ORIGINAL RESEARCH ARTICLE

Prevalence of sexual harassment and its relationship with family birth order among female undergraduates: New findings from institutional-based cross-sectional study in the south east, Nigeria

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Abstract

Family is the microcosm of a larger society that provides care that shapes the behavior of children. However, the different levels of attention children receive from their parents may affect their behaviour and self-esteem, which can lead to them being more vulnerable to sexual harassment. An institutional-based cross-sectional survey was conducted from March – August 2021, to assess the relationship between family birth order and prevalence of sexual harassment. The multistage sampling procedure was used to draw 1070 participants. The data was analyzed using percentages, mean, and multivariate logistic regression statistics. The multivariate logistic regression was used to estimate adjusted odds ratios (AOR) along with 95% confidence intervals (CIs). The level of significance was set at $P < 0.05$. The findings revealed prevalence (73.6%) of sexual harassment, and the two forms such as verbal ($\bar{x} = 2.63$) and non-verbal sexual harassment ($\bar{x} = 2.56$) were high. The multivariate logistic regression odds ratios adjusted shows that the middle born were approximately 2 folds (AOR = 1.62; CI = 1.14 − 2.30; P = 0.008 < 0.05) more likely to predict sexual harassment. The study recommended amongst others that parents in South Eastern Nigeria should refrain from given special attention to a particular child as this may predispose the unfavoured child to sexual harassment. *(Afr J Reprod Health 2022; 26[11]: 56-66)*.

Keywords: Birth order, female undergraduates, sexual harassment, south eastern universities, Nigeria

Résumé

La famille est le microcosme d'une société plus large qui fournit des soins qui façonnent le comportement des enfants. Cependant, les différents niveaux d'attention que les enfants reçoivent de leurs parents peuvent affecter leur comportement et leur estime de soi, ce qui peut les rendre plus vulnérables au harcèlement sexuel. Une enquête transversale en établissement a été menée de mars à août 2021 pour évaluer la relation entre le rang de naissance dans la famille et la prévalence du harcèlement sexuel. La procédure d'échantillonnage à plusieurs degrés a été utilisée pour sélectionner 1070 participants. Les données ont été analysées à l'aide de pourcentages, de moyennes et de statistiques de régression logistique multivariée. La régression logistique multivariée a été utilisée pour estimer les rapports de cotes ajustés (AOR) ainsi que les intervalles de confiance (IC) à 95 %. Le niveau de signification a été fixé à P < 0,05. Les résultats ont révélé la prévalence (73,6 %) du harcèlement sexuel, et les deux formes telles que le harcèlement sexuel verbal (= 2,63) et non verbal (= 2,56) étaient élevées. Les rapports de cotes de la régression logistique multivariée ajustés montrent que les personnes nées au milieu étaient environ 2 fois (AOR = 1,62 ; IC = 1,14 - 2,30 ; P = 0,008 0,05) plus susceptibles de prédire le harcèlement sexuel. L'étude recommandait, entre autres, que les parents du sud-est du Nigéria s'abstiennent d'accorder

une attention particulière à un enfant en particulier, car cela pourrait prédisposer l'enfant défavorisé au harcèlement sexuel. *(Afr J Reprod Health 2022; 26[11]: 56-66).*

Mots-clés: Ordre de naissance, étudiantes de premier cycle, harcèlement sexuel, universités du sud-est, Nigeria

Introduction

Family birth order has been reported to influence the development of specific behaviours of individuals within and outside the families[1].This is because children receive different levels of care and attention from their parents with reports indicating that first born receives more care and attention than middle and last born[2-9] .The different levels of care and attention children receive from their parents contribute to the difference in behaviour and self-esteem observed in children of the same family. Consequently, children who receive better parental care are more likely to develop better self-esteem and behaviour which in turn can make them less vulnerable to social vices such as sexual harassment[3-6]. Studies have associated birth order with risky sexual behaviour, and other personality traits, a risk factor to sexual harassment[2-7] Some of the studies reported that later born siblings particularly middle born are the greater risk takers than first born in a family in terms of risky sexual behaviour and other delinquent act which may expose them to sexual harassment[1,3-5]. Adlert in his theory reported that while firstborn or single children would score the lowest on a delinquency rating, middle-born would score the highest, and the last children would score somewhere between first-born and middle born[8].

