



## **Knowledge and Practice of Personal Hygiene and Factors affecting it among Pregnant Women attending Antenatal Clinic in a Teaching Hospital in Lagos State, Nigeria.**

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**Background:** Pregnancy can be seen as a period of considerable changes involving many processes in a woman's body systems. During this state, without proper understanding and practice of hygiene during pregnancy, the pregnant woman may face some risks which may be detrimental to her health and to the health of her unborn child. **Aim:** This study assessed the knowledge and practice of personal hygiene and factors influencing it among pregnant women attending the antenatal clinic in Lagos University Teaching Hospital, Idi- Araba, Lagos, Nigeria. **Methods and Materials:** The study adopted a descriptive cross-sectional research design. Self-structured questionnaires were used to elicit information from the respondents. One hundred and eighty-two (182) respondents formed the sample size. Variables were tested using Chi-square at  $p < 0.05$ . **Results:** Most of the respondents had good overall knowledge (98.3%) and good overall practice (87.5%) of personal hygiene. Lack of regular sources of clean water (82.4%), a distance of the house to the sources of water supply (72.1%) and inability to carry out home cleaning due to the weight of the pregnancy (54.6%) were the factors identified as influencing the practice of personal hygiene. There was a statistically significant relationship between the knowledge and practice of personal hygiene among the respondents ( $p = 0.004$ ,  $\chi^2 = 8.187$ ). **Conclusion:** The knowledge and practice of personal hygiene were good, however; the healthcare providers should give adequate health education on personal hygiene during ANC. Also, supports should be provided to resolve identified factors affecting personal hygiene practice during pregnancy.

**Keywords:** Antenatal clinic, Knowledge, Practice, Personal hygiene, pregnant women.

### **Introduction**

Personal hygiene is described as a condition of maintaining the cleanliness of one's body and clothing to preserve overall health and well-being. It includes activities related to the promotion of sanitary practices to oneself to prevent or minimize the spread of communicable diseases (Park, 2007). Personal hygiene aims to promote standards of personal cleanliness wherever people live. In

communities with poor hygiene, the proportion of mortality of children under five years of age may exceed 60% and there is a high incidence of water-borne diseases like diarrhoea and dysentery (Park, 2007). These indicate the need and importance of hygiene practice.

Hygiene is an old concept related to medicine, as well as to personal and professional care practices related to most aspects of living (Mazharu, 2012). Good hygienic practices, such as hand washing and the safe disposal of faeces are essential for maximizing the health benefits of safe water and sanitation facilities (Water Aid America, 2011). Evidence showed that when hygiene education accompanies the provision of water and sanitation, the number of deaths caused by diarrhoea diseases is reduced by an average of 65 percent. Hygiene education and promotion encourage people to replace their unsafe practices with simple and safe alternatives. Maintaining oral health during pregnancy has been recognized as an important public health issue worldwide (George, Shamin & Johnson 2011; Shub, Wong, Jennings, Swain & Newnham, 2009). Maternal mortality may occur when appropriate care is not taken before, during and after pregnancy. At the country level, Nigeria and India are estimated to account for over one-third of all maternal deaths worldwide in 2015, with approximate 58,000 maternal deaths (19%) and 45,000 maternal deaths (15%), respectively (WHO, 2015). Nigerian women face a lifetime risk of maternal death of 1 in 13 compared to 1 in 31 for sub-Saharan Africa as a whole (Hygiene and Environmental Module, 2019).

The most common cause of maternal death in Nigeria is postpartum haemorrhage which accounts for 23% of all maternal deaths, followed by infections following childbirth (puerperal sepsis) at 17% (Hygiene and Environmental Module, 2019). Women die as a result of complications that occur during and after pregnancy and childbirth, whereas most of these complications are often preventable or treatable (WHO, 2015). Personal hygiene practices that are of major concern to pregnant women are body hygiene, oral hygiene, hand hygiene, face hygiene, fingernail and toenail hygiene, hair hygiene and clothes hygiene. When these hygiene practices are ensured, this will prevent or reduce infection in pregnancy and complications can be curbed

indirectly, but if otherwise, maternal mortality may occur due to complications (WHO, 2015).

