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# The Effects of Overcrowding on Students Living in University of Calabar Female Hostel, Cross River State, Nigeria

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**Received:** 11 March 2022

**Accepted:** 25 June 2022

**Published:** 29 July 2022

**Abstract:** *The demand for university education has led to an increase in the students' population especially in the Nigerian public universities. This comes with intense pressure on the bearing capacity of available school infrastructure. This study was designed to investigate the effects of overcrowding on the female students living in the University of Calabar Hostel, Cross River State, Nigeria. A sample of 276 out of the 892 students living in the university was drawn for the study using the simple random sampling technique based on Taro Yamane's (1967) formula for the finite population. A 14 item structured questionnaire with a four-point Likert rating scale was adopted. Data generated from the administration of the questionnaire were analyzed using descriptive and inferential statistics. Descriptively, tables, chart figures, percentages, average, and frequencies were used. However, Chi-square correlation techniques were employed in testing the study hypotheses. The result of the analysis revealed that the University of Calabar Female Hostel is overcrowded with a significant effect on the physical and health wellbeing of students. The study emphasized building more hostels by the university stakeholders to accommodate the*



*overcrowded students, limiting students allocated to and allowed to share hostel rooms to avoid overutilization of resources, ensuring there is adequate clean water supply to prevent the shortage of water, avoid the incidence of a disease outbreak by implementing biweekly hostel sanitation exercise, and improve the duration of electricity supply in the hostels to enhance good ventilation system.*

**Keywords:** *Students, Hostel, Overcrowding, Health, Wellbeing.*

## **1. INTRODUCTION**

Housing insecurity is affecting the academic performance of students globally, 45% of the US college students are facing a problem related to housing instability, unaffordability, or homelessness. However, community college students are at a higher risk of housing insecurity and homelessness compared to their peers at colleges and universities (Broton 2020). The public universities in Africa are having problems with hostel management, most of the schools are overcrowded with poor living conditions, insufficient finance, poor learning facilities, and scarcity of modern hostel facilities (Chikafalimani, Kibwami, and Moyo 2021). The hostel management in the Nigerian universities is ineffective due to the poor monitoring and evaluation, lack of modern facilities, mismanagement of funds reserved for hostel maintenance, and poor students' complaint response services (Kenneth and Chukwunwike 2020). Affordable accommodation is the students' most important need, and for sustainable development housing, there is a need for a public private partnership model that can ease the problem of the poor student housing system (Ike and Baldwin 2020). The effective social environment increases the students' performance and wellbeing, the rate at which Nigerian students are dissatisfied with the hostels' management in their respective schools is very alarming. The overcrowding and poor hostel facilities are the main reasons discouraging students from living in the universities' hostels (Ajayi, Yusuf, and Ajani 2015).

Hostel accommodation is part of the prerequisite commitment for the higher education institutions, the establishment of sufficient university hostels should be among the key priorities in the Nigerian institutions. The central theme and responsibilities for running the school hostels should be shared among the stakeholders via public private partnership (Philip, Ileanwa, and El-Hussain 2018). There is a need for a serious intervention of all stakeholders in colleges of education, polytechnics, and universities in response to the hostel problems and students overcrowding (Toriola-coker et al. 2021). There is a positive relationship between the quality of housing and the students' academic performance. Therefore, there is a need for a comprehensive program that can support sustainable housing facilities in Nigeria (Mbazor 2021). The landlords are more concerned with profit rather than improving their hostels. The galloping increase in hostel demand without a correspondent increase in supply is the major reason for the students' overcrowding and rental extortion (Onyenechere et al. 2016).

