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MENSTRUAL PATTERN AND CONTRACEPTIVE USE AMONG FEMALE UNDERGRADUATE STUDENTS OF PRINCE ABUBAKAR AUDU UNIVERSITY, ANYIGBA

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Abstract

There is a growing concern about dysmenorrhea (menstrual pain among young female undergraduates of higher institutions because of its deleterious effect on their menstrual health and academic success. This study examined menstrual pattern and contraceptive use among female undergraduate student of Prince Abubakar Audu University, Anyigba. The study is descriptive in nature. The sample size was 330 derived through Krejcie and Morgan (1970) sample size formula based on the female population of the school. Multi-stage sampling technique employed to choose the respondents from the population of the students using multi-stage sampling technique. Data analysis was done with the use of Statistical Package for Social Sciences (SPSS) version 20. The analysis was done at univariate level using frequency distribution and percentages. Means scores were calculated for each Likert scale questions to make decision since the affected variables are ordinal in nature. The study showed that vast majority of the female student's experienced menstrual pains. The study further revealed that sizable percentage reported irregular cycles. It is also reported that the most commonly known contraceptive methods among the female undergraduate students are oral pills, injection and condom. It is revealed that contraception help female undergraduate students of higher learning to control their menstrual flow, reduce menstrual pain and have regular menstrual cycle. The study highlights the importance of better reproductive health education and services to enhance menstrual health and harmless contraceptive practices among female undergraduate students. These conclusions provide valuable understandings for policymakers and healthcare service providers to improve reproductive health care in tertiary institutions.

Keywords: Menstrual pain, Contraceptive, Knowledge, Menstrual Pattern, Female and Undergraduates.

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Introduction

Menstruation is the physiological change that takes place in the life of amatured woman through evidence of monthly flow of blood from the vagina **(Itriyeva, 2022)**. It is one of the signs that a girl-child has reached the age of puberty. This experience will likely continue until the woman reaches the age of menopause or intermittent disrupted by pregnancies and childbirth **(Winkler, 2020)**. Menstruation is a lived experiences for women which is a regular bodily function **(Johnston-Robledo & Chrisler, 2020)**. It is strongly related to reproductive issue. Menstruation or menstrual cycle is a sequence of physiological changes that occur in a woman's body in preparation for conception **(Ncube, 2022)**. A typical menstrual cycle occurs every 28th day and could occur in other women between 21 and 35 days or even more **(Schmalenberger et al., 2021)**. Menstrual cycle commonly known as menstruation or period is the loss of the uterine lining. This sometimes comes with pain and other discomforting experiences for women. This could be caused by many factors such as genetics, lifestyle, pregnancy related conditions and any other underlying health issues such as hormonal imbalance, uterine fibroids, and smallness of the cervix **(Begum et al., 2016)**. This menstrual disorders could manifest in the form of tiredness, failure to concentrate on the given task, lethargy, depression, dizziness, loss of appetite, mood changes, uneasiness, nausea and vomiting, excessive perspiration and many others **(Begum et al., 2016)** . Menstrual pattern vary among women. Some women have regular and predictable menstrual cycle while many others have irregular or on rare cases non-existing. Some women experience regular and painless menstrual cycle while others have deleterious menstrual experiences characterize by pains, discomfort and health related challenges that keep them indoors for days thereby disrupting their normal daily activities and impact their quality of life **(Jha et al., 2020)**. There is a growing concern among women especially young ones on how to maintain menstrual health on a monthly basis especially while schooling. This may be due to the fact that menstrual cycle is not a sport that should be displayed to outsider nor something that could be opened to public conversation **(Johnston-Robledo & Chrisler, 2020)**.This may likely portray such as not being civilized or that such a woman does not have decorum.This experience of menstruating pain and discomfort have made female students to adopt strategies to cope with this unbearable experience. This pain could pose serious challenge to their wellbeing and could have negative effect on their academic performance and social life, if not properly managed. To manage this menstrual crisis many young female undergraduate adopt contraceptive strategy to regulate and control their menstrual flow. Menstrual cycles and reproductive health are intricately linked **(Wilson et al., 2021)**. This relationship is a key factor in determining contraceptive preferences and options needed to improve menstrual health. Studies have shown that women with irregular cycles may choose hormonal contraception to control their menstruation **(Cheng et al., 2021; Liang et al., 2023)** while those with regular and predictable cycles may find it easier to monitor their vulnerability to pregnancy through natural family planning methods. It is reported that about 35% of women use oral contraception to manage pain associated with menstrual cycle in a study carried out on menstrual health literacy and management strategies among young women in Australia **(Armour et al., 2021)**, It is also reported that three-quarter of women under 25 years' experience menstrual pain globally with around nine-tenth of women in Australia experiencing menstrual pain **(Armour et al., 2021)**. In Ethiopia, it is reported that more than three-quarter of women attending high school were experience menstrual pain which was significantly found to be associated with age, irregular menstrual flow, history of menstrual pain in the family, long menstrual flow and skipping of breakfast **(Mammo et al., 2022)**, Menstrual pain was also reported among undergraduate students of higher institutions in Nigeria **(Ezebialu et al., 2021)**.

