

Menstrual Characteristics of Women in Kumana Chiefdom Kauru Local Government Area Kaduna State, Nigeria

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Abstract

Menstrual history of women has very important implications for the woman's health outcomes. Variations exist in menstrual cycle length in most women, these variations occur between individual women and between populations, seasonal variation in menstrual cycle irregularity also exist. The aim of the study was to determine the menstrual characteristics of women in Kumana Chiefdom, Kauru Local Government Area of Kaduna State, Nigeria. A total number of 623 women between 18 - 65 years, were selected randomly from the eight (8) districts of Kumana Chiefdom. Informed consent was obtained from the women prior to the study and all the subjects completed a questionnaire which had their biodata and reproductive history. The data was reported as mean \pm SD (standard deviation) and percentages. Student's t- test and analysis of variance (ANOVA) were used to test the differences in the mean of the subgroups. Chi - square tests was used to compare proportions between subgroups and according to reproductive characteristics. The results indicated that the study population had a mean menarcheal age of 15.58 years with 76% of the women still menstruating, 56% had regular menstruation and 83% had menstrual flow that lasted between 3 - 5 days. It was also observed that 54% of the study population never had a miscarriage while 25%, 12% and 5% of them had miscarriages once, twice and three times respectively. The women in this study population experience regular menses with a menstrual flow duration of 4-5 days, few women had miscarriage and few of them experience menstrual pains. In conclusion, the women in this study population are likely to have a high reproductive success.

Keywords: Kumana, Menstruation, Reproductive Success, Women

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Introduction

Menstrual history of a woman can have very important implications for the woman's health outcome (Kuindzhi *et al.*, 2006; Williams, 2006). Early work done by Treloar *et al.*, in 1967 revealed the existence of little variations in menstrual cycle length in most women that are in their reproductive years.

Menarche is the first menstrual period experienced by a girl, it signifies woman's transition from childhood to adulthood. It is the initiation of menstruation which, usually happens between the ages of 12 and 15 (Hays *et al.*, 2017). Menarche indicates the end of one developmental stage and the beginning of a new one, marking a developmental milestone and this varies from population to population depending on many factors such as body mass index, weight, height, age, educational status, socio-economic status and cultural status (Tunau, *et al.*, 2012). Mane *et al.* (2016) in a study they conducted among girls of a Primary Health Centre Area in Davangere, India, found the mean menarcheal age of the girls to be 13.52 years.

Variations in menstrual cycle length occur between individual women and between populations. Seasonal variation in menstrual cycle irregularity also exist (Williams, 2006). The normal range for ovulatory cycle is between 21 and 35 days, most periods last between 3 to 7 days with the duration of the menstrual flow ranging between 2 to 7 days. Aribio *et al.* (2015) in their work found that the duration of menstrual flow for most girls in both private and public schools was 4-5 days per cycle.

The study conducted by Williams, (2006) observed that majority of women (76.5%) reported at least one cycle classified as irregular; the mean percent of irregular cycles per woman was 37.9%. Few years after menarche, irregular and longer cycles were reported to be common (Diaz *et al.*, 2006; Fraser *et al.*, 2007; Zegeye *et al.*, 2009). Irregular cycles are associated with increased risk for the development of endometrial cancer, (Soliman *et al.*, 2005), non-insulin dependent diabetes mellitus and rheumatoid arthritis (William *et al.*, 2006). Menstruation is often irregular among women of early and late reproductive ages, but its variability among women of midreproductive age remains unclear (Victor *et al.*, 2015) and in a study conducted by Rabiou *et al.* (2019), they found the menstrual cycle to be regular all the time (44.1%), regular in majority of the time (39.7%), regular occasionally (5.0%), and irregular (unpredictable) (11.0%) among the adolescents. Adebimpe *et al.* (2016) in their study found that 82.8% had regular monthly menstrual flow pattern.