### **Literature Review**

Ph.D. students are unable to compete financially in private rental and house ownership in Sydney, Australia. Some of the International students are regarded the school housing as inappropriate compared to their household profile. However, the house demands from the



Ph.D. students have presented a challenge to the universities, planning agencies, local government, and housing providers in delivering a competitive tertiary education environment (Ruming and Dowling 2017). International students in Canadian universities are having difficulties in finding the adequate, affordable, and sustainable houses. This was issue raised from inadequate finance, inability to find a student job, currency fluctuations, and changes in the lifestyle (Calder and Burns 2016). Despite finding adequate housing in the Netherlands for the international students, some are still facing challenges with discrimination and disadvantages in the students' housing market (Fang and Liempt 2021). The Wellbeing of children suffers when they live in an overcrowded home. In Los Angeles, there are many situations where the wellbeing of children suffered when they was exposed to overcrowded conditions. The negative effects of overcrowding are affecting their adult welfare and several future socioeconomic statuses (Solari and Mare 2012). Social Media such as Twitter, Facebook, and LinkedIn assist students in searching for an appropriate house available in the market (Zhou 2014).

There is a high rate of under nutrition cases associated with marginalized adolescent girls living in social welfare hostels in Andhra Pradesh, India. The skin and dental problems of those victims can be resolved through early detection and proper treatment (Udayar, Kommula, and Prasad 2016). In the university Sains Malaysia, the factors responsible for the satisfaction of the school hostels are room size, fees, hostel security, distance from the university facilities, and the population of the hostel occupants (Khozaei et al. 2010). The female students that are coming from conservative small cities and villages in Lahore, Pakistan for studies are facing severe challenges, they lack the everyday information to be used in adjusting to the new socioeconomic status. This lack of information and awareness is affecting their academic performance, research, and wellbeing (Rafiq et al. 2021). The students living at Alexandria University have shown their dissatisfaction with the accommodation, support, and health facilities. However, to resolve this problem, there is a need for a supportive environment that students can feel safe and satisfied (Abolfotouh et al. 2007). There is a rent problem in Buea, Cameroon. The hostel management problems consist of skyrocketing increases in rent, poor hostels facilities, lack of transparency from the hostel managers, transgression of hostel rules, and illegal selling of rooms by hostel tenants (Wanie et al. 2017). Among the negative effects of hostel, overcrowding is the promotion of infectious diseases among the students. The sharing beds and living under overcrowded rooms are reasonably associated with Tuberculosis infection in the universities' hostels in Pwani University county Kenya (Teresia et al. 2020). In most developing countries the government is the main provider of accommodation in the public universities, but the admitted students are outnumbered the hostel facilities leading to overutilization of resources and hostel overcrowding (Spio-kwofie and Anyobodeh 2016).

The hostels of the Nigerian universities are not only suffered from overcrowding effects but also overutilization of the available facilities. The cooking inside rooms, stealing, toilet infections, social discrimination, and other poor practices are negatively affecting the welfare and the academic performance of the students (Ekejiuba 2015). Hostel overcrowding is among the causes of diseases and poor well-being of Nigerian students, the dilapidated hostel facilities are very deteriorating leading to poor students' safety and health (Ruth Ochanya Adio-Moses 2013). Poor healthy nutrition, lack of balanced diet food, inadequate information about the students' environment are the main factors affecting the well-being of the Nigerian students



(Doygun and Gulec 2012). There is the poor air quality in the hostels managed by the Nigerian universities, the horrible ventilation system with poor dilapidated buildings is the setback for the Nigerian education system (Osaro et al. 2013). The loss of privacy, room overcrowding, lack of sufficient hostel facilities are the main reasons for destabilizing the psychological and physical health status of Nigerian students. The hostel occupants are more vulnerable to disease and depression due to the bad hostel management system (Adegoke 2014). The high occupancy ratio per room in some of the Nigerian universities is very worrisome, leading to merged 8 to 10 students in a single room of 4 people. The poor condition of living in the universities' hostels needs urgent attention. However, the hostels should be under proper maintenance and utilization (Aluko 2011).