Other research has documented the impact of birth order on individual attitude and behaviours and also revealed consistent birth order differences for many personality traits and behaviours such as antisocial behaviours that lead to sexual harassment[1,10]. Other related studies also reported that middle born and last born in a family especially female ones possess the propensity to adopt certain behaviours such as drug abuse and be willing to cooperate with sexual harassers than their firstborn counterparts[3,9-11]. In another related research, it was documented that female child or adult who engage in sexual intercourse with strangers and those who keep multiple sexual partners do so because of poor parental care, lack of supervision, poverty and lack of financial assistance especially during their education[12-14]. This is so as female adolescents in school who lack family assistances or help required

to succeed in their chosen academic will end up going beyond hawking to engaging in risky sexual practices to earn extra money for school fees which is often associated with sexual harassment[15-17].

When a child is properly cared for and their activities or relationship with peers well supervised, monitored and controlled such child is less likely to be exposed to sexual harassment or other delinquent behaviours in the school[18-20]. It is also reported that in family where a child is given adequate financial support and care in school is 76% and 65% less likely to report lifetime and past year sexual harassment experiences than their counterparts who lack family financial support[21]. A female child who lacks family financial support and attention during her school may experience feelings of neglect, inferiority, depression, incompetence and may be exposed to sexual harassment by any person outside the family who she may see as a confidant[22-26].

Schools particularly university studies on sexual harassment experiences among female students have revealed that sex-for-grades is rampant among staff and students[27-33]. Studies have also reported that this type of sexual harassment in tertiary institutions is called Quid pro quo type of sexual harassment which occur when a superior (supervisor/lecturer) conditions the granting of an academic reward upon receipt of sexual favours from a subordinate/female undergraduate[34-36]. It is however observed that female undergraduates mostly yield to this type of sexual harassment with its consequences ranging from emotional and psychological trauma, early pregnancy, sexually transmitted infections, school dropout, suicide attempt and death[37,38].

Studies have documented that the perpetrators of sexual harassment look for specific characteristics in the female child to abuse or harass sexually[39,40]. Such characteristics include female child who are from poor background, needy, troubled or lonely, indecent dressed like those who dress half naked seeking for financial assistance and those from single parent or broken homes[27,33,39,40]. It is also reported that the perpetrators achieve sexual satisfactions from the victims' using gifts, force, anger, threats, and bribes to ensure their continuing compliance, and they systematically desensitized

the victims through sexual talk, touch, sexual advances such as using hand or sign language to denote sexual activity, winking, leering, and persuasion[39,41]. All these characteristics have been observed as correlate of verbal and non-verbal forms of sexual harassment among women especially during their education and working lives[42-47]. These forms of sexual harassment were utilized to solicit information on birth order and prevalence of verbal and non-verbal sexual harassment among female undergraduates in South Eastern State universities in Nigeria.

South Eastern Nigeria, is one of the six geopolitical zones in Nigeria predominantly Igbo people with diverse Igbo cultures and traditional patriarchal. Thus, the family order of birth and male child preference in Igbo land have remained a source of concern and one of the most lasting cultural values among the Igbo of South Eastern Nigeria[48-50]. This family choice of birth is perhaps communicated to the siblings by the parent directly or indirectly from birth till they grow. This attitude may however predispose the unfavoured child to take solace or confide from any other person like male staff, students or lecturers in the school. The decision would make the female child vulnerable to sexual harassment by any person who may avail to help. Research on birth order and sexual harassment has received limited attention, despite the pervasiveness of sexual harassment and its impact on women's physical, mental, social and psychological wellbeing in schools and workplaces globally. Most studies focused on birth order and risky sexual behaviour, and other personality traits, not necessarily on sexual harassnent[2-7]. It is against this point of view that the present study attempts to establish the relationship between birth order and exposure to sexual harassment. The study therefore hypothesized that there might be a relationship between the family order of birth and prevalence of sexual harassment among female undergraduates in South East, Nigeria.

