



Prevalence And Risk Factors Of Dysmenorrhea Among Female Undergraduates Of Ignatius Ajuru University Of Education Port Harcourt, Rivers State

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ABSTRACT

This study investigated the prevalence and risk factors of dysmenorrhea among female undergraduates in Ignatius Ajuru University of Education Port Harcourt, Rivers State. The study adopted the descriptive cross sectional survey design. The sample size of 400 was calculated using Taro Yamene method formula. A multi-stage sampling procedure was adopted for this study. A self-structured questionnaire was developed for this study to collect data. The data collected from this study were collated and analyzed using the Statistical Products for Service Solution (SPSS). The result showed that 334(83.5%) have ever experienced abdominal or stomach discomfort prior to your menstruation, 295(73.8%) agreed that their menstruation accompanied with prolonged pain, 326(81.5%) indicated that they experience for severe cramp at/in you abdomen towards few days to your monthly menses, 254(63.5%) indicated that they experience painful menstruation on the first day, 105(26.3%) indicated first two days and 41(10.3%) indicated all through the menstruation, 288(72.0%) agreed that their menstrual cramping is accompanied with their menstrual flow. However, 159(39.8%) indicated that the pain of their menstrual cramp is mild, 160(40.0%) indicated that it is severe and 81(20.3%) indicated it was very severe. The tested hypotheses revealed that there was a significant association between age at menarche (X^2 -value = 19.718; df = 4, $p < 0.05$), family history (X^2 -value = 3.123; df = 2, $p > 0.05$), previous case of abortion (X^2 -value = 8.646; df = 2, $p > 0.05$) and irregular menstrual flow (X^2 -value = 15.037; df = 2, $p < 0.05$) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. It was concluded that the prevalence of dysmenorrhea was significantly high and several factors such as age at menarche, family history, irregular flow of menses and previous cases of abortion were associated with dysmenorrhea. It was recommended that amongst others that the university health service should ensure that Health education is organized for students and females educate them on several reproductive issues such as dysmenorrhea that affect health.

Keywords: prevalence, risk factors, dysmenorrheal, female undergraduates

INTRODUCTION

Menstruation is normal condition that every female most encounter to determine their womanhood. One of the major physiological changes that take place in adolescent girls is the onset of menarche, which is often associated with problems of irregular menstruation, excessive bleeding, and dysmenorrhea (Agarwal & Agarwal, 2010). Of these, dysmenorrhea is one of the common problems experienced by many adolescent girls. Menstrual cramps (dysmenorrhea) are throbbing or cramping pains in the lower abdomen. Many women have menstrual cramps just before and during their menstrual periods. For some women, the discomfort is merely annoying. For others, menstrual cramps can be severe enough to interfere with everyday activities for a few days every month. Conditions such as endometriosis or uterine

fibroids can cause menstrual cramps. Treating the cause is key to reducing the pain. Menstrual cramps that are not caused by another condition tend to lessen with age and often improve after giving birth. Dysmenorrhea is a common gynecological condition with painful menstrual cramps of uterine origin. Two categories of dysmenorrhea are primary and secondary dysmenorrhea. Primary dysmenorrhea refers to menstrual pain without any pelvic pathology. These symptoms have underlying cause of elevated endometrial prostaglandins and their metabolites. Dysmenorrhea is divided into two broad categories, i.e., primary and secondary dysmenorrhea. The presence of crampy, recurrent pain in the lower abdomen during menses in the absence of demonstrable disease is primary dysmenorrhea. Adolescents and young women are more likely to be diagnosed with primary dysmenorrhea, an exclusionary diagnosis. Women suffer from pain related symptoms in secondary dysmenorrhea, with a disorder accounting for symptoms like endometriosis, uterine fibroids, or adenomyosis. The significant clinical features experienced by women suffering from secondary dysmenorrhea include pain during intercourse, resistance to effective treatment, and enlarged uterus.

