

Original Paper

Relationship Between Socio-demographic Variables and Minor Discomforts in Pregnancy: A Retrospective Survey in Nigeria

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ABSTRACT

Introduction: Many pregnant women experience discomforts during their pregnancy that are not severe, but may reduce their well-being. These minor discomforts such as vomiting, heartburn, and leg cramps can be troublesome and may affect the women's quality of life.

Objective: This research aims to determine the relationship between socio-demographic variables and minor discomforts in pregnancy.

Materials and Methods: This is an analytical cross-sectional study. Participants were 202 pregnant women in Birnin-Kebbi, Kebbi State, Nigeria. Systematic sampling was used for their recruitment. A self-report questionnaire was used for surveying socio-demographic characteristics and assessing the pattern and severity of minor discomforts. Chi-square(χ^2) test and ordinal logistic regression analysis were used for analyzing the collected data at 95% Confidence Interval(CI).

Results: The age range of most women (42.1%) was 20-24 years. Most of them had their 2-4th pregnancy(37.6%) and a tertiary education (62.4%). There was a significant relationship between the variables of age, number of pregnancies and occupation and the occurrence of minor discomforts in pregnancy ($P<0.05$). There was a significant relationship between the occupation and duration of minor discomforts ($P<0.05$), and between educational levels and mode of treatment for minor discomforts ($P=0.05$). The Odds Ratios(OR) in ordinal logistic regression models indicated that with one unit change in age, number of pregnancies and occupation, the duration of minor discomforts was 1.05(95% CI; 0.457-1.722, $P=0.0001$), 1.07(95% CI; 0.316-2.021, $P=0.0001$) and 1.07(95% CI; 0.662-2.063, $P=0.0001$) times more likely to change, respectively.

Conclusion: Healthcare professionals should consider the factors of age, number of pregnancies, and occupation when providing care to pregnant women. More research to address the minor discomforts in pregnancy is recommended using different methods.

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Highlights

- The health problems of pregnant women including their minor discomforts such as nausea, pelvic pain, and back pain should receive more attention.
- The minor discomforts in pregnancy may negatively affect the happily life of woman, if not treated properly.
- Healthcare professionals should consider socio-demographic variables when providing care to pregnant women.

Plain Language Summary

Every pregnant woman wants to have a healthy pregnancy, which is not always possible due to unforeseen circumstances, including the effect of minor ailments. These minor ailments in pregnancy may alter with happily living of the woman if not handle properly. Understanding factors that could determine the management and control of these ailments is important. Socio-demographic factors such as age, number of pregnancies, occupation and educational level are crucial in understanding several health conditions and could be of benefit when studied in relation to pregnancy minor ailments. In this study, the age, number of pregnancies, occupation and educational level were studied in relation to pregnancy ailments' duration, perceived severity, perceived effect on daily activities and mode of treatment. The study found that the age, number of pregnancies and occupation of the woman can determine the occurrence of the minor ailments in pregnancy. Also, occupation of the pregnant woman can determine the duration of pregnancy minor ailments. Therefore, considering socio-demographic factors when caring for pregnant woman could be helpful in making the woman to enjoy happy pregnancy and successful delivery.

Introduction

Pregnancy is a period in which a woman carries a developing fetus [1]. It consists of three trimesters marked by specific foetal developments [2]. Pregnancy is accompanied by certain physiological and psychological changes that can be stressful for pregnant women [3]. These changes lead to minor discomforts that can predispose pregnant women to some difficulties [4]. According to Kaur and Gagandeep [5], the anatomical, physiological and biochemical changes that occur during pregnancy can lead to certain discomforts. The minor discomforts occur due to hormonal, metabolic, accommodation and postural changes, while major discomforts are due to changes in musculoskeletal, digestive, nervous, integumentary, cardiovascular, renal and endocrine systems [6]. Women experiencing multiple discomforts longer than few weeks are most likely to have health and well-being problems in early-mid pregnancy [7]. Many pregnant women experience discomforts that may not be severe but reduce their wellbeing [8], and if neglected, they may lead to serious health problem [9]. Pregnancy-related minor discomforts may also result in feelings anxious and overwhelmed [10]. Evidence has shown the high rate of sick leave in pregnant women due to such discomforts [11]. The most common minor discomforts include nausea and vomiting, fatigue, heartburn, insomnia, varicose vein, back ache, pelvic pain,

leg cramps, frequent micturition and constipation [7, 12]. The prevalence of lower back pain among pregnant women is estimated to be 45-75% and up to 70% of women experience pelvic girdle pain [13]. Moreover, about 50-90% of pregnant women experience nausea and vomiting during their first trimester [5]. Heartburn becomes more severe at about 30-40th week of gestation [14].