The facilities available in the private hostels are what determine the satisfaction of the students living outside the campus. The students are more likely to pay higher rent to a good hostel even if it's far from their school. The main reasons attracting students in choosing hostels are good water supply, security, neat toilets, and a good ventilation system (Bello and Ezeokoli 2020). The poor hostel facilities have resulted in causing diseases among the higher institutions' students, and the hostel overcrowding led to the overutilization of resources that affect the learning environment and wellbeing of the students (Vivan, Bijimi, and Aliba 2013). Polytechnic students are dissatisfied with their hostel accommodation in Nigeria, the bathrooms, bedrooms, common rooms, and other hostels' facilities do not meet the intended purpose in which they are provided. (Toyin Sawyerr and Yusof 2013). Students are blaming their school management for causing overutilization of resources due to the admission of enormous students who outnumbered the available hostel facilities. They agreed that the pressure of overcrowding is negatively affecting their general welfare (Christiana et al. 2012). Gender difference is a significant factor influencing the students when choosing hostel. The kitchen, laundry, and privacy are more relevant to female students than males when making a residency choice (Amole 2012). Students prioritize meeting the basic needs over their studies engagement due the residential insecurity and homelessness, and this problem creates a barrier to college access (Hallett et al. 2017). More than half of the students in southwestern Nigeria have shown dissatisfaction with their residences due to social densities such as the bathroom, kitchen, demographic characteristics of the students, and storage facilities (Amole 2008).

The past practice of denying single girls accommodation has declined. The female students in the University of Lagos, Nigeria have undeniable access to the housing market. The current problems affecting the students are domestic violence, house rent increase, disturbance from the neighborhood, nonconductive atmosphere, and late arrival of lectures (Yusuff 2011). Overcrowding is the worst condition experienced by Nigerian students. The hostels' waste disposal, power supply, security, and water supply are the major factors influencing the students in choosing hostels at Bells and Crescent universities (Azeez et al. 2016). The students living off-campus in Nassarawa state university Nigeria were overcrowded and suffered from slum neighborhoods. Prostitution, drug dealing, and cultism are among the common social vices found in those off-campus areas (Nyen Inyang, Ejue, and Agwadu 2018). There is a squandering crisis with hostel overcrowding in Kaduna State University, Nigeria. The high rate of accommodation expenses, shortage of available accommodation, and poor infrastructural facilities are the main challenges facing the students living in hostels (Michael, Joe, and Ada 2011). The hostel buildings in Kano University of Science and Technology Wudil is in good



condition ranging from security, electricity supply, bed space, water supply, firefighting equipment, standby generator, and waste disposal. However, other facilities such as laundry, desks, drainage, kitchenette, and privacy are in poor conditions (Bichi, Abdu, and Adam 2018). Many studies have been conducted about the students' housing system in Nigeria. However, no attention has been paid to examining the effect of hostel overcrowding on the health and wellbeing of female students living in Nigerian Universities. Therefore, this study seeks to investigate the effects of overcrowding on female students living in the University of Calabar hostels, Cross River State Nigeria, with the specific objectives of examining the number of female occupants per room, investigating the possibility of overcrowding in the study area, accessing the effects of hostel overcrowding on students' health, identifying the causes of hostel overcrowding and its repercussions on the female students' academic performance and wellbeing. The research findings would be relevant in design policies aimed at enhancing better hostel management in Nigerian Universities. Stakeholders such as the federal government, states governments, local governments, landlords, school management board, staff, principal officers, ministry of education, and the students can use the outcome of this study to set up hostels management policies that can ensure the effectiveness of student housing system in Nigeria.

## **2. METHODOLOGY**

### **2.1 Sources of Data**

The data for this study were collected from both primary and secondary sources. Primary data were generated through the use of a questionnaire to obtain the data on the estimated number of occupants per room, the possibility of overcrowding in the study area, causes of overcrowding of students in the hostel, and the effects of overcrowding on the respondents' health and wellbeing. Invariably, other secondary data were collected from already existing data from the University of Calabar student affairs office, different textbooks, articles, published journals, and magazine that focuses mainly on the subject matter.

### **2.2 Sampling technique and size**

The study uses the simple random sampling technique in selecting respondents from the study area where all the individuals under the population of the study have an equal chance of being selected. Therefore, the distribution pattern of the questionnaires is randomly selected. The University of Calabar female hostel hall 8 and hall 9 has a total number of 246 rooms, and 11 common rooms with 892 students according to the school students' affairs record 2020. However, in determining the sample size for the distribution of the questionnaire since the entire population cannot be covered, the (Yamane 1967) formula for the finite population was employed to statistically determine the minimum sample frame for the study. This is calculated as thus;

$$N = \frac{n}{1+n(e)^2} \dots \dots \dots (1)$$

Where;

- N = finite population
- e=level of significance



i = Unity.

