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Physical abuse contributes to appetitive aggression but socioeconomic status and religiosity matters

Tochukwu Charles Orjiakor, Victor Thomas Sereke, & Nneoma Gift Onyedire
Department of Psychology, University of Nigeria, Nsukka, Enugu state, Nigeria.
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ABSTRACT

Appetitive aggression represents the enjoyment of aggression for its own sake and is widely associated with people who have experienced extreme violence. Extant literature on this phenomenon has mostly focused (ex)combatant and forensic samples, with traumatic experiences considered the top risk factor. Studies exploring appetitive aggression in noncombatant samples are rare. Using a Nigerian community sample of young people in secondary education, we explored if physical abuse could be associated with the predisposition to cruelty, and if this is mediated by socioeconomic status and religiosity. Three hundred and six secondary school students (154 males and 152 females, M_{age} = 15.32, *SD* = 1.90) completed measures of childhood trauma, socioeconomic status and appetitive aggression. Mediation pathways were explored using Hayes Process macros. Results revealed that physical abuse positively predicted appetitive aggression among youngsters (Total effect β = .83). Socioeconomic status and religiosity mediated the association between physical abuse and appetitive aggression. It seemed that higher socioeconomic status protected against cruelty while strong religiosity promoted the enjoyment of aggression. Improving the socioeconomic conditions of people who have suffered abuse could help in severing the cycle of aggression. Our finding suggests that the sub-Saharan region where resources are scare and many people strongly identify with religious beliefs, the inclination to cruelty could be indeed popular. Interventions to cut the cycle of violence could benefit from considering the roles of socioeconomic conditions and religiosity.

Introduction

Communal conflicts are sadly common across many African countries (United Nations, 2024), impacting lives and wellbeing negatively, and priming young people for future violence. Youths in turbulent societies tend to be socialized into adopting and normalizing the utilization of violence in addressing conflicts. In some ultraviolent societies, descriptions of appetitive aggression, a unique form of violence where perpetrators relish and enjoy violence have been acknowledged (Harmisch & Pfeiffer, 2018; Zeller et al., 2020).Appetitive aggression is the perpetration of violence and/or the infliction of harm upon a victim for the purpose of experiencing violence-related enjoyment (Elbert et al., 2018). People who report experiencing this phenomenon report lusting after killing and derive joy in the mutilation and maiming of victims. The phenomenon of appetitive aggression has been mainly studied in African societies that have been through rough years of violence such as Democratic Republic of Congo (Pels et al., 2017), Rwanda (Weisfeld et al., 2019), and South Africa (Lemieux et al., 2019). Although early studies in appetitive aggression have focused on combatants who report such lust for aggression (Weierstall & Elbert, 2013; Crombach et al., 2016), studies have also emerged on the experiences of non-combatants residing in violent communities, or civilians exposed to violent conflicts (Böhm et al., 2018; Hecker et al., 2019). It is important to widen the exploration of factors/variables that facilitate or mitigate the enjoyment of aggression in people not directly involved in combat.

Aside from direct exposure to the front lines of combat, exposure to various forms of abuse has also been identified to contribute to the enjoyment of aggression (Crombach et al., 2014; Hermenau et al., 2019). Studies have also shown that appetitive aggression can be developed through adverse childhood experiences such as physical abuse(e.g., Rieder & Elbert, 2013; Roth et al., 2014). Physical abuse is the intentional use of physical force against a person that results in or has the potential to result in physical injury. Physical abuse and maltreatment have been associated with both general (Agbaria & Natur, 2018) and appetitive aggression (Dambacher et al., 2021). However, studies exploring the pathway between physical abuse and especially appetitive aggression are still emerging. We portend that two locally popular contextual factors, socioeconomic status and the adoption of religious beliefs, could explain the pathway between physical abuse and enjoying the

Victor Thomas Sereke, Department of Psychology, University of Nigeria, Nsukka, Enugu state, Nigeria
Email: victorsereke@gmail.com

perpetration of aggression.

Conflict-prone regions are likely to experience poverty. Sub-Saharan Africa has many active violent conflicts, and 47% of the population of sub-Saharan Africa lives in poverty (Security Council Report, 2025). These poor socioeconomic conditions could provide opportunities for abuse and violence to thrive. Studies have found that low socioeconomic status is associated with aggressive behaviour (Javdani et al., 2021). Assari (2020) also found that children from high socioeconomic status families were less likely to experience physical abuse compared to those from low socioeconomic status families. Hong et al (2023) reported that socioeconomic factors played mediating roles between parenting styles, psychological capital, and aggressive behavior. However, specific studies on socioeconomic status and, specifically, appetitive aggression are rare. In the current study, we examined if the socioeconomic status of young people mediates the association between physical abuse and appetitive aggression.