In a study conducted by Zegeye *et al.* (2009), dysmenorrhea (pain during menstruation) was reported by 72% of the study subjects and 28.5% had moderate to severe dysmenorrhea which was found to be common among those who had irregular cycles and longer duration of flow while an earlier study done among Malaysian school girls found that 67.7% of the study population experience dysmenorrhea (Lee *et al.*, 2006). In a study conducted by Dharampal *et al.* (2012), 56.15% of the subjects reported that they experienced dysmenorrhea, and abnormal cycle length was common affecting 30.48% of them. In a different study conducted by Rigon *et al.* (2012), 9% of the subjects reported that the length of their menstruation interval was irregular and Zegeye *et al.* (2009) reported that 42.8% of the subjects had irregular cycles. In study conducted by Rabiou *et al.* (2019) they found that 42.5% experienced dysmenorrhea while 30.1% had no dysmenorrhea

Menopausal transition is associated with highly irregular cycles (Santoro and Chervenak, 2004; Williams, 2006). Knowledge of the length and variations of the menstrual cycle

becomes necessary for patient education and identification of deviations from the normal (Diaz *et al.*, 2006; Zegeye *et al.*, 2009). Menstrual abnormalities are very common among younger girls but become less frequent as the girls grow older (Chang *et al.*, 2009; Rigon *et al.*, 2012; Lee *et al.*, 2013). A study conducted in Moscow found that 18% of teenage girls have irregular menstrual cycle during the second year of their menstruation after this, the girls take longer time to establish regular menstrual cycle (Natalia *et al.*, 2014) some girls were discovered to have increased risk of experiencing reproductive problems in future. There is increased interest in occurrence of the menstrual cycle because of the discovery of estrogen being highly involved in several health outcomes (Chavez-MacGregor, *et al.*, 2005).

It is important to note that prolonged menstruation intervals and heavy menstrual bleeding is requires serious attention (Rigon *et al.*, 2012) because it is an important indication of possible pregnancy as well as providing information to the reproductive health of the women (Bae *et al.*, 2018). It has been found that menstrual characteristics are also associated with fertility and abortion (Small *et al.*, 2006). However, in some studies, age was not found to be associated with menstrual cycle length or irregularity, even though this could be because of the limited age range (Williams, 2006). Menstrual cycle data can be used as a direct measurement of hormones (Williams, 2006).

The aim of the study was to determine the menstrual characteristics of Women in Kumana Chiefdom, Kauru Local Government Area of Kaduna State, Nigeria. Qualitative research has been conducted on women's reproductive characteristics in other part of Nigeria but nothing has been reported from Kumana Chiefdom, Kauru Local Government Area of Kaduna State, Nigeria thus, necessitating this study.

Materials and Methods

The study was conducted in Kumana Chiefdom (Fig. 1) which is one of the three chiefdoms in Kauru Local Government Area of Kaduna State, Nigeria. The chiefdom is bounded to the West by Kajuru Local Government, to the East by Lere Local Government, to the South - West by Zangon Katap Local Government, to the South by Tsam (Chawai) Chiefdom and to the North by Kauru Chiefdom of Kauru Local Government.

A total number of 623 women were selected randomly from the eight (8) districts of Kumana Chiefdom. Ethical approval for this study was obtained from the Health Research Ethics Committee of Ahmadu Bello University Teaching Hospital Shika- Zaria Nigeria, with the number; ABUTHZ/HREC/N09/2015. Prior consent from the women was obtained and all the subjects completed a questionnaire, which included their reproductive history such as age at menarche, number of miscarriages, duration of menses, menstrual pain and menstrual regularity.

The sample size was calculated using the formula below; $Sample\ size = Z^2pq/d^2$. Where n = desired sample size, Z = standard normal deviation 1.96 at 95% confidence level, d = degree of precision=0.05, p = proportion=0.7 (70%), $q= 1.0-p$ and $n= 304$ (Naing *et al.*, 2006)

Inclusion and exclusion criteria

- I. **Inclusion criteria:** The women that were used in this study had at least stayed in Kumana chiefdom for a minimum of Ten (10) years, not pregnant and were mentally and physically fit
- II. **Exclusion criteria:** Pregnant women, physically and mentally sick.