The onset of puberty in the life of a young girl sets into motion hormonal, psychological, cognitive and physical changes which transforms the girl from a child to a sexually matured woman (Kumbhar et al., 2011). Menstruation, which is controlled by the hormones of the hypothalamopituitary axis and is one of the milestones of puberty in girls, involves the cyclical shedding of the inner lining of the uterus. Onset of menstruation is celebrated in some cultures as it shows the girl is becoming a woman. It however, also heralds a period of inhumane treatment of some post pubescent girl since some cultures and religions consider the menstruating woman as impure leading to forced seclusion, reduced mobility, as well as dietary and social restrictions (Bhartiya, 2013; United Nations Children Funds, 2013). Some women, before or during menstruation also had to contend with dysmenorrhea which is a painful cramping sensation in the lower abdomen and sometimes accompanied by headache, dizziness, diarrhea, bloated feeling, nausea and vomiting, backache and leg pains (Grandi et al., 2012). This menstruation associated pain occurs as a result of excessive production of prostaglandins in the endometrium during the ovulatory cycle which then causes contraction of myometrium, vasoconstriction as well as sensitization of nerve ending.

Good proportion of females pooled the risk of dysmenorrhea and others related condition. Sima et al. (2022) reported that occurrence of dysmenorrhea is associated with present of certain conditions such as chronic infectious diseases, family history, social life among others resulting into high prevalence of 78.4%. Karout et al. (2021) in their study it was reported that the prevalence of primary dysmenorrhea was 80.9% and major factors significant associated with heavy menstrual pains family history (AOR=10.28), history in loss weight (AOR=2.05) and age of women. Previously, studies of Ju et al. (2014) indicated that the prevalence of dysmenorrhea varied between 16%-91% in women of childbearing age with slightly below average of women had severe pain. Ju et al. (2014) observed that the prevalence of dysmenorrhea was associated with modifiable and potential risk factors such as women's age of menses, use of contraceptive orally, and high stress are inversely associated with dysmenorrhea. Evidence from Tavallae et al. (2011) showed that the prevalence of no, mild, moderate, and severe menstrual pain was 10%, 41%, 28%, and 22% respectively and associated factors were family history, higher stress, depression, age as potential confounding factors. It was observed that females are psychologically and physically derail due to the experience of heavy painful menstruation. Hence, this study investigated the prevalence and risk factors of dysmenorrhea among female undergraduates in Ignatius Ajuru University of Education Port Harcourt, Rivers State.

Statement of the Problem

The actual prevalence of dysmenorrhea is not globally registered and recognized. Physiological changes occur mostly when there is hormonal instability during menstruation in female. It was observed that females of reproductive age suffer for health effects of prolong painful menstruation leading psychological and social deprivation like anxiety, depression, pain, among others. The welfare of female both adolescent and adult ones have been not considered especially during menstruation where they experience discomfort. The health care status of female during and after menstruation continues to deteriorate as a result of pain and discomfort. Over the years, the researcher observed that females are

depressed severely once their monthly discharge is approaching or about to take place. It is pertinent that most female undergraduates in IAUE missed several academic activities and absent themselves from lectures during menstruation due to unbearable pain traceable to the menstrual period which has raised concern to the researcher. It is unclear the extent to which young girls are incapacitated each month due to the severity of dysmenorrhea. Hence, this raises a need to evaluate the menstrual characteristics and prevalence of dysmenorrhea in female undergraduates in tertiary educational institution. To this extent, the researcher is poised to unravel the prevalence and risk factors of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State..

METHODOLOGY

The research design employed for this study was descriptive survey design. The area of this study was Ignatius Ajuru University of education Rumuolumeni Port Harcourt, Rivers State. The population of this study comprised of female undergraduates in Ignatius Ajuru University of Education, Port Harcourt. The sample size for this study was 400 undergraduate students in IAUE. The sample size of the study was estimated using Taro Yamene method formula. A multistage sampling procedure was adopted for the study. The first stage involves the use of simple random sampling technique to select three faculties which include natural and applied sciences, social sciences and humanities respectively from the existing six faculties by balloting without replacement. Stage two: simple random sampling technique was used to select four departments from each selected faculties for this study. The third stage involves the use of systematic sampling technique to select 46 undergraduates from each of the selected department in IAUE for this study.