Infection during pregnancy is one of the leading causes of maternal mortality. It is an important, potentially preventable and yet often overlooked cause of maternal, fetal and neonatal mortality and morbidity (Nwambo, Nwankwo, Ilo, Ezenduka & Makachi, 2016). Approximately 109 Nigerian women die each day from preventable causes related to pregnancy and childbirth. Hormonal changes that occur during pregnancy increase the risk for both pregnancy and non-pregnancy related infections due to the physiological immunosuppression of the body system, which indicates the need for hygiene practices during and after pregnancy (Wekesah & Izugbara, 2017).

Pregnancy is often thought to be associated with increased susceptibility to infection. For example, during the 19th and early 20th centuries, pregnancy was thought to have a deleterious effect on the course of tuberculosis, so much that therapeutic abortion was recommended in pregnant women with tuberculosis (Sappenfield, Jamieson & Kourtis, 2013). This may be due to the various physiological, anatomical and biochemical changes that occur in the body of pregnant women during pregnancy especially the ones that have to do with the elevation of the hormone level, suppression of the immune system and may also account for the exaggeration in the excretion of waste body products such as sweat, urine, mucus, saliva etc. during pregnancy. Pregnancy is a special state for a woman which is associated with concurrent physiological and emotional changes. For instance, some pathogens have been reported in the oral cavity among pregnant women during this period (Annan & Nuamah, 2005). Shabbir, Masooma, Qazi and Younus (2015) stated that the pregnancy period may also predispose to unhealthy habits.

These habits may include: lethargy, lowered interest in self-care such as bathing, tooth

brushing, etc., likeness for particular types of food groups at the detriment of other essential food groups, frequent unhealthy snacking habits such as licking sweets to curb nausea, and pica.

Adam, Okeigbemen, Osagie and Oseghele (2017), reported that 83.2% were aware of oral hygiene, more than half (54.4%) of the pregnant women attending antenatal clinics in public secondary health facilities in Benin City Nigeria, the respondents had poor knowledge of oral health and this indicated a need for education on oral hygiene to antenatal clinic attendees in order to improve their knowledge and prevention of oral pathogens during the period of pregnancy (Adam, Okeigbemen, Osagie & Oseghele, 2017). Through the experience of countries that have drastically reduced their maternal mortality rates globally, much has been learned about the necessary policies and interventions that were put in place. Aside from the increasing knowledge on family planning methods, changing the position of women in their communities and improving access to quality (maternal) health care, it is obvious that access to clean water, sanitation and hygiene at home and in the clinic play a key role as well in reducing maternal mortality and morbidity in Sub-Sahara Africa (Songa, Machine & Rakuom, 2015).

Nun, Adesuyi & Olawoore (2018) reported that access to improved water, personal hygiene, and sanitation which are all parameters of hygienic practice is key to Sustainable Developmental Goals (SDGs 3 & 6) targets of addressing child and maternal mortality in Nigeria. Gaining access to interventions and services which are provided to aid personal hygiene helps improve people's knowledge and practice toward personal hygiene. According to previous research works on a relationship between pregnancy outcome and bad health behaviours, most of which show that negative health behaviours predispose to infection; pregnancy and labour complications such as miscarriage and preterm labour; congenital anomalies, infections of the newborn, maternal and fetal

death (Nwambo, Nwankwo, Ilo, Ezenduka & Makachi, 2016).

The practice of personal hygiene, therefore, is embedded in the level of knowledge gained and pre-formed attitude over time. The pregnancy state may also predispose the pregnant woman to decreased interest in self-care such as bathing, tooth brushing, a likeness for particular types of food groups more than other essential food groups and frequent unhealthy snacking habits (Nun, Adesuyi & Olawoore, 2018).

Without proper understanding and practice of hygiene, the pregnant woman may face these risks and maternal morbidity and mortality may occur. Furthermore, the African literature has a dearth of studies that investigate the knowledge, attitude, and practices of pregnant women towards hygienic practice. Also, there is no literature that investigate factors affecting the practice of personal hygiene during pregnancy. This study was conducted to fill that gaps and to add to the body of knowledge of how very few practices that are often overlooked can cause havoc to the mother and unborn child during pregnancy.

Hence, this study assessed the level of knowledge and practice of personal hygiene among pregnant women attending LUTH, Idi-Araba, Lagos.