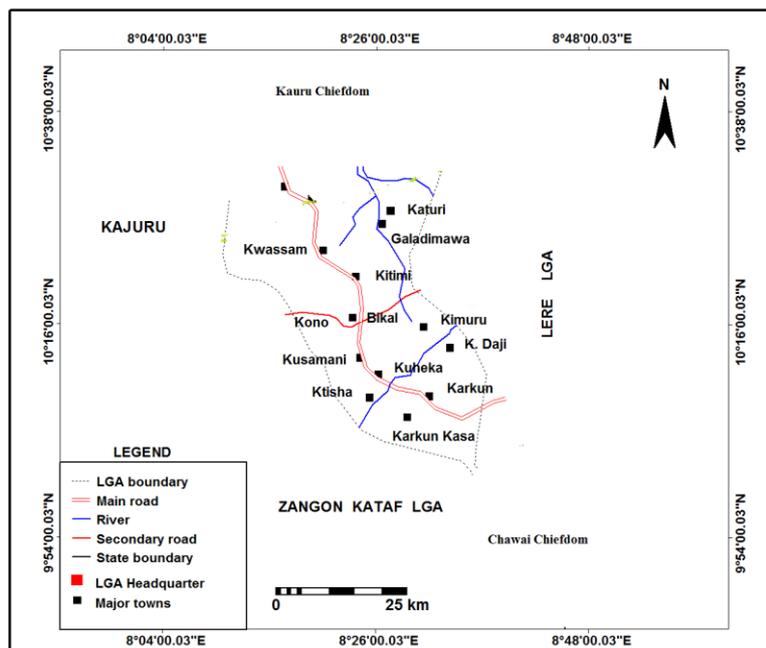


Figure 1: Kumana Chiefdom, Kauru Local Government Area; (Adapted and Modified from Kauru LGA Map, 2006 Nigerian population census)

The statistical package for social sciences (SPSS) 17 for Windows (IBM, Coop, NY) was used for the statistical analyses, the data were reported as Mean \pm SD (standard deviation) and percentages, Student's t- test and one - way Analysis of Variance (ANOVA) were used to test the differences in the mean of the subgroups. Chi - square tests was used to compare proportions between subgroups with respect to the different reproductive characteristics.

Results

The study conducted on the subjects examined the reproductive characteristics of the women in which the result showed the frequency distribution of menarcheal age and the pattern of sexual menstruation of the women showed the mean menarcheal age to be 15.58 years as indicated in figure 2 below

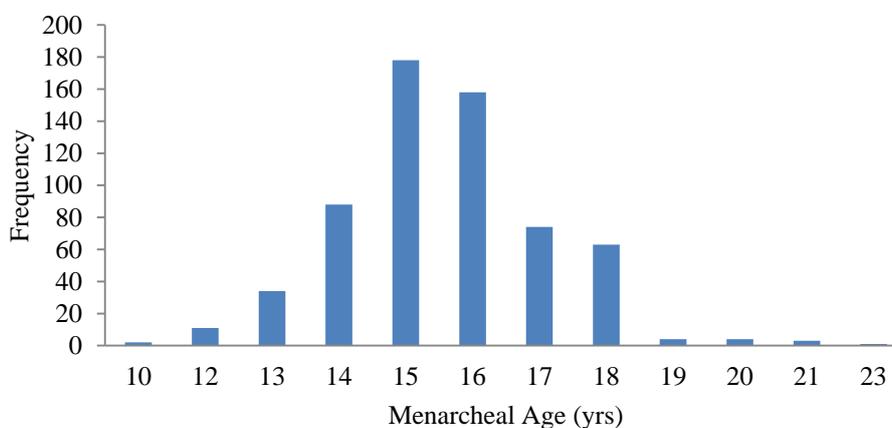


Figure 2: Menarcheal age of Women of Kumana Chiefdom, mean menarcheal age = 15.58 years

A total number of 623 women (age range between 18 -65 years) with a mean age of 39.28 ± 1.31 were administered the questionnaires out of which 5% of the women did not respond to it. Of the 436 (75%) that responded, 156 (25%) were not menstruating while 70% of the women were on menses as seen in Fig. 3. The result showed that a higher percentage of the women used for this study were in the reproductive age (gynecological age).