Methods

Research design/setting

We conducted an institutional-based cross-sectional survey research design between March 2021 – August 2021 to examined the relationship between birth order and prevalence of sexual harassment among female undergraduates in State universities in South Eastern Nigeria. The five states in the South East zone have common boundaries with similar cultures, tradition and characteristics. However, the university community in the area is a community of young people who are very adventurous, ill-informed and have the zeal to experiment at all times including what they see or watch on social media. Consequently, a common experience would expect an occurrence of social vices such as, drug abuse, prostitution, sexual harassment and diverse forms of risky sexual behaviours in such environment clustered together by tertiary institutions. The scenarios have necessitated the current study in the South Eastern state universities, Nigeria. This study comprised all the female undergraduates studying in the five state universities in the South Eastern Nigeria with the population of 51, 400. This population is based on the data collected from Universities Registrar's Office in 2020/2021 academic year.

Sample size determination and sampling procedure

The sample for the study consisted of one thousand twenty-eight (1070) female undergraduates. We calculated the sample size by using this formular:

$$n = N \times \frac{\frac{Z^2 \times p \times (1-p)}{e^2}}{\left[N - 1 + \frac{Z^2 \times p \times (1-p)}{e^2}\right]}$$

N= Population
Z= the critical level at 0.05 =1.96
P= the prevalence of sexual harassment 36.7% from previous study by Ogbonnaya, et al.,[51].
e = the margin error = 0.03

$$= 51400 \times \frac{\frac{1.96^2 \times 0.367 \times (1-0.367)}{0.03^2}}{\left[51400 - 1 + \frac{1.96^2 \times 0.367 \times (1-0.367)}{0.03^2}\right]}$$

$$= 51400 \times \frac{\frac{0.892}{0.03^2}}{\left[51400 - 1 + \frac{0.892}{0.03^2}\right]}$$

$$= 51400 \times \frac{\frac{991.607}{52391}}{}$$

$$= 51400 \times 0.0189$$

$$n = 972.857$$

Adding 10% for attrition $972.857 \times 10\% = 97.285$ Hence $n = 972.857 + 97.285 = 1070.143 \cong 1070$

Therefore, the final sample size used for this study was 1070.

The procedure for sample selection involved multi-stages. In the first stage, the South East geopolitical zone of Nigeria was clustered into five states. In the stage two, four (4) state universities were selected from the five (5) state universities in South East geopolitical zone of Nigeria, using simple random sampling technique of balloting with replacement. The third stage involved the use of purposive sampling technique to draw 268 female undergraduates from each of the four (4) state universities in the South East Nigeria. We administered one thousand seventy copies of the questionnaire to the respondents at any point where there were accessible until one thousand seventy-(1070) respondents were reached. However, out of one thousand seventy copies of questionnaire distributed, nine hundred and ninety-seven were returned representing 97.0% returned rate. However, only nine hundred and sixty-eight copies (968) were properly filled and fit for data analysis.

