

# The Influence of Menstruation on the Academic Achievement of Senior Secondary School Biology Students in Irewole Local Government, Osun State, Nigeria.

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**Abstract:** This study is designed to investigate the influence of menstruation on the academic achievement of senior secondary school Biology students in Irewole Local Government Area of Osun State, Nigeria. In the light of this, three specific objectives and research questions were highlighted not only to achieve but also to answer. The study employed quasi-experimental design. Besides, purposive sampling technique was used to take a sample of sixty-five (65) Grade 11 (Senior Secondary School II) students from three public high school within the study area. The data generated from the instrument that is Biology Achievement Test (BAT) was analysed with the aid of a component of inferential statistics. The findings revealed a significant relationship between the academic achievement of students in Biology and menstruation. This is because, students before their menstrual period had mean score of 45 marks which was slightly higher than the one they had during (that is 42 marks) their menstrual period. A significant association between the academic achievement of students in Biology and menstrual pains was also observed. However, there was no significant relationship between the academic achievement in Biology among participants and duration of menstruation. This means that number of days used to complete menstruation period was insignificant to academic achievement of the participants in Biology. It is inferred from the study that there is relationship between menstruation and students' academic performance in Biology among public secondary schools. Recommendations such as provision of conducive facilities in schools, constant awareness programme on the subject matter among others were made.

**Keywords:** Menstruation, Biology, Academic Achievement, Senior Secondary School students, Duration of Menstruation.

## INTRODUCTION

In Nigeria, the philosophy of education is such that discourages gender discrimination at all levels of education. This implies that all students are given equal opportunity to education. This will enable them to compete freely and fairly among themselves regardless of their gender. At all levels of education especially senior secondary school level, male and female students are: put under the same learning environment, taught by the same teachers, exposed to the same curriculum, allow to write the same examinations which are marked by the same examiners under the use of the same marking guide.

However, there are some natural phenomena which may still place female adolescent students at a disadvantage in their attempt to compete keenly with their male counterparts in both internal and external examination at all levels of education. These natural phenomena include: menstruation, pregnancy, birth, breast feeding and weaning. It is at secondary school age the adolescent female students reach the period of puberty which has its major sign as menstruation. This implies that more often than not female students start to experience

menstruation at secondary school level. Menstruation is a fundamental aspect of being a woman and feeling like a woman who can be able to guarantee the continuity of life (reproduction). According to Begum, Hossan and Nazneen, (2014), menstruation is a physiological process, which involves monthly shedding of endometrium accompanied by flow of blood from the uterus through the vagina as a result of effects of hormones released from the hypothalamus-pituitary and ovaries.

Menstruation does not just come monthly in adolescent girls with ease. It is associated with a lot of problem such as abdominal, cramp, tiredness, pelvic pain, breast tenderness, mood swings, dizziness, head ache, back ache, vomiting, and diarrhea. Apart from the menstrual problems stated above by these researchers, other challenges which menstruating girls face in managing menstruation at school include:

- Limited access to affordable and hygienic sanitary materials
- Lack of facilities in schools which can provide privacy for the girls to freely and

comfortably change their sanitary pads, clean themselves or even take bath

- Fear of standing up to answer question in the classroom in case they have stained in their skirt
- Bullying and teasing from boys
- Shame and fear of people finding out that they are on their menses
- Lack of accurate information and fear about what is happening to them
- Lack of support and understanding from their teachers
- Taboos on what they can and cannot do during their menses (Splash, 2015)

With all the above painful symptoms and challenges that are associated with menstruation, the natural phenomenon does not start and stop in a day. The duration of the menstrual cycle, which usually occur every 28 days, varies from 4-10 days with an average of 6 days (Omu, Al-marzouk and Delles, 2011). This indicates that a menstruating girl will pass through this painful and distasteful experience for such number of days. If the menstruation should occur during the school days, it means the menstruating girl may have to pass through a stressful period which may likely put her at a disadvantage during teaching-learning process. However, some research on the performance of well academically qualified women has shown that they were less likely to be negatively affected by menses (Suman, Mrunalini and Jyoti, 2013).