### **Materials and Methods**

The study adopted a descriptive research design. The study was carried out in Lagos University Teaching Hospital (LUTH), Idi-Araba, Lagos, Southwestern Nigeria. The hospital has a total of 761 beds and 28 wards. The hospital trains hundreds of nursing, medical, dental, pharmacy, physiotherapy, radiography, and other science students. The hospital has about thirteen clinical departments including the antenatal clinic (ANC). The study population was the pregnant women attending the antenatal clinic. The ANC runs four clinics days in a week with about 70 women attending weekly and an average of two hundred and eighty (280)

monthly (LUTH, ANC register, 2020). The minimum sample size was determined by using Yamane formula (Yamane, 1967), with a calculated sample size of 182 women after the addition of a 10% non-response rate as follows:

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

Where;

N= population size= 280

e= level of precision expected data 95% confidence level = 0.05

n= required sample size

$$n = \frac{280}{1 + 280(0.05)^2}$$

$$n = 165$$

In addition 10% attrition rate; 10% of 165 = 16.5

Total = 165+16.5= 181.5 approximately 182.

A simple random sampling technique was used to select the pregnant women that participated in the study. A balloting system with papers containing “YES” or “NO” was used to pick the pregnant women so that every pregnant woman had an equal chance of being selected for the study until desired sample size was achieved. A structured self-administered questionnaire was used for data collection. was developed from a review of the literature to collect data from pregnant women. The instrument was divided into four (4) sections: the socio-demographic items, the knowledge items, items on the practice of personal hygiene and factors influencing the practice of personal hygiene during pregnancy. A pre-test of the instrument was carried out on 18 pregnant women at the antenatal clinic in

Lagos State University Teaching Hospital (LASUTH), with the Cronbach’s alpha result of reliability index ranging from 0.86 to 0.94. A total number of 182 questionnaires were distributed to pregnant women, 176 of the questionnaires were adequately filled and returned giving a response rate of 96.7%.

Data analysis was done with the Statistical Package for the Social Service (SPSS) version 20.0). The overall knowledge of the respondents on personal hygiene in pregnancy was categorized to ‘good knowledge’ and ‘poor knowledge’ level based on the individual scores. The correct response is scored 1 while the wrong response is scored 0 and then summed up. Nine question items were used to assess respondents’ knowledge. Any score of 5 and above is categorized as good knowledge and those below 5 were categorized as poor knowledge. The overall practice was scored by scoring the correct right response as 1 and the incorrect response as 0. Seven question items were used to assess the respondents’ practice of personal hygiene in pregnancy. A score of 4 and above denoted good practice and while a score below 4 denoted poor practice. Descriptive and inferential statistics were used to present the data. Chi-square statistic was used to establish the associations between variables for the hypothesis at the significance level of 0.05. Ethical approval was obtained from the Ethical Committee of Lagos University Teaching Hospital (LUTH) with approval number (ADM/DCST/HREC/APP/3458). Informed consent was obtained from the respondents after they had been given an appropriate explanation of the study purpose and were assured of the confidentiality of the information obtained from them.

## Results

**Table 1:** Socio-demographic data of the respondents

| Variables                 | Frequency (N=176) | Percentage (100%) |
|---------------------------|-------------------|-------------------|
| Age (years)               |                   |                   |
| 20-29                     | 80                | 45.5              |
| 30-39                     | 87                | 49.4              |
| 40-49                     | 9                 | 5.1               |
| Total                     | 176               | 100               |
| Mean age: 30.5±1.83 years |                   |                   |
| Ethnicity                 |                   |                   |
| Igbo                      | 57                | 32.4              |
| Hausa                     | 6                 | 3.4               |
| Yoruba                    | 95                | 54.0              |
| Others                    | 18                | 10.2              |
| Total                     | 176               | 100               |
| Religion                  |                   |                   |
| Christianity              | 130               | 73.9              |
| Islam                     | 42                | 23.9              |
| Traditional religion      | 4                 | 2.2               |
| Total                     | 176               | 100               |
| Marital status            |                   |                   |
| Single                    | 7                 | 4.0               |
| Married                   | 169               | 96.0              |
| Total                     | 176               | 100               |
| Educational qualification |                   |                   |
| None                      | 1                 | 0.6               |
| Primary                   | 1                 | 0.6               |
| Secondary                 | 36                | 20.4              |
| Tertiary                  | 138               | 78.4              |
| Total                     | 176               | 100               |
| Occupation                |                   |                   |
| Civil servant             | 51                | 29.0              |
| Self-employed             | 105               | 59.7              |
| Unemployed                | 8                 | 4.5               |
| Student                   | 12                | 6.8               |
| Total                     | 176               | 100               |
| Income status             |                   |                   |
| Less than 40,000/month    | 71                | 40.3              |
| 41,000-70,000             | 66                | 37.5              |
| 71,000-100,000            | 39                | 22.2              |
| Total                     | 176               | 100               |