Data collection tools and procedure

In order to gain access to and cooperation from the respondents, the researchers obtained a letter of introduction from the registrars of each of the sampled four state universities. The letters introduced the researchers to the respondents stating the purpose of the study. A well-structured questionnaire titled: Birth Order and Prevalence of Sexual Harassment among Female Undergraduates Questionnaire (BPSHFUQ) adapted from Fitzgerald, *et al.*[52], Mazzeo, *et al.*[43], and Zausmer& Godia[53] was the instrument used for data collection. It consisted of three sections: A, B and C. Section A contained items soliciting information on the demographic characteristics of the respondents such as age, year spent in the university and birth order. A special attention was given to birth order. This was categorized as follows, firstborns, middle born and last born, to test their sexual harassment experiences. The test was to determine the relationship between any of the ordinal positions and prevalence of sexual harassment. The first born was classified as the first female child in a family, the middle born was classified as any child between the first born and the last born. While the last child

referred to any child that was born last in the family. Families who had one or two children were excluded in the study as there would be no middle born. Section B consisted 1 item on prevalence of sexual harassment which the respondents were requested to use a tick [√] on the Yes or No question. Section C consisted four-point Likert scale questions soliciting information on prevalence of verbal sexual harassment (VSH) and non-verbal sexual attention (NVSH) among the respondents in the past year or 12 months. The responses were weighed as Always AL: 3.1 - 4.0, Often OF: 2.1 - 3.0, Occasionally: 1.1 - 2.0, Never: 0.1 - 1.0. The mean scores were interpreted on this basis since the data was interval data. However, the cluster mean was derived by adding, four, three, two and one and dividing by four, i.e., $\frac{4+3+2+1}{4} = \frac{10}{4} = 2.50$.

Data processing and analyses

All the data generated and properly filled were analyzed using IBM SPSS version 25 (Statistical Package for Social Science). Descriptive statistics were used to present the data. The percentages were presented in both table and figures, while mean and standard deviation were presented in table to answer the research question. In order to describe the relationship between birth order and prevalence of sexual harassment among the respondents, bivariate and multivariate logistics regression statistics were employed to analyze the data. The multivariate logistics regression was used to estimate the adjusted odds ratios (AOR) along with 95% confidence intervals (CIs) to determine independent predictors of sexual harassment and the degree of the relationship. The level of significance was set at $P < 0.05$.

Results

The findings from the demographic characteristics of the respondents shows that the age bracket of the respondents varied widely. Thus, majority at the age bracket 19-22yrs have the highest percentage (45.0%) of the participant, followed by the ages of 23-26yrs years with the percentage of (37.9%), and the age of 15-18yrs with the percentage of 9.9%, the least participants was those at the age of 27yrs and above with percentage of (7.1%). The study also
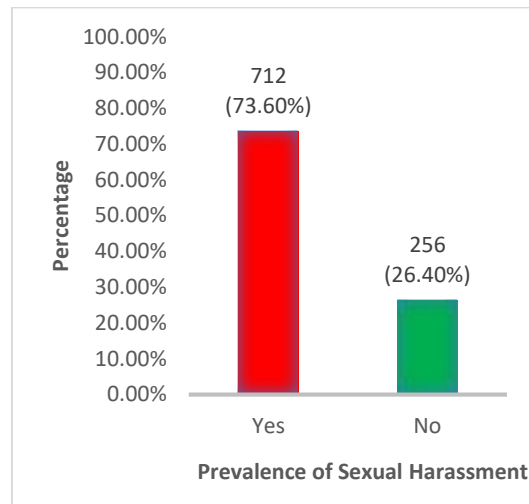
Table 1: Personal characteristics of the students (n = 968)

Characteristics	Frequency (%)
Age group	
15-18yrs	96 (9.9)
19-22yrs	436 (45.0)
23-26yrs	367 (37.9)
27yrs & above	69 (7.1)
Year(s) in the University	
1-2yrs	196 (20.2)
3-4yrs	618 (63.8)
5-6yrs	134 (13.8)
More than 6yrs	20 (2.1)
Order of Birth in the Family	
First born	278 (28.7)
Middle born	477 (49.3)
Last born	213 (22.0)

Figure 1: The bar chart above is the illustration of the prevalence of sexual harassment among female undergraduates in the state universities in south east, Nigeria (n = 968)

found that the number of year(s) the participants spent in the University varied. For instance, the participants have spent 1-2yrs, 3-4yrs, 5-6yrs, and more than 6yrs with the following percentages (20.2%), (63.8%), (13.8%), (2.1%) respectively. Regarding family order of birth, majority of the participants are middle born with the per centage (49.3%), followed by first born (28.7%) and last born (22.0%) respectively.