The instrument for data collection was a self-structured questionnaire titled Prevalence, and Associated Factors of Dysmenorrhea Questionnaire (PPAFDQ). The instrument for the study was validated by three experts in the department of Human Kinetics Health and Safety Studies, Ignatius Ajuru University of Education. Copies of the instrument alongside the objectives, research questions and hypotheses were given to these aforementioned experts for moderation, suggestions and criticism, corrections from these experts were employed in writing the final copy of the instrument, hence, the instrument is valid and was used for the study. Split-half method was used to determine the degree of internal consistency of the instrument. 40 copies of the instrument were administered at the same time to undergraduates in Rivers State University which is homogenous to the area of study. The reliability index was determined using Cronbach Alpha. If a reliability co-efficient of 0.6 and above is attained, the instrument will be accepted as being reliable for the study. Data collection was done by distributing the questionnaire to the participants one-on-one. Three trained research assistants were employed to help the researcher during the data collection. The period for administering and retrieving the questionnaire was undertaken for three weeks with on spot retrieval after completion. Data collected were analyzed using Statistical Product for Service Solution (SPSS) version 25.0. Statistical tools such as percentages (%), frequency and Chi-square test at 0.05 level of significance.

RESULTS

Table 1: Socio-demographic data

Variables	Frequency	Percentages
Age		
<20 years	100	25.0
21-25 years	166	41.5
26>	134	33.5
Age at Menarche		
<10 years	47	11.8
11-15 years	284	71.0
>16	69	17.3
Level of study		
100	100	25.0
200	100	25.0
300	100	25.0
400	100	25.0

Table 1 shows the socio-demographic data. The result showed that 100(25.0%) were aged <20 years, 166(41.5%) were aged 21-25 years and 134(33.5%) were aged >26 years. For age at menarche, 47(11.8%) had their menarche at <10 years, 284(71.0%) had theirs at 11-15 years and 69(17.3%) had theirs at >16 years. For level of study, 100(25.0%) were in 100 level, 100(25.0%) were in 200 level, 100(25.0%) were in 300 level and 100(25.0%) were in 400 level.

Table 2: Prevalence of dysmenorrhea

Items	Frequency	Percentages
Have you ever experienced abdominal or stomach discomfort prior to your menstruation?		
Yes	334	83.5
No	66	16.5
Is your menstruation accompanied with prolonged pain?		
Yes	295	73.8
No	105	26.3
Do you experience for severe cramp at/in you abdomen towards few days to your monthly menses?		
Yes	326	81.5
No	74	18.5
At what period do you experience painful menstruation?		
First day	254	63.5
First two days	105	26.3
All through my menstruation	41	10.3
Is your menstrual cramping accompanied with the menstrual flow?		
Yes	288	72.0
No	112	28.0
How painful is your menstrual cramp?		
Mild	159	39.8
Severe	160	40.0
Very severe	81	20.3

Table 2 shows the prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. The result showed that 334(83.5%) have ever experienced abdominal or stomach discomfort prior to your menstruation, 295(73.8%) agreed that their menstruation accompanied with prolonged pain, 326(81.5%) indicated that they experience for severe cramp at/in you abdomen towards few days to your monthly menses, 254(63.5%) indicated that they experience painful menstruation on the first day, 105(26.3%) indicated first two days and 41(10.3%) indicated all through the menstruation, 288(72.0%) agreed that their menstrual cramping is accompanied with their menstrual flow. However, 159(39.8%) indicated that the pain of their menstrual cramp is mild, 160(40.0%) indicated that it is severe and 81(20.3%) indicated it was very severe.

Table 3: Chi-square test showing significant association between age at menarche and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State

Variables	Dysmenorrhea			Total Freq %	X ² -value p-value df	Decision
	Mild Freq %	Severe Freq %	Very severe Freq %			
Age at menarche						
<10	53(53.0)	27(27.0)	20(20.0)	100(100)	19.718	Rejected
11-15	47(28.3)	79(47.6)	40(24.1)	166(100)	0.001	
16>	59(44.0)	54(40.3)	21(15.7)	134(100)	4	
Total	159(39.8)	160(40.0)	81(20.3)	400(100)		

*Statistical significant (p<0.05)

The finding of the study showed that there is a significant association between age at menarche (X²-value = 19.718; df = 4, p<0.05) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Therefore, the null hypothesis which states that there was no significant association between age at menarche and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State was rejected.

