Effect of Socio-Demographic Variables on the Prevalence of Anaemia Among Pregnant Women in Sokoto, Nigeria

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Abstract

Background: Anaemia is a major public health problem affecting all ages of the population with its highest prevalence among the children under five years of age and pregnant women. The aim of this study was to determine the socio-demographic factors contributing to the prevalence of anaemia among pregnant women in Sokoto, Nigeria.

Materials and Methods: A descriptive study, involving 273 pregnant women, was conducted between June and November, 2015. Socio-demographic characteristics of the participants were collected through structured questionnaire and the haemoglobin concentration of each subject determined using haematology analyser.

Results: Prevalence of anaemia showed significant relationship with occupation, educational status and family status (p<0.05) while marital status and residence showed no significant association with anaemia (p>0.05). Housewives had the highest prevalence of anaemia (44.3%) while the civil-servants had the least prevalence of 25.0%. Prevalence of anaemia decreases with increasing educational status as primary or no formal education, secondary education and tertiary education had prevalence of 80.0-83.3%, 53.8% and 19.4%, respectively.

Conclusion: The study has shown that occupation, educational status and family status had significant influences on the prevalence of anaemia among pregnant women in Sokoto. It is therefore recommended that free education and employment opportunities be provided for the people of Sokoto State and most especially, the pregnant women as these efforts can ultimately reduce the high prevalence of anaemia.

Keywords: Effect; Socio-Demographic Variables; Prevalence; Anaemia; Pregnant Women; Sokoto

Introduction

Anaemia is a major public health problem affecting all ages of the population with its highest prevalence among the children under five years of age and pregnant women [1,2]. Globally, anaemia affects 1.62 billion people (25%), among which 56 million are pregnant women [1,3].

The World Health Organisation defined anaemia in pregnant women as haemoglobin less than 11.0 g/dL [4] and it has been observed that Africa carries a high burden of anaemia with a prevalence of 65.8% among pregnant women [3].

In developing countries, the cause of anaemia during pregnancy is multifactorial and this includes nutritional deficiencies of iron, folate, vitamin B12 and also parasitic diseases associated with malaria and hookworm infection. The relative contribution of each of these factors to anaemia during pregnancy varies greatly by geographical location, season and dietary practice [5].

Socio-demographic factors like literacy, religion, caste, type of family, occupation are the major obstacles for the prevention of anaemia during pregnancy [6] while high party, low socio-economic status, birth interval or short pregnancy intervals and educational status have been identified as risk factors for anaemia in pregnancy by other researchers [7-9].

Information from literature has indicated few studies addressing the role of socio-demographic factors contributing to anaemia in pregnancy in North-Western region of Nigeria [7,10]. However, based on the peculiarities of some of these
socio-demographic factors to different parts of Nigeria, the current study was undertaken to determine the socio-demographic variables associated with anaemia in pregnant women in Sokoto state as the knowledge will enhance better management of the subjects which will ultimately reduce anaemia in pregnancy.

Materials and Methods

Study Design and Population

After the ethical approval from the ethical committee of Usman Danfodio University Teaching Hospital (UDUTH) and informed consent sought from the participants, we conducted a descriptive study on pregnant women who were attending antenatal clinic of UDUTH, Sokoto between June and November, 2015.

Age range of 18-42 years and a sample size of 273 obtained using relevant formula [11] were considered in this study. The inclusion criteria included pregnant women who were resident in Sokoto and willing to participate in the study while those ones who refused to give informed consent or receiving treatment for anaemia in pregnancy and bleeding disorders were excluded from the study.

Sample and Data Collection

Two milliliters of venous blood was collected into EDTA bottle from each subject for the determination of haemoglobin concentration using haematology automated analyser (Mythic 22 CT, 2008) while data were collected using questionnaire for the socio-demographic characteristics (marital status, occupation, educational status, family status and others).

Data Analysis

All quantitative data were analyzed using SPSS version 20 (SPSS Inc, Chicago, IL). Comparative analyses were done using student’s t-test, analysis of variance and chi-square. All significance were reported at p<0.05.

Results

Table 1 reveals the socio-demographic characteristics of pregnant women in Sokoto. Prevalence of anaemia showed significant relationship with occupation, educational status and family status (p<0.05). With regard to occupation, housewives had the highest prevalence of anaemia (44.3%) while the civil servants had the least prevalence of 25.0%.

Prevalence of anaemia amongst pregnant women with respect to lack of formal education, primary education, secondary education and tertiary education were 83.3%, 80.0%, 53.8% and 19.4%, respectively while that of family status with regard to monogamy and polygamy were 27.2% and 85.7% respectively.