Figure 1 shows that out of 968 participants, 712 (73.6%) were sexually harassed while 256 (26.4%) were not harassed. Therefore, the prevalence of sexual harassment among female undergraduates in the State universities in South East, Nigeria was 73.6%.

Data in Table 1 shows the item mean score and standard deviations of verbal sexual harassment among the respondents. Specifically, the Table shows that the harassers often time make sexual joke about the body weight or appearance of the respondents ($\bar{x}$ = 2.58; SD= 1.06), harassers oftentimes call their phone for a sex related discussion ($\bar{x}$ = 2.62; SD=1.11), harassers often sext or message them through E-mail, Facebook or WhatsApp" ($\bar{x}$ = 2.60; SD= 1.17), harassers oftentimes distribute written or graphic materials that are insulting and are of sexual nature ($\bar{x}$ = 2.68; SD=1.08), harassers often comment on their sexual abilities ($\bar{x}$ = 2.65; SD=1.16), harassers comment on their body parts, size or shape ($\bar{x}$ =2.57; SD= 1.10), "harassers oftentimes comment on their clothing ($\bar{x}$ = 2.62;SD=1.07), harassers oftentimes invite them for date or hangout ($\bar{x}$ = 2.66;

SD=1.12), harassers oftentimes invite the respondents for sexual intimacy against their will ($\bar{x}$ = 2.63; SD=1.14), harassers oftentimes make sexual provocative comments about their colour ($\bar{x}$ = 2.59; SD=1.14), harassers oftentimes make kissing sound, howling or smacking of lips to them ($\bar{x}$ = 2.65; SD=1.14), harassers oftentimes make sexual suggestive whistling to the female students ($\bar{x}$ = 2.63; SD=1.12), harassers oftentimes call them some degrading names of a sexual nature ($\bar{x}$ = 2.60; SD=1.17). Overall, the clusters mean score of $\bar{x}$ = 2.63; SD=0.83 which is greater than the mean of $\bar{x}$ = 2.50, signifies high prevalence of verbal sexual harassment among female undergraduates in state universities in the South East, Nigeria.

Data in Table 2 shows item mean scores and standard deviations of non-verbal sexual harassment among the respondents. Specifically, the Table shows that the harassers oftentimes lick lips to the female students ($\bar{x}$=2.61; SD=1.12), harassers oftentimes wink eyes to them ($\bar{x}$ = 2.58; SD=1.11), harassers oftentimes give an unwanted present ($\bar{x}$ = 2.56; SD=1.15), harassers oftentimes indicate lewd gestures such as hand or sign language to denote sexual activity ($\bar{x}$ = 2.51; SD=1.15), harassers oftentimes display sexually suggestive pictures or posters in their presence ($\bar{x}$ = 2.63; SD=1.15), harassers oftentimes stalk or follow them around ($\bar{x}$ = 2.61; SD=1.16), harassers

Table 1: Prevalence of verbal sexual harassment among female undergraduates in state universities in the south east, Nigeria (n = 712)

SN	Verbal Sexual Harassment	Mean	SD
1	Harassers make sexual joke about body weight or appearance of female students	2.58	1.06
2	Harassers call their phone for a sex related discussion	2.62	1.11
3	Harassers sext or message them through their E-mail, Facebook or WhatsApp	2.60	1.17
4	Harassers distribute written or graphic materials that are insulting and are of sexual nature	2.68	1.08
5	Harassers comment on their sexual abilities	2.65	1.16
6	Harassers comment on their body parts, size or shape	2.57	1.10
7	Harassers comment on their clothing	2.62	1.07
8	Harassers invite them for date or hangout	2.66	1.12
9	Harassers invite them for sexual intimacy against their will	2.63	1.14
10	Harassers make sexual provocative comments about their colour	2.59	1.14
11	Harassers make kissing sound, howling or smacking of lips to them	2.65	1.14
12	Harassers make sexual suggestive whistling to them	2.63	1.12
13	Harassers call them some degrading names of a sexual nature	2.60	1.17
	Overall Cluster Mean $\bar{x}$	**2.62**	**0.83**