Table 4: Chi-square test showing significant association between family history and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State

Variables	Dysmenorrhea			Total Freq %	X ² -value p-value df	Decision
	Mild Freq %	Severe Freq %	Very severe Freq %			
Family history						
Yes	67(37.4)	80(44.7)	32(17.9)	179(100)	3.123	Accepted
No	92(41.6)	80(36.2)	49(22.2)	221(100)	0.210	
Total	159(39.8)	160(40.0)	81(20.3)	400(100)	2	

*Statistical significant (p>0.05)

The finding of the study showed that there is no significant association between family history (X²-value = 3.123; df = 2, p>0.05) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Therefore, the null hypothesis which states that there was no significant association between family history and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State was accepted.

Table 5: Chi-square test showing significant association between previous abortion and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State

Variables	Dysmenorrhea			Total Freq %	X ² -value p-value df	Decision
	Mild Freq %	Severe Freq %	Very severe Freq %			
Previous cases of abortion						
Yes	86(36.9)	107(45.9)	40(17.2)	233(100)	8.646	Accepted
No	73(43.7)	53(31.7)	41(24.6)	167(100)	0.013	
Total	159(39.8)	160(40.0)	81(20.3)	400(100)	2	

*Statistical significant (p>0.05)

The finding of the study showed that there is no significant association between previous case of abortion (X²-value = 8.646; df = 2, p>0.05) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Therefore, the null hypothesis which states that there was no significant association between previous case of abortion and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State was accepted.

Table 6: Chi-square test showing significant association between irregular menstrual flow and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State

Variables	Dysmenorrhea			Total Freq %	X ² -value p-value df	Decision
	Mild Freq %	Severe Freq %	Very severe Freq %			
Irregular menstrual flow						
Yes	127(41.9)	128(42.2)	48(15.8)	303(100)	15.037	Rejected
No	32(33.0)	32(33.0)	33(34.0)	97(100)	0.001	
Total	159(39.8)	160(40.0)	81(20.3)	400(100)	2	

*Statistical significant (p<0.05)

The finding of the study showed that there is a significant association between irregular menstrual flow (X²-value = 15.037; df = 2, p<0.05) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Therefore, the null hypothesis which states that there was no significant association between irregular menstrual flow and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State was rejected.

DISCUSSION

The result of this study indicated that the prevalence of dysmenorrhea was high. The result showed that respondents who had irregular menstrual flow had 127(41.9%) mild, 128(42.2%) severe and 48(15.8%) very severe dysmenorrhea. The result of this study is in credence with studies of Ju et al. (2014) observed that the prevalence of dysmenorrhea was associated with modifiable and potential risk factors such as women's age of menses, use of contraceptive orally, and high stress are inversely associated with dysmenorrhea. Sima et al. (2022) affirmed that the prevalence of dysmenorrhea was 78.4%. Evidence

from Tavallae et al. (2011) showed that the prevalence of no, mild, moderate, and severe menstrual pain was 10%, 41%, 28%, and 22% respectively and associated factors were family history, higher stress, depression, age as potential confounding factors. The result of this study is in line with studies of Bakhsh et al. (2022) indicated that the observed dysmenorrhea in the study; 1107 (92.3%) women had non-pathological dysmenorrhea (primary) while 92 (7.7%) women had pathological dysmenorrhea (secondary) respectively Kural et al. (2015) which indicated the prevalence of dysmenorrhea was very high among female amounting to 84.2% of which 34.2% had experienced severe pains. Agarwal and Agarwal (2010) added that the prevalence of dysmenorrhea in adolescent girls was found to be 79.67%. Patel et al. (2006) affirmed that the risk of moderate to severe dysmenorrhea was associated with the experience of violence (OR= 2.23). The result of this study is in consonance with studies of Sima et al. (2022) agreed that prevalence of dysmenorrhea was 78.4% among girl. It is pertinent because physiological changes during adolescent development affect reproductive health status.