The findings of the study showed that almost half of the respondents were within the age range of 30-39years with a mean age of 30.5±1.83 years. The largest proportion of the respondents (49.4%) was within the age range of 30-39years while the minority (5.1%) was between 40-49years. More than half (54.0%) were Yoruba, 73.9% were Christians, 96.0% were married, 78.4% have completed tertiary education and 59.7% were self-employed. The majority (58.0%), had only one child while 2

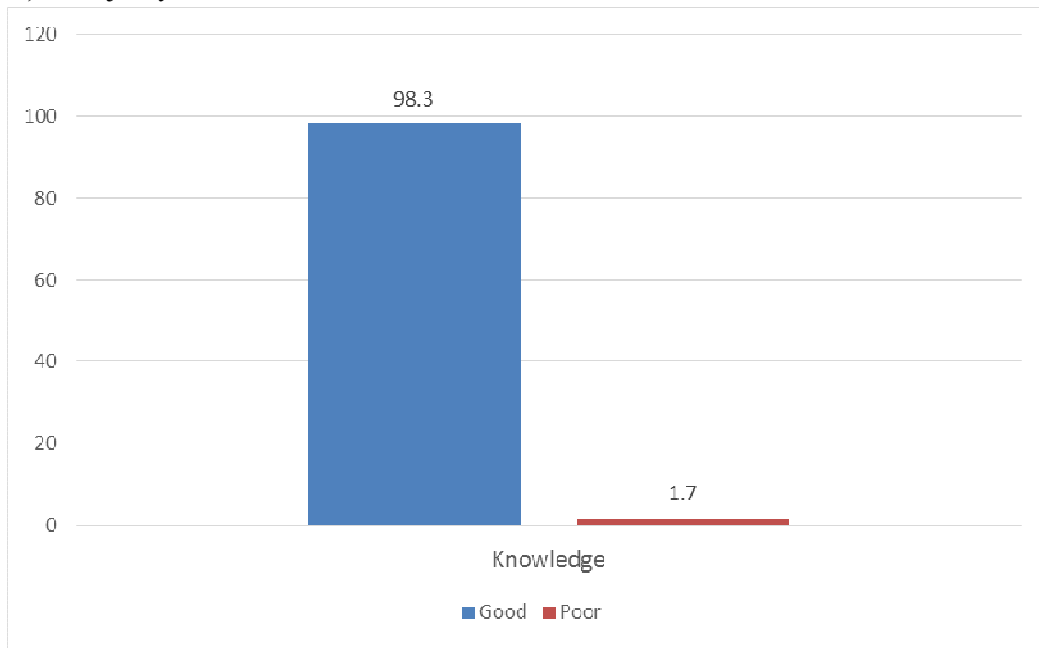
(1.1%) had 4 children. About two-fifths (40.3%) earned 40,000 naira per month while 22.2% earned between 71,000-100,000 naira per month as shown in Table 1.