Substituting:

$$= \frac{n}{1+n(e)^2} = \frac{892}{1+892(0.05)^2}$$

$$= \frac{892}{893 (00025)} = \frac{892}{3.23}$$

$$= 276$$

A total number of 276 female students were selected using the random sampling technique and administered the questionnaire.

**2.3 Instrument of Data Collection**

A 14-item questionnaire with a four-point Likert rating scale is the main instrument that was used in this study. A total of 276 questionnaires were randomly distributed to the occupants of the two hostels of different age categories, educational backgrounds, faculties, and departments.

**2.4 Technique of Data Analysis**

The empirical data obtained from the field was analyzed using descriptive and inferential statistics. Descriptively, tables, chart figures, percentages, average, and frequencies were used. On the other hand, Chi-square correlation techniques were employed in testing the study hypotheses. The formula for the Chi-Square is given as thus:

$$X^2 = \frac{(O - E)^2}{E} \dots\dots\dots (2)$$

Where

$X^2$  = Chi-square value

O = observed frequency

E = expected frequency

Whereby E is obtained from the distribution using the formula:

$$E = \frac{\text{Row total} \times \text{Column total}}{\text{Grand total}} \dots\dots\dots (3)$$

**Data Analysis and Presentation**

The result presented in *Table 1* showed that 63 (22.8%) of the respondents were aged 16-20 years, whereas age 21-25 has the highest frequency of respondents of 143 (51.8%), followed by a frequency of 65 (23.6%) for age 26-30 years. The least frequency of respondents was observed for age 31 years and above with a frequency of 5 (1.8%) respondents.

Table 1. Distribution of respondents by age

Age	Frequency	Percentage
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16-20 YEARS	63
22.8	
21-25 YEARS	143
51.8	
26-30 YEARS	65
23.6	
31 YEARS AND ABOVE	5
1.8	
<b>TOTAL</b>	<b>276</b>
<b>100</b>	

**Source:** Researchers' Fieldwork, 2021

Out of the 276 (100%) respondents used for the study, *table 2* showed the academic level of the students, the highest number of respondents wherein 200 level (91, 33.0%), followed by 300 level (68, 24.6%), and 100 level (57, 20.7%). The least frequency occurs respectively for respondents in 400 level and 500 level with the frequency of 30 (10.9%) respondents each.

Table 2. Distribution of students by academic level

Academic level	Frequency	Percentage
100 LEVEL	57	
20.7		
200 LEVEL	91	
33.0		
300 LEVEL	68	
24.6		
400 LEVEL	30	
10.9		
500 LEVEL	30	
10.9		
<b>TOTAL</b>	<b>276</b>	
<b>100</b>		

**Source:** Researchers' Fieldwork, 2021

The result presented in *Table 3* showed the duration of respondents' stay in hostel. The data revealed that 42 (15.2%) of the respondents have stayed in the hostel for one academic session, the highest frequency showed that 91 (33.0%) of the respondents have been in hostel for two academic sessions while 68 (24.6%), 70 (25.4%) and 5 (1.8%) of the respondents have stayed in the hostel for three, four and five academic sessions respectively.

Table 3. Distribution of students by the duration of stay in the hostel

Academic Session	Frequency	Percentage
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1 SESSION	42
15.2	
2 SESSIONS	91
33.0	
3 SESSIONS	68
24.6	
4 SESSIONS	70
25.4	
5 SESSIONS	5
1.8	
<b>TOTAL</b>	<b>276</b>
<b>100</b>	

**Source:** Researchers’ Fieldwork, 2021

The result presented in *table 4* and *figure 1* showed the students’ responses on whether or not they deem their hostel is overcrowded. The result showed that 241 (87.3%) of respondents agreed that their hostel is overcrowded whereas 35 (12.7%) of the respondents do not deem their hostel is overcrowded.