Understanding menstrual patterns and family planning practices among tertiary students is central to reproductive health promotion and well-being. Menstrual health is vital to woman's overall health, impacting her physical, emotional, and social well-being **(Chirwa, 2019)**. Unpredictable or irregular menstrual cycles can be suggestive of fundamental health issues, which, if not resolved, can have long-term repercussions **(Prior, 2019)**. In addition, contraceptive uptakes among young women are important for consideration, as they play a major role in preventing unplanned pregnancies and managing menstrual-related abnormal conditions **(Prior, 2016)**.

The study of menstrual patterns and contraceptive use is specifically useful in the context of tertiary institutions like Prince Abubakar Audu University, where students are developing into adulthood and may be undergoing fluctuations in their menstrual cycles because of stress, lifestyle transformation, and other reasons (Liu et al., 2020). Furthermore, the knowledge, attitudes, and practices related to contraception can vary widely among undergraduate students, influenced by factors such as education, cultural beliefs, and access to healthcare services (Loaiza & Liang, 2021). The study therefore examined between menstrual pattern and benefit of contraception among female undergraduates of Prince Abubakar Audu University, Anyigba.

Theoretical Foundation

The Health Belief Model (HBM) theory is a psychological framework used to know and predict individual behaviors associated with health, principally in response to health-related solutions. The theory was developed in the 1950s by social psychologists Hochbaum (1958), Rosenstock (1970) in the United States of America Public and Health Service to explain the widespread failure of people to participate in programs to prevent and detect disease. The theory was later extended to study people responses to symptoms (Kirscht, 1974) in their behaviours in response to a diagnosed illness, particularly to medical regimens (Berker, 1974) in **(Champion & Skinner, 2008)**. The model posits that people's beliefs about health problems, perceived benefits of action, and barriers to action can explain their engagement (or lack thereof) in health-promoting behaviors.

The key propositions of the model are stated below;

Perceived severity:

This proposition is centered on individual’s belief about the danger of catching a disease or health disorder. This proposition relate to how individual who is sick perceived the seriousness of a health challenge and its repercussions. It is grounded on the fact that if an individual who is sick believes that a disease is severe, they may likely find a way of avoiding it.

Perceived benefit:

Another proposition of the model is the perceived benefit of the expert advice to reduce the risk or seriousness of the health problem. If people believe that a certain behavior will successfully avert or alleviate a health challenge, they are more likely to accept it.

Perceived barriers:

These are barriers that are seen to prevent individual from seeking solutions to their health problems such as cost, convenience, side effects, and shame. The lower the perceived barriers, the more likely the behavior to seek medical help will be adopted.

Cue to action:

This is an activator or a motivator that prods an individual to respond to situations. This could be internal for example symptoms of health problems or it could be external such as medical advice or health campaigns.

Self-efficacy:

This proposition entails individual ability and confidence to successfully perform health behavior. Increased self-efficacy raises the possibility of behavior modification.

Application of Health Belief Model (HBM)

The Health Belief Model (HBM) can be applied to the study of menstrual patterns and contraceptive use among female undergraduate students in the following way;

Female students may assess their vulnerability to unplanned conceptions or menstrual irregularities based on their knowledge of reproductive health and contraceptive use. Students who perceive that they are at high risk of getting pregnant because of irregular or improper contraceptive use may be encouraged to adopt better contraceptive practices.

