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Perpetration and perceived spatial patterns of violent behaviours among university undergraduates in South-East Nigeria

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The study investigated perceived spatial patterns and formulated preventive strategies against violent behaviours among undergraduates of South-East Universities, Nigeria. Descriptive survey research design was adopted for the study while multi-stage sampling procedure was employed to draw the sample for the study. Well-completed 1,707 copies of researcher-designed undergraduates violent behaviours perpetration patterns questionnaire (UVBPPQ) that comprised five sections A, B, C, D, and E were returned by undergraduates of eighteen randomly selected departments from seventeen faculties in four federal and five state universities situated in South-East Nigeria and were analyzed. Split-half was used to determine reliability of instrument (UVBPPQ) while Spearman-Brown Prophecy (correction) Formula was used to establish reliability co-efficient of the sub-scales. Cronbach's alpha statistic was also utilized to establish inter-item correlation co-efficient of items in Sections B and C of the instrument. Mean statistic and percentages were utilized for answering the research questions while Chi-square (χ^2) was utilized to test the four postulated null hypotheses. Undergraduates violent behaviour in-depth interview guide (UVBIIG) was adopted to generate qualitative data to complement the quantitative data. Results revealed that low prevalence of violent behaviours was found among undergraduates of South-East Nigerian universities.

Key words: Pattern, spatial pattern, violence, behaviours, surveillance.

INTRODUCTION

Attainment of a very sound and qualitative education that fosters development of individuals with the capacity to function effectively depends largely on a conducive environment of learning devoid of violent behaviours. A university environment plagued with violent behaviours cannot accomplish the goals of Nigerian higher development of the individuals. World Health Organization (WHO) (1996) defined violence as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of resulting in injury, death, psychological harm,

mal-development or deprivation. National Center for Injury Prevention and Control (2004) defined violence as threatened or actual physical force or power initiated by an individual that results in, or has a high likelihood of resulting in physical or psychological injury or death. The definition used by WHO associates intentionality with the committing of the act itself, irrespective of the outcome it produces. This study in essence adopted WHO's (1996) definition of violence.

Few typologies existed already and none is very comprehensive (Foege et al., 1995). The typology proposed by WHO (1996) divides violence into three broad categories according to characteristics of those committing the violent act: self-directed violence; interpersonal violence; and collective violence. This initial categorization differentiates between violence a person inflicts upon himself or herself, violence inflicted by another individual or by a small group of individuals, and violence inflicted by larger groups such as states, organized political groups, militia groups and terrorist organizations. However, this study was restricted to interpersonal and community violent behaviours, which are most prevalent among undergraduates of federal and state universities in Nigeria (Aluede and Aluede, 1999; Aluede, 2001; Aluede et al., 2005; Smith, 2006). In addition, the restriction of the study to interpersonal and community violent behaviours was justified by the university's existence as an institutional setting, which functions as a community where youths from diverse backgrounds perpetrate random acts of violence, rape or sexual assault, bullying, arson, and so on with the intention of maiming other youths or inflicting injuries on university staff.

Studies have shown that violence and violent behaviours perpetration breed devastating consequences (Dahlberg and Krug et al., 2002). Perpetration of violence and violent behaviours when allowed to flourish poses serious immediate and future long-term implications for health, psychological and social development of individuals, families, communities, institutions and countries (United Nations, 2007). Similarly, any educational institutional that allows violence to permeate its structures and fabrics cannot actualize the goals for its establishment and existence. Nigerian higher educational institution is established with the aim of giving any student who enrolls, a very sound and qualitative education, to be able to function effectively in any environment in which he/she may find him/herself; so as to become more productive, self-fulfilling and attain self - actualization (Federal Government of Nigeria, 1981). With the monumental manifestations of violence (especially cult-related violence) and violent behaviours in Nigerian universities in recent time, this worthwhile goal is gradually becoming elusive (Aluede et al., 2005; Oruwari and Owei, 2006).

Interest in behaviours that have important impacts on human health and well-being is based upon two assumptions: that a significant proportion of the mortality from the leading causes of death is caused by the behaviour of individuals, and that such behaviour is modifiable (Conner and Norman, 1996). Behaviour is held to exert its influence on health in three basic ways: by producing direct biological changes, by conveying health risks or protecting against them, or by leading to the early detection or treatment of disease (Baum and Posluszny, 1999). Starr and Taggart (1992) defined behaviour as a response to external and internal stimuli, following integration of sensory, neural, endocrine and effector components. Behaviour has a genetic basis, hence is subject to natural selection, and it commonly can be modified through experience. Olweus (1999) defined violent behaviour as aggressive behaviour where the actor or perpetrator uses his or her own body as an object (including a weapon) to inflict (relatively serious) injury or discomfort upon an individual. With such a definition there is an overlap between violence and bullying, where bullying is carried out by physical aggression. The behaviour of people and other organisms falls within a range with some behaviours being common, some unusual, some acceptable, and some outside acceptable limits. Thus, violent behaviours belong to unacceptable limits.

Tabrizi and Madanipour (2006) stated that environmental criminologists have correlated crime patterns with the environmental and physical layout of places where crimes occur. Incidents of crime tend to concentrate in specific locations at particular time periods. It is also important to note that fear of crime has spatial and temporal dimensions as well. People tend to fear specific locations and times, especially during the night. Dangerous places are linked to perceptions of blocked prospects which reduce visibility and create opportunities for potential criminals to hide. Nelson et al. (2001) indicated that potential threat of violence and violent behaviours shapes people's perceptions of risk and subsequent behaviour. These perceptions are strongly attached to specific localities.

Lindsay and Norman (1977) defined perception as the process by which organisms interpret and organize sensation to produce a meaningful experience of the world. Sensation usually refers to the immediate, relatively unprocessed result of stimulation of sensory receptors in the eyes, ears, nose, tongue, or skin. Perception, on the other hand, better describes one's ultimate experience of the world and typically involves further processing of sensory input. In practice, sensation and perception are virtually impossible to separate, because they are part of one continuous process. Thus, perception in humans describes the process whereby sensory stimulation is translated into organized experience. That experience, or percept, is the joint product of the stimulation and of the process itself. Relations found between various types of stimulation (for example, light waves and sound waves) and their associated percepts

suggest inferences that can be made about the properties of the perceptual process; theories of perceiving then can be developed on the basis of these inferences.

Pomerantz (2003) viewed perception as the process of attaining awareness or understanding of the environment by organizing and interpreting sensory information. He further expounded that perception involves signals in the nervous system, which in turn result from physical stimulation of the sense organs. For example, vision involves light striking the retinas of the eyes, smell is mediated by odour molecules and hearing involves pressure waves. Perception is not the passive receipt of these signals, but can be shaped by learning, memory and expectation. Perception involves these "top-down" effects as well as the "bottom-up" process of processing sensory input (Bernstein, 2010). Perception depends on complex functions of the nervous system, but subjectively seems mostly effortless because this processing happens outside conscious awareness. In this study, perception refers to the opinion; awareness or understanding an undergraduate possesses based on violent behaviour perpetration and its spatial patterns within the university environment.