Mean Key:
*3.1-4.0 = Always (AL)
*2.1-3.0 = Often (OF)
*1.1-2.0 = Occasionally (OC)
*0.1-1.0 = Never (NE)

often times publicly watch pornography in the presence of the female students ($\bar{x}$ = 2.58; SD=1.18), harassers oftentimes invade their personal space or privacy ($\bar{x}$ = 2.60; SD= 1.18), harassers oftentimes stare at them or give them elevator eyes (Up and down) ($\bar{x}$ = 2.46; SD=1.12), and oftentimes show facial expressions such as sexual smiles to the female students ($\bar{x}$ = 2.48; SD= 1.04). Overall, the clusters mean score of ($\bar{x}$ = 2.56; SD=0.87), which is greater than the mean of 2.50 signifies high prevalence of non-verbal sexual harassment among female students.

Data in Figure 2, shows the summary of prevalence of sexual harassment among female undergraduate with regard to birth order. The chart shows that middle born had prevalence of 50.8%, first born (26.7%) and last born (22.5%) respectively. By implication, the most prevalent was middle born with the prevalence of 50.8%. The least was last born with the prevalence of 22.5%.

Data in Table 3 shows the summary of multivariate logistic regression on the relationship between female undergraduates of the three different family birth order and prevalence of sexual harassment. The result of the adjusted odd ratios shows that the middle born were approximately 2 folds (AOR = 1.62; CI = 1.14 – 2.30; P = 0.008 < 0.05) more likely to predict sexual harassment than the first born in the family. The last born in the family were not found to have statistically significant relationship with the prevalence of sexual harassment (AOR=1.41; CI =0.92 – 2.16; P=0.118 > 0.05). This implied that family order of birth can predict prevalence of sexual harassment among female undergraduates in South eastern Nigeria.

Table 2: Non-verbal sexual harassment among female undergraduates in state universities in the south east, Nigeria (n = 712)

SN	Non-verbal Sexual Harassment	Mean	SD
1	Harassers stare or give elevator eyes (Up and down) to you	2.46	1.12
2	Harassers make some facial expressions such as sexual smiles	2.48	1.04
3	Harassers lick lips to you	2.61	1.12
4	Harassers wink eyes to you	2.58	1.11
5	Harassers gives you an unwanted present	2.56	1.15
6	Harassers indicate some lewd gestures such as hand or sign language to denote sexual activity to you	2.51	1.15
7	Harassers display sexually suggestive pictures or posters in your presence	2.63	1.15
8	Harassers stalk or follow you around	2.61	1.16
9	Harassers publicly watch pornography in your presence	2.58	1.18
10	Harassers invade your personal space or privacy	2.60	1.18
	Overall Cluster Mean $\bar{x}$	**2.56**	**0.87**
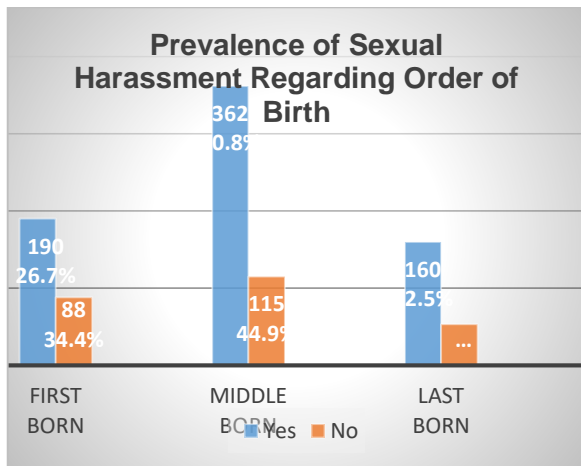
Figure 2: Bar chart presentation of sexual harassment by birth order (n = 968)