Table 4: Students’ responses on their perception of whether or not their hostel is overcrowded

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Not Overcrowded	35	
12.7		241
Overcrowded		
87.3		
<b>TOTAL</b>	<b>276</b>	
<b>100</b>		

**Source:** Researchers’ Fieldwork, 2021



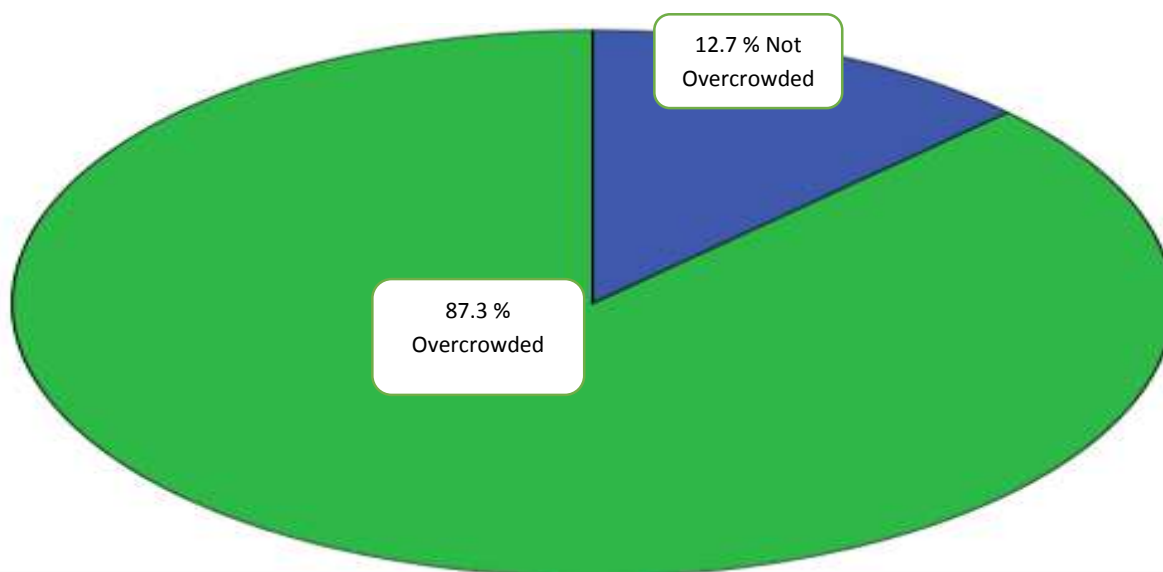


Figure 1: Pie chart showing the distribution of students' responses on their perception of whether or not their hostel is overcrowded

Source: Researchers' Fieldwork, 2021

The result presented in *Table 5* showed the students' responses on the number of students allocated to their room. 5 (1. %) responded that only 1 student was allocated to their room, whereas 8 (2.9%), 216 (78.3%), 5 (1.8%), 5 (1.8%), 19 (6.9%), and 18 (6.5%) of the respondents responded that 3, 4, 5, 6, 7, 8, and above 8 students were allocated to their room. The result also revealed that the highest frequency of respondents of 216 (78.3%) are of the position that 4 students were allocated to their room.

Table 5: Students' responses on the number of students allocated to their room

Number of Student	Frequency	Percentage
1	5	1.8
3	8	2.9
4	216	78.3
6	5	1.8
7	5	1.8
8	19	6.9
ABOVE 8	18	6.5



<b>TOTAL</b>	<b>276</b>
<b>100</b>	

**Source:** Researchers’ Fieldwork, 2021

Table 6 revealed the respondents’ responses on the number of students that share their room, it was discovered that 9 (3.3%) of the respondents stayed in their room alone, whereas 15 (5.4%) stay with one other person, 14 (5.1) stay with three other students, while 10 (3.6), 22 (8.0%), 20 (7.2%), 94 (34.1%), and 92 (33.3%) respectively stay 5, 6, 7, 8 and above 8 persons in their room.