Violent behaviours and violence-related crimes have emerged as two of the most prominent challenges facing Nigerian educational system including university system where the spate of violence seems to impinge profound effects on university administration, lecturers' and students' welfare and property (Aluede et al., 2005; Smith, 2006; Egbochukwu, 2007). Perpetration of violent behaviours, its perceptions, patterns and safety have been at the centre stage of several debates and discussions. Institute for Security Studies-ISS (2001) stated that addressing perceptions of crime (violent behaviours inclusive) is as important as reducing crime levels. Additionally, ISS (2001) asserted that fear of crime or violent behaviour perpetration affects quality of life and has negative economic and political consequences irrespective of cultural, social and geographical contexts.

The study investigated how, within the context of heightened safety and security concerns in Nigeria and universities environments in particular; undergraduate populations perceive violent behaviours perpetration patterns in public spaces such as drinking establishments, lecture halls/amphitheaters, sports centres, shopping districts, cyber café, restaurants, entertainment venues and hostels. The analysis was undertaken as part of a broader attempt to examine perceptions of violent behaviours perpetration, especially in relation to spatial patterns of human behaviours.

Forms of violent behaviours most prevalent among undergraduates of Nigerian universities (federal and state universities) as highlighted by Nwokwule (1992) and Aluede et al., (2005), which include sexual assault/abuse, verbal aggression, bullying, stabbing, shooting, arson, weapon carrying, robbery, arson, gang fight and violent acts/crimes against property or materials (such as burglary, theft) were investigated. Violent behaviours are also perpetrated in patterns. Cowie (1990) referred to pattern as the various forms that something may take. Pridemore et al. (2003) classified patterns into three forms. These are spatial, temporal and demographic. However, the scope of this study was restricted to spatial pattern of violent behaviours among university undergraduates in South-East Nigeria. A spatial pattern is a perceptual structure, placement, or arrangement of objects on earth. It also includes the space in between those objects. Patterns may be recognized because of their arrangement; maybe in a line or by a clustering of points. Three classifications are often used when discussing spatial patterns, aggregated (or clustered), random and regular. In reference of spatial behaviours, Canter and Hammond (2006b) stated that offenders do not typically travel far from their homes to offend because of the increase in time, money and effort to travel further a far, as well as the fact that individuals prefer to remain within the area around their homes, with which they feel most comfortable and most familiar.

Several studies (Canter and Larkin, 1993; Canter and Gregory, 1994; Snook, 2004; Cusimano et al., 2010) conducted on spatial behaviour of criminals have also indicated that individual characteristics of offenders are influencing the distances travelled by them to commit offences.

In a study of serial burglars, Snook (2004) provided some evidences that differences in age, experience, monetary reward and methods of transportation can determine offenders' travel choice. Snook (2004) asserted that young offenders select targets that are located nearer to their homes than older ones. However, age differences in criminal mobility may exist because "age summarizes a wide range of aspects related to differences in criminal spatial development such as the size of their cognitive maps, levels of restriction on mobility (for example, the amount of parental control) and access to resources (for example, vehicle)". Considering this study, age difference among undergraduates of South-East Nigerian universities may have significant impact on perception of spatial pattern of violent behaviours perpetration.

In this study, spatial pattern of violent behaviour can be exemplified as the manner by which an individual undergraduate or group of undergraduates perpetrate violent behaviours in relation to the immediate environment, which encompasses students, staff (animate objects) and university infrastructure (inanimate objects). Perception of spatial pattern of violent behaviour on the other hand refers to opinion, awareness or understanding undergraduates have based on violent behaviours in relation to the immediate environment, which encompasses students, staff (animate objects), university infrastructure (inanimate objects) and places. The baseline data generated in the study established that

undergraduates perceived violent behaviours to significantly occurred in the hostels, restaurant and drinking establishments (RDE), entertainment and shopping districts (ESD). The data on perceived spatial pattern of violent behaviours perpetration among university undergraduates in South-east Nigeria were collected during the 2010/2011 academic session.

The spatial aspects of human interactions are key issues to understand human activities and behaviours including violent behaviours. Theories such as Routine Activity Theory-RAT (Cohen and Felson, 1979), Spatial Syntax Theory-SST (Nubani and Wineman, 2005; Baran et al., 2006), Social Ecological Model-SEM (Bronfenbrenner, 1977, 1979) and Social Perception Theory-SPT (Smith and Mackie, 2000), which have been developed to investigate and understand spatio-temporal characteristics and perception of human activities and interactions were also adopted as theories of anchor.

Spatial syntax theory emphasizes spatial factors (street networks, building placement, and building size) as correlates of crime (Nubani and Wineman, 2005; Baran et al., 2006) or of other social phenomena. As such it addresses one aspect of the "suitable targets" dimension of routine activity analysis. For instance, network locations which make for easy escape are more suitable targets than network locations which are not. Spatial syntax theory provides a methodology for mapping a space into a connected set of discrete units through a process terms spatial configuration. This map results in identification of 'syntactic steps,' which are line segments in a network, with a new step starting when there is a change in direction. The 'depth' between any two spaces in the network is the least number of syntactic steps connecting them. One may measure the degree of 'integration' between spaces in terms of depth. A given space has greater 'global choice' when there are many potential paths connected to it. All these measures of spatial syntax may be used as potential correlates of crime or any other social phenomenon.

Social perception theory (SPT) is, in psychology and other cognitive sciences, that part of perception that allows people to understand the individuals and groups of their social world, and thus an element of social cognition (Smith and Mackie, 2000). It allows people to determine how others affect their personal lives. While social perceptions can be flawed, they help people to form impressions of others by making the necessary information available to assess what people are like. Missing information is filled in by using an implicit personality theory: if a person is observed to have one particular trait, observers tend to assume that he or she has other traits related to this observed one. These assumptions help to "categorize" people and then infer additional facts and predict behaviour (Delamate et al., 2003). Social perceptions are also interlinked with self-perceptions. Both are influenced by self-motives. Society has the desire to achieve beneficial outcomes for the self

and to maintain a positive self-image, both for personal psychic benefits and because we know that others perceive us as well. It is human nature to want to create a good impression on others, almost as if self-perceptions are others' social perceptions (Dunning, 2001).

The study was also anchored on routine activity theory since studies on violence, violent crime, violent behaviour and victimization involve utilization of demographic variables (age, race, education, gender, etc.) which are often applied as proxies for unmeasured risk variables (living in high-crime neighbourhoods, frequenting high-crime establishments, work in areas low in police protection, low personal capacity to resist and so on) and parameters for determining occurrence of social phenomena (Mustaine and Tewksbury, 1998).