Another pathetic problem is that most of the girls that attend public secondary school in Osun State, Nigeria come from poor home. Thus, they may find it difficult to afford disposable sanitary pads. This may force them to result to the use of material like cloth rags to soak up menstrual blood. These material may not be properly sanitized, increase risk of infection, cause physical discomfort and leak during the school day. Also, none of the public schools used for this study has standard toilet facilities that can provide privacy for menstruating girls to take care of themselves during their menses.

Maurya and Kushwaha (2017) report that UNICEF estimates that one in ten menstruating girls skips school four to five days per month or completely drop out. A girl who is absent from school due to menstruation for four days of every 28 days cycle loses 13 learning days, and 104 hours of school every school term. Around 23% of adolescent girls in the age group 12 years and 18 years drop out of school after they begin menstruation because of inadequate menstrual protection like access to disposable sanitary pads and lack of standard toilet facilities in their schools. This means that a menstruating girl does not have control over the

unavoidable problems which the nature may place on her.

If a girl continues to stay away from school as a result of menstruation for such a period of time in a term then, how would she be able to compete keenly with her male counterparts in both internal and external examinations. However, critics have argued that girls in the developing world face array of challenges and that menstruation is insignificant, almost unperceivable factor. For example, out of the 5,241 Zambian girls who were surveyed by the Adolescent Girls Empowerment Program in 2013, only 1% reported that their absence from school was related to menstruation. The number one reason cited in 54% of responses was illness (calder, 2015). This is to say that there was a mixed report on the effects of menstruation on female academic achievement. If critical examination could be given to the problems which menstruation may bring on the education of female especially at the secondary school level, it becomes imperatives for stakeholders of education to give significant attention to menstruation as it affects female education. This is because, the role educated women would play in the development of any nation cannot be overemphasised.

For instance, women have the greatest inclination to stay at home and spend long periods with their children, hence if educated, they would be able to influence more people and hence contribute more to the society. Investing in the education of females may be an effective attempt to improve standard of living in developing countries. The future of any society lies in the hands of the women. This is so because, women are the closest parents to the children and they are the first teacher in the life of every child. It is only an educated girl that would eventually become an educated mother who will be equipped with all it entails to develop herself, the children, the community, and the society culturally, socially, economically, religiously, and politically.

Despite the problems associated with menstruation and the role which women education could play in national development, little attention has been given to the natural phenomena (menstruation) in relation to girls' academic performance at secondary school level in Nigeria. According to Suman, Mrunalini and Jyoti (2013), menstruation as a research area has not attracted much attention in feminist scholarship. This is attributed to a number of reasons. For instance, the reluctance of equality feminists to engage with anything bodily that would signify differences was instrumental in overlooking menstruation as a topic of scholarly investigation. Not only is menstruation largely considered not interesting, it is widely considered to be a distasteful area of study.

## STATEMENT OF THE PROBLEM

The disparity in the academic performance of male and female students at the secondary school level has generated a lot of outcry by stakeholders of education in Nigeria. This observable disparity has been blamed on a number of social, economic and cultural variables. Most of these variables affect the academic performance of both female and male students. However, there is a natural phenomenon which can affect the academic performance of female students but can never affect that of their male counterparts. This phenomenon is menstruation which may bring fundamental effects on the academic performance of female students only. Despite this, both male and female students are still being subjected to the same continuous assessment and examination conditions.

Aside, many researchers have focused their studies on factors that affect the academic performance of both male and female students. Generally, very few studies had been carried out on the influence of menstruation on academic performance of female students, especially senior secondary school biology students in Osun State. It is on these premises that this study was conducted to investigate the influence of menstruation on students' academic achievement in Biology in Irewole Local Government Area of Osun State, Nigeria.

## RESEARCH QUESTIONS

Based on this background, the following research questions are enumerated to serve as a guide to the study:

- i. Is there any significant relationship between the academic achievement of students in Biology and menstruation?
- ii. To what extent does menstrual pains influence academic achievement of students in Biology during menstruation?
- iii. Is there any significant relationship between the academic achievement of students in Biology and duration of menstruation?