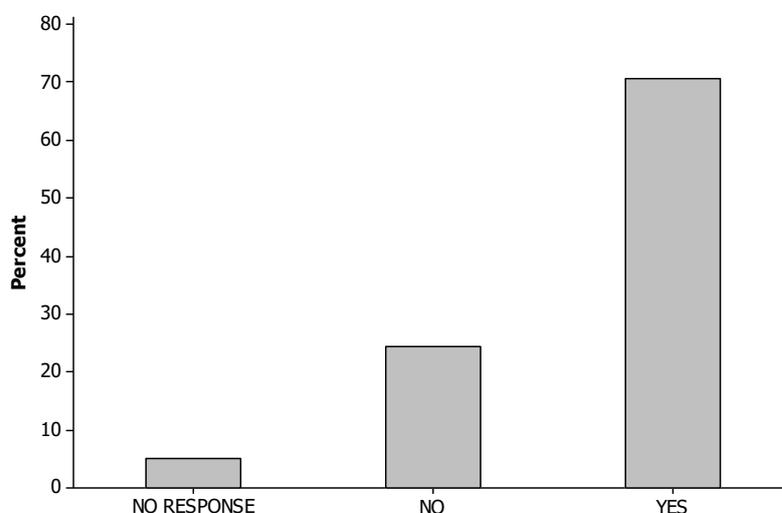


Figure 3: Percentage of women on menses in Kumana Chiefdom

The figure 4 showed the pattern of menses experienced by women in the study population, which indicated that 19% (118) of the women experience irregular menstruation, 57% (355) of the women experience regular menstruation while 25% (156) of the women in the study population did not respond to the questionnaire administered to them.

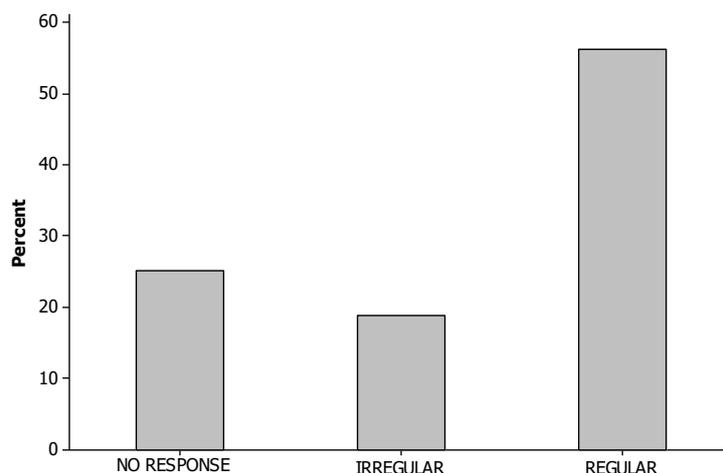


Figure 4: Percentage of regular and irregular menstruation of women in Kumana Chiefdom

Figure 5 showed menstrual flow of the women in association with regular and irregular menses. 76.4% of the below. women were seen to have regular menses of which, (3.1%) of the women had a duration of menstrual flow of 1 day, (9.3%) of the women had a duration of menstrual flow of 2 days, (33.8%) of the women had a duration 3 days of menstrual flow, (41.2%) of the women had a duration 4 days, (11.9%) of the women had 5 days duration of

menstrual flow and only (0.8%) of the women had 7 days duration of menstrual flow. 23.6% of the women had irregular menses and the duration of menstrual flow for the women from the figure below showed (2.5%) of the women to be 1 day, (5%) women had menstrual flow of 2 days, (40%) of the women had duration of menstrual flow of 3 days, (25.8%) of the women had duration of 4 days, (20%) of the women had duration of 5 days and (1.7%) of the women had duration of 7 days. It was also observed that a significantly high number of women had the duration of menstrual flow of 3 days for women that experienced both regular and irregular menstrual patterns.

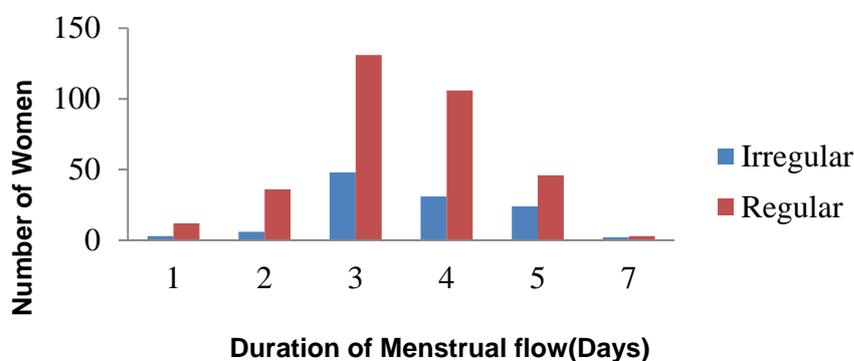


Figure 5: Frequency of duration of menstrual flow and type of menses of women in Kumana Chiefdom