Also, this study was also anchored on ecological model. The model comprehensively addresses public health problems such as injury, violent behaviours, health risk behaviours, and violence against women at multiple levels (University of Florida, 1999). These levels highlight the interaction and integration of biological, behavioural, environmental and social determinants (these determinants can be broadly divided into 'upstream' determinants-education, employment, income, living and working conditions; 'midstream'-health behaviours and psychosocial factors and 'downstream'-physiological and biological factors), as well as the influence of organizations (for examples, workplace and schools), other persons (for instance, family, friends, and peers), and public policies all of which together help individuals make healthy choices in their daily lives (Glanz and Rimmer, 1995). A key feature is that it highlights how health and wellbeing are affected by changes and interactions between all these factors over the course of one's life (McClure et al., 2004). The model provides a complex web of causation and creates a rich context for intervention. To buttress this fact, it recognizes that: young people (university undergraduates) come to university campuses with social, family and behavioural histories that influence their university behaviours; and once on campus, peers, residence, and lifestyle factors further influence what they believe, endorse, and do with regard to violence. Consequently, SEM can be used to exemplify pattern of violent behaviours among university undergraduates of south-east Nigeria and design appropriate intervention strategies for their eradication.

Violent incidents and fear of violence have permeated higher educational institutions including university campuses in Nigeria. These have profound damaging effects on the educational process. Schools with high rates of crime and violence are less effective in educating learners. These universities have lower levels of learner achievement, higher rates of absenteeism, and more dropouts. Violent behaviours perpetration in universities' environments not only has immediate devastating effects on students, but often persists into adulthood and supports an intergenerational culture of coercion and

violence. The study of spatial pattern of violent behaviours perpetration provides a much more significant picture of violence in the university environments that overlays previously computed fatality data. Furthermore, examining perceived spatial patterns of violent behaviours perpetration among undergraduates based on certain demographics can be utilized to theorize on the impact of violent behaviours on undergraduates and formulate preventive strategies.

There exists a dearth of studies and reliable data on perpetration, perceived spatial pattern of violent behaviours among undergraduates of South-East Nigerian universities. Therefore, there subsists the pertinent question of what perceived spatial patterns of violent behaviours exist among university undergraduates of South-East Nigeria? Addressing the perpetration and perceived spatial patterns of violent behaviours among undergraduates of South-East Nigerian universities is as important as reducing its magnitude and damaging effects. Effective eradication of violent behaviours perpetration requires primary intervention, that is, formulation of appropriate preventive strategies. Thus, this situation poses a question of which appropriate preventive strategies can be formulated against perpetration and perceived spatial pattern of violent behaviours among undergraduates of South-East Nigerian universities?

The purpose of the current study was to investigate perpetration, perceived spatial pattern of violent behaviours among university undergraduates in South-East, Nigeria and recommend preventive strategies against such behaviours.

MATERIALS AND METHODS

The study adopted cross-sectional survey research design. The study was carried from 2010 to 2012. The population of the study was 176,531 university undergraduates that enrolled during 2010/2011 academic session in the public universities in South-East, Nigeria. A sample of 1,800 representing 1.02 per cent of the population participated in the study. Multi-stage sampling procedure was employed to draw the sample for the study. Three forms of instruments were utilized for data collection. These include: Undergraduates violent behaviours perpetration and patterns questionnaire (UVBPPQ), undergraduates violent behaviours interview guide (UVBIG) and appropriate violent behaviours preventive strategies questionnaire (APVBPSQ). The face validity of the instruments was established through the judgments of five experts from Sociology and Anthropology Department, Health and Physical Education Department, Psychology and Measurement and Evaluation Department, University of Nigeria, Nsukka. Split-half method of reliability testing and Cronbach Alpha statistic were used to determine reliability indices of UVBPPQ, APVBPSQ and its sub-scales while reliability co-efficient values of 0.79, 0.82 and 0.77, respectively were obtained. Research questions were answered using means and standard deviations, as well as percentages while Chi-square was used to test the null hypotheses at 0.05 level of significance.

Research instruments

The procedures involved in the design of the instrument include:

Extensive literature review and interview with specialists in the field and related fields were conducted, extraction of topics required for the formulation of questionnaire items, determination of items for each sub-topic, preparation of the draft of the questionnaire and determination of the appropriate scales for each of the sub-topics. Subsequently, the face and content validity of the instrument were established. To establish the reliability of the instrument, 30 copies of the instrument (UVBPPQ) were administered on 30 undergraduates of Kogi State University, Anyigba. The instrument items were divided into two equal sets of even and odd numbers. The responses of the two sets were analyzed to ascertain the reliability co-efficient of the entire instrument using Spearman-Brown prophecy (correction) formula statistics. The reliability co-efficient of the entire instrument was 0.79. Furthermore, using inter-item analysis, the reliability co-efficient of items in Section B of the (UVBPPQ) was established using Cronbach's alpha coefficient. However, Section E (perception of spatial pattern of VBs) had reliability co-efficient of 0.82 and 0.77, respectively. Since reliability co-efficient of the instrument was above 0.79 (the cut-off point was considered to be 0.7) for all subscales of UVBPPQ. Thus, the instrument was considered reliable for use in the study.

Procedures adopted in formulating appropriate preventive strategies against perpetration and perceived spatial pattern of violent behaviours

The formulation underwent three distinct phases namely: outlining the baseline findings; outlining the objectives and components of the preventive strategies, and subjecting the objectives and proposed preventive strategies to experts for both face and content validity. This procedure though slightly differed from the method adopted by Ezedum (1999) and Ekenedo (2007); the two procedures have similar modus operandi and guiding modalities. The APSAVBQ comprising the objectives of the study and suggested preventive strategies was presented together with the summary of major findings from the baseline data to 15 experts selected from the fields of Geography, Health and Physical Education, Psychology, Sociology and Anthropology. The experts were required to adjudge the degree of appropriateness of the suggested preventive strategies in the questionnaire by ticking ($\sqrt{}$) against the items with response options of 'Very Appropriate', 'Appropriate' and 'Not Appropriate'. They were also requested to make their inputs. The data were analysed using mean statistic. Responses to the questionnaire items were weighted as follows:

'Very Appropriate' (3 points), 'Appropriate' (2 points) and 'Not Appropriate' (1 point). A criterion mean of 2.00 was utilized in taking decision in reference to the appropriateness of the items. The criterion was calculated as follows:

$$\frac{3+2+1}{3} = \frac{6}{3} = 2.00$$

Hence, an item with a mean that is equal to or greater than the criterion mean of 2.00 was adjudged as 'Appropriate'. In addition, an item with a mean less than 2.00 was considered to be 'Not Appropriate' as a component of the preventive strategies.

Inclusion criteria

The inclusion criteria included being a bona fide student of any of the selected universities during 2010/2011 academic session in the south-east Nigeria and willingness to participate in the study after given informed consent.

Exclusion criteria

These include not responding to all the items in the copies of the questionnaires, or inappropriate or inconsistent response to the questionnaire items based on the investigators' discretion.