Adopting and committing to religious beliefs is another commonly experienced phenomenon in the sub-Saharan region. Over 90% of people in sub-Saharan Africa identify with at least one religion, with over 60% identifying as Christians and 32% as Muslims (Pew Research Centre, 2025). Religiosity could be seen as an individual's level of devotion to a particular religion (Habib et al., 2018). It is plausible that holding and living by religious beliefs could help individuals living in tumultuous situations make meaning and navigate life challenges, and perhaps help quell the urge for aggression. However, the evidence of the role of religiosity in aggression is inconsistent. Some studies suggest that texts that promote God-supported violence (Bushman et al., 2007), or an authoritarian image of God were associated with aggressive behaviors/tendencies (Johnson et al., 2013).But religiosity has also been associated with decreased risk behaviours such as violence, sexual behaviours, substance use, delinquency, and suicide (Jang et al., 2022; Ibenwa et al., 2022). A decrease in religiosity following a traumatic experience has also been linked to negative mental health outcomes including posttraumatic stress (Gerber et al., 2011). However, people with stressful life experiences have been reported to align less with religious and spiritual beliefs (Sigurvinsdottir et al., 2021). We hypothesize that the inconsistent findings may be related to the interstitial role of religiosity. Additionally, extant studies have not particularly focused on the link between religiosity and the enjoyment of appetitive aggression. We hypothesize that religiosity will mediate the pathway between physical abuse and appetitive aggression.

The General Strain Theory (Agnew, 2018) suggests that stress and strain caused by negative life events, such as poverty or abuse, can lead to adopting aggression as a coping mechanism. Hence, individuals who experience adverse events such as physical abuse may be more inclined to relish aggression and, low socioeconomic status and adopting religious beliefs could influence whether they propagate enjoy being violent.

The Current Study

Nigeria being the most populous country in Africa has experienced a significant proportion of these violent events (Ugwoke et al., 2020 ; Orjiakor et al., 2020), with attendant negative consequences; Boko Haram terrorist group which is faith- driven (Celso, 2015) in the North, recurrent killings by nomadic Fulani herders in different parts of the country (Chukwuorji et al., 2017), the Niger Delta militancy in the Niger Delta pushing for equitable economic redistribution (Obi, 2014) as well as the various inter-tribal conflicts all over the country. The current study will also contribute by exploring the concept of appetitive aggression in non-combatant samples to explore its spread in different samples. Haer et al. (2013) had called for more studies of appetitive aggression among a non-combatant sample, and there seems to be paucity of research among non-combatant sample.

In the current study, we hypothesized that:(1) physical abuse will predict appetitive aggression. (2) socioeconomic status will predict appetitive aggression. iii) religiosity will not predict appetitive aggression. 3) religiosity and socioeconomic status will play mediating roles between physical abuse and appetitive aggression.

Method

Participants

Participants were 306 students (males = 154, 50.33%; females = 152, 49.7%) recruited from 4 secondary schools in a sub-urban area of Lagos State, Nigeria using purposive sampling. Estimates suggest that 60% of Nigerian young people experience violence (UNICEF, 2017). Participants age ranged from 12 to 25 years (M = 15.32 years, SD = 1.90). They identified to be from the Yoruba (n = 139, 45.4%), Igbo (n = 105, 34.3%), and Hausa/Fulani (n = 37, 12.1%), ethnic groups. Three respondents did not indicate their ethnicity. Based on religion, participants identified as Christians (n = 194, 63.40%), Muslims (n = 100, 32.7%), and African Traditional worshippers (n = 11, 3.6%). One respondent did not indicate his religion.

Measures

Physical Abuse Subscale of the Childhood Trauma Questionnaire (PAS- CTQ-SF)

The CTQ-SF was developed by Bernstein et al. (2003) from the original 70-item Childhood Trauma Questionnaire (Bernstein & Fink, 1998). The PAS is a 5-item for the assessment of physical abuse experienced while growing. Respondents are required to indicate on a 5-point Likert scale ranging from 1 (never true) to 5 (very often true). Sample items include: "*People in my family hit me so hard that it left me with bruises or mark; I believe that I was physically abused; I got hit so hard by someone in my family that I had to see a doctor or go to the hospital"*. The PAS has been validated in the Nigerian setting by Essien et al. (2018). With the current sample, we obtained a good reliability estimate for the PAS with a Cronbach's alpha of .70.

Confirmatory factor analysis showed a single factor for the PAS-CTQ-SF.