Table 6: Respondents’ responses on the number of students that share their room

<b>Number of Student</b>	<b>Frequency</b>	<b>Percentage</b>
1	9	
3.3		
2	15	
5.4		
4	14	
5.1		
5	10	
3.6		
6	22	
8.0		
7	20	
7.2		
8	94	
34.1		
ABOVE 8	92	
33.3		
<b>TOTAL</b>	<b>276</b>	
<b>100.0</b>		

**Source:** Researchers’ Fieldwork, 2021

Table 7 shows the students’ responses on the number of students that share their space and locker. It was revealed that 50 (18.1%) respondents don’t share their space and locker, 87 (31.5%) share their space and locker with one other person, 98 (35.5%) share their space and locker with two other persons, whereas 10 (3.6%), 9(3.3%), 4 (1.4%), 8 (2.9%), 5 (1.8%) and 5 (1.8%) of the respondents respectively responded that 4, 5, 6, 7, 8 and above 8 of them share their space and locker.



Table 7: Respondents’ responses on the number of students that share their space and locker

Number of Student	Frequency	Percentage
1	50	18.1
2	87	31.5
3	98	33.5
4	10	3.6
5	9	3.3
6	4	1.4
7	8	2.9
8	5	1.8
ABOVE 8	5	1.8
<b>TOTAL</b>	<b>276</b>	<b>100.0</b>

Source: Researchers’ Fieldwork, 2021

The result presented in *Table 8* showed the respondents’ responses on the number of students that share their toilets. The result revealed that only 4 (1.4%) of the respondents don’t share their toilet with other students, 10 (3.6%), 5 (1.8%), and 15 (5.8%) of them share with one, two and three other persons respectively. Whereas 5 (1.8%), 10 (3.6%), 49 (17.8%), and 178 (64.5%) of the respondents agreed respectively that 6, 7, 8, and above 8 students share their toilet.

Table 8: Respondents’ responses on the number of students that share their toilets

Number of Student	Frequency	Percentage
1	4	1.4
2	10	3.6
3	5	1.8
4	15	5.4
6	5	1.8



7	10
3.6	
8	49
17.8	
ABOVE 8	178
64.5	
<b>TOTAL</b>	<b>276</b>
<b>100.0</b>	

**Source:** Researchers’ Fieldwork, 2021

The result presented in *Table 9* showed that 49 (17.8%) respondents strongly disagree that they can’t read in their rooms because of over-crowding, whereas 96 (34.8%), 93 (33.7%), and 38 (13.8%) respectively disagree, agree and strongly agreed.

**Table 9:** Students’ responses that over-crowding Impinge on their ability to study in their rooms

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
STRONGLY DISAGREE	49	
17.8		
DISAGREE	96	
34.8		
AGREE	93	
33.7		
STRONGLY AGREE	38	
13.8		
<b>TOTAL</b>	<b>276</b>	
<b>100.0</b>		

**Source:** Researchers’ Fieldwork, 2021

The result presented in *Table 10* showed the respondents’ position on the item that over-crowding in the hostel has promulgated their state of depression. The result showed that 49 (17.8%) each of the respondents respectively strongly disagree and disagree that overcrowding in the hostel has made them depressed, whereas, 70 (25.4%) and 108 (39.1%) of respondents agree and strongly agree respectively that overcrowding in the hostel has made them depressed.

**Table 10:** Respondents’ responses that over-crowding in the hostel has made them depressed

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
STRONGLY DISAGREE	49	
17.8		
DISAGREE	49	
17.8		
AGREE	70	
25.4		



STRONGLY AGREE	108
39.1	
<b>TOTAL</b>	<b>276</b>
<b>100.0</b>	

**Source:** Researchers’ Fieldwork, 2021

The result presented in *Table 11* revealed that 56 (20.3%) and 29 (10.5%) of respondents strongly disagree and disagree respectively that overcrowding has caused them late attendance in lectures. Whereas while 69 (25.0%) agreed, 122 (44.2%) of the respondent strongly agreed that overcrowding has caused them late attendance in lectures.