Ethical consideration

Undergraduates were given informed consent letters seeking their permission to participate in the study. Undergraduates were not coerced to participate in the study.

RESULTS

After retrieval of the administered copies of the UVBPPQ, the researchers gathered and sorted out the improperly completed copies. Copies of the questionnaire returned were crosschecked for completeness of responses while those that were incorrectly completed were discarded. A total of 93 copies of the questionnaire were excluded from data analysis considering the exclusion criteria. Hence, 1,707 properly completed copies of the instrument were used for data analysis. The quantitative data were analyzed using the statistical package for the social sciences (SPSS batch system version 16). The data were analyzed on an item-by-item basis to indicate the response frequencies and percentages of various categories of respondents such as age, academic level, gender, and university type. Out of the 1,800 copies each of the questionnaires distributed, 1707 [age = (15 to 19 years = 334, 20 to 24 years[+] = 1373]; [academic level = (200 level = 629, 300 level = 290, 400 level = 788)]; [gender = (male = 842, female = 865)]; [university type = (federal = 774, state = 933)]; representing 94.8% return rate, were used for data analysis.

Table 7 shows that χ^2-cal value of test of hypothesis of no significant difference in the perceived spatial pattern of violent behaviours perpetration based on age ($\chi^2 = 0.88 < 43.77$, df = 30, p < .05) is less than the critical χ^2-value. Thus, the hypothesis is, therefore, accepted. Table 8 indicates that χ^2-cal value of test of hypothesis of no significant difference in the perceived spatial pattern of violent behaviours perpetration based on gender ($\chi^2 = 72.98 > 43.77$, df = 33, p < .05) is greater than the critical χ^2-cal value. Thus, the hypothesis is, therefore, rejected. Table 9 reveals that χ^2-cal value of test of hypothesis of no significant difference in the perceived spatial pattern of violent behaviours perpetration according to academic level ($\chi^2 = 36.82 < 79.08$, df = 33, p < .05) is less than the critical χ^2-value. The hypothesis is, therefore, accepted. Table 10 reveals that χ^2-cal value of test of hypothesis of no significant difference in the perceived spatial pattern of violent behaviours perpetration according to university type (χ^2 = 17.06 < 43.77, df = 30, p < .05) is less than the critical χ^2-value. The hypothesis that there is no significant difference in the perceived spatial pattern of violent behaviours perpetration according to university type university type is, therefore, accepted.

Undergraduates in universities reported low perpetration of indicated violent behaviours: bullying (1.55 ± 0.49), stabbing (1.35 ± 0.47), rape (1.10 ± 0.30), gang fights (1.05 ± 0.28), and weapon carrying (1.20 ± 0.50). In reference to perceived spatial pattern of violent behaviours, undergraduates of different ages reported that violent behaviours were mostly perpetrated in the hostels (15 to 19 years = 36.4%; 20 to 24 years[+] = 31.4%), restaurants and drinking establishments (15 to 19 years = 23.7%; 20 to 24 years[+] = 27.4%). Undergraduates based on gender reported that violent behaviours were mostly perpetrated in the hostels (male = 34.7%; female = 30.2%), restaurants and drinking establishments (male = 23.8%; female = 29.5%). Undergraduates of different academic levels indicated violent behaviours were mostly perpetrated in the hostels (200 level = 29.9%; 300 level = 32.45%; 400 level = 34.5%), restaurants and drinking establishments (200 level = 27.2%; 300 level = 21.7%; 400 level = 28.0%). Based on university type, respondents' perception of spatial pattern of VBs was as follows: HST (federal = 26.2%; state = 35.5%), moderately at RDE (federal = 26.0%; state = 25.6%), and infinitesimally at ESD (federal = 18.1%; state = 17.9%). There was a significant difference ($\chi^2 = 72.98 > 43.77$, df = 30, p < .05) in the undergraduates' perceived spatial pattern of violent behaviours based on gender. Intervention strategies such as development of youth violence surveillance system (2.40 ±.91) and implementation of hostel violence surveillance system in the university environment (2.40 ±.82) were recommended.

DISCUSSION

Data in Table 1 show low prevalence of violent behaviours (grand $\overline{X}$ = 1.98 < 2.00; ± 0.73) among undergraduates. This finding was not expected and thus surprising. This is because surveys conducted by Aluede et al. (2005), Smith (2006), Egbochukwu (2007) and Egwunyenga, (2009) revealed high prevalence of violent behaviours among undergraduates of Nigerian universities and youths of other cultural or ethnic backgrounds who were in higher institutions of learning (Olweus, 1993). Although, when data on prevalence of some VBs were isolated and analyzed, results indicated that arson ($\overline{X}$ = 2.01 > 2.00), robbery cases ($\overline{X}$ = 2. 13 > 2.00), theft and burglary ($\overline{X}$ = 2.07 > 2.00) were violent behaviours prevalent in the university environments. This finding contradicts those of Nwokule (1992), Aluede et al. (2005), Smith (2006) who reported high prevalence of

Table 1. Prevalence of violent behaviours in the university environment (n = 1,707).

Parameter	$\overline{X}$	SD	Decision
Occurrence of bullying in the university environment in the past 12 months	1.84	0.71	*LPVB
Occurrence of stabbing in the university premise in the past 12 months	1.91	0.76	*LPVB
Occurrence of rape in the university environment in the past 12 months	1.98	0.74	*LPVB
Manifestation of gang fights in the university environment in the past 12 months	1.97	0.69	*LPVB
Occurrence of weapon (knife, cutlass, gun) carrying in the past 12 months	1.96	0.73	*LPVB
Occurrence of arson on the campus in the past 12 months	2.01	0.68	*PVB
Manifestation of robbery cases on campus in the past 12 months	2.13	0.73	*PVB
Occurrence of violent acts against property in the past 12 months	2.07	0.79	*PVB
Occurrence of gun shooting in university environment in the past 12 months	1.97	0.75	*LPVB
Grand mean	1.98	0.73	*LPVB

*LPVB = Low prevalence of violent behavior. *PVB = Prevalence of violent behaviour

Table 2.   Percentage of perceived spatial patterns of violent behaviours among undergraduates (n = 1,707).