Minor discomforts of pregnancy pose challenges to health care professionals regarding their management and control. These discomforts require special observations and application of different treatment options [15]. However, they have received less attention [16]. Nurses and midwives identify the need for and provide proper Antenatal Care (ANC) to alleviate suffering and maintain the optimal health of pregnant women [1]. Understanding the determinants of pregnancy health is important for strengthening ANC, which can positively affect the health of pregnant women [17]. To promote a healthy pregnancy, it is crucial to have a better understanding of the maternal factors that can influence the state of health in pregnancy. Addressing these determinants is necessary for improving maternal and child health and contributing to a healthy society. Thus, this research aims to retrospectively study the relationship between socio-demographic factors and minor discomforts in pregnancy, for greater understanding and planning to improve maternal health.

Materials and Methods

This is an analytical and cross-sectional study. The study population consists of all pregnant women attending the ANC clinic of a hospital in Birnin-Kebbi, Kebbi State, Nigeria from January to April 2019. The total number of pregnant women that met the inclusion criteria within this period were 455. The sample size was 209 using Cochran's formula [18], by considering a probability (P) of 50% at 95% Confidence Interval (CI). Systematic sampling was used for selecting after obtaining the sampling frame from the matron in-charge of ANC clinic. Pregnant women with medical, obstetric or gynaecological diseases were not involved in the research. This is because these conditions may mask or aggravate minor discomforts of pregnancy, and respondents may not be able to differentiate between minor discomforts and the disease conditions.

A 17-item self-report questionnaire with two sections was used for data collection. They were completed by face-to-face interview for women with no reading literacy. The section A surveys the socio-demographic characteristics of women (age, number of pregnancies, occupation, and educational level), while section B assesses the pattern and the severity of minor discomforts in pregnancy. It consists of four subscales including duration of discomforts, perceived severity of discomforts, perceived effect of discomforts on daily activities, and treatment mode of discomforts. The duration of discomforts subscale consists of 3 items answered by <1 week, 1-2 weeks, 3-4 weeks, and >4 weeks which are scored by 1, 2, 3, and 4, respectively. The perceived severity of discomforts subscale consists of 3 questions rated as 1= Very mild, 2= Mild, 3= Severe, and 4= Very severe. The subscale of perceived effect of discomforts on daily activities consists of 3 questions rated as 1= Very low, 2= Low, 3= High, and 4= Very high. The subscale assessing treatment mode of discomforts has 3 questions answered by self-medication, personal home care, outpatient care, and inpatient care. Four experienced midwives including two faculty members and two clinicians confirmed the face validity and content validity of the questionnaire. Their suggestions, advices and recommendations were applied. The reliability of questionnaire was determined by using Cronbach's alpha coefficient which was obtained 0.713.

After collecting 209 questionnaires, it was found that some women had given more than one answer to some questions such that only 202 questionnaires could be used in data analysis which was conducted in Statistical Package for Social Science SPSS v.21 software using frequency,

percentage, Chi-square test, and ordinal logistic regression at 95% Confidence Interval. The responses were rank ordered from the lowest to the highest level, which made the ordinal logistic regression analysis possible.

Results

Most of participants were at the age range of 20–24 years (42.1%); and only 15.8% were at the age range of 15-19 years. Most of them had pregnancy for the 2-4th time (37.6%), while 36.1 % had pregnancy for the first time. Moreover, most of them were working as civil servant (47.0%), and only 11.9% were business women. Most of them (62.4%) had a tertiary education and only 4.9% had non-formal education (Table 1).