Table 11: Respondents’ responses that over-crowding in the hostel has caused them late attendance in lectures

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
STRONGLY DISAGREE	56	
20.3		
DISAGREE	29	
10.5		
AGREE	69	
25.0		
STRONGLY AGREE	122	
44.2		
<b>TOTAL</b>	<b>276</b>	
<b>100.0</b>		

**Source:** Researchers’ Fieldwork, 2021

*Table 12* showed the respondents’ responses that overcrowding in the hostel makes it difficult for them to concentrate on their studies. The result showed that 60 (21.7%) and 159 (57.6%) of the respondents strongly disagree and disagree respectively that overcrowding in the hostel makes it difficult for them to concentrate. While 33 (12.0%) and 24 (8.7%) respectively agreed and strongly agreed that overcrowding in the hostel makes it difficult for them to concentrate.

Table 12: Respondents’ responses that over-crowding in the hostel makes It difficult for them to concentrate on their studies

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
STRONGLY DISAGREE	60	
21.7		
DISAGREE	159	
57.6		
AGREE	33	
12.0		



STRONGLY AGREE	24
8.7	
<b>TOTAL</b>	<b>276</b>
<b>100.0</b>	

**Source:** Researchers’ Fieldwork, 2021

Table 13 showed the respondents’ responses to the challenges faced by students in the hostel. The result showed that 59 (20.7%) of the respondents identified no challenge, 146 (51.2%) of the respondents identified the dilapidated buildings as the challenge whereas 5 (1.8%), 51 (17.9%), and 15 (5.3%) of the respondents respectively identified poor sanitation, poor power supply, and inadequate water supply as the challenges confronting students staying in the hostel.

Table 13: Respondents’ responses on the challenges faced by students in the hostel

Challenges	Frequency	Percentage
NONE	59	
21.4		
DILAPIDATED BUILDING	146	
52.9		
POOR SANITATION		
5	1.8	
POOR POWER SUPPLY	51	
18.5		
INADEQUATE WATER SUPPLY	15	
5.4		
<b>TOTAL</b>	<b>276</b>	
<b>100.0</b>		

**Source:** Researchers’ Fieldwork, 2021

Test of Hypothesis

**Hypothesis**

**H<sub>0</sub>** - Overcrowding has no significant effect on the physical and health wellbeing of hostel occupants in the University of Calabar.

**H<sub>1</sub>**- Overcrowding has a significant effect on the physical and health wellbeing of hostel occupants in the University of Calabar.

**Decision Rule**

1. Reject the null hypothesis (H<sub>0</sub>) if the calculated Chi-square value is greater than the table value.
2. Accept the null hypothesis (H<sub>0</sub>) if the calculated Chi-square value is less than the table value.

Table 14: Contingency table on the effect of overcrowding on the physical and mental wellbeing of students in the university of Calabar female hostel



	<b>Agreed</b>	<b>Disagreed</b>	<b>Total</b>
<b>Overcrowded</b>	127 (A)	68 (C)	195
<b>Not-overcrowded</b>	20 (B)	61 (D)	81
<b>Total</b>	147	129	276

**Source:** Researchers’ Fieldwork, 2021

The expected frequencies for the observed frequencies were calculated using the formula:

$$E = \frac{\text{Row total} \times \text{Column total}}{\text{Grand total}}$$

Therefore for

$$\text{Cell A} = \frac{195 \times 147}{276} = 103.8587$$

$$\text{Cell B} = \frac{81 \times 147}{276} = 43.1413$$

$$\text{Cell C} = \frac{195 \times 129}{276} = 91.1413$$

$$\text{Cell D} = \frac{81 \times 129}{276} = 37.8587$$

The Chi-Square Formula  $X^2 = \frac{(O - E)^2}{E}$  was applied to obtain the calculated  $X^2$  –value

**Table 15. Computation of Chi-Square ( $X^2$ ) Value**

	<b>O</b>	<b>E</b>	<b>O-E</b>	<b>(O-E)<sup>2</sup></b>	<b>(O-E)<sup>2</sup>/E</b>
A	127	103.8587	23.1413	535.52	5.156236
B	20	43.1413	23.1413	535.52	12.41316
C	68	91.1413	23.1413	535.52	5.875711
D	61	37.8587	23.1413	535.52	14.14523
	<b>276</b>				<b>*37.59034</b>