The perceived gravity of issues like unintentional pregnancy, menstrual irregularities, or side effects of family planning methods can influence behavior. This model will help female students to seek medical help for menstrual disorders if they realise the gravity of the consequences of experiencing menstrual pain or disorders such as disruption in their academic performance, health problems and social stigma.

Understanding the benefits of contraceptive use and regular monitoring of menstrual patterns can help undergraduates female students adopts family planning methods to enhance their menstrual health and quality of life. In addition, the model can also help female undergraduate to understand inhibitors to medical access and avoid them with a view to improving their health behaviours. Equally, the model will also afford female undergraduates of the available health interventions such as educational campaigns, medical advices that can enhance their menstrual health.

In summary, health campaigns on campuses built around Health Belief Model (HBM) can be used to address erroneous beliefs, reduce barriers, and provide the necessary supports needed to boost students' self-efficacy in respect of menstrual health and contraceptive use.

Research Methods
The study used the following methods:

Study Design
The study used descriptive survey design considering the characteristics of the study population.

Data Source: The data were collected primarily from female undergraduate students of Prince Abubakar Audu University using questionnaire method.

Sample Design and Sample Size:
A total number of three hundred and thirty (330) female students were chosen from the female population (11,234) of the students of Prince Abubukar Audu University Anyigba. Krejcie and Morgan (1970) sample size determination technique was used to arrive at the

figure. Multistage sampling technique was adopted to choose the respondents. At the first stage, out of the 8 faculties in the school, four (4) faculties namely; Management, Social sciences, Art and Humanities and Natural Sciences. At the second stage, from each of the faculties, one department was also purposively selected. In social sciences, Sociology department was selected. In Management sciences, the department of business administration was selected. In Arts and Humanities, the department of religious studies was chosen while in Natural sciences, the department of Physics was chosen. At the third stage, the number of respondents eventually chosen was based on the population in each of the departments' earlier selected through purposive means. The number of respondents chosen from each department is shown in the table below.

Table 1: Summary of the Respondents Selected through Multi-stage Sampling

S/N	Faculties	Departments	Department Population	Sampling distribution of respondents
1	Social Sciences	Sociology	879	$\frac{879}{2,295} \times 331 =$ 127
2	Arts and Humanities	Religious Studies	284	$\frac{284}{2,295} \times 331 = 41$
3	Natural Sciences	Physics	222	$\frac{222}{2,295} \times 331 = 32$
4	Management Sciences	Public Administration	910	$\frac{910}{2,295} \times 331 = 131$
Total	4	4	2,295	331

Data Analysis

Data analysis was done using statistical package for social sciences (SPSS) Version 20. The analysis was done at the univariate level using frequency distribution with percentages and average scores for the questions asked in Likert scale form.

Results

Table 2 shows the socio-demographic characteristics of the respondents. The mean age of the respondents is 21.5 years. The age distribution showed that more than three-fifth of the respondents were aged between 18 and 25 years while more than a quarter of the students were aged below 18 years. Approximately three-fifth of the respondents were not yet married. This is not unexpected as tertiary institutions are majorly patronized by people are yet to get marry to avoid distraction associated with marriage. Further analysis shows that three-fifth of the respondents were Christians while two-fifth were Muslims. The distribution of respondents by faculty shows that two-fifth of the students were in Management Sciences, close to two-fifth of the respondents were in Social Sciences while one-tenth of the students were in Arts and Humanities and Natural Sciences respectively. Equally, the table shows that about half of the respondents were collecting between N20,000 and N30,000.00 allowance on a monthly basis while close to two-fifth of the respondents collect between N30,000 and N50,000 monthly allowance on a monthly basis. The table further shows that majority of the students (67%) were staying off-campus while more than one-fifth of the students were staying in the school hostels. In addition, the distribution of the respondents according to ethnic affiliation shows that more than one-fifth of the respondents were Igala, less than one-fifth of the respondents were Yorubas. The respondents who were Ebira and others were 16% and 28% respectively. The analysis also shows that the respondents cut across four (4) levels,

100 to 400 levels. The percentage spread shows that 36% of the respondents were in 100 level, 31% were in 200 levels, 19% were in 300 levels while 13% were in 400 level.