The figure 6 shows the nature of dysmenorrhea experienced by the women of Kumana Chiefdom which revealed that 16.7% of the women experience moderate menstrual pain, 13.7% experience mild menstrual pain, 4.3% have severe menstrual pain while 65.3% of the women did not experience dysmenorrhea.

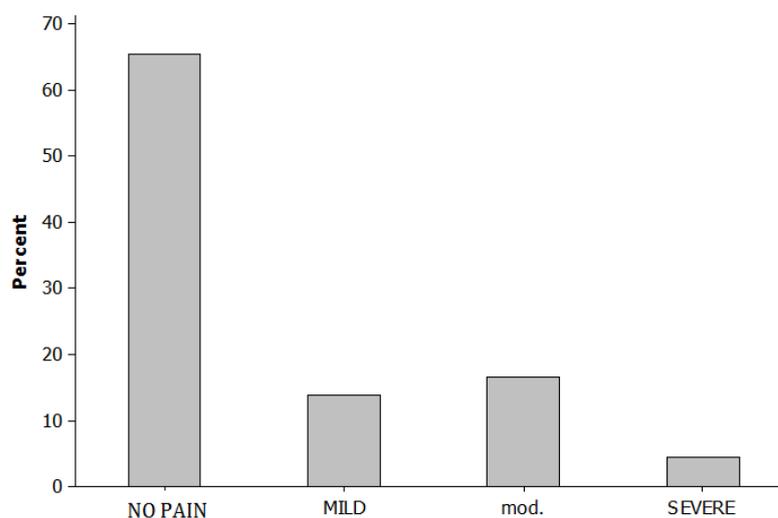


Figure 6: Nature of dysmenorrhea experienced by women in Kumana Chiefdom

The figure 7 showed that 56.7% women that experience regular menses never had any miscarriage, 23.2% women had one miscarriage, 10.3% women had two miscarriages, 1.5% women had three miscarriages while 0.5% women had 5 and above number of miscarriages. For the women that experienced irregular menses, 58.3% women did not experience miscarriage, 25% women had one miscarriage, 16.7% women had two

miscarriages, 2.5% women had three miscarriages while only 0.8% woman had four miscarriages.

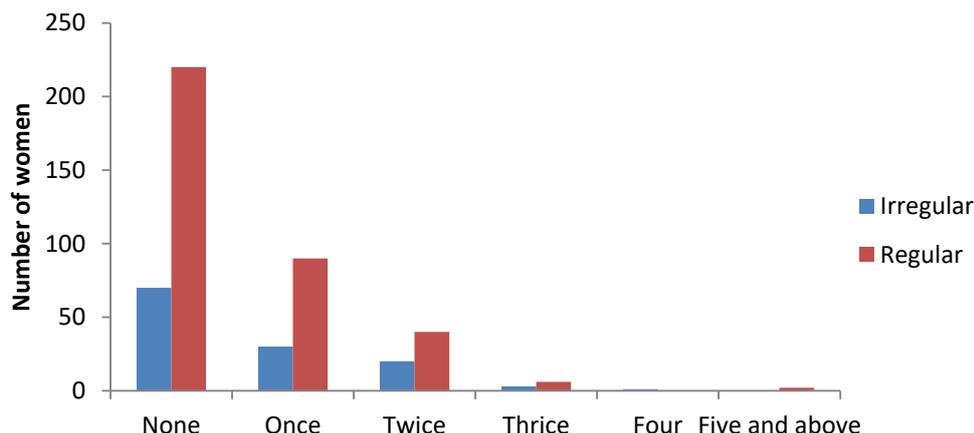


Figure 7: Frequency of menstruation and miscarriages of women in Kumana Chiefdom

Figure 8 below shows the frequency of miscarriages with respect to the nature of menstrual flow. The result indicated that there was no association between miscarriages and nature of menstrual flow.