Socioeconomic Status Scale (SES)

This scale was developed by El-Gilany et al. (2012) for health research. The scale assesses socioeconomic status using 7 areas of life. In the present study, some of the items were extracted namely, the educational, occupational and healthcare domains as contained in the original scale. The chosen factors were assumed to be the most appropriate and they simplified the measure for the Nigerian setting. The reliability index in the current study was .74.

Religiosity Orientation Test (ROT)

The ROT is a 6-item scale in which respondents are asked to reflect on their religious life. It was developed by Idehen (2001) to assess the frequency of behavioural observances such as church attendance and private prayer. The items are presented in an interrogative format, and participants are asked to respond on a 5-point Likert scale ranging from 1 to 5 (frequently to never). There are different response alternatives for each item which guard against response set and social desirability responses. Sample items include: *How important is your religious belief?*Item scores are summed to get the total religiosity scores. Low scores indicate a deep religious orientation, and high scores indicate a superficial religious orientation. The reliability index (Cronbach's alpha) in the current study was .72. Confirmatory factor analysis showed a single-factor structure for the ROT.

Appetitive Scale of the Appetitive and Facilitative Scale (AFAS)

The Appetitive and Facilitative Aggression Scale (AFAS; R. Weierstall, personal communication, May 6, 2017) assesses the frequency of both reactive and appetitive aggression. The AFAS asks for different levels of involvement in aggressive behaviours within the last four weeks. The items for appetitive aggression refer to acting aggressively because of feelings of positive arousal (e.g. “Did you provoke others, simply because it was fun for you?”) and were an adapted version of the Appetitive Aggression Scale for the civilian setting, which has also been tested regarding its validity when applying with the help of translators (Weierstall & Elbert, 2011). The Appetitive Aggression subscale was used in this study. The Appetitive aggression subscale consists of 15 items with answers based on a five-point Likert scale ranging between 0 (never) and 4 (very often). Items were summed up to receive a total score for appetitive aggression. Cronbach's alpha has been reported by Hecker et al. (2015) to be .78. The reliability index in the current study was .85.

Procedure

Approval for the study was obtained from the institution of the authors. The researcher approached participants in their classes after receiving permission from the legal custodians of the students across the various schools. The researchers explained the nature of the study to the participants and what was required. Respondents were then given copies of the questionnaires to complete. Participants were informed that they were free to withdraw at any stage of the study, without any prejudice, and that their personal information would remain confidential.

Design/ Statistics

The current study utilised a cross-sectional design. Means and standard deviations were computed. Pearson's correlation (*r*) analysis was conducted among the study variables while Hayes Process was used to test the hypotheses for the study. Data were analyzed using Statistical Package for the Social Sciences (SPSS V 21).

Results

We first present the inter-correlations between demographic variables, physical abuse, socioeconomic status, religiosity, and appetitive aggression to give context to the findings.

Table 1: Correlation table of variables considered in the stud

Variables	*M*	*SD*	1	2	3	4	5	6
1. Gender		—	-					
2. Age	15.31	1.90	-.15	-				
3. Post	.46	.50	-.02	.23***	-			
4. Physical abuse	9.23	4.07	-.04	.08	.10*	-		
5.Socioeconomic status	13.12	4.26	.06	-.07	-10**	-.30***	-	
6. Religiosity	10.96	3.76	.11	-.06	-.10	.14***	-.02	-
7. Appetitive aggression	13.94	10.55	-.02	.00	.00	.31***	-.20***	.20*

Note: *p< .05; **p< .01; ***p< .001; Gender: 0 = male, 1 = female; Post: 0 = No, 1 = Yes.

Table 1 indicated that none of the demographic variables was significantly associated with appetitive aggression. Physical abuse had a positively significant relationship with holding a post showing that those who were physically abused aspired to positions of power. Physical abuse also had a positively significant correlation with religiosity; and a significant negative correlation with socioeconomic status showing that as one's socioeconomic status increased, physical abuse decreased. Physical abuse and religiosity were positively and significantly correlated with appetitive aggression, while socioeconomic status negatively correlated with appetitive aggression.

