of precision (0.05)

**Data collection:** A semi structured questionnaire was adopted to collect data from pregnant women who were randomly selected for the study from the health facilities in Ilishan and Sagamu. A semi-structured questionnaire from was used to get the necessary information from the respondents. The questionnaire inquired about;

The socio-demographic background which includes the age, marital status, level of education, religion, ethnicity amongst others, the knowledge of pica, the practice of pica, commonly consumed substances and frequency of consumption.

**Statistical analysis:** The data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0, while the data generated were analyzed using descriptive statistics to obtain frequencies and percentages.

## Results

Table 1 shows the demographic characteristics of the respondents who took part in this study. All the respondents were pregnant women who attended selected antenatal clinics in primary health centres in Ikenne and Sagamu local government areas in Ogun State. Almost half (43.6%) of the women fell between the age bracket of (21-30) years, 84.6% of the respondents were married, 61.1% were Christians, more than half (63.8%) of the respondents were Yoruba, 31.5% of the respondents were traders.

Maternal pregnancy history is shown in Table 2. 32.2% of the respondents started attending antenatal clinics in the third month of their pregnancy and 26.2% of them had had two full term pregnancies. As at the time of the study, 24.8% had two children, 46.3% of the respondents were in their second trimester and they had pregnancy symptoms such as nausea, vomiting, headache, loss of appetite, dizziness and spitting.

Table 3 outlines the knowledge of pica. Majority (92.6%) of the respondents claimed not to have heard about pica, 58.4% of the respondents did not give a response as to why they think women practice pica and

over half of the respondents (64.4%) said they did not know whether pica has any negative effect on pregnancies. Table 4 shows the practice of pica which reflects that majority (63.1%) of the respondents crave non-food items, 58.4% of the respondents eat non-food items and 40.9% of the respondents consume these items every other day. Almost half of the respondents (46.3%) were practicing pica during childhood and adolescence while 28.2% of them practiced pica in their previous pregnancies. About 29.5% of the respondents said that nothing happens to them when they don't take the non-food items.

**Table 1: Demographic characteristics of respondents**

Item	Variables	Frequency(no)	Percentage (%)
Age(years)	15-20		12.8
	21-30		43.6
	31-40		36.9
	41-49		6.7
	Total		100.0
Marital status	No response		0.7
	Single		12.8
	Married		84.6
	Divorced		2.0
	Total		100.0
Highest level of Education	No response		4.0
	None		17.4
	Primary school		26.8
	Secondary school		30.9
	Tertiary institution		20.8
	Total		100.0
Religious affiliation	No response		2.0
	Christianity		61.1
	Islamic		35.6
	Traditional		1.3
	Total		100.0
Ethnicity	No response		0.7
	Yoruba		63.8
	Igbo		18.1
	Hausa		10.7
	Other		6.7
	Total		100.0
Occupation	No response		3.4
	Trader		31.5
	Artisan		26.8
	Civil servant		13.4
	Others		24.8
	Total		100.0

**Table 2: Maternal Pregnancy History of respondents**

Item	Variable	Frequency (no)	Percentage (%)
Month of starting antenatal	No response	4	
	First	6	
	Second	25	
	Third	48	
	Fourth	30	
	Fifth	12	
	Sixth	10	
	Seventh	13	
	Eighth	1	
	Total	149	
Number of full term pregnancies	None	39	
	One	15	
	Two	39	
	Three	31	
	Four	16	
	Five	7	
	Six	1	
	Seven	1	
	Total	149	
Number of children	No response	2	
	None	43	
	One	17	
	Two	37	
	Three	30	
	Four	14	
	Five and above	6	
	Total	149	
Present trimester	No response	6	
	First trimester	18	
	Second trimester	69	
	Third trimester	56	
	Total	149	

**Table 3: Maternal Pregnancy History of respondents contd.**

<b>Item</b>	<b>Variable</b>	<b>Frequency (no)</b>	<b>Percentage (%)</b>
Pregnancy symptoms of the respondents	No response	2	1.3
	None	29	19.5
	Nausea	2	1.3
	Vomiting	5	3.4
	Headache	1	0.7
	Loss of appetite	1	0.7
	Dizziness	1	0.7
	Spitting	2	1.3
	Others	6	4.0
	Two symptoms	38	25.5
	Three symptoms	41	27.5
	Four symptoms	12	8.1
	More than four symptoms	9	6.0
	Total	149	100.0