Discussion

The present study is among the first to examine the relationship between birth order and prevalence of sexual harassment among female undergraduates in State universities in south eastern Nigeria. The finding shows that the prevalence of sexual harassment among female undergraduates in the past year was (73.6%). The finding was anticipated and consequently not a surprise. This is because, the South Eastern Nigeria where the study was conducted is one of the six geopolitical zones in Nigeria predominantly Igbos with diverse cultures and traditional patriarchal. *The family factors particularly* ordinal positions and male child preference in Igbo land have remained one of the most lasting cultural values[48-50]. This family preferences were communicated to these siblings directly or indirectly from birth till they grow. This phenomenon would make the female child see themselves as inferior to men, and male child superior to the female child. This superiority among the male ones would make them see the female ones as object of sex and harassment. The finding of the current study was somewhat higher though agreed with the study who revealed high prevalence 65.3% of sexual harassment among female undergraduates studied[54]. The current findings were also higher than the finding of the study who reported prevalence of 36.7% sexual harassment/victimization among female

undergraduates in Ebonyi State university[51]. It is also somewhat higher from the study who revealed a high prevalence (51.2%) of sexual harassment among female registered nurses in their workplace[55]. This high or low with reference to the findings, for instance high prevalence in some studies conducted in the university workplace could be attributed to the university environment where most of the girls spend most of the day time and even their night time in the campus compared to collage girls.

The study also revealed prevalence of verbal form of sexual harassment ($\bar{x}$ = 2.63; SD = 0.83), and non-verbal form of sexual harassment ($\bar{x}$ = 2.56; SD = 0.87). The findings were not deceitful, thus, the present hardship associated with the outbreak of COVID-19 pandemic in Nigeria have impacted negatively on the workers way of life particularly lecturers in the state universities whose salaries, arrears, hazards allowance, academic earned allowance and other allowances are not well paid unlike their sisters in federal universities. This they may likely transfer their aggression by using every other means to pursue their happiness including sexually harassing their female undergraduates. The finding from the current study was somewhat higher than the study who revealed the prevalence rates of verbal and nonverbal sexual harassments 38.4% and 17.1%, respectively, among female undergraduates[56]. Nevertheless, the current finding was somewhat lower than the study who reported high prevalence rates of physical, verbal and nonverbal sexual harassments 78.2%, 90.4% and 80.0%, respectively, among female students[57]. The findings are also in agreement with the study who reported that all the female undergraduates in their university were exposed to different forms of sexual harassment even though 95.5% of them were wearing "hijab"[58]. The high or low with reference to the findings could be attributed to varied geographical locations, subject' composition and other demographic factors associated with the setting of the study.

On the relationship between birth order and prevalence of sexual harassment. The study revealed that sexual harassment was most prevalent in the middle born with the prevalence of 50.8%. This implied that order of birth can predict prevalence of sexual harassment in the south

Table 3: Summary of the relationship between birth order and prevalence of sexual harassment using multivariate analyses of logistic regression