Table 2: Mediation model using Hayes PROCESS Macro showing the mediating roles of religiosity and socioeconomic status on the relationship between physical abuse and appetitive aggression

Effect	Paths	.	SE	95% *CI*	
				Lower	Upper
Total	Physical abuse → Appetitive aggression	.83	.14	.55	1.11
Indirect (Rel)	Physical abuse → Rel → Appetitive aggression	.06	.03	.01	.14
Indirect (SES)	Physical abuse → SES → Appetitive aggression	.09	.05	.01	.20
Direct	Physical abuse → Appetitive aggression	.68	.15	.39	.96

Table 2 shows the result of the mediation analysis using Hayes PROCESS Macro. Results show that physical abuse significantly predicted appetitive aggression. Total effect represents the contributions of physical abuse to appetitive aggression without considering any of the mediator variables. In the model the total effect of physical abuse on appetitive aggression was significant ($\beta = .83$, $p < .001$) demonstrating that physical abuse predicted appetitive aggression. Hence higher reports of physical abuse is associated with more reports of the enjoyment of aggression. Direct effect represents the predictive effects of physical abuse when the mediators (religiosity and SES) are included in the model. It is interesting to note the significant beta drop ($\beta = .68$), demonstrating that religiosity and SES explains significant proportion of the relationship between physical abuse and appetitive aggression.

The indirect effect shows the proportion of the variance explained by the mediating variables in the physical abuse-appetitive aggression link. Indirect effects are considered significant if the 95% confidence interval (*CI*) does not include zero (0). The CI ranges were .01 - .14 for religiosity, and .01 - .20 for socioeconomic status. Put directly socioeconomic status and religiosity significantly mediated the pathway between physical abuse and appetitive aggression. It may be important to note that while religiosity positively predicted appetitive aggression, socioeconomic status was negatively associated with appetitive aggression. This is demonstrated in Fig 1 below. This suggests that while higher economic status may be a protective factor in appetitive aggression, strict adherence to religious beliefs is likely a risk factor.

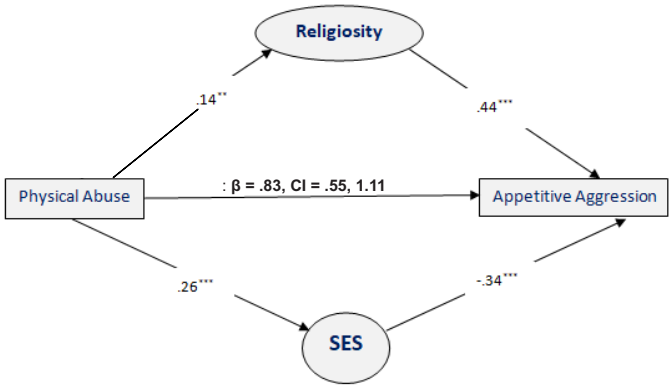

Fig 1: Mediation Analysis for physical abuse, religiosity, socioeconomic status and appetitive aggression.

Discussion

In this study, we proposed the realities of socioeconomic status and religiosity in a sub-Saharan country could explain the pathway between physical abuse and appetitive aggression. Earlier studies in communities that have experienced extreme violence acknowledge the roles of traumatic experiences/abuse in fostering the enjoyment of aggression. Findings from the current study extend the studies on appetitive aggression to a young student sample in Nigeria, and suggest that physical abuse, which is all too common in such contexts, could also explain the development of appetitive aggression. Findings from the current study show that physical abuse, socioeconomic status, and religiosity are associated with appetitive aggression, particularly in a young non-combatant sample.

The finding that physical abuse is strongly associated with appetitive aggression was rather expected, as it supports the popular assertion of violence begetting violence. Exposure to physical abuse has been identified to lead to individuals being less sensitive to violence, and consequently being more accepting of it (Hsieh & Chen, 2017). Our finding extends findings by suggesting that exposure to physical abuse could also lead (noncombatant) youngsters to enjoy aggression. Exposure to physical abuse may hence enable individuals to easily cross the moral inhibitions and threshold and relish aggression perpetration (Elbert et al., 2017;

Weierstall & Elbert, 2011).

A more intriguing dynamic in the findings of the current study is the finding that religiosity and socioeconomic status mediated the relationship between physical abuse and appetitive aggression. This finding suggests that religiosity and socioeconomic status significantly accounts for some of the variance in the pathway between physical abuse and appetitive aggression. Hence in some way, physical abuse is associated with appetitive aggression through religiosity and socioeconomic status. Deeper understanding of these intermediary factors are important especially as extant studies have somewhat consensus on abuse/trauma and appetitive aggression (Augsburger et al., 2015). Further studies will be required to understand the dynamics of religiosity and the enjoyment of aggression. Pertinent questions could reflect differences amongst different religious faiths on perception and perpetration of cruelty (e.g. Christians vs Muslims); whether cruelty perpetration is selective e.g. perpetrated within groups or against other groups. It would also be interesting to learn if there are protective elements of religiosity on appetitive aggression.

