

## Assessment of Predisposing Factors to Female Students Susceptibility to Ill-Health in Higher Educational Institutions in Benue State, Nigeria



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**ABSTRACT:** The study aimed to examine the predisposing factors to female students' susceptibility to ill-health in higher educational institutions in Benue State. The study was essentially a descriptive survey research. A total of 180 female students from three higher institutions of learning responded to a self-developed 20 items questionnaire with a Cronbach alpha reliability coefficient of .65. Results from the descriptive analysis shows that environmental factors 75.6%, genetic/physiological factors 72%, and lifestyle 80% plays important roles as predisposing factors that influences the female students' susceptibility to ill-health. The endogenous factors contribution to female students' susceptibility to ill-health include genetic traits 16.3%, menstruation 73.7%, and hormone activity 10.6%. The exogenous factors have overcrowding 58.8%, poor sanitary condition 86.3%, use of poor-quality water 32.6%, poor quality of food consumed 10.6%, unhealthy environment 56.8%, risky behaviours such as drinking alcohol, smoking, abortion contribute 55.8%, body exposure from indecent dressing 28%, and exposure to severe hot weather 7%. The findings indicate that the female students genetic/physiological constitution, unhealthy environment and lifestyle in these schools could influence their susceptibility to mental and physical health disorder or disease. Thus, it is important and necessary for the Federal and State government who owned these schools gives priority attention to ensure that adequate construction of more infrastructure for healthy accommodation and learning are provided. This can be achieved by putting in place strategic monetary policy measures to finance adequate construction of infrastructures and proper maintenance of the academic environment.

**KEYWORDS:** Predisposing factors, Susceptibility, Female students, Ill-health, Higher institutions

### INTRODUCTION

Good health and wellbeing are the desired state of living deserve of every human being. However, by the nature of the creation of man, illness is a condition that most people are likely to experience in their life time. This means all human beings are susceptible to ill-health problems due to endogenous and exogenous influences from genetic, biological, environmental factors and disposition to a negative lifestyle. Predisposition factors are the risk factors that can lead a person to develop a medical or mental health problem. Risk factors refers to the genetic, biological, psychological, family, community, or cultural attributes, characteristics behaviours or exposures that are associated with or lead to a higher probability of occurrence of health-related outcomes (Aday, 2001; Substance Abuse and Mental Health Administration (SAMHSA) n.d. as cited in Byrum, 2023). These factors may not in isolation influences an individual experience of illness but often from the interaction between the endogenous and exogenous factors there will be a development of an illness. For example, Dahlgren and Whitehead (as cited in Martino, 2017) stated that susceptibility to mental disorders which are also ill-health may be determined by individual risk factors, which in turn are determined...these are impacted on by living and working conditions, which are determined by the broader socioeconomic, cultural and environment.

The environment in which people lives in when it is not properly maintained to be hazard free can have a major influence on people susceptibility to illness. Maintaining a healthy environment is an essential contributory factor that prolong peoples' life

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and improve quality of life. According to Bahadori et al (2015) factors such as hereditary, lifestyle, environmental factors, socio-economic status...housing, food security, health care, have significant effects on health and its outcomes including quality of life. On the contrary, at any time in life a situation is experience to compromise the well-being of the people, it will consequently promote diseases, disability and unhappiness. People for different reasons lives in different places at different point in time. For the purpose of acquiring education, the school environment becomes a temporary resident for the students. Accordingly, every school environment needs to be well built with adequate facilities that will be conducive and suitable for accommodation and learning. Unfortunately, the environmental conditions of the public higher educational institutions in Nigeria lacks much that is desire. The Nigeria public Universities, Polytechnics and Colleges of Education, Schools of Nursing and Midwifery are typically having overcrowded population of students in fundamentally inadequate infrastructure and facilities for their accommodation and learning. Overcrowding, shortage of hostel accommodation/dormitories, severe hot weather experience in the State, dilapidated utilities leading to open defecation, indiscriminate urination and waste disposal, are the obvious characteristics of these higher institutions of learning. The decrepit state of the environments of these schools could constitute environmental hazard to the students' health.