## RESEARCH OBJECTIVES

The broad objective of this study is to examine the influence of menstruation on students' academic achievement in Biology. While, the specific objectives are to;

- i. evaluate the relationship between the academic achievement of students in Biology and menstruation,
- ii. examine the extent to which menstrual pains influence academic

achievement of students in Biology during menstruation, and

- iii. assess the relationship between the academic achievement of students in Biology and duration of menstruation.

## METHODOLOGY

### RESEARCH DESIGN

The study employed quasi-experimental research design which was ex-post facto in nature. The design is considered appropriate for the fact that it disregards random assignment of subjects to experiment and a control group. However, the subjects of the investigation are given dual considerations, that is, before observing menstruation and during that time. In the light of this, pre-test was done for the set of subjects who felt under the first category (before menstruation) while post-test was given to the same set of subjects but only during menstruation. On the part of ex-post facto, the researcher examines the effects of naturally occurring condition of the subjects that is before and during menstruation on achievement.

### POPULATION OF THE STUDY

All public school students most especially those who offered Biology during 2017/2018 academic session in Irewole Local Government Area of Osun State formed the target population.

### SAMPLE AND SAMPLING TECHNIQUE

Sixty-five (65) Grade 11 (Senior Secondary School II) students were sampled from three public high school within the study area. This was done with the aid of purposive sampling technique in which the researcher carefully and consciously chooses the subjects to be included in the sample so that the sample can be developed for his needs. Hence, only those who had been experiencing menstruation were sampled.

### INSTRUMENTATION

The instrument used for the study was self-designed questionnaire tagged Biology Achievement Test (BAT) which comprised two segments. The first segment consisted of demographic attributes of the respondents' menstrual cycle information inclusive. The second segment entailed sixty (60) Biology test items which cut across topics and sub-topics embedded in the Biology scheme of work for Grade 11 (SSS 11). Each of the test items is accompanied with four (4) options from which the respondent is expected to choose the correct answer. The estimated Reliability coefficient of the instrument (BAT) was done with the aid of Kuder Richardson 20 (KR-20) which produced 0.75. This means that 75 percent

variance in student achievement score in Biology is measurable by BAT.

#### DATA ANALYSIS PROCEDURE

A component of inferential statistics that is t-test at one-per cent and five per cent (1% & 5%) levels of

#### Results

**Research Question I:** Is there any significant relationship between the academic achievement of students in Biology and menstruation?

**Table I:** Table showing the t-test result on the relationship between the academic achievement of students' in Biology and menstruation.

Biology Achievement	N	Mean	St. Dev	DF	T-Cal	T-Tab	Remark
Before Menstruation	65	45.366	8.270	123	3.096	1.960*	Sig.
During Menstruation	60	41.580	9.875			2.576**	

5% \* 1% \*\* Source: Author Computation (2019)

Table 1 comprised empirical results emanated from t-test on the Biology achievement of students and menstruation. The researcher was able to reckon with sixty (60) out of the sixty five (65) respondents during their respective menstruation periods. However, on the average, the mean score obtained by the participants before and during menstruation are 45 marks and 42 marks respectively. At 1% and 5% levels of significance with degree of freedom of 123, the table values of

significance was used to analyse the data collected for the study in order to answer the research questions and achieve the specific objectives enumerated above.

t-statistics are 2.576 and 1.960 respectively while calculated value of 3.096 (t-calculated) was obtained. It is observed that critical values are less than calculated value. Therefore, this study established a significant relationship between the academic achievement of students in Biology and menstruation. This is because, students before their menstrual period had mean score which was slightly higher than the one they had during their menstrual period.

**Research Question II:** To what extent does menstrual pains influence academic achievement of students' in Biology during menstruation?

**Table II:** Table showing the t-test result on the relationship between the academic achievement of students' in Biology and menstrual pains.