Variable	Spatial pattern													
	*LRA		*RDE		*HST		*ESD		*SPC		*DAB		*OTR	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Where does bullying occur in the university premise?	179	10.5	483	28.3	469	27.5	160	9.40	207	12.1	114	6.7	46	2.7
Where does stabbing often occur in the campus?	52	3.00	600	35.1	406	23.8	444	26.4	74	4.3	69	4.0	62	3.6
Where do undergraduates often commit act of rape?	49	2.90	162	9.50	1010	59.2	129	7.60	44	2.6	131	7.7	182	10.7
Where does shooting usually occur in the campus?	156	9.10	558	32.7	222	13.0	517	30.3	98	5.7	88	5.2	68	4.0
Where do students usually engage in gang fight?	156	9.10	711	41.7	188	11.0	406	23.8	140	8.2	59	3.5	47	2.8
Where does weapon carrying mostly perpetrated?	196	11.5	623	36.5	212	12.4	432	25.3	96	5.6	117	6.9	31	1.8
Where do undergraduates mostly engage in arson?	79	4.60	539	31.6	421	24.7	263	15.4	83	4.9	297	17.4	25	1.5
Where does robbery usually occur in the campus?	51	3.00	217	12.7	1011	59.2	267	15.6	23	1.3	116	6.8	22	1.3
Where do students mostly commit theft and burglary?	66	3.90	203	11.9	1042	61.0	102	6.00	13	0.8	249	14.6	32	1.9
Average		6.40		26.7		32.4		17.7		5.1		8.1		3.6

*LRA = Lecture rooms and amphitheatres, *RDE = Restaurants and other drinking establishments, *HST = Hostels, *ESD = Entertainment venues and shopping districts, *SPC = Sports centres, *DAB=Departmental and administrative buildings, *OTR=Others

investigated violent acts among undergraduates of Nigerian universities. In contrast, results on specific violent behaviours (arson, robbery incidents, theft and burglary) are consistent with those of Gudlaugsdottir et al. (2004) and Sibai et al. (2009) who investigated violent behaviours

among adolescents in Iceland and post-war Lebanon, respectively. These contrasts could be attributed to homogeneity of subjects of this study and previous studies even though their geographical and cultural settings varied.

Data in Table 2 indicated that undergraduates perceived violent behaviours (VBs) to be considerably perpetrated in HST (32.4 %), RDE (26.7%), and infinitesimally at ESD (17.7%) in their university campuses. Sampson et al. (1997) and Tabrizi and Madanipour (2006) asserted that environmental criminologists have correlated crime patterns with the environmental and physical layout of places where crimes occur. Incidents of crime tend to concentrate in specific locations at particular time periods. This finding is in agreement with those of Cusimano et al. (2010), whose reports corroborated the above assertion by reiterating that violent acts are significantly perpetrated where there is a convergence of different populations or same population that moves with time. Also, such population is characterized by several indicators of social deprivation. Therefore, perpetration of violent behaviours in hostels was plausible but astonishing. The hostels are perceived as safe places that should provide comfort and safety for students but are also sites associated with undergraduates' routine activities, their mobility and provide opportunities for potential criminals to hide and unleash violent behaviours on other students. In other words the hostels are potential crime sites. This finding is in agreement with those of Graham et al. (2006) who studied large drinking establishments and found that the immediate bar-room environment had an important impact on the frequency of aggression but less on the severity of aggression.

According to Graham et al. (2006), the strongest predictors of both the frequency and severity of patron aggression in large drinking establishments were social factors such as rowdiness/permissiveness and sexual activity, contact and competition, and closing time variables such as over-serving at closing time and the number of people hanging around after closing. Nelson et al. (2001) who conducted a survey in Cardiff and Worcester in the UK, also reported major clusters of violent crime at night in the pub/leisure zones of the city centre and secondary clusters during the day in major retail streets/entertainment districts. Dangerous places are linked to perceptions of blocked prospects which reduce visibility and create opportunities for potential criminals to hide (Tabrizi and Madanipour, 2006). Thus, this agreement was acknowledged and may be due to subjects' composition and similarities between physical properties of the environments where the earlier studies were conducted and the present study.

Data in Table 3 showed that regardless of age, undergraduates perceived VBs to mostly occurred in HST (15 to 19 years = 36.4%; 20 to 24 years[+] =31.4%), RDE (15 to 19 years = 23.7%; 20 to 24 years[+] = 27.4%), and

ESD (15 to 19 years = 13.9%; 20 to 24 years[+] = 18.6%), respectively. This finding is in consonance with those of Graham et al. (2006) who studied large drinking establishments and found that the immediate bar-room environment had an important impact on the frequency of aggression but less on the severity of aggression. According to Graham et al. (2006), the strongest predictors of both the frequency and severity of patron aggression in large drinking establishments were social factors such as rowdiness/permissiveness and sexual activity, contact and competition, and closing time variables such as over-serving at closing time and the number of people hanging around after closing.

Nelson et al. (2001) who conducted a survey in Cardiff and Worcester in the UK, also reported major clusters of violent crime at night in the pub/leisure zones of the city centre and secondary clusters during the day in major retail streets/entertainment districts. Dangerous places are linked to perceptions of blocked prospects which reduce visibility and create opportunities for potential criminals to hide (Tabrizi and Madanipour, 2006). The finding is also consistent with that of Australian Bureau of Statistics' (2006) Crime and Safety Survey reports conducted in 2005, which revealed that approximately 70% of persons aged 15 years and over perceived that there are problems relating to crime and/or public nuisance in their local neighbourhoods. Thus, this agreement was acknowledged.

Data in Table 4 indicated that undergraduates' perceived spatial pattern of VBs based on gender were as follows: male (HST = 34.7%; RDE = 23.8%; ESD = 19.6%), female (HST = 30.2%; RDE = 29.5%; ESD = 15.9%), respectively. The finding was interesting but expected. The finding is inconsistent with those of Krakowski and Czobor (2004) who reported gender differences in the frequency and course of physical and verbal assaults over the 4-week period among their subjects. The finding also contradicted that of Egbochukwu (2007) whose reports indicated that secondary school students perceived that boys more than girls were both bullies and victims of bullying. Boys reported being kicked or hit more often than girls. The results further showed that it was more common for bullying to take place in the classroom in government schools than in private schools. The contradiction may be because of subjects' composition and disparities in dispositions of secondary school students and university undergraduates.

Data in Table 5 showed that undergraduates across academic level perceived VBs to be typically perpetrated in the HST (200 level = 29.9%; 300 level = 32.45%; 400 level = 34.5%), RDE (200 level = 27.2%; 300 level = 21.7%; 400 level = 28.0%), and ESD (200 level = 15.1%; 300 level = 18.5%; 400 level = 19.5%). The finding was expected, thus, not a surprise because any environmental condition irrespective academic class that generates significant discomfort or displeasure, such as poverty, overcrowded hostels, and dilapidated buildings,

Table 3. Percentage of perceived spatial pattern of violent behaviours perpetration based on Age (n = 1,707).