As shown in Table 2, the majority (52.9%) of pregnant women aged 20-24 years had no minor discomforts, and the difference in occurrence of minor discomforts was significant between age groups ($P < 0.05$). The majority (61.9%) of pregnant women with ≥ 8 pregnancies reported no occurrence of discomforts. The occurrence of minor discomforts was significantly different between women with different number of pregnancies ($P < 0.05$). Moreover, most of the pregnant women who were an artisan (50.8%) had no occurrence of minor discomforts. Majority (54.3%) of pregnant women with tertiary education who had minor discomforts were treated as outpatient at hospital. All pregnant women with non-formal education who had minor discomforts were treated either by self-medication or as inpatient at hospital (60% and 40%, respectively). There was a significance relationship between the educational level and the treatment mode for minor discomforts ($P < 0.05$).

Most of women at all age groups variable had discomforts for 3-4 weeks or >4 weeks. There was no woman aged ≥ 30 years that perceived the effect of discomforts on daily activities as very high. Majority (50%) of women with ≥ 8 pregnancies perceived the duration of discomforts as short (1-2 weeks). Those with the first pregnancy mostly receive outpatient treatment for their discomforts (65.1%). There was no woman with ≥ 8 pregnancies that used self-medication as mode of treatment for minor discomforts. It was also found that housewives had the highest perceived minor discomforts (50%). Most of women with tertiary education (34.6%) had minor discomforts for >4 weeks. Majority of these women with tertiary education (54.3%) received outpatient care for their discomforts. Moreover, majority of women with non-formal education (60%) used self-medication as mode of treatment for their minor discomforts. Overall, most of women did not perceive discomforts as severe.

Table 1. Socio-demographic characteristics of participants (n=202)

Variables		No. (%)
Age(y)	15-19	32(15.8)
	20-24	85(42.1)
	25-29	42(20.8)
	≥30	43(21.3)
Number of pregnancies	First	73(36.1)
	2-4 th	76(37.6)
	5-7 th	32(15.8)
	≥8 th	21(10.4)
Occupation	Artisan	61(30.2)
	Housewife	22(10.9)
	Civil servant	95(47.0)
	Business woman	24(11.9)
Educational level	Tertiary education	126(62.4)
	Secondary education	45(22.3)
	Primary education	21(10.4)
	Non-formal education	10(4.9)

The logistic regression (ordinal) models had good fit. The P from chi-square test for all models were less than 0.05. The goodness-of-fit significance of all models were greater than 0.05, and the pseudo R² values (Nagelkerke) were 94.1%, 90.0%, 90.9% and 87.4% for duration, perceived severity, perceived effect on daily activities, and mode of treatment, respectively (Table 3). According to the results in this table, with one unit increase/change in age, number of pregnancies and occupation, there was a decrease in duration of discomforts by 19.82, 10.55 and 22.82, respectively; with one unit increase/change in age and occupation, there was a decrease in perceived severity by 30.95 and 20.46, respectively; with one unit increase in number of pregnancies, there was an increase in perceived severity by 8.58; with one unit increase/change in age and occupation, there was a decrease in perceived effect on daily activities by 26.90 and 13.8, respectively; one unit change in number of pregnancies caused an increase in perceived effect on daily activities by 3.14; with one unit increase/change in age and occupation, there was a decrease in mode of treatment by 28.13 and 23.09, respectively; and with

one unit increase in number of pregnancies, there was an increase in mode of treatment by 2.47.

However, the Odds Ratio (OR) values indicated that with one unit change in age, number of pregnancies, and occupation, the duration of discomforts was 1.05 (95% CI; 0.457-1.722 P=0.0001), 1.07 (95% CI; 0.316-2.021, P=0.0001) and 1.07 (95% CI; 0.662-2.063, P=0.0001) times more likely to change, respectively; the perceived severity of discomforts was 1.06, 1.03 and 1.05 times more likely to change, respectively; the perceived effects of discomforts on daily activities was 1.04, 1.02 and 1.04 times more likely to change, respectively; and the mode of treatment for discomforts was 1.04, 1.02 and 1.03 times more likely to change, respectively. All predictors (age, number of pregnancies, and occupation) were found to be non-significant predictors of the duration of discomforts, perceived severity of discomforts, perceived effects of discomforts on daily activities, and mode of treatment for discomforts.