The hazardous nature of the higher institution environments added to the students' engagement in risk-behaviours is associated with experience of disease conditions that affect their physical and mental well-being with correspondent weakness of the cognitive ability as well as poor academic performance in the school (Bonnell et al., 2019; Ong et al., 2021; Orlu 2013). In fact, almost all Federal and State government owned higher educational institutions in Nigeria including those in Benue State have overcrowded population of students' that are sandwiched in few hostels' accommodation in the school space. Besides, the schools have very unhealthy lecture halls, dilapidated and unmaintained facilities, inadequate and poor water supply sources plus the poor quality of food available to eat. This unhealthy school environment often makes it difficult for the students to practice and maintain good hygiene necessary to prevent themselves from developing one type of illness or the other. Students are regularly breaking down with malaria, enteric fever, diarrhea, mental fatigue, respiratory diseases, traumatic injuries from falls and other social and physical activities, STIs, mental health problems and so on.

The impoverished living conditions of the higher institutions of learning in Benue State translate into added risk of contracting and transmitting diseases that could cause an unprecedented damage to intellectual productiveness of the students. Conventionally, these schools admit both the males and female students of different ages. But actually, it has been known that people may be more susceptible to ill-health at different times in their lives, and there is the likelihood that some individuals and groups may be more at risk than others at any given time (Aday 2001). In-as-much-as the population of some of these institutions comprised of both males and female students, the female students' health is of great concern and they are the focus of this study. Many diseases that particularly affect female students who lacks the basic conditions necessary to ensure good hygiene and healthiness is; being sandwiched in tiny poorly constructed hostel/dormitory rooms, unavailability of clean water supply or sources, decrepit and unsanitary toilets and bathrooms in the female hostels.

Furthermore, Aday (2001) reported that women, children, and the elderly are often vulnerable to a host of healthcare problems which might be associated with environmental factors. In fact, Olowankere and Okanlawon (2016) study of vulnerability status of public-school children found that only 5.7% children were not vulnerable, 68.0% were vulnerable, 22.7% were most vulnerable while 3.6% were mostly vulnerable. The findings indicate that a lot of children in public schools were most vulnerable given to the fact the government have deliberately abandoned the maintenance of public schools. The important thing about risk factors is that they are identifiable and observable prior to the event they predict in the life of the male or female as living being. For example, Sheldon et al (2021) study in a survey of 14,000 students across 19 universities in 8 countries revealed that 35% of students met the diagnostic criteria for at least one common mental health condition (Auerbach et al., 2016) as another form of ill-health challenges and the predisposing factors that affect the students are bound to result from their school environment or their history. Similarly, Limone, and Toto (2022) emphasized that, the individual growth with environmental interaction play a significant role in determining one's health. Definitely, several factors are likely to predispose female students susceptibility to ill-health in the higher institutions of learning in Benue State. These may include; genetic and physiological factors, lifestyle, harsh weather, school environment, age, gender, sex and many others.

An environment with poor characteristics which is not modified and maintained for conducive living has its greatest impact on people whose health status is already at risk of experiencing ill-health challenges. The general health and wellbeing of university students in Benue State and Nigeria has to be an important public health concern all stakeholders in the educational system. But contrary to this expectation, there is rather a conspicuous observation of the government deliberately neglecting or giving little attention to build a healthy learning environment for the students. In fact, the lack of adopting proactive initiatives to

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put adequate measures in place to provide healthy learning environment for the students' well-being and successful learning cannot be overemphasized. The deprive state of the higher educational institutions tend to be disadvantageous to the students' health status which presumably affect their activeness in academic participation and performance. Findings from the literature has shown that experiencing mental and physical health problems is associated with poor academic achievements (Hysenbegasi et al., 2005), increased study drop-out rates (Megivern et al., 2003), and 210% increase in the number of students discontinuing their studies due to poor mental health (Hubble and Bolton, 2020 as cited in Sheldon, 2021). The situation is almost similar in most colleges since they are predisposed to similar conditions and forms of livelihood (Limone, & Toto, 2022).