Variable	15-19 years (n = 334)													
	*LRA		*RDE		*HST		*ESD		*SPC		*DAB		*OTR	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Where does bullying occur in the university premise?	40	12.0	96	28.7	117	35.0	28	8.4	24	7.2	24	7.2	5	1.5
Where does stabbing often occur in the campus?	4	1.2	155	46.4	98	29.3	45	13.5	0	0.0	24	7.2	8	2.4
Where do undergraduates often commit act of rape?	3	0.9	57	17.1	209	62.6	18	5.4	3	0.9	28	8.4	16	4.8
Where does shooting usually occur in the campus?	37	11.1	85	25.4	66	19.8	82	24.6	16	4.8	35	10.5	13	3.9
Where do students usually engage in gang fight?	44	13.2	99	29.6	32	9.6	76	22.8	58	17.4	16	4.8	9	2.7
Where does weapon carrying mostly perpetrated?	76	22.8	95	28.4	67	20.1	37	11.1	0	0.0	56	16.8	3	0.9
Where do undergraduates mostly engage in arson?	32	9.6	83	24.9	58	17.4	60	18.0	12	3.6	86	25.7	3	0.9
Where does robbery usually occur in the campus?	6	1.8	21	6.3	221	66.2	55	16.5	10	3.0	21	6.3	0	0.0
Where do students mostly commit theft and burglary?	7	2.1	21	6.3	226	67.7	17	5.10	10	3.0	53	15.9	0	0.0
Average		8.3		23.7		36.4		13.9		4.4		11.4		1.9

Variable	20-24 years + (n = 1,373)													
	*LRA		*RDE		*HST		*ESD		*SPC		*DAB		*OTR	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Where does bullying occur in the university premise?	139	10.5	387	28.2	352	25.6	132	9.6	90	6.6	232	16.9	41	3.0
Where does stabbing often occur in the campus?	48	3.5	445	32.4	308	22.4	399	29.1	74	5.4	45	3.3	54	3.9
Where do undergraduates often commit act of rape?	46	3.4	105	7.6	801	58.3	111	8.1	41	3.0	103	7.5	166	12.1
Where does shooting usually occur in the campus?	119	8.7	473	34.5	156	11.4	435	37.1	82	6.0	53	3.9	55	4.0
Where do students usually engage in gang fight?	112	8.2	612	44.6	156	11.4	330	24.0	82	6.0	43	3.1	38	2.8
Where does weapon carrying mostly perpetrated?	120	8.7	528	38.5	145	10.6	395	28.8	96	7.0	61	4.4	28	2.0
Where do undergraduates mostly engage in arson?	47	3.4	456	33.2	363	26.4	203	14.8	71	5.2	211	15.4	22	1.6
Where does robbery usually occur in the campus?	45	3.3	196	14.3	290	57.5	212	15.4	13	0.9	95	6.9	22	1.6
Where do students mostly commit theft and burglary?	59	4.3	182	13.3	816	59.4	85	6.2	3	0.2	196	14.3	32	2.3
Average		5.9		27.4		31.4		18.6		4.5		8.4		3.7

can both produce violent inclinations and reduce disinhibitions against violent behaviours as part of the social disorganization and weak social controls that accompany these conditions. This finding is in agreement with those of Graham et al. (2006) who studied large drinking establishments and found that the immediate bar-room environment had an important impact on the frequency of aggression but less on the severity of aggression. According to Graham et al. (2006), the strongest predictors of both frequency and severity of patron aggression in large drinking establishments were social factors such as rowdiness/permissiveness and sexual activity, contact and competition, and closing time variables such as over-serving at closing time and the number of people hanging around after closing. Thus, this agreement was acknowledged and may be due to subjects' composition and similarities between physical properties of the environments where the earlier studies were conducted and the present study.

Results in Table 6 showed that based on university type, respondents' perceptions of

Table 4. Percentage of perceived spatial pattern of violent behaviours perpetration according to gender (n = 1,707).

Items	Male (n = 842)													
	*LRA		*RDE		*HST		*ESD		*SPC		*DAB		*OTR	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Where does bullying occur in the university premise?	83	9.9	174	20.7	206	24.5	95	11.3	36	4.3	212	25.2	36	4.3
Where does stabbing often occur in the campus?	23	2.7	204	24.2	217	25.8	304	36.1	34	4.0	22	2.6	38	4.5
Where do undergraduates often commit act of rape?	17	2.0	49	5.8	497	59.0	81	9.6	30	3.6	89	10.6	79	9.4
Where does shooting usually occur in the campus?	43	5.1	235	27.9	74	8.8	328	39.0	49	5.8	66	7.8	47	5.6
Where do students usually engage in gang fight?	44	5.2	425	50.5	94	11.2	166	19.7	62	7.4	16	1.9	35	4.2
Where does weapon carrying mostly perpetrated?	38	4.5	244	29.0	122	14.5	320	38.0	45	5.3	45	5.3	28	3.3
Where do undergraduates mostly engage in arson?	15	1.8	321	38.1	232	27.6	101	12.0	21	2.5	133	15.8	19	2.3
Where does robbery usually occur in the campus?	23	2.7	72	8.6	587	69.7	64	7.6	23	2.7	54	6.4	19	2.3
Where do students mostly commit theft and burglary?	10	1.2	79	9.4	599	71.1	24	2.9	10	1.2	53	12.4	16	1.9
Average	-	3.9	-	23.8	-	34.7	-	19.6	-	4.1	-	9.7	-	4.2
	Female (n = 865)													
Where does bullying occur in the university premise?	96	11.1	309	35.7	263	30.4	65	7.5	78	9.0	44	5.1	10	1.2
Where does stabbing often occur in the campus?	29	3.4	396	45.8	189	21.8	140	16.2	40	4.6	47	5.4	24	2.8
Where do undergraduates often commit act of rape?	32	3.7	113	13.1	513	59.3	48	5.5	14	1.6	42	4.9	103	11.9
Where does shooting usually occur in the campus?	113	13.1	323	37.3	148	17.1	189	21.8	49	5.7	22	2.5	21	2.4
Where do students usually engage in gang fight?	112	12.9	286	33.1	94	10.9	240	27.7	78	9.0	43	5.0	12	1.4
Where does weapon carrying mostly perpetrated?	158	18.3	379	43.8	90	10.4	112	12.9	51	5.9	72	8.3	3	0.3
Where do undergraduates mostly engage in arson?	64	7.4	218	25.2	189	21.8	162	18.7	62	7.2	164	19.0	6	0.7
Where does robbery usually occur in the campus?	28	3.2	145	16.8	424	49.0	203	23.5	0	0.0	62	7.2	3	0.3
Where do students mostly commit theft and burglary?	56	6.5	124	14.3	443	51.2	78	9.0	3	0.3	145	16.8	16	1.8
Average	-	8.8	-	29.5	-	30.2	-	15.9	-	4.8	-	8.2	-	2.6

spatial pattern of violent behaviours were as follows: HST (federal = 26.2%; state = 35.5%), moderately at RDE (federal = 26.0%; state = 25.6%), and infinitesimally at ESD (federal = 18.1%; state = 17.9%). The finding was interesting but anticipated because experience has shown that locations of violent injuries and residence locations of victims were both closely related to each other and clearly clustered in certain parts of neighbourhoods characterized by high numbers of drinking establishments/bars, social housing units,

shopping districts, entertainment venues, homeless shelters, as well as lower household incomes (Cusimano, et al., 2010). In Nigerian context, many university environments either federal or state in recent times have been characterized by proliferation and concentration of restaurants and drinking establishments and shopping districts for economic gains without considering that such places are hotspots of violence and possess propensity to breed clusters of violent crimes with attendant health, social and

economic consequences on university community. The finding contradicts those of Sampson et al. (1997), who used census and survey data to measure neighbourhood characteristics and violent crime rates for Chicago's 343 neighbourhoods. Survey questions in that study included perceived levels of crime and community response to crime and antisocial behaviour, while census data were used to measure social deprivation. Sampson et al. (1997) found that neighbourhood's stability, social deprivation, and

Table 5. Percentage of perceived spatial pattern of violent behaviours perpetration according to academic level (n = 1,707).