Results also indicated that socioeconomic status negatively predicted appetitive aggression; thus, higher socioeconomic status is associated with lesser enjoyment of aggression and vice versa. Why would people of lower socio-economic status experience higher lust for violence? One explanation could be in the finding that youths from low-income families are likely to live in more disturbed or violent neighbourhoods and thus may experience more violent exposure/physical abuse (American Psychological Association, 2023). Extant studies have also suggested that persons of lower socioeconomic have a higher likelihood of experiencing trauma/abuse and distress (Buchmann et al., 2014; Fatima & Sheikh, 2014). Experiencing abuse may then metamorphose to perpetrating it and, perhaps, as we found in the current study, enjoying the perpetration of abuse. One takeaway for investigators of the emerging concept of appetitive aggression is to add socioeconomic status/poverty as a risk factor in developing the appetite for aggression. SES is a very significant factor to keep track of as ultraviolent societies are typically poverty traps. Interventions to prevent the return to the cycle of violence could consider measures that alleviate poverty, and/or improves the socioeconomic wellbeing of survivors.

Furthermore, what could be understood about the role of having higher socioeconomic status in the physical abuse - appetitive aggression link? Perhaps having access to more socioeconomic resources means that the effects of physical abuse on appetitive aggression is reversed. We do not suggest that improving economic status is a quick fix for cushioning the effects of abuse on aggression. However, if better socioeconomic conditions appear to hold some promise in neutralizing, perhaps even reversing the effects of abuse, then economic empowerment of victims of abuse may be an approach to consider.

Surprisingly, religiosity positively predicted appetitive aggression. Stricter adherence to religious values was observed to be strongly linked to the enjoyment of aggression. This is somewhat antithetical as religious beliefs, at least on the surface, can be assumed to promote empathy, harmonious coexistence, and positive interpersonal relationships. Wellman and Tokuno (2004) suggested that slight distinctions in religious subscriptions could easily provoke religious strife and violence. However, social identity processes and group behaviour may partly explain religiosity and aggression using the group conflict paradigm (Campbell, 1965). Previous research (e.g., Wright & Khoo, 2018) have suggested that some aspects of religiosity, where people begin to interpret a threat against the collective to be a threat to self could be linked to aggression. Ysseldyk et al (2011) also reported that a stronger religious identity is linked to more likelihood of engaging in confrontations. However previous studies have not reflected on whether this link between religiosity and aggression could extend to the enjoyment of aggression perpetration. The current study beams on the latter position as we found that religiosity was strongly associated with cruelty- the enjoyment of aggression. We however did not specifically explore aggression in the context of in-group/out-group members.

The current finding is even more significant within the Nigerian context. Nigeria as a country has and is currently experiencing bouts of ethno-religious conflicts and violence that has led to loss of lives and property (Marshal, 2023). Attacks and reprisal attacks are commonly reported in religious conflicts. If inclination to religiosity could be associated with cruelty (i.e. appetitive aggression), then actors in the peace and reconciliation programs should be informed of such tendencies. Leaders in religious spheres who are often looked up to in times of tensions should also be informed of such tendencies and act to curtail further violence by members of religious groups. We acknowledge that other variables that were not accommodated in the current study may help to further explain the patterns observed.

This study examined the link between physical abuse, socioeconomic status, religiosity, and appetitive aggression. Understanding the roles of socioeconomic status and religiosity as intermediary factors is particularly important for the Nigerian context as these two factors are remarkably commonly experienced in the Nigerian context, or indeed other sub-Saharan settings, considering the commonality of violence. As we found evidence for mediation for socio-economic status as well as religiosity, interventions aiming to reduce cruelty in violent contexts may benefit from these findings. Poverty is currently rife in Nigeria with many people living below the poverty line (Panchal, 2020), and religious beliefs (and related conflicts) are commonly experienced. Policy actors and stakeholders who interface with young people in the community or even make decisions impacting general wellbeing should realise the extensive links that physical abuse, strong religious beliefs and low socioeconomic status have in spurring aggressive behaviour.

Limitations and Suggestions for Future Research

Data was collected using a self-report approach;thus, we admit potential limitations around respondents potentially giving responses that are socially desirable, limited scope of reference (e.g. memory biases) responses, and possibly distorted response attitudes. Also, the sensitive nature of the variables particularly, physical abuse and socioeconomic status may have affected the response pattern of participants. Also, our sample was drawn from one Nigerian city, so experiences may vary across subnational cities and regions. Also, the cross-sectional and correlational nature of the design for this present research prevents conclusions regarding causal patterns between variables. Future research should replicate this study using experimental or longitudinal methods to allow for establishment of causal relationships. Future studies should consider using more representative samples that cut across different occupations and experiences. Also, this study may be replicated in other non-combatant settings to see if similar trend exists.

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Informed Consent: All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was obtained from all participants for being included in the study.

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