Table 2: Knowledge of pregnant women on personal hygiene

| Variables   | Frequency<br>(N=176) | Percentage % |
|---|----------------------|--------------|
| Regular antenatal visit is important during pregnancy   |                      |              |
| True  | 169                  | 96.0         |
| False   | 3                    | 1.7          |
| I don't know  | 4                    | 2.3          |
| Total   | 176                  | 100          |
| There is adequate and effective teaching on personal hygiene on every antenatal visit                   |                      |              |
| True  | 162                  | 92.0         |
| False   | 7                    | 4.0          |
| I don't know  | 7                    | 4.0          |
| Total   | 176                  | 100          |
| Lack of oral hygiene such as regular brushing can result in infection during pregnancy                  |                      |              |
| True  | 125                  | 71.0         |
| False   | 3                    | 7.4          |
| I don't know  | 38                   | 21.6         |
| Total   | 176                  | 100          |
| Lack of adequate perineal care during pregnancy can negatively affect the mother and the unborn baby    |                      |              |
| True  | 145                  | 82.4         |
| False   | 2                    | 1.1          |
| I don't know  | 29                   | 16.5         |
| Total   | 176                  | 100          |
| Ensuring a good and clean environment will promote healthy living during pregnancy                      |                      |              |
| True  | 175                  | 99.4         |
| False   | 0                    | 0            |
| I don't know  | 1                    | 0.6          |
| Total   | 176                  | 100          |
| Eating of a balanced diet and properly handled foods/fruits promotes the development of the unborn baby |                      |              |
| True  | 171                  | 97.2         |
| False   | 5                    | 2.8          |
| Total   | 176                  | 100          |
| Washing the hair regularly is part of personal hygiene  |                      |              |
| True  | 165                  | 93.8         |
| False   | 8                    | 4.5          |
| I don't know  | 3                    | 1.7          |
| Total   | 176                  | 100          |
| Hand washing prevents infection   |                      |              |
| True  | 173                  | 98.3         |
| False   | 2                    | 1.1          |
| I don't know  | 1                    | 0.6          |
| Total   | 176                  | 100          |
| Having a regular daily bath is not necessary  |                      |              |
| True  | 29                   | 16.5         |
| False   | 145                  | 82.4         |
| I don't know  | 2                    | 1.1          |
| Total   | 176                  | 100          |

Majority of the respondents agreed that regular antenatal visit is important during pregnancy (96.0%), and they were provided with adequate and effective teaching on personal hygiene at every antenatal visit (162); that lack of oral hygiene such as regular brushing can result in infection during pregnancy (71.0%) and lack of adequate perineal care during pregnancy can negatively affect the mother and the unborn baby (82.4%). Majority as well believed that

ensuring a good and clean environment will promote healthy living during pregnancy (99.4%), eating a balanced diet and properly handled foods/fruits promotes the development of the unborn baby (97.2%), washing their hair regularly is part of personal hygiene (93.8%), handwashing prevents infection (98.3%) and having a regular daily bath is necessary 145 (82.4%), as shown in Table 2.



**Figure 1:** Overall knowledge on personal hygiene

Figure 1 shows that 98.3% of the respondents had a good knowledge of personal hygiene while only 1.7% had poor knowledge of personal hygiene.

**Table 3:** Practice of personal hygiene among pregnant women

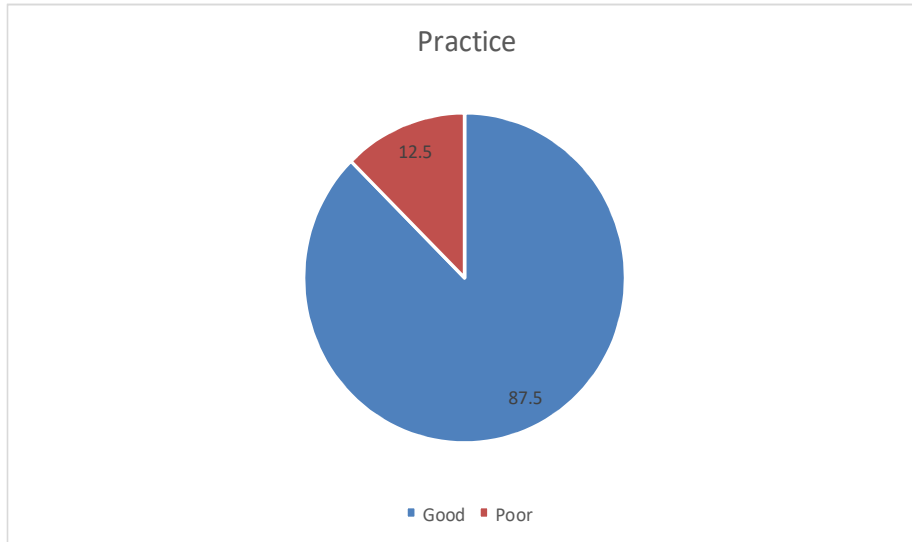
|  | OFTEN (%)  | SOMETIMES (%) | RARELY (%) | NEVER (%) | Mean±SD  |
|--|------------|---------------|------------|-----------|----------|
| Do you attend your antenatal clinics regularly?        | 163 (92.6) | 10 (5.7)      | 3 (1.7)    | 0 (0.0)   | 1.09±0.3 |
| Do you brush your teeth at least twice daily?          | 84 (47.7)  | 80 (45.5)     | 9 (5.1)    | 3 (1.7)   | 1.60±0.7 |
| Do you wash your hand before & after using the toilet? | 157 (89.2) | 17 (9.7)      | 2 (1.1)    | 0 (0.0)   | 1.12±0.4 |
| Do you discard stagnant water around your house?       | 124 (70.5) | 30 (17.0)     | 4 (2.3)    | 18 (10.2) | 1.52±0.9 |
| Do you change soiled under wears at least twice daily? | 129 (73.3) | 39 (22.2)     | 6 (3.4)    | 2 (1.1)   | 1.32±0.6 |
| Do you clear the bush in your environment regularly?   | 131 (74.4) | 30 (17.0)     | 4 (2.3)    | 11 (6.3)  | 1.40±0.8 |
| Do you have your bath at least twice daily?            | 147 (83.5) | 26 (24.8)     | 3 (1.7)    | 0 (0.0)   | 1.18±0.4 |