**Source:** Researchers’ Fieldwork, 2021

Therefore the calculated  $X^2$  –value = 37.59034

The tabulated/critical  $X^2$  –value = 3.84, \*significant at 0.05 level, degree of freedom = 1

The result of the analysis of data presented in *Table 15* indicated that the calculated  $X^2$  –value of 37.59034 is statistically greater than the critical  $X^2$  –value of 3.84 at 0.05 level of significance and 1 degree of freedom. On this note, the null hypothesis that overcrowding has no significant effect on the physical and health wellbeing of hostel occupants in the University



of Calabar was rejected while the alternate hypothesis was accepted. The implication of this is that overcrowding has a significant effect on the physical and health wellbeing of hostel occupants in the University of Calabar.

### **3. DISCUSSION ON FINDINGS**

The findings of the study revealed that the University of Calabar female Hostels are overcrowded, while the majority of respondents agree that only four students were allocated to their rooms but they end up sharing their rooms, wardrobes, and toilets with 8 or more other occupants. The majority of the respondents revealed that their rooms are overcrowded and that the overcrowding has made them often sick, lose concentration, get depressed, attend lectures late and find it difficult to read in their room. The test of the hypothesis revealed a significant Chi-square value which showed that overcrowding has a significant effect on the physical and health wellbeing of female students living in the university of Calabar hostels. Researchers across universities and schools have found similar results to this study indicating that the conditions of the students' hostels are not conducive enough to facilitate appropriate learning and growth and that overcrowding in the hostel impinges on the academic performance, as well as physical and mental wellbeing of the hostel occupants. Our findings are in line with the findings of (Ruth Ochanya Adio-Moses 2013) who discovered that Hostel overcrowding is among the causes of diseases and poor well-being of Nigerian students, the dilapidated hostel facilities are very deteriorating leading to poor students' safety and health. However, our results are commensurate with the findings of (Ekejiuba 2015) who revealed that hostels of the Nigerian universities are not only suffering from overcrowding effects but also overutilization of the available facilities. The cooking inside rooms, stealing, toilet infections, social discrimination, and other poor practices are negatively affecting the welfare and the academic performance of the students. The study also found similar evidence with the findings of (Philip et al. 2018; Toyin Sawyerr and Yusof 2013; Yusuff 2011) who pointed out that there are frequent cases of frustration, friction, antagonisms, conflict, and open confrontation among roommates in overcrowded student hostels on the usage of spaces, wardrobes, toilets, and other hostel facilities. However, the student hostel accommodations in Nigeria are not only emerges to be inadequate but some of the existing ones are dilapidated and constitute a danger to the health of the students.

### **4. CONCLUSION**

The study was designed to examine the effects of overcrowding on the female students living in the University of Calabar Hostels, Cross River State, Nigeria. A sample of 276 out of the 892 students living in the university was drawn for the study using the simple random sampling technique based on the (Yamane 1967) formula for the finite population. A 14 item structured questionnaire with a four-point Likert rating scale was adopted. Data generated from the administration of the questionnaire were analyzed using descriptive and inferential statistics. Descriptively, tables, chart figures, percentages, averages, and frequencies were used. However, Chi-square correlation techniques were employed in testing the study hypotheses. The result of the analysis revealed that the University of Calabar Female Hostel is overcrowded with a significant effect on the physical and health wellbeing of the students. The study





emphasized that the university management should effectively enforce the limit of students allocated to and allowed to share hostel rooms to avoid hostel overcrowding and overutilization of resources, hostel management should ensure there is adequate clean water supply to prevent the shortage of water supply, avoid the incidence of a disease outbreak by implementing biweekly hostel sanitation exercise. The university management should improve the duration of electricity supply in the school hostels to enhance good ventilation system, the university stakeholders such as federal government, states governments, local governments, landlords, school management board, staff, principal officers, ministry of education, companies, mortgage banks, non-governmental organizations, and successful alumni of the university are needed to call upon to assist in investing and providing more hostels to accommodate the female overcrowded students in the University of Calabar, Cross River State, Nigeria.

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