Table 2: Distribution of Respondents according to their Socio-demographic Characteristics

Variables	Frequency	Percentage (%)
Sex		
Female	330	100
Age in Years:		
Less than 18	90	27
18-25	205	62
26-33	15	5
34-41	14	4
42-49	6	2
Mean Age of respondents	21.5 years	
Marital Status		
Single	241	73
Married	69	21
Divorced	12	4
Separated	8	2
Religion		
Christianity	198	60
Islam	132	40
Faculty:		
Arts and Humanities	41	12
Social Sciences	127	38
Management Sciences	131	40
Natural Science	32	10
Monthly Allowance per Thousand		
₦20-30	155	47
₦30-50	120	36
₦50-70	30	9
₦70 and above	25	8
Place of Residence		
Hostel	109	33
Off-Campus	221	67
Ethnic Affiliation		
Igala	109	33
Yoruba Okun	76	23
Ebira	52	16
Others	93	28
Level		
100	118	36
200	102	31
300	62	19
400	48	14

Menstrual Patterns among the Respondents

Table 3 below shows the distribution of respondents by menstrual pattern. The analysis shows that 54% of the respondents strongly agreed that female students of the university were exposed to irregular menstrual cycle, 24% agreed that there is irregular menstrual cycle

among the students. About 20% of the respondents did not agree that there is irregular flow of menstruation among the students.

The distribution of respondents according to whether the students experience painful menstrual cycle. Thirty six (36%) of the respondents strongly agreed that the students experience painful menstrual cycle while thirty three percent (33%) agreed that they experience painful menstrual cycle. Further analysis shows that of those that believe that menstrual cycle occurs at interval of between 22-30 days, 55% strongly agreed to the assertion while 25% only agreed. Nineteen percent (19%) of the respondents did not agree to the question. In the category of those that provided answer to the option of having regular menstrual cycle between every 28th and 30th day of the month. Thirty three percent (33%) strongly agreed, 36% agreed while 26% did not agree either strongly on not. In the category of number of days of menstrual flow, 40% strongly agreed, 42% agreed, while 18% did not agree. Another pattern observed is the bloating or puffiness in the abdominal area. Thirty three percent (33%) of the respondents strongly agreed, 44% agreed while 23% did not agree.

Table 3: Distribution Female Undergraduate Students of Prince Abubakar Audu University, Anyigba According to Menstrual Patterns.

S/N	Options	SA	A	U	D	SD	Mean	Decision
1.	Irregular menstrual cycle	178 (54%)	78 (24%)	2 (1%)	42 (13%)	30 (8%)	4.01	Common
2.	Painful menstrual cycle	120 (36%)	110 (33%)	10 (3%)	62 (19%)	28 (8%)	3.64	Not common
3.	Menstrual circle breaks at interval between 22-30 days	180 (55%)	83 (25%)	4 (1%)	33 (10%)	30 (9%)	4.06	Common
4.	I have a menstruation regularly every 28-30 days	110 (33%)	120 (36%)	15 (5%)	55 (17%)	30 (9%)	3.77	Not common
5.	Bleeding usually lasts for 3-8 days	130 (40%)	140 (42%)	-	50 (15%)	10 (3%)	4.00	Common
6.	Bloating or puffiness in the Abdominal area	109 (33%)	145 (44%)	-	40 (12%)	36 (11%)	3.76	Not common
7.	Weighted average						3.87	

The mean score of the distribution shows that irregular menstrual cycle is common on the average among the female students of Prince Abubakar Audu University, Anyigba, It is also shown that menstrual flows occurs among the students every 22nd day to 30th day on a monthly basis. It is also observed that on the average, menstrual flow last between 3-8th day every month. However, comparing the grand mean to the mean in each category, it is observed that the grand average is 3.87 when compared to the mean in each of the categories, we conclude that for category 1, since grand mean is less than the mean of those that female students of the university experience irregular menstrual cycle, we conclude that irregular menstrual cycle is common among the students. Furthermore, it is also shown that menstrual circle flows occur between 22nd to 30th day of the month which is common among them because the average occurrence of 4.06 is greater than the grand average. In addition, since the grand mean of 3.87 is less than the mean of those who agreed that bleeding last for between 3 and 8 days (4.00), we conclude that it is common for menstrual cycle to flow between 3 and 8 days among the female students. However, because the means of the categories, painful menstrual cycle (3.64), menstruating regularly every 28-30 days (3.77)

and bloating or puffiness in the Abdominal area during menstruation (3.76) is less than the grand average (3.87), we conclude that painful menstruation, menstruating every 28-30 days and bloating with puffiness at the abdominal area during menstruation are not common among the students.