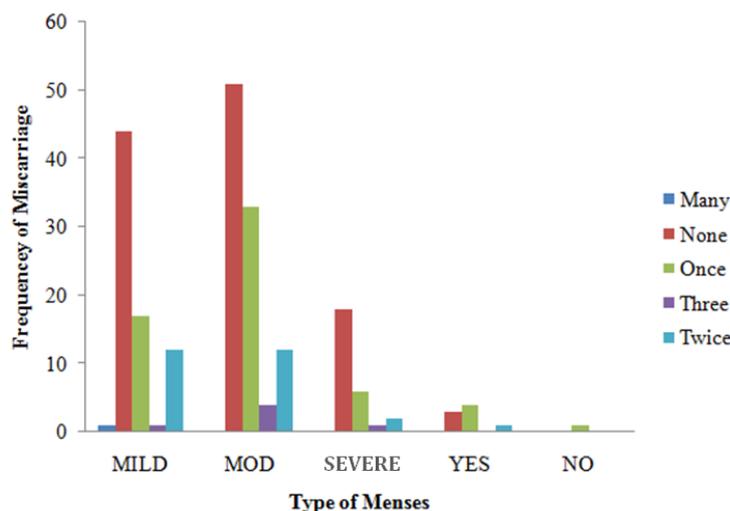


Figure 8: Association between nature of menstrual flow and frequency of miscarriages

Discussion

The age at menarche of women in this study was found to be 15.58 years which found to be different from the age at menarche observed for girls in Davengere India in a study conducted by Mane *et al.*, (2016) which could have resulted from environmental and cultural factors. It was found in this study that 25% of the women were not menstruating, while 70% were undergoing menstruation, which is an indication of high reproductive success as it corroborates results reported by Williams (2006). In the present study, the report of high prevalence of menstruating women was consistent with the reports from the study conducted by Natalia *et al.*, (2014) though not in accordance with the study conducted by Rabiun *et al.* (2019), this may be so because this study was carried out on women. The 3-5 day duration of menstrual flow observed in this student is consistent with reports by Aribo *et al.* (2015) and by Rabiun *et al.* (2019) who found the menstrual flow to be between 4 – 5 days per

cycle and an average duration of 4.9 days menstrual flow. This study observed that majority of the women had regular menstruation, which is an indication that few women in this study population were at risk of developing endometrial cancer (Soliman, *et al.*, 2005), non-insulin dependent diabetes mellitus and rheumatoid arthritis (Williams, *et al.*, 2006). The result of this study also indicating that 65% did not experience dysmenorrhea, 18% reported to experience moderate menstrual pain and the remaining had mild or severe menstrual pain which is closer to the result obtained in a study conducted by Zegeye *et al.*, (2009) that observed 72% of the subject experiencing menstrual pain and 28.5% had moderate to severe menstrual pain and also the result obtained in this study was found to be in accordance with the one obtained by Rabiou *et al.* (2019) in which they found 42.5% of the subjects to have the prevalence of dysmenorrhea. The result shown in figure 7, indicated that the number of women that had miscarriages were fewer than those that had no miscarriage associated with both regular or irregular menstruation, which is an indication of good reproductive health in the study population and less implications for the women's health outcomes (Kuindzhi *et al.*, 2006). It was observed from the result shown in Figure 7 that 56.7% of the women never had a miscarriage, while 23.2%, 10.3%, 1.5% and 0.5% had one, two, three and four miscarriages respectively. This also indicates a good reproductive health in the study population as reported by Williams, (2006). The result seen indicated miscarriage to be associated with the severity of dysmenorrhea, thereby suggesting that healthy reproductive life is a good factor in controlling miscarriages as observed in the study conducted by Natalia *et al.*, (2014) who reported that some girls were discovered to have an increased risk of experiencing reproductive problems in future because, health status of the ladies have great influence on their reproductive characteristics.

Conclusions

A high percentage women in this study population had an average menarcheal age of 15.58 years, experienced regular menstruation, with a duration of 4-5 days menstrual flow and low prevalence of dysmenorrhea. Thus indicating that the women in this study population are likely to have high reproductive success.

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