Items	200 Level (n = 629)													
	*LRA		*RDE		*HST		*ESD		*SPC		*DAB		*OTR	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Where does bullying occur in the university premise?	40	6.4	260	41.3	175	27.8	53	8.4	36	5.7	33	5.2	32	5.1
Where does stabbing often occur in the campus?	43	6.8	211	33.5	148	23.5	163	25.9	7	1.1	27	4.3	30	4.8
Where do undergraduates often commit act of rape?	14	2.2	104	16.5	262	41.7	40	6.4	6	1.0	96	15.3	107	17.0
Where does shooting usually occur in the campus?	69	11.0	220	35.0	61	9.7	164	26.1	19	3.0	48	7.6	48	7.6
Where do students usually engage in gang fight?	68	10.8	216	34.3	62	9.9	147	23.4	79	12.6	22	3.5	35	5.6
Where does weapon carrying mostly perpetrated?	93	14.8	232	36.9	101	16.1	57	9.1	52	8.3	69	11.0	25	4.0
Where do undergraduates mostly engage in arson?	29	4.6	146	23.2	168	26.7	107	17.0	34	5.4	129	20.5	16	2.5
Where does robbery usually occur in the campus?	20	3.2	70	11.1	343	54.5	100	15.9	10	1.6	70	11.1	16	2.5
Where do students mostly commit theft and burglary?	4	0.6	81	12.9	374	59.5	24	3.8	13	2.1	117	18.6	16	2.5
Average	-	6.7	-	27.2	-	29.9	-	15.1	-	4.5	-	10.8	-	5.8
	300 Level (n = 290)													
Where does bullying occur in the university premise?	51	17.6	39	13.4	106	36.6	31	10.7	38	13.1	14	4.8	11	3.8
Where does stabbing often occur in the campus?	3	1.0	108	37.2	94	32.4	21	7.2	20	6.9	28	9.7	16	5.5
Where do undergraduates often commit act of rape?	6	2.1	12	4.1	205	70.7	13	4.5	16	5.5	9	3.1	29	10.0
Where does shooting usually occur in the campus?	40	13.8	84	29.0	46	15.9	83	28.6	20	6.9	9	3.1	8	2.8
Where do students usually engage in gang fight?	38	13.1	78	26.9	37	12.8	99	34.1	14	4.8	15	5.2	9	3.1
Where does weapon carrying mostly perpetrated?	60	20.7	105	36.2	23	7.9	60	20.7	19	6.6	23	7.9	0	0.0
Where do undergraduates mostly engage in arson?	10	3.4	78	26.9	51	17.6	65	22.4	17	5.9	63	21.7	6	2.1
Where does robbery usually occur in the campus?	9	3.1	42	14.5	138	47.6	76	26.2	3	1.0	22	7.6	0	0.0
Where do students mostly commit theft and burglary?	9	3.1	21	7.2	144	49.8	36	12.4	0	0.0	75	25.9	5	1.7
Average	-	8.7	-	21.7	-	32.4	-	18.5	-	5.6	-	9.9	-	3.2
	400 Level (n = 788)													
Where does bullying occur in the university premise?	88	11.2	184	23.4	188	23.9	76	9.6	40	5.1	209	26.5	3	0.4
Where does stabbing often occur in the campus?	6	0.8	281	35.7	164	20.8	260	33.0	47	6.0	14	1.8	16	2.0
Where do undergraduates often commit act of rape?	29	3.7	46	5.8	543	68.9	76	9.6	22	2.8	26	3.3	46	5.8
Where does shooting usually occur in the campus?	47	6.0	254	32.2	115	14.6	270	34.3	59	7.5	31	3.9	12	1.5
Where do students usually engage in gang fight?	50	6.3	417	52.9	89	11.3	160	20.3	47	6.0	22	2.8	3	0.4
Where does weapon carrying mostly perpetrated?	43	5.5	286	36.3	88	11.2	315	40.0	25	3.2	25	3.2	6	0.8
Where do undergraduates mostly engage in arson?	40	5.1	315	40.0	202	25.6	91	11.5	32	4.1	105	13.3	3	0.4
Where does robbery usually occur in the campus?	22	2.8	105	13.3	530	67.3	91	11.5	10	1.3	24	3.0	6	0.8
Where do students mostly commit theft and burglary?	53	6.7	101	12.8	524	66.5	42	5.3	0	0.0	57	7.2	11	1.4
Average	-	5.3	-	28.0	-	34.5	-	19.5	-	4.0	-	7.2	-	1.5

Table 6. Percentage of perceived spatial pattern of violent behaviours perpetration according to university type (n = 1,707).

Items	Federal University (n = 774)													
	*LRA		*RDE		*HST		*ESD		*SPC		*DAB		*OTR	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Where does bullying occur in the university premise?	20	2.6	243	31.4	251	32.4	69	8.9	152	19.6	19	2.5	20	2.6
Where does stabbing often occur in the campus?	10	1.3	289	37.3	291	37.6	116	15.0	10	1.3	0	0.0	58	7.5
Where do undergraduates often commit act of rape?	19	2.5	49	6.3	446	57.6	70	9.0	0	0.0	10	1.3	180	23.3
Where does shooting usually occur in the campus?	50	6.5	291	37.6	40	5.2	195	25.2	32	4.1	78	10.1	88	11.3
Where do students usually engage in gang fight?	19	2.5	244	31.5	49	6.3	237	30.6	50	6.5	79	10.2	96	12.4
Where does weapon carrying mostly perpetrated?	172	22.2	271	35.0	49	6.3	145	18.7	39	5.0	79	10.2	19	2.5
Where do undergraduates mostly engage in arson?	60	7.8	270	34.9	157	20.3	134	17.2	49	6.3	85	11.0	19	2.5
Where does robbery usually occur in the campus?	10	1.3	128	16.5	253	32.7	220	28.4	9	1.2	92	11.9	62	8.0
Where do students mostly commit theft and burglary?	30	3.9	30	3.9	292	37.7	77	9.9	0	0.0	307	39.7	38	4.9
Average	-	5.6	-	26.0	-	26.2	-	18.1	-	4.9	-	10.8	-	8.3
	State university (n = 933)													
Where does bullying occur in the university premise?	207	22.2	219	23.5	262	28.1	93	10.0	55	5.9	87	9.3	10	1.0
Where does stabbing often occur in the campus?	20	2.1	380	40.7	244	26.2	234	25.1	28	3.0	9	1.0	18	3.0
Where do undergraduates often commit act of rape?	0	0.0	48	5.1	534	57.2	110	11.8	19	2.0	104	11.1	118	12.1
Where does shooting usually occur in the campus?	56	6.0	315	33.8	122	13.1	245	26.3	109	11.7	30	3.2	56	6.0
Where do students usually engage in gang fight?	18	1.9	440	47.2	113	12.1	177	19.0	129	13.8	19	2.0	37	4.0
Where does weapon carrying mostly perpetrated?	1	0.1	347	37.2	141	15.1	331	35.5	67	7.2	37	4.0	9	0.9
Where do undergraduates mostly engage in arson?	0	0.0	164	17.6	356	38.2	118	12.6	149	16.0	128	13.7	18	1.9
Where does robbery usually occur in the campus?	29	3.1	120	12.8	608	65.2	158	16.9	0	0.0	9	1.0	9	1.0
Where do students mostly commit theft and burglary?	139	14.9	113	12.1	597	64.0	36	3.8	9	1.0	30	3.2	9	1.0
Average	-	5.6	-	25.6	-	35.5	-	17.9	-	6.7	-	5.3	-	3.4