**Table 4: Knowledge of Pica of respondents**

<b>Item</b>	<b>Variables</b>	<b>Frequency(no)</b>	<b>Percentage (%)</b>
Awareness of pica	No response	9	6.0
	Yes	2	1.3
	No	138	92.6
	Total	149	100.0
Source of information about pica	No response	146	98.0
	At home	1	0.7
	Others	2	1.3
	Total	149	100.0
Perceived reason why women practice pica	No response	87	58.4
	Because of the taste of the substance	8	5.4
	Because of the smell of the substance	1	0.7
	To reduce stress		
	Cultural reasons	5	3.4
	Environmental reasons	9	6.0
	Others		
	Because of two reasons	5	3.4
	Because of three	25	16.8
	Total	8	5.4
Perceived negative effect on pregnancy	No response	1	0.7
	Yes	149	100.0
	No		
	I don't know	12	8.1
	Total	23	15.4
Negative effects of pica on pregnancy	No response	18	12.1
	Still birth	96	64.4
	Deformed baby	149	100.0
	I don't know	31	20.8
	Others	10	6.7
	Two effects	1	0.7
	Total	98	65.8
		1	0.7
	8	5.4	
	149	100.0	

**Table 5: Practice of Pica of respondents**

<b>Item</b>	<b>Variable</b>	<b>Frequency (no)</b>	<b>Percentage (%)</b>
Craving for any non-food item	No response	6	4.0
	Yes	94	63.1
	No	49	32.9
	Total	149	100.0
Consumption of any non-food item	No response	6	4.0
	Yes	87	58.4
	No	56	37.6
	Total	149	100.0
Non-food item do you consumed	No response	62	41.6
	Ice	62	49.0
	Nzu	11	10.1
	Millet	1	0.7
	I don't know	7	4.7
	More than one substance		
	Total	2	1.3
Non-food item eaten most frequently	No response		
	Ice	63	42.3
	Nzu	75	50.3
	I don't know	9	6.0
	Millet	1	0.7
	Total	1	0.7
Reason(s) for eating non-food items	No response		
	Because of the taste	64	43.0
	Because of the smell	1	0.7
	Copying other pregnant women	1	0.7
	To reduce nausea and vomiting	1	0.7
	Just craving for it	3	2.0
	I don't know	7	4.7
	Satisfaction	5	3.4
	Others	24	16.1
	Two reasons	1	0.7
	More than two reasons	29	19.5
	Total		
		13	18.7
	149	100.0	

**Table 5b: Practice of Pica of respondents Contd.**

<b>Item</b>	<b>Variables</b>	<b>Frequency(no)</b>	<b>Percentage (%)</b>
Frequency of consumption of the non-food item?	No response	65	43.6
	Once a day	6	4.0
	More than once a day		
	Once a week	12	8.1
	Every other day	4	2.7
	Others	61	40.9
	Total	149	100.0
Practice of pica before pregnancy	No response	60	40.3
	Yes	67	45.0
	No	22	14.8
	Total	149	100.0
Period of pica practice	No response	79	53.0
	During childhood	9	6.0
	During adolescence	3	2.0
	Previous pregnancy	1	0.7
	During childhood and adolescence	57	38.3
	Total	149	100.0
Practice of pica in previous pregnancies	No response	90	60.4
	Yes	42	28.2
	No	17	11.4
	Total	149	100.0
Consequence of not eating the pica substance	No response	68	45.6
	Nothing	44	29.5
	I feel sick	7	4.7
	I get depressed	1	0.7
	Feel hungry	1	0.7
	Feel uncomfortable	16	10.7
	Feel sick and uncomfortable	9	6.0
	More than two	3	2.0
	Total	149	100.0



Table 6: Correlation among the practice of pica, pregnancy symptom and the stage of pregnancy.

Variables	Pregnancy Symptom	Gestational period or stage of pregnancy
Practice of Pica	- 0.059	- 0.055

### Discussion

Pica practice is a common condition globally. The practice has evolved into a global public health concern and Nigeria is not left out. Several studies in most Western countries have shown that pregnant women are likely to engage in pica practice; these include studies conducted in areas like Canada (Corbett *et al.*, 2003). This study elaborates on the prevalence pica globally. The study which was carried out a study among 128 pregnant women from two rural communities in Canada and found out the prevalence of pica to be thirty-eight (38%) with African-American women reported to be practicing pica frequently than other ethnicities. Another study conducted in Kenya (Ngozi, 2008) showed that 74% pregnant women were practicing pica during pregnancy period and a study conducted in Ghana showed that 44.8%, 67.7% and 48% of pregnant women were practicing food aversion, food craving and pica respectively during (Koryo-Dabrah *et al.*, 2012). It was discovered from this study that 58.4% of the respondents practiced pica while 37.6% of them do not practice pica while the others did not give a response.