The majority of the respondents often attended antenatal clinic regularly (92.6%),

brushed their teeth at least twice daily (47.7%) washed their hands before and after using the

toilet (89.2%), changed their soiled underwear at least twice daily (73.3%) and have their bath at least twice daily (83.5%). Also, the majority often discarded stagnant water

around their houses (70.5%) and cleared the bush in their environment regularly (74.4%) as shown in Table 3.



**Figure 2:** Overall practice of personal hygiene

The majority of the respondents (87.5%) had good practice of personal hygiene while

12.5% had a poor practice of hand hygiene as seen in figure 2.

**Table 4:** Factors influencing respondents' practice of personal hygiene

| S/N | Factors  | YES Frequency (%) | NO Frequency (%) |
|-----|--|-------------------|------------------|
| 1.  | Lack of regular source of water supply.  | 145(82.4)         | 31(17.6)         |
| 2.  | Distance of the house to source of water supply.                                     | 127 (72.1)        | 49 (27.9)        |
| 3.  | Inability to carry out home cleaning due to the weight of the pregnancy.             | 96 (54.6)         | 80 (45.4)        |
| 4.  | Inability to use antiseptic soaps and liquid in cleaning due to lack of money to buy | 84 (47.7)         | 92 (52.3)        |
| 5.  | Lack of knowledge on the importance of hygiene practices.                            | 76(43.2)          | 100(56.8)        |
| 6.  | Lack of time to carry out hygiene practices due to the nature of my job.             | 64(36.4)          | 112(63.6)        |
| 7.  | Lack of assistance from my husband during home cleaning.                             | 64 (36.4)         | 112(63.6)        |

**Decision Rule:** Any parameter above 50% is a major factor for the "YES" option

Table 4 presents factors identified by the respondents as affecting their practice of personal hygiene. These were lack of regular source of water supply (82.4%) which seemed to be a very strong factor, the distance of the house to the source of water supply (72.1%) and inability to carry out home cleaning due to the weight of the pregnancy (54.6). The

majority of the respondents claimed not to have challenges with the following; money to buy antiseptic soap and liquid cleaning, knowledge on the importance of hygiene practices, time to carry out hygiene practices due to the nature of their job and lack of assistance from their husband during home cleaning.



**Table 5:** Association between the knowledge and practice of personal hygiene

| Overall practice | Overall knowledge |          | Total (%)   | X <sup>2</sup> | Df | P-value |
|------------------|-------------------|----------|-------------|----------------|----|---------|
|                  | Good (%)          | Poor (%) |             |                |    |         |
| Good             | 153 (99.4)        | 1 (0.6)  | 154 (87.5%) | 8.187          | 1  | 0.004   |
| Poor             | 20 (90.9)         | 2 (9.1)  | 22 (12.5%)  |                |    |         |
| Total            | 173 (98.3)        | 3 (1.7)  | 176 (100.0) |                |    |         |

Table 5 shows that there was a statistically significant relationship between the knowledge and practice of personal hygiene among the respondents ( $X^2 = 8.187$ ,  $p = 0.004$ ).