local immigrant concentration explained 70% of variations in the perception of crime, community response and violent crime rates. The contradiction may be because of variations in subjects' composition of the earlier study and present study.

Data in Table 7 showed that no significant difference ($\chi^2 = 0.88 < 43.77$, df = 30, $p < 0.05$) was found in the perceived spatial pattern of violent behaviours perpetration by age. The finding was interesting but anticipated. This finding is in line with those of Nelson etal. (2001) who conducted a survey in Cardiff and Worcester in the United Kingdom and reported major clusters of violent crime at night in the pub/leisure zones of the city centre and secondary clusters during the day in major retail streets/entertainment districts. Dangerous places are linked to perceptions of blocked prospects which reduce visibility and create opportunities for potential criminals to hide (Tabrizi and Madanipour, 2006; Freidrich et al., 2009). The finding is also consistent with that of Australian Bureau of Statistics' (2006) Crime and Safety Survey reports conducted in 2005, which revealed that age of respondents did not significantly influence their perception of problems relating to crime and/or public nuisance in their local neighbourhoods. Thus, this agreement was acknowledged.

Results in Table 8 showed that a significant difference ($\chi^2 = 72.98 > 43.77$, df = 30, $p < 0.05$)

Table 7. Summary of Chi-square (χ^2) analysis of no significant difference in the perceived spatial pattern of violent behaviours perpetration based on Age (n = 1,707).

Variable	N	χ^2 –cal. value	df	χ^2 –Crit. value
Age				
15-19 years	334			
20-24 years[+]	1373	0.88	30	43.77

*Significant at p <0.05.

Table 8. Summary of Chi-square (χ^2) analysis of no significant difference in the perceived spatial pattern of violent behaviours based on gender (n = 1,707).

Variable	N	χ^2 –cal. value	df	χ^2 –Crit. value
Gender				
Male	842			
Female	865	72.98	30	43.77

*Significant at p <0.05.

Table 9. Summary of Chi-square (χ^2) analysis of significant difference in the perceived spatial pattern of violent behaviours perpetration based on academic level (n = 1707).

Variable	N	χ^2 –cal. value	df	χ^2 –Crit. value
Academic level				
200 level	629			
300 level	290	36.82	60	79.08
400 level	788			

*Significant at p <0.05.

Table 10. Summary of Chi-square (χ^2) Analysis of No Significant Difference in the Perceived Spatial Pattern of Violent Behaviours Perpetration Based on University Type (n = 1,707).

Variable	N	χ^2 –cal. value	df	χ^2 –Crit. value
University type				
Federal University	774			
State University	933	17.06	30	43.77

was found in the perceived spatial pattern of violent behaviours perpetration by gender. The finding was fascinating but anticipated because experience has indicated that a male preponderance in violent behaviour has been demonstrated both with respect to property offences and violent offences, therefore, the result that gender had significant influence on perception of spatial pattern of violent behaviours was a surprise and anticipated. The finding lent credence to those of Krakowski and Czobor (2004) who found that gender had significant effect on their subjects' violent behaviour perpetration. Though, Krakowski and Czobor (2004) utilized psychiatric patients whose violent incidents occurred during their first 2 months of hospitalization, the agreement in the findings could be attributed to male preponderance in violent behaviours perpetration. In addition, this finding contradicts that of Poipoi (2011) who found that there was no significant difference between male and female students in their perception of forms of violence among secondary school students. The dissimilarity in findings might have arisen because of variations in geographic features inherent in locations of both studies.

Results in Table 9 revealed that a significant difference (χ^2 = 36.82 < 79.08, df = 60, p < 0.05) was found in the perceived spatial pattern of violent behaviours perpetration by academic level. The finding was expected, thus, not a surprise because any environmental condition irrespective academic class that generates significant discomfort or displeasure, such as poverty, overcrowded hostels, and dilapidated buildings, can both produce violent inclinations and reduce disinhibitions against violent behaviours as part of the social disorganization and weak social controls that accompany these conditions. This finding is in agreement with those of Graham et al. (2006) who studied large drinking establishments and found that the immediate bar-room environment had an important impact on the frequency of aggression but less on the severity of aggression. Thus, this agreement was acknowledged.

Results in Table 10 indicated that no significant difference (χ^2 = 17.06 < 43.77, df = 30, p < 0.05) was found in the perceived spatial pattern of violent behaviours perpetration by university type. The finding was interesting but anticipated because experience has shown that locations of violent injuries and residence locations of victims were both closely related to each other and clearly clustered in certain parts of neighborhoods characterized by high numbers of drinking establishments/bars, social housing units, shopping districts, entertainment venues, homeless shelters, as well as lower household incomes (Cusimano et al., 2010). In Nigerian context, many university environments either federal or state in recent times have been characterized by proliferation and concentration of restaurants and drinking establishments and shopping districts for economic gains without considering that such places are hotspots of violence and possess propensity to breed clusters of violent crimes with attendant health, social and economic consequences on university community. The finding is consistent with that of Egwunyenga (2009), who

in her study of room-mates conflicts in Nigerian universities found that university type had no significant influence on perception and violent acts of room-mates in Nigerian universities. The agreement between both findings may be attributed to subjects' composition.

RECOMMENDATIONS

Recommendations such as installation of hostel violence surveillance system (HVSS) in the campuses, community-wide youth violence surveillance system and inclusion of youths in the campaign against violence were made based on the findings of the study.

Conflict of interest

The authors have no conflict of interest

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