Marital status and residence showed no significant association with anaemia (p>0.05). However, anaemia was more prevalent in the single or unmarried pregnant women (50.0%) than the married ones (39.1%) while those residence in the rural areas had higher prevalence (44.8%) than the pregnant women in the urban areas (38.5%).

Table 2 shows haemoglobin levels with respect to socio-demographic factors of pregnant women. There were no statistically significant differences in the haemoglobin levels of pregnant women between those who are single and married;
rural dwellers and urban dwellers (p>0.05) but the haemoglobin values with respect to lack of no formal education, primary education, secondary education and tertiary education showed statistically significant differences (p<0.05).

**Discussion**

Despite the use of iron and folate supplementation, and anti-malaria prophylaxis, which are prescribed for pregnant women in antenatal clinics for the prevention of anaemia, the prevalence of anaemia is still high in Nigeria [12]. However, this high prevalence may be associated with socio-demographic factors which contribute to anaemia in pregnancy in many parts of Nigeria that are scantily examined.

This study showed that occupation, educational status and family status are strongly associated with the prevalence of anaemia in pregnancy. These findings are in agreement with earlier studies [7-9,13]. The study further revealed that housewives had the highest prevalence of anaemia (44.3%) compared to civil servants and traders, and this observation confirmed previous reports [13,14]. However, this result is expected from housewives since most of them depend solely on their husbands' earnings for their financial needs, hence, the believe that housewives belong to the group of people within the low socio-economic status which is a known determinant of anaemia [14,15].

The study has further shown that prevalence of anaemia decreases significantly with increase in the level of education as it was revealed that prevalence of anaemia in pregnant women with primary or no formal education (80.0-83.3%) was 4 times above those ones with tertiary education (19.4%) while haemoglobin level increased significantly with the level of education. These findings are consistent with the earlier studies [6,12,13]. Low level or lack of education amongst the pregnant women would have resulted in unemployment which leads to poverty and therefore, makes it difficult for them to afford antenatal services and nourishing meals which are essential in the prevention of anaemia. However, women with low socio-economic status have been associated with consumption of diets that are low in micro-nutrients, animal protein, and vitamins but high in carbohydrates and phytates which interfere with intestinal uptake of iron and other trace minerals such as zinc and calcium [16].

It has been observed in this study that polygamy had higher prevalence of anaemia (85.7%) than monogamy (27.2%).

<table>
<thead>
<tr>
<th>Socio-demographic Characteristics</th>
<th>Hb level (g/dL)</th>
<th>Number (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>11.9±0.9</td>
<td>2(0.7)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Married</td>
<td>11.2±1.1</td>
<td>271(99.3)</td>
<td></td>
</tr>
<tr>
<td><strong>Residence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>10.9±1.2</td>
<td>29(10.6)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Urban</td>
<td>11.2±1.1</td>
<td>244(89.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Educational Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal</td>
<td>10.3±1.6</td>
<td>18(6.6)</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>11.0±1.7</td>
<td>10(3.7)</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>11.2±1.1</td>
<td>106(38.8)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Tertiary</td>
<td>11.3±1.0</td>
<td>139(50.9)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Haemoglobin levels with respect to socio-demographic factors of pregnant women in Sokoto.
and this is line with other studies [8,13] that attributed anaemia with the family size of greater than four.

Marital status showed no association with anaemia in this study and this is contrary to earlier report [17]. However, single or unmarried pregnant women had higher prevalence of anaemia (50.0%) compared to the married ones (39.1%) in this study which conforms with the findings of earlier researcher [17] but disagrees with other author [9]. These divergent views may be associated with disproportionate samples sizes for unmarried and married women in various studies. However, single or unmarried pregnant women may be prone to anaemia due to discrimination against them by members of the families or society who mostly refuse to render financial assistance to meet up their antenatal services and dietary intakes.

Anaemia was not significantly related with the residence of the pregnant women in this study and this is in agreement with the report of a researcher [18] but other authors reported otherwise [9,19]. However, higher prevalence of anaemia among the pregnant women in rural areas compared to urban areas in this study, agrees with the earlier findings [17,18]. The high prevalence in the rural areas may be associated with the low socio-economic status of the pregnant women who are most likely housewives that may not afford access to reputable health centers, good antenatal services and nourishing diets.

In conclusion, the study has shown that occupation, educational status and family status had significant influences on the prevalence of anaemia among pregnant women in Sokoto. It is therefore recommended that free education up to tertiary level and employment opportunities be provided for the women of Sokoto state as these efforts will enhance their socio-economic status and ultimately lead to reduction in the high prevalence of anaemia.

References


18. Swarnlatha N. Prevalence of anaemia and its socio-demographic determinants among pregnant women attending