Knowledge of Contraceptive Methods among the Respondents

Table 4 shows the contraceptive methods known by the respondents. In the analysis the most common methods known by the respondents using the average are oral pills (4.42), injection (4.35) and condom while the least known methods of contraception are withdrawal (1.76) and vaginal rings (1.78).

Table 4: Distribution of Respondents according to Knowledge of Contraceptive Methods

S/N	Options	SA	A	U	D	SD	Mean	Decision
Contraceptive methods Known								
1.	Condom	176 (53%)	140 (42%)	-	4 (1%)	10 (3%)	4.34	Well known
2.	Oral Pills	162 (49%)	149 (45%)	-	8 (2%)	11 (3%)	4.42	Well known
3.	Injection	182 (55%)	122 (37%)	-	12 (4%)	12 (4%)	4.35	Well known
4.	Withdrawal	20 (6%)	4 (1%)	-	160 (48%)	146 (44%)	1.76	Not well known
5.	Vaginal rings	9 (3%)	20 (6%)	-	162 (49%)	139 (42%)	1.78	Not well known
6.	Diaphragm	50 (15%)	10 (3%)		140 (42%)	130 (40%)	2.12	Not well known
7.	Lactational amenorrhea	40 (%12)	80 (24%)	-	100 (30%)	110 (33%)	2.51	Not well known
8.	Implants	69 (21%)	21 (6%)	-	168 (51%)	72 (22%)	2.53	Not well known
9.	Patches	22 (7%)	41 (12%)	-	150 (45%)	117 (35%)	2.09	Not well known
10.	Abstinence	42 (13%)	63 (19%)	-	142 (43%)	83 (25%)	2.51	Not well known
11.	Temperature reading	55 (17%)	26 (8%)	-	136 (41%)	113 (34%)	2.31	Not well known
	Weighted average						2.79	Not well known

To make decision based on the analysis, we compared the grand mean (2.79) to the mean of each of the methods. Since the grand mean of 2.79 is less than the mean of oral pills (4.42), Injections (4.36) and condoms (4.35), we conclude that the methods commonly known among the female students are oral pill, injections and condom.

Table 5 shows the distribution of respondents according to benefit of contraceptive Use. The analysis shows that female undergraduate of Prince Abubukar Audu university use contraceptive to regulate their menstrual flow or prevent excessive bleeding during menstruation (4.29). Further analysis shows that contraceptive use regulate menstrual cycle (4.24). It is also shown that contraceptive methods suppress or mitigate menstrual pain (4.06)

Table 5: Distribution of Respondents according to Benefit of Contraceptive Use for Female Undergraduate Students

S/N	Options	SA	A	U	D	SD	Mean	Decision
1.	Contraceptive are used to quell pain during menstrual cycle	155 (46%)	120 (36%)	-	30 (10%)	25 (8%)	4.06	Beneficial
2.	Contraceptive are used to regulate menstrual cycle	180 (55%)	109 (33%)	-	21 (6%)	20 (6%)	4.24	Beneficial
3.	Contraceptive are used to avoid excessive bleeding during menstrual cycle	200 (61%)	90 (27%)	-	18 (5%)	22 (7%)	4.29	Beneficial
4.	Contraceptive Usage are not good	40 (12%)	78 (24%)	-	112 (34%)	100 (30%)	2.53	Not beneficial
	Weighted average						3.78	

We conclude by comparing the grand average score with the mean score of each category as follows. The grand average score is 3.78 while the mean score for categories in descending order of magnitude are 4.29, 4.24 Since the grad average score 3.78 is less than the mean score of categories 1, 2 and 3, we conclude that methods of contraception are beneficial to the students in mitigating irregular menstrual flow and pains.