Several factors have contributed to the mental and physical distress and discomfort associated with undergraduates. But as explained by Sebastian (2008) some groups of people are found to be predisposed and more susceptible to illness or life events and could experience worse health outcomes than others. For instance, sex is found to be one of the variables that has a significant contribution to the mental illnesses that people experience in learning institutions. Relatedly, Swende (2023) explained that women in particular have a unique set of health care challenges and are at a higher risk of developing certain disease condition than men. Soh et al (as cited in Limone & Toto, 2022) stated that the prevalence of the ill-health conditions tends to be much higher among female students than male students. Gender wise, it is commonly reported that women are more at risk for physical and psychological, or social health problems than men. Even so, it is still recognized that any person can be vulnerable at any given point in time due to life circumstances or response to illness or event (Chesnay, 2008). In the same vein, it is also known that some people may be more vulnerable or less vulnerable to ill-health at different times in their lives and there is likelihood that some individuals and groups may be more at risk than others at any given point in time (Aday, 2001; Fortunka, 2020; Jones, & Bartlett Learning, 2017; Olowankere, & Okanlawon, 2016).

In fact, the growing interest in health and its determinants is a response to the growing pace of people's lives, which society puts health first, which makes us a community of health (Fortunka, 2020). Generally, in Nigeria the study on gender dimension of illnesses as it affects people is skewed towards men and children more that women. Besides, the inattention of the government or policymakers to gender-sensitive policies that would address the health-related issues of women in Nigeria has an extended effect on the female students in higher educational institutions. In view of the concern arising from the government insensitivity or negligence of putting in place adequate measures to provide and sustained a healthy learning environment for the students, this study seeks to investigate predisposing factors to female students' susceptibility to ill-health in higher educational institutions in Benue State.

### **Objectives of the Study**

The aim of this study was to achieve the following objectives, which are to:

1. Describe the predisposing factors that may expose the female students' susceptibility to ill-health in higher educational institutions in Benue State.
2. Identify the endogenous factors that predisposed the female students' susceptibility to ill-health in higher educational institutions in Benue State.
3. Identify the exogenous factors that predisposed the female students' susceptibility to ill-health in higher educational institutions in Benue State.

### **Research Questions**

The research questions to answer in order to established that the stated objectives are achieved were as follows.

1. What are the predisposing factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State?
2. What are the endogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State?
3. What are the exogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State?

## **METHOD**

### **Research Design**

The research adopted a descriptive survey design to achieve the stated objectives. Three higher educational institutions which are Benue State University Makurdi, University of Agriculture Makurdi (Now Joseph Sarwuan Tarkaa University of Agriculture Makurdi), and School of Nursing and Midwifery Makurdi in Benue State were the designated settings of the study where the target

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population was accessed. Quantitative and qualitative methods were employed for data collection from the sample drawn population of the three institutions designated for the study.

### Population/Sample

The target population for the study was female students of the Benue State University Makurdi, University of Agriculture Makurdi (Now Joseph Sarwuan Tarkaa University of Agriculture Makurdi), and School of Nursing and Midwifery all situated in Makurdi Benue State. There are three senatorial zones in Benue State that has higher educational institutions but one senatorial zone was chosen to access the target population. Within this chosen senatorial zone, are the three higher educational institutions mentioned above. In sampling for the study, the homogenous sampling technique, which is a type of purposive sampling method was used. Purposive sampling is a non-probability sampling method that gives the researcher the liberty to rely entirely on his/her judgement to select the sample from the target population to participate in a study. The homogenous technique was suitable for selecting the sample required since they all share common sex characteristics and are living in the same research settings. A total of 180 were female students were selected as the sample from the three higher educational institutions for the study. Their demographic characteristics include age, marital status, occupation, and academic programme.