### Discussion

The findings of the study showed that almost half of the respondents were within the age range of 30-39 years with a mean age of  $30.5 \pm 1.83$  years. More than half of the respondents were Yoruba, it is not surprising that the majority of respondents were Yoruba because the study area belongs to the Yoruba ethnic group. The vast majority were married; reflecting the much respected value of the institution of marriage among the respondents. More than three-quarters of the respondents had tertiary education hence had more than basic reading and writing skills and about one third earned below 40,000 nairas per Month. The findings of socio-demographic information are in agreement with the study on social support and satisfaction with attending antenatal services among pregnant women in Lagos, Nigeria (Ademuyiwa, Farotimi & Ojo, 2020). Also, the findings of Pete, Biguioh, Izacar, Adogaye and Nguemo (2019), were at variance to the socio-demographic data of respondents in the present study.

The findings of this study also showed that respondents had good knowledge of personal hygiene, this may be due to their higher level of educational status (Nun, Adesuyi & Olawoore, 2018), which conforms with the study conducted on knowledge of personal hygiene among pregnant women, where the respondents had good knowledge about

personal hygiene, these findings is also in agreement with studies carried out by (El-Mahdi Ibrahim, Mudawi & Ghandour, 2016; Perumal, 2013; Farah, Karim, Akther, Begum & Begum), where respondents had good oral health knowledge and knowledge of personal hygiene and sanitation among selected slums in Dhaka. Majority of the respondents accepted that regular antenatal visit is important during pregnancy and that they obtained adequate and effective teaching on personal hygiene at every antenatal visit. The majority also believed that lack of oral hygiene such as regular brushing can cause an infection during pregnancy while poor perineal care during pregnancy can negatively affect the health of the mother and the unborn baby. Almost all of the respondents accepted that ensuring a good and clean environment will promote healthy living during pregnancy, eating a balanced diet and properly handled foods/fruits promotes the development of the unborn baby, washing the hair regularly is part of personal hygiene, handwashing prevents infection and having a regular daily bath is necessary. However, the findings of this present study were in contrast to the report of the study conducted by some researchers where more than half of the pregnant women attending antenatal clinics in public secondary health facilities had poor knowledge of oral health (Perumal, 2013).

The findings of this present study show that the majority of the respondents had good practice of personal hygiene and this finding conforms with a study conducted by Farah, Karim Akther, Begum and Begum (2015); El-Mahdi Ibrahim, Mudawi and Ghandour, (2016). The findings of a study conducted

among pregnant women attending a Sudanese maternity hospital is not in agreement with this present study (Songa, Machine & Rakuom, 2015).

Findings from this present study also showed that strong factors affecting practices of personal hygiene among respondents are lack of regular source of water supply, the distance of the house to the source of water supply and inability to carry out home cleaning due to the weight of the pregnancy. Access to clean water, sanitation and hygiene at home are important factors that affect practices of personal hygiene among pregnant women in a study conducted on maternal and child health on water sanitation and hygiene (Songa, Machine & Rakuom, 2015), this finding is in agreement with our study.

The findings of this study showed that there was a statistically significant relationship between the knowledge and practice of personal hygiene among pregnant women ( $p = 0.004$ ,  $X^2 = 8.187$ ), hence a change in the knowledge of the respondents would significantly affect their practice of hand hygiene. This finding is contrary to the study conducted by Nun, Adesuyi and Olawoore (2018), the authors found that there was no statistically significant relationship between the knowledge and practice of hygienic practice among women attending comprehensive centres in Ondo State, Nigeria. That is there is no relationship between the knowledge and practice of personal hygiene among the respondents.

### Conclusion

This study had shown that though the knowledge of personal hygiene is good and the practice is above average among the respondents, there is still a need to give effective health education on effective personal hygiene and pregnant women should be supported to resolve factors affecting practices of personal hygiene among them.

### Recommendations

- Midwives should endeavour to give adequate health education on personal

hygiene practices among pregnant women during antenatal clinics.

- Awareness should be created by the Governments on media and enforce policies that will help in ensuring a good environment to ensure personal and environmental hygiene among pregnant women in general.

**Running Title:** Personal hygiene among pregnant Women

**Conflict of Interest:** There is no conflict of interest

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