Impact of Contraceptive Use on Menstrual Pattern among Female Undergraduate Students

Table 6 describes the impact of contraceptive use on menstrual pattern among the female students of Prince Abubakar Audu University, Anyigba. Using the average score of the likert scale question, it is shown that contraceptive methods mitigate the impact of menstrual pain (4.36), reduces camping (4.32) and helps the female undergraduate to experience regular menstrual cycle (4.28), helps them to prepare for menstrual flow (4.16) and also helps to regulate flow of bleeding.

Table 6: Distribution of Respondents according to Impacts of Contraceptive Usage on Menstrual Pattern among Female Undergraduate Students

S/N	Options	SA	A	U	D	SD	Mean	Decision
1.	I make use of contraceptive in preparation for my menstrual cycle	166 (50%)	120 (36%)	-	22 (7%)	22 (7%)	4.16	Low impact
2.	Contraceptive usage helps me to menstruate regularly	175 (53%)	125 (38%)	-	10 (3%)	20 (6%)	4.28	High impact
3.	Contraceptive usage has helped in regulating my flow of bleeding	150 (45%)	145 (44%)	-	10 (3%)	25 (8%)	4.15	Low impact
4.	Contraceptive usage has freed me from menstrual pain	178 (54%)	128 (39%)	-	14 (4%)	10 (3%)	4.36	High impact
5.	It makes some periods lighter and reduce cramping	150 (45%)	162 (49%)	-	10 (3%)	8 (2%)	4.32	High impact
	Weighted Average						4.25	

We conclude by looking at the impact of the options by comparing the grand average score of 4.25 with the mean score in each category. Since the grand mean score (4.25) is less than the mean score in category 2 (4.28), category 4 (4.36) and category 5 (4.32) we conclude that the methods of contraception have high impact on their menstrual pattern by reducing menstrual pain and cramping during menstruation. However, because the grand mean score (4.25) is

greater than the mean score of category 1 (4.16) and category 3 (4.15), we conclude that the method used has low impact on their preparation for menstruation and menstrual flow.

Discussion

The study examined menstrual pattern and contraceptive use among female undergraduate students of Prince Abubakar Audu University, Anyigba. The study shows that irregular menstrual cycle is common among the students of the school. This finding is supported by **(Zeru et al., 2021)** in their study of magnitude and associated factors of menstrual irregularity among undergraduate students Debre Barhan university in Ugandan. In addition, it is also discovered that menstrual flow occurs every 22 to 30^{th} day of every month. The finding is supported by **(Manna et al., 2023)** in their study among undergraduate students of medical college in Kolkata, India. It is also discovered in the study that menstrual flow occurs between 3-8 days in a menstrual cycle. This finding is also supported by **(Manna et al., 2023)**. However, the study shows that though there is menstrual pain and cramping among the students, it is not common. This finding is not supported by the study carried out by **(Muskan et al., 2021)**.

Furthermore, the study also revealed that oral pill, injection and condom are the most common contraceptive methods known by the female students of the school. This result is supported by **(Agbo et al., 2020)**.

The study further revealed that contraceptive application during menstruation reduces menstrual pain and regulate bleeding during menstruation which ultimately improves the menstrual health and quality of life of female undergraduate students of Prince Abubakar Audu University.

Limitation

The study is descriptive in nature and also limited to female undergraduate students of Prince Abubakar Audu University. It cannot be generalized to all the female undergraduate students in the state and the country.

Conclusion

The study concludes that there irregular menstrual cycle is common among the students of the school. It is also discovered that though there is evidence to suggest that female undergraduates of the school experienced menstrual pain and cramping, it is not common among them. The study also suggest that female undergraduate of the school were using contraceptive to control their menstrual flow as well as prevent menstrual pain to improve their quality of life during this period.

Therefore, the study pinpoints the importance of better reproductive health education and services to promote menstrual health and harmless contraceptive practices among undergraduate students in our university

Recommendation

i. Government should ensure that female undergraduate are educated on their menstrual health
ii. Female undergraduates should be encouraged to visit health facilities for medical help any time they experience irregular flow or menstrual pain to forestall any complications arising from the occurrence.

iii. In addition, effective coping strategy for managing menstrual crisis should be adopted by the students.

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