### Instrument for data Collection

A self-developed questionnaire that consisted of twenty (20) items was used for data collection from the female students who were participants in the study. As it was a self-developed research tool for the purpose of the study, the test of the questionnaire to determine its reliability was done with the use of the Statistical Package Social Sciences (SPSS) version 20. The Cronbach alpha reliability coefficient of .65 which is statistically considered acceptable was obtained from measurement of the twenty (20) items questionnaire. Besides the use of the questionnaire, interview was used for gathering information regarding the students' observation of the environment of their school they are living and studying in.

Prior to having access to the population for selection of the sample and collection of data, the authorities of the three institutions were met to seek and obtain their authorization to meet with the and solicit their consent of the students to participate in the study through providing necessary information needed to use for the research. On obtaining the ethical approval from the top management of these institutions, we proceeded to meet the female students in their lecture hall and at different times of completion of lectures. Their consent was sought on explanation of the purpose and nature of the study. They were clearly assured of the nondisclosure of the information they are providing to earn their trust and confidentiality of the use, and management of the information obtained from them. They were also informed of the right to discontinue participation during the process of giving information required for the study.

### DATA ANALYSIS

The data collected from the students was achieved within a period of three weeks. The data analysis was done with the use of descriptive statistics particularly to obtain the frequency and percentages values that were used for the interpretation of the results from the Statistical Package Social Sciences (SPSS) version 20. The statistics is useful in the presentation and interpretation of the data analyzed in a more meaningful way, that allows for easy description of the outcome of the study.

### RESULTS

A total of 180 female students were selected based on their willingness and acceptance to participate in this study, which was focused on assessment of the predisposing factors to female students' susceptibility to Ill-health in Higher Educational Institutions in Benue State. The students age ranged from 18–40years. Detailed summary of the demographic characteristics of students are presented in table 1 below.

**Table 1: Summary of Distribution of Demographic Characteristics of the Students**

| Variables<br>(N=180)  | Frequency | Percentage (%) |
|-----------------------|-----------|----------------|
| <i>Age</i>            |           |                |
| 18-27                 | 71        | 44.4           |
| 27-33                 | 32        | 20             |
| 33-40                 | 19        | 11.9           |
| <i>Marital status</i> |           |                |

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|                       |     |      |
|-----------------------|-----|------|
| Single                | 122 | 76.3 |
| Married               | 38  | 23.7 |
| <i>Occupation</i>     |     |      |
| Students              | 121 | 75.6 |
| Civil servants        | 39  | 24.4 |
| <i>Academic prog.</i> |     |      |
| Undergraduates        | 124 | 77.5 |
| Master degrees        | 28  | 17.5 |
| PhD                   | 8   | 5    |

Table 1 above shows the socio-demographic characteristics of the female students who participated in the study. The age mean was  $32.50 \pm 5.64$  years. Among these students, 71(44.4%) were age between 18-27years, 32(20%) were age between 27-33years. While 19 (11.9%) students were age between 33-40years. For marital status, students who are single were 122(76.3%), married were 38(23.7%), by occupation, students were 121(75.6%) and those that are civil servants were 39(24.4%). Regarding academic programme, 124(77.5%) were undergraduates, 28(17.5) master's degree students and 8(5%) PhD students.

**Table 2: Predisposing factors to female student's susceptibility ill-health**

| Variables             | Frequency | Percentage (%) |
|-----------------------|-----------|----------------|
| Environmental factors | 127       | 75.6           |
| Physiological factors | 115       | 72             |
| Lifestyle             | 128       | 80             |

Table 2 represent the percentage rate for the predisposing factors that could influence the female students' susceptibility to ill-health in the three higher institutions. Environmental factors contribute 75.6%, physiological factors contribute 72%, and their lifestyle contribute 80%.