Table 2. Frequency of minor discomfort-related variables based on socio-demographic variables

Variable		Minor Discomfort-Related		Socio-Demographic Variables		P*
Age(y)		15-19(n=32)	20-24(n=85)	25-29(n=42)	≥30(n=43)	

Variable		No. (%)				P*
		Minor Discomfort-Related		Socio-Demographic Variables		
Occurrence of discomforts	Yes	16(50)	40(47.1)	37(88.1)	40(93.0)	0.001
	No	16(50)	45(52.9)	5(11.9)	3(7.0)	

Variable		No. (%)				P*
		Minor Discomfort-Related		Socio-Demographic Variables		
		1 st (n=73)	2- 4 th (n=76)	5- 7 th (n=32)	≥8 th (n=21)	
Number of pregnancies	Yes	43(58.9)	59(77.6)	23(71.9)	8(38.1)	0.001
	No	30(41.1)	17(22.4)	9(28.1)	13(61.9)	

Variable		No. (%)				P*
		Minor Discomfort-Related		Socio-Demographic Variables		
		AR(n= 61)	HW(n= 22)	CS(n= 95)	BS(n= 24)	
Occupation	Yes	30(49.2)	16(72.7)	68(71.6)	19(79.2)	0.01
	No	31(50.8)	6(27.3)	27(28.4)	5(20.8)	

Variable		No.(%)				P*
		Minor Discomfort-Related		Socio-Demographic Variables		
		n=30	n=16	n=68	n=19	
Duration of discomforts (week)	<1	10(33.3)	4(25)	9(13.2)	5(26.3)	0.001
	1-2	7(23.3)	9(56.3)	12(17.6)	7(36.8)	
	3-4	7(23.3)	0(0.0)	21(30.9)	2(10.5)	
	> 4	6(20)	3(18.8)	26(38.2)	5(26.3)	

Variable		No. (%)				P*
		Minor Discomfort-Related		Socio-Demographic Variables		
		TE (n=81)	SE (n=30)	PE (n=17)	NFE (n=5)	
Educational level	Self-medication	9(11.1)	3(10)	4(23.5)	3(60)	0.05
	Personal home care	13(16)	7(23.3)	2(11.8)	0(0.0)	
	Outpatient care	44(54.3)	13(43.3)	6(35.3)	0(0.0)	
	Inpatient care	15(18.5)	7(23.3)	5(29.4)	2(40)	

AR: Artisan; HW: Housewife; CS: Civil servant; BS: Business; TE: Tertiary education; SE: Secondary education; PE: Primary education; NFE: non-formal education. *Chi-square test

Table 3. Ordinal logistic regression models to predict minor discomforts of pregnancy

Dependent Variables	P	Goodness of Fit P	Pseudo R ²	Estimate	Exp(β)(OR)	Std. Error	95% CI			
							Lower	Upper		
Duration	0.0001	0.999	0.941	Age	-19.82	Age	1.05	237.9	0.457	1.722
				No. of pregnancy	-10.55	No. of pregnancy	1.07	78.9	0.316	2.021
				Occupation	-22.82	Occupation	1.07	116.1	0.662	2.063
Perceived severity	0.0001	0.998	0.900	Age	-30.95	Age	1.06	273.8	0.471	1.832
				No. of pregnancy	8.58	No. of pregnancy	1.03	149.2	0.418	2.024
				Occupation	-20.46	Occupation	1.05	203.9	0.551	1.871
Perceived effect on daily activities	0.0001	0.999	0.909	Age	-26.90	Age	1.04	106.2	0.145	1.933
				No. of pregnancy	3.14	No. of pregnancy	1.02	166.8	0.327	1.975
				Occupation	-13.18	Occupation	1.04	184.2	0.475	1.833
Mode of treatment	0.0001	0.999	0.874	Age	-28.13	Age	1.04	278.9	0.541	2.051
				No. of pregnancy	2.47	No. of pregnancy	1.02	143.8	0.692	1.743
				Occupation	-23.09	Occupation	1.03	196.5	0.287	1.644

Discussion

The results of this study revealed an unexpected finding where majority of pregnant women aged 20-24 years reported no minor discomforts during pregnancy. This is contrary to the claim that majority of pregnant women experience minor discomforts during pregnancy [15]. It was evident from the results that age had some influence on the occurrence of these discomforts, since the percentage of their occurrence increased with an increase in maternal age. Thus, pregnant women with higher age may require more attention for reducing and managing their minor discomforts. However, more investigation is needed. At all age groups, the majority of women had the discomforts for 3-4 weeks or >4 weeks; only few women had discomforts for 2 weeks or lower. The majority of women with tertiary education had the discomforts for >4 weeks. Thus education may be an attribute to the greater duration of minor discomforts in pregnancy. The number of pregnancies may also be an attribute to the pregnant woman's perception of discomforts. This is because the majority of those with ≥8 pregnancies perceived the duration of discomforts as short (1-2 weeks).