In Ghana, (Mensah *et al.*, 2010) pica is highly prevalent in pregnant women, with the predominant types being pagophagia and geophagia (Mensah *et al.*, 2010), It was found that 47% of pregnant women practiced various forms of pica with pagophagia being the highest (41.0%) and trichophagia being the lowest (3.7%). In this study, when asked what substances they consumed most frequently, half of the respondents 49% consumed ice, 10.1% consumed nzu (white chalk), 0.7% consumes millet, and others did not give a response.

Multiple factors drive the consumption of nonfood items [Placek and Hagen 2013] and this corroborates the findings of this study; as 0.7% of the respondents consumed these non-food items because of the smell, 0.7% because of the smell, 0.7% were copying other pregnant women, 2.05 took these non-food items to reduce nausea and vomiting, 4.7% just craved these items, 3.4% do not have any reason, 16.1% took these non-food items just to get satisfaction, 19.5% had two reasons while 18.7% had more than two reasons. In a

research (Ogallo, 2008) on pica and amylophagy, it was discovered that pica did not appear to occur in their respondents in the first trimester but was more frequent before pregnancy or after the first trimester. It had been stated (Mensah *et al.*, 2010) that there was no significant difference between the practice of pica and the gestational period. This corroborates my findings as there is no significant difference between the practice of pica and the stage of pregnancy.

Another research carried out by Callahan (2003) on perception and practices of pica among pregnant women in La Nkwatanang-madina Municipal of Ghana showed a relationship between symptom and pica practice unlike this research where there is no significant difference between pregnancy symptoms and the practice of pica.

### Conclusion

This study revealed that most of the respondents have no pre-knowledge of pica. Almost all the respondents do not know whether or not pica has any negative effects, neither do they know the negative effects of pica. Pregnant women eat white sand because of the smell and to reduce vomiting or because of cultural reasons. Those who eat ice do so because they feel hot, they crave for it or they just derive satisfaction from it. Most of the respondents that practice pica usually did so every other day. A few of them also practiced pica daily. It was also discovered from this study that more than half of the respondents practice pica; most especially phagophagia (ice) and geophagia (nzu-white sand).

### References

- Agarwal A., (2017). Pica- An Enigma of Malnutrition. *Journal of Nutritional Disorders and Therapy*, vol 7(issue 2).
- Blinder, B. J. Goodman S. L., Henderson P. (2008). An Update on Pica: Prevalence, Contributing Causes, and Treatment. *Psychiatric Times*, 25 (6), 1–12.
- Callahan, G. N. (2003). Eating dirt. *Emerging Infectious Diseases*, 9(8), 1016–1021.

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- Corbett, R. W., Ryan, C., and Weinrich, S. P. (2003). Pica in pregnancy: does it affect pregnancy outcomes? *The American Journal of Maternal Child Nursing*, 28(3), 183–189; quiz 190–191.
- Homme, J. (2016). Perception and Practices of Pica among Pregnant Women in the La Nkwantanag- Madina Municipal of Ghana. A dissertation submitted for the awards of Master of Science in Applied Health Social Sciences, University of Ghana.
- Khoushabi, F., Ahmadi, P., Shadan, M.R., Heydari, A., Miri, A., and Jamnejad, M. (2014). Pica Practices among Pregnant Women Are Associated with Lower Hemoglobin Levels and Pregnancy Outcome. *Open Journal of Obstetrics and Gynecology*, 04(11), 646–652.
- Koryo-Dabrah A, Christina A, Richard A (2012). Dietary Practices and Nutrient Intakes of Pregnant Women in Accra, Ghana. *Res. J. Biol. Sci.* 4(4):358-365.
- Lacey E.P., (1990) Broadening the perspective of pica: literature review. *Public Health Rep*: 105:29-35.
- Lin J., Temple L., *et al*, (2016). Pica during Pregnancy Mexican-born women: a formative study. *Maternal Child Nutrition*.
- Mensah, F. O., Twumasi, P., Amenawonyo, X. K., Larbie, C., & Jnr, a. K. B. (2010). Pica practice among pregnant women in the Kumasi metropolis of Ghana. *International Health*, 2(4), 282–286.
- Ngozi P.O. (2008). Pica practices of pregnant women in Nairobi, Kenya. *East Afr. Med Journal* 85 (2):72-79.
- Ogallo, I. O. (2008). Prevalence of Pica Practices and Associated Factors published thesis submitted for the awards of Bsc Degree in food science and dietetics, University of Nairobi, Kenya.
- Placek, C. D., & Hagen, E. H. (2013). A test of three hypotheses of pica and amylophagy among pregnant women in Tamil Nadu, India. *American Journal of Human Biology*, 25 (6), 803–813.
- Thyer, Bruce A. and Wodaski, John (2007). *Social Work in Mental Health: an evidenced based approach*. John Wiley and sons.