**Table 3. Endogenous and exogenous factors influence on female students' susceptibility to ill-health**

| Variables                            | Frequency<br>(N-180) | Percentage |
|--------------------------------------|----------------------|------------|
| <i>Endogenous factors</i>            |                      |            |
| Genetic makeup                       | 26                   | 16.2       |
| Menstruation                         | 118                  | 73.7       |
| Hormone activity                     | 17                   | 10.6       |
| <i>Exogenous factors</i>             |                      |            |
| Overcrowding (hostels/lecture halls) | 158                  | 58.8       |
| Poor sanitary conditions             | 138                  | 86.3       |
| Poor quality water                   | 52                   | 32.6       |
| Poor quality of food consumed        | 17                   | 10.6       |
| Unhygienic environment               | 91                   | 56.8       |
| Risky behaviours                     | 89                   | 55.7       |
| Body exposure                        | 45                   | 28         |
| Severe hot weather                   | 12                   | 7          |

Table 3 shows the percentage rate of the endogenous and exogenous factors that influences that female students' susceptibility to ill-health in the three higher educational institutions in Benue State selected the study. The distribution of the percentages for endogenous factors on one hand has genetic traits 16.3%, female menstruation 73.7%, and hormone activity 10.6. On the other

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hand, exogenous factors have overcrowding 58.8%, poor sanitary condition 86.3%, use of poor-quality water 32.6%, poor quality of food consumed 10.6%, unhygienic environment 56.8%, risky behaviours (such as drinking alcohol, smoking, abortion etc.) contribute 55.8% and body exposure from indecent dressing 28%. Exposure to severe hot weather condition 7%.

### **DISCUSSION**

This study aimed to assess the predisposing factors that influence female students' susceptibility to ill-health in higher educational institutions in Benue State. Three questions were set to be answered for the purpose of achieving the stated research objectives.

Question one: What are the predisposing factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State? The findings from the research participants drawn from Benue State University, Joseph Sarwuan Tarkaa University, and School of Nursing and Midwifery all in Makurdi Benue State suggests that the female students genetic/physiological constitution, unfavourable environmental conditions, and negative lifestyle influences their susceptibility to ill-health. These factors in many cases elicit the development of an illness in the individual usually through interaction with one another. These findings corresponded with available evidence from previous studies reviewed. For example, Lifestyle accounts for about 60% of health potential (Fortunka, 2020). Sheldon et al (2021) in a survey of 14,000 students across 19 universities in 8 countries revealed that 35% of students met the diagnostic criteria for at least one common mental health condition and the predisposing factors that affect the students are bound to result from their school environment or their history. An environment with poor characteristics which is not modified and maintained for conducive living has its greatest impact on people whose health status is already at risk (Aday, 2001; Bhuyan, 2004; Martino, 2017; SAMHSA, n.d.). Sex as a biological determinant of human differences has a significant contribution to the mental illnesses that people experience in learning institutions. Swende (2022) stated that women have a unique set of health care challenges and are at a higher risk of developing certain disease condition than men. Soh et al (as cited in Limone & Toto, 2022) stated that the prevalence of the ill-health conditions tends to be much higher among female students than male students. Conclusively, women in particular are recognized be at risk for poor physical and psychological, or social health.

Question two: What are the endogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State? The result of the data collected and analyzed shows the endogenous factors that influence the female susceptibility to ill-health reside within their genetic composition, menstruation cycle, and hormone activity. These findings agreed with other empirical evidences on the relationship between endogenous factors and illness. For example, Limone and Toto (2020) also explained that genetic risk factors are based on an individual's genes. Moreover, the predisposing factors that affect the students are bound to result from their school environment or their history; therefore, the growth environment and interaction play a significant role in determining one's health. As a result, some diseases are developed duly from an individual's 'genetic make-up'. They further explained that many other diseases, such as asthma or diabetes, reflect the interaction between the genes of the individual and environmental factors. Cutolo et al (2004) reported that sex hormones (estrogen, androgens and progesterone etc.) plays an important role as modulators of the autoimmune disease/perpetuation. Other researchers opined that higher disease risk in females appears to follow key hormonal transitional time points in a female reproductive life-cycle, such as puberty, menarche, menstruation and menopause (Baibergenova et al., 2006; Kynyk et al., 2011 as cited in Nwaru et al., 2016).