Order of Birth in the Family	Harassment Yes f (%)	No f (%)	χ^2	P-Value	β	Crude OR	Adjusted OR (95% CI)	P-Value
First born	190 (26.7)	88 (34.4)	5.484	0.064	1	2.16	1	0.028 *
Middle born	362 (50.8)	115 (44.9)			0.48	1.46	1.62 (1.14 – 2.30)	0.008 *
Last born	160 (22.5)	53 (20.7)			0.34	1.40	1.41 (0.92 – 2.16)	0.118

eastern state universities. The multivariate logistics regression adjusted shows that the middle born were approximately 2 folds (AOR = 1.62; CI = 1.14 – 2.30; P = 0.008 $<$ 0.05) more prevalent to sexual harassment than the first born in the family. The finding was expected and consequently not a surprise, thus, the findings affirmed the studies who reported that family birth other is an important predictor of risky sexual behaviours including exposure to sexual harassment[2-7,9]. This is because when appropriate attention, care and supervision are shown to the first born in a family. The middle born and others would likely seek for that attention and care outside the family thereby exposing themselves to sexual harassment as they are likely to be open to any new experiences and person who may appear to assist[59]. It is also evidence in some studies who reported that later-borns would be more likely than first born to be ensnared into sexual activities at younger ages as they would attempt to create family niche with the aim of reducing direct competitions in the family[9-11,60]. The current findings supported the earlier studies who reported that in the families of two or more children, middleborns typically received 10% less childcare than did firstborns or lastborn[61-63]. Again, unlike middleborns, first-born and lastborn benefit from another tendency in parental investment while middle born are deprived of such benefits[61-63,64].

Conclusions

Our study provided the first data on birth order and prevalence of sexual harassment among female undergraduates. The study found that the prevalence of sexual harassment was relatively high, including VSH and NVSH among the female students. It was further revealed that family order of birth can predict SH. Thus, the middle born were indicated to be the most victim of sexual harassment in the South eastern Nigeria

universities. The study supports the need for the parents of the study location to refrain from given extra-ordinary attention to a particular child due to the order of birth, as this may create problems and deprive the unfavoured child parental care, attention, proper feeding, clothing, school fees amongst others. The scenarios would make the victim vulnerable to sexual harassment. Also, the government should adequately sensitize and encourage all parents especially in the south eastern Nigeria to ensure how best they can show equal attention and treated fairly all their children irrespective of the order of birth. This might mean using customary courts to ensure justice in the application of family laws especially as it regards to sharing family inheritance in Igbo land of South East Nigeria.

Strength and Limitation

The major strength of this paper, is that, to the best of our knowledge, this study is among the first to assess the relationship between family birth order and prevalence of sexual harassment among female undergraduates. Therefore, the new findings will add essential insight on the research towards curbing the menace of sexual harassment in the university education. Again, there was high level of confidentiality during the administration of questionnaire thus, was filled anonymously, and was returned collectively through their class representative. Also, the multivariate logistics regression was used to estimate adjusted odds ratios (AOR) to estimates independent predictors of sexual harassments. However, the study is not without limitations. For instance, some of the female undergraduates who admitted to be sexually harassed were not willing to give further information regarding their experiences due to fear of unknown, reprisals, retribution, or conspiracy, hence the researchers were their lecturers in the

same university. This might underestimate the magnitude of the problem. Also, due to the sensitive nature of the study, there might be social and cultural desirability bias.

Ethical consideration

Ethical approval was obtained from the registrars of each of the four sampled state universities in the South East, Nigeria. Also, a written informed consent was also obtained from each of the respondents before the questionnaire was administered. In the consent letter the respondent were fully assured of confidentiality and anonymity of the data. The study was strictly conducted without coercion but based on respondents' volition and consent.

Conflicts of interest

The authors have no conflicts of interest to disclose in this article.

Authors' contributions

Christian OA, and Edith NO conceived and commissioned the study. Christian OA performed the literature search and screened for the selected studies, extracted the data and wrote the first draft of the manuscript. Christian OA, and Cajetan Il performed the analysis and interpretation of the study. Emeka UM, Lois NO, Emeka UM, Edith NO, Eunice NA, Uzochukwu CI, Maria-Lauretta CO, Onyechi N, Ifeyinwa MO, Okocha YI, Ben NO, and Chukwu OE, supervised all aspects of the study. All the authors have read, agreed and approved to the final manuscript.

Acknowledgment

Funding

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