Symptoms	N	Mean	St. Dev	Df	T-Cal	T-Tab	Remark
Without Pains	35	42.59	7.637	58	5.040	2.000*	Sig.
With Pains	25	40.20	6.586			2.660**	

5% \* 1% \*\* Source: Author Computation (2019)

Table 2 showed that at 1% and 5% levels of significance with degree of freedom of 58, the table values of t-statistics are 2.660 and 2.000 respectively while calculated value of 5.040 (t-calculated) was obtained. It is observed that critical

values are less than calculated value. Therefore, there was significant association between the academic achievement of students in Biology and menstrual pains.

**Research Question III:** Is there any significant relationship between the academic achievements of students in Biology and duration of menstruation?

**Table III:** Table showing the t-test result on the relationship between the academic achievements of students in Biology and duration of menstruation.

Duration	N	Mean	St. Dev	Df	T-Cal	T-Tab	Remark
<4 days	29	42.59	7.637	58	1.008	2.000*	Sig.
> 4 days	31	40.20	6.586			2.660**	

5% \* 1% \*\* Source: Author Computation (2019)

Table 3 shows that at 1% and 5% levels of significance with degree of freedom of 58, the table values of t-statistics are 2.660 and 2.000 respectively while calculated value of 1.008 (t-calculated) was obtained. It is observed that critical values are greater than calculated value. Therefore, there was no significant relationship between the academic achievement in Biology among participants and duration of menstruation. This is to say that number of days used to complete menstruation period was insignificant to academic achievement of the participants in Biology.

#### DISCUSSION OF FINDINGS

The study examined the influence of menstruation on academic achievement in Biology among secondary school students. The first research question was on the relationship between academic achievement of student in Biology and menstruation. The empirical results emanated from this research question indicated that there was significant relationship between academic achievement of students in Biology and menstruation. This outcome may be attributed to the mental and behavioural symptoms such as anxiety, nervousness, forgetfulness, hostility, and poor concentration which are associated with menstrual period that could limit female adolescent students' level of understanding during teaching-learning interaction as well as hinder their level of assimilation during readings for the examination and thereby leading to a decline in performance as compared with their previous ones. This was in tandem with submission made by Raju, and Suguna, (2017) in which the effect of menstrual symptoms are said to be multidimensional in nature such as lack of interest on the part of students under menstrual period to go to the schools, lack of concentration during study hours, and difficulty in remembering the studied contents among others which would sum up to impact academic performance of female students in school subjects negatively.

Also, the second research question examined if there is significant relationship between the academic achievement of students in Biology and menstrual pains. The empirical findings revealed significant relationship between the academic achievement of students in Biology and menstrual pains. The difference in academic achievement in Biology was in favour of those who didn't experience pains during menstrual cycle. This is to say that painful symptoms accompanied with menstrual period among female adolescent students may affect their level of concentration towards academic task and thereby inhibiting their achievement in school subjects most especially Biology. This was corroborated by Ahmed and Piro (2012) in which significant association between

amounts of blood flow, medication taking during menstruation, menstrual discomforts such as abdominal pain, back pain, nausea, vomiting and anxiety and school performance were reported. Similarly, Lilliwati, Verna, and Khairani, (2007) argued that the negative effects of menstruation on school activities include school absence, class absence, reduced concentration and disability to participate in sport activities. Finally, the number of days used to maintain menstrual period was insignificant to academic achievements of the participants in Biology.

#### CONCLUSION

The study concluded that there was a relationship between menstruation and students' academic performance in Biology among public secondary schools.

#### RECOMMENDATIONS

The following recommendations were generated from the finding of the study;

- i. Public schools either in collaboration with government or non-governmental organizations should as a matter of urgency put counselling services mechanism in place which aimed at helping adolescents to acquire needful skill require to handle menstruation period.
- ii. Stakeholder of education should ensure that conducive facilities are provided both within and outside the school environment for the benefit of students during menstruation period.
- iii. Adolescent girls should be managed appropriately during menstruation by school administrators in terms of the task to be given to them.

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