Question three: What are the exogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State? Regarding the exogenous factors responsible for the female students' susceptibility to ill-health the many of these environmental and lifestyle related negative behaviours were identified. These include, overcrowding of students in both the hostels and lecture halls poor sanitary condition, use of poor-quality water, poor quality of food consumed, unhygienic environment, risky behaviours (such as drinking alcohol, smoking, abortion etc.), body exposure from indecent dressing. and exposure to severe hot weather condition in the State. These findings agreed with evidence from previous studies that any environment that is confine with unhygienic characteristics, which are left unmodified and not maintained for conducive living has its greatest impact on people whose health status is already at risk (Aday, 2001; Hersi et al., 2017; Limone, & Toto, 2022; Martino, 2017; Najera, 1993, Ojo, 2004; SAMHSA, n.d.). An unmaintained school environment often makes it difficult for the students to practice and maintain good hygiene to be free from falling ill. The impoverished living conditions of the higher institutions of learning in Benue State translate into added risk of contracting and transmitting diseases that could cause an unprecedented damage to intellectual productiveness of the students. According to Limone, and Toto, (2022) the situation is almost similar in most colleges since they are predisposed to similar conditions and forms of livelihood.



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## CONCLUSION

Living and maintaining a good mental and physical health and wellbeing is essential for the promotion of the peoples' quality of life and longevity as they grow from age to age. However, it is very rare to achieve the need to be completely free from some health challenges primarily due to our inherent predisposition to ill-health from various factors. This is the more reason why this study was carried out to examine the predisposing factors and female students' susceptibility to ill-health in higher educational institutions in Benue State. The findings from the study have proven that the female students are by virtue of their genetic/physiological constitution, unhealthy environment and lifestyle put them at the risk of mental and physical health disorder or disease. Unfortunately, the three higher learning institutions in which the students schooling are schooling in have overcrowded population sandwiched in inadequate and poor hostels accommodation, unsanitary lecture halls, unmaintained environment plague with infested wastes, harsh weather condition, poor quality water and food consumed. These unhealth environmental potential could invariably interact with endogenous factors to increase the female students' susceptibility to ill-health. In fact, the outcome of this study reveals the reality of the health consequences most especially the female students in the public higher educational institutions in Benue State are facing.

## Implication for the Study

Learning becomes interesting and successfully acquired largely where the learning environment is suitably created to be conducive to positively motivate the students physical and mental activities in their pursuit to achieve higher educational qualification. The opposite of this in many cases result to the students poor learning habit and academic performance especially if they are constantly experiencing health problems triggered by the unhealthy environmental living conditions that often interact with their inherent predisposing factors to ill-health. Until the students in the public higher institutions are guaranteed a safe health learning environment to minimize the risk factors that influences their susceptibility to ill-health problems, their determination for higher academic pursuit will diminish.. Consequently, when the human right approach is evoked focusing on the interest of students in school at all levels, more relevant and congruent public health policies and programmes should be developed to reposition the institution to align with global best practices.

In view of this, it is important and necessary for the Federal and State government who owned these schools gives priority attention to ensure that adequate construction of more infrastructure for healthy accommodation and learning are provided. This can be achieved by putting in place deliberate policy action to increase the fiscal budget in the educational system to activate adequate construction and proper maintenance of the academic environment. Until this is done, the female students and even the males in higher institutions of learning shall continue to suffer the menace of ill-health problems associated with their predisposing factors dwelling the in the self and the school environment. Indeed, the study will be an important reference for the governments to adopt as a source of influence to her actions that will lead to the improvement of the conditions of learning environments of these institutions.

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