The finding of the study showed that there is a significant association between age at menarche (X^2 -value = 19.718; df = 4, $p < 0.05$) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. The result of this study is in corroboration with findings of Patel et al. (2006) which reported that girls for age >14 compared with <13 years) and older age (OR 0.43) for age 40-50, compared with 18-24 years) were protective. Ju et al. (2014) depicted that age at first menarche was inversely associated with dysmenorrhea, and high stress increased the risk of dysmenorrhea. De-Sanctis (2016) added that age of female showed a significant risk of dysmenorrhea as girls below 15 years were 3.2 times more likely to have severe pain of the same problem. Ameade et al. (2018) affirmed the prevalence of dysmenorrhea was high among females at their age of menarche.

The finding of the study showed that there is no significant association between family history (X^2 -value = 3.123; df = 2, $p > 0.05$) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Kural et al. (2015) reported that good proportion of girls (53.7%) had some family history of dysmenorrhea and female with family history of dysmenorrhea are 3.0 times more likely to suffer for the same problems. The result of this study is in line with studies of Bakhsh et al. (2022) which illustrated the family history was 3.2 times more likely predict the prevalence of dysmenorrhea among girls. Ju et al. (2014) affirmed that family history of dysmenorrhea strongly increased its risk, with odds ratios between 3.8 and 20.7 as a significant predictor of dysmenorrhea. Tavallae et al. (2011) protective factors for menstrual pain while women with family history of dysmenorrhea. Karout et al. (2021) agreed that family history was 2.225 times more likely to develop severe dysmenorrhea. Al-Jefout et al. (2015) added that good proportion of female (55.8%) had a family history of severe dysmenorrhea compared with 33.1% of those without dysmenorrhea

The finding of the study showed that there is no significant association between previous case of abortion (X^2 -value = 8.646; df = 2, $p > 0.05$) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Sima et al. (2022) prevalence of dysmenorrhea was 78.4% during menstrual period among female with prior cases of abortion. Ju et al. (2014) indicated that the prevalence of dysmenorrhea was high among female who had done abortion. Karout et al. (2021) affirmed that previous case of infection and abortion was found significantly associated with reproductive health issues such as dysmenorrhea. Patel et al. (2006) depicted that previous abortion was 2.7times more likely to have developed dysmenorrhea among girls.

The finding of the study showed that there is a significant association between irregular menstrual flow (X^2 -value = 15.037; df = 2, $p < 0.05$) and prevalence of dysmenorrhea among female undergraduates of Ignatius Ajuru University of Education Port Harcourt, Rivers State. Karout et al. (2021) indicated that heavy menstrual and irregular flow of menses was found to be significant risk factor of primary dysmenorrhea. Al-Jefout et al. (2015) affirmed that heavy menstrual flow was significantly associated primary dysmenorrhea among female. Sima et al. (2022) and Ameade et al. (2018) whose studies depicted that female with irregular menstrual flow were 10.5 times more likely to be significantly associated with primary dysmenorrhea at $p < 0.05$.

CONCLUSION

Based on the findings of this study, it was concluded that the prevalence of dysmenorrhea was significantly high and several factors such as age at menarche, family history, irregular flow of menses and previous cases of abortion were associated with dysmenorrhea.

RECOMMENDATIONS

Based on the finding, it was recommended that:

1. University health service should ensure that Health education is organized for students and females educate them on several reproductive issues such as dysmenorrhea that affect health.
2. Reproductive health education should be improved enough by including them in the school curriculum to prepare girls for menstruation and inform them about problems related to this phenomenon, especially dysmenorrhea.
3. University health service should organize periodical awareness programs to minimize the consequences of primary dysmenorrhea should be introduced to female students during first year entry.
4. Female students should visit health care providers for diagnosis and or early detection of stages of dysmenorrhea so that adequate treatment and management will be obtained.
5. University management should provide welfare package to affect females to enable meet up academic activities as dysmenorrhea may affect their school activity and make free medical services.

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