In this study, the majority of pregnant women did not perceive the discomforts as severe. This was found in terms of all variables except in educational level in which

the majority of the respondents with non-formal education perceived them as very severe. This is consistent with the results of Sajitha et al.'s study [8] where many pregnant women experienced discomforts that were not severe but reduced their wellbeing. Those with first pregnancy perceived the discomforts less severe compared to others with different number of pregnancies. The women with more than one pregnancy might have been influenced by different pregnancy experiences, since each pregnancy is accompanied with different experiences [6].

There was no women age ≥30 years that perceived the effect of minor discomforts on daily activities as very high, indicating that age influence the perceptions about the severity of discomforts. This is against the findings of Agampodi et al.'s study in which 83.6% of pregnant women had disturbances in daily activities due to minor discomforts. Regarding the occupation variable, housewives reported the highest effect of minor discomforts on daily activities. Regarding the education variable, the majority of women with secondary or non-formal education perceived the highest effect of minor discomforts, which is consistent with the results. [19]. More studies are needed to assess whether occupation and educational level have any association with the effects of minor discomforts during pregnancy on daily activities of women.

In the present study, women with first pregnancy treated their discomforts as outpatient more than others; none of those with ≥ 8 pregnancy used self-medication for treatment; the majority of them were treated at hospitals with or without hospitalization. The number of pregnancies may influence the way of seeking healthcare and the knowledge of self-medication dangers. This is contrary to the findings of You et al. [20]. In their study, primiparous mothers were more likely to utilise ANC services than multiparous mothers. They also postulated that multiparous women may rely on their past experiences, knowledge, and skills related to pregnancy and childbirth. The majority of women with tertiary education received outpatient treatment for their discomforts, while the majority of those with non-formal education used self-medication as mode of treatment for their minor discomforts. This is in agreement with the results of Shahabuddin et al.'s study [21] where education was reported as an important and necessary factor for understanding the need for skilled health care during pregnancy; and that women's education had a positive association with health facility use.

None of demographic variables were able to significantly predict the dependent variables. Nevertheless, the regression models showed that with one unit increase/change in age, number of pregnancies and occupation, there was a decrease in duration and perceived severity of minor discomforts; with one unit increase in number of pregnancies, there was an increase in perceived severity; with one unit increase/change in age and occupation, there was a decrease in perceived effect of minor discomforts on daily activities, while one unit change in number of pregnancies caused an increase in perceived effect on daily activities; with one unit increase/change in age and occupation, there was also a decrease in mode of treatment, while with one unit increase in number of pregnancies there was an increase in mode of treatment. The educational level was found to be a redundant variable in all regression models and, therefore, was excluded from the analysis. Moreover, the OR values revealed that one unit change in the predictor variables (age, number of pregnancies, and occupation) led to approximately an increase by one unit in dependent variables. Thus, the predictor variables caused some changes in dependent variables, but the changes were not statistically significant.

Variables such as age, number of pregnancies, occupation, and educational level are important for determining the health of pregnant women. Although minor discomforts are highly occurring among pregnant women, research on them is limited discomforts is limited. It is, there-

fore, important for healthcare professionals to consider the mentioned factors when providing care to pregnant women to optimize healthcare services and improve the maternal and child health. It is suggested that health education regarding minor discomforts in pregnancy should be provided to all mothers seeking ANC [22]. More studies to address the issue of minor discomforts in pregnancy are needed using different methods specific to a given variable or a specific discomfort, so that more information be provided for effective practice and care of pregnant women. The limitation of the study included the use of self-report tool which can cause bias, and low number of participants.

Ethical Considerations

Compliance with ethical guidelines

Ethical approval for the research was obtained from Kebbi State Health Research Ethical Committee (Code: 104:4/2018). Permission to conduct the research was obtained from the hospital management. The participants declared their informed consent after receiving explanations about the research. They were assured of the confidentiality of their information. Honesty, justice, beneficence, nonmaleficence, respect for human rights and dignity were observed throughout the research process.

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Conflict of interest

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