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## DECONSTRUCTING HIERARCHICAL BULLYING IN SENIOR HIGH BOARDING SCHOOLS IN GHANA

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### ABSTRACT

*Bullying is a social behaviour that instigates psychological and/or physical harm to others. In Ghana, bullying is a growing issue of concern because it is ingrained in the senior high school (SHS) culture. The study, with a sample size of 62, was a retrospective observational one which required participants to fill out a survey and the data was analysed using R programming language. Male students in SHS 1 and SHS 2 who were in mixed-sex schools were bullied more predominantly than their counterparts in single-sex schools. They also bullied others in greater proportion in SHS 3. Female students in SHS 2 who were in single-sex schools were more considerably bullied than those in mixed-sex schools. Furthermore, bullying was independent of age group. Although not statistically significant, there is a trend of males who are popular being bullied very often in SHS 1 and SHS 2 while males who are "not popular" bully others "very often" when they are in SHS 2 and SHS 3. The high incidence of bullying in males in mixed-sex schools is suggestive of the tendency to exhibit aggression which is recorded in the literature to have a seductive influence on females and the opposite is true for females. The display of bullying, where popular people are bullied "very often" and unpopular people bully others "very often" suggests that there is a dominance-hierarchical underpinning to bullying. Bullying undermines the telos of senior high education, which is rooted in discipline and knowledge acquisition. Our study utilizes a dominance theory of bullying under a hierarchical framework to uncover the mechanism by which bullying takes place and this provides a unique lens with which we can resolve this canker.*

**Keywords:** bullying, social behaviour, psychological behaviour, educational age, senior high school education

## **INTRODUCTION**

Bullying is an intentional use of power to physically and/or psychologically harm victims within the same locality as the aggressor (cyberbullying was not accounted for in this study). Many theories attempt to explain why this phenomenon occurs. These include the theory of response to group and peer pressure, social cognition theory and dominance theory of bullying each of which grounds the phenomenon of bullying in group and status-seeking behaviour (Subedi, 2020). Bullying is a growing epidemic within Ghanaian boarding schools (Antiri, 2016), especially in Senior High Schools (SHS), which are divided into three academic levels: SHS 1, SHS 2, and SHS 3. This system corresponds to the 10th, 11th, and 12th grades commonly found in Western societies. This paper will examine bullying in SHS through the lens of the dominance theory which asserts that bullying is a means by which individuals gain social status and popularity among their peers (Subedi, 2020).

The effects of bullying have been well studied. Bullying has established associations with anxiety, depression, post-traumatic stress and poor academic performance (Antiri, 2017). Several studies have detailed the ample influence of the social environment (Tay and Zamore, 2022) and personality traits (Dadson, 2020) on bullying. Duah (2023) found that victims of bullying were more likely to engage in non-compliant behaviours. He also maintained that emotional and tangible resource interventions from social groups were ineffective in reducing bullying rates, however, interventions from schools and parents had a significant effect in reducing bullying. Additionally, Arhin et al. (2019) and Baiden et al. (2019) have studied the psychological consequences of bullying in Ghanaian schools while Tay (2023) probed the forms of bullying in institutes of higher education in Ghana. Saliently, Quarshie and Odame (2021) have

noted a link between thoughts of suicide and bullying victimisation. However, as of yet, no study has sought to describe the mechanism by which bullying is enacted. Accordingly, the purpose of this paper is to investigate the principles that allow bullying to take place.

This study is unique in the fact that it follows from theoretical models of social behaviour known as the dominance theory of bullying (Subedi, 2020) and shifts the conversation of bullying in Ghana from a descriptive one to a more mechanistically defined phenomenon.

Accordingly, the aim of this study is to validate the interplay of dominance hierarchies and bullying behaviour as well as the influence of grade level (SHS 1, 2 and 3) on the propensity to be bullied. There are two hypotheses that this paper presents: (1) The educational age hypothesis which states that the true age of the individual does not affect the propensity to be bullied but is determined by the grade level (or educational age) they are in and (2) bullying operates within a social hierarchy, where seniors who are high on the senior (global) social hierarchy exist at this level because they bully the juniors in the highest position of the junior (local) social hierarchy.

## **Literature Review**

Bullying is a phenomenon that has been studied from empirical and theoretical viewpoints. One such viewpoint is the dominance theory of bullying. This theory illustrates a pattern of negative behaviour which entails bullying others in hopes of increasing one's status in society (Subedi, 2020). Bullying of these sorts tends to take place within a group context to rise up a hierarchy. Since a rise in the hierarchy is by definition a socially judged activity, these kinds of behaviours are exhibited in the presence of validators or groups of people who are often bullies themselves.

One other theory that explains bullying behaviour is the humiliation theory. According to Elison (2018), humiliation is a derogatory experience perpetuated by a hostile actor to diminish the victim to others. Studies suggest humiliation is often used as a means of gaining social power within a group setting (McCarley, 2009). Thus, victims are usually left dejected and lose social reputation in the process (McCarley, 2009). Notably, this could potentially create a vicious cycle in which the individual who lost their social status engages in humiliating others in a bid to reinstate or increase their social status. Indeed, individuals who have been bullied (whose effects overlap with humiliation) tend to mirror the character of their bullies (Cook et al. 2010). Oftentimes, these individuals manifest their loss of self-esteem associated with being a victim of bullying as aggression and other forms of antisocial behaviour (Donnellan, 2005). Furthermore, this phenomenon is also consistent with the deviant peer group hypothesis which posits that individuals who have dysfunctional social behaviour tend to associate with like-minded individuals (Cook et al. 2010). Victims of bullying experience a social transformation that begins with prosocial behaviour and transitions to loss of self-esteem which in turn, manifests as aggressive behaviour. Ultimately, this leads them to closely associate with the bullying group that initiated this social transformation.

Bullying has also been described as part of the organisational cultural theory which outlines the aggressor's response to peer pressure and describes the heavy influence of the surrounding community (Subedi, 2020). Bullying is a function of collective behaviour such that any intervention that seeks to curtail it will only be as successful as its ability to disintegrate the canker from its simplest unit – the community.

The practice of bullying in schools in Ghana is one with a long-standing history. It has an

institutional underpinning that has become a rite of passage for many incoming students all over the country (De-Valera and Boahen-Boaten, 2022). Saliently, De-Valera and Boahen-Boaten (2022) assert that the bullying that takes place in schools in Ghana is largely dominance-based and hierarchical in nature which they report takes roots in Ghana's British colonial history. This follows the prediction of the dominance-based theory of bullying (Subedi, 2020). The structure of the hierarchy is a vicious cycle. Senior students bully junior students and when these juniors eventually become seniors they continue in the tradition which is characterised by inflicting hardship on others often in the form of physical abuse (De-Valera and Boahen-Boaten, 2022). Bullying, which affects more than half of the students in junior high school (JHS) and SHS (Iyanda et al., 2022) has been shown to correlate highly with poor mental health with depression being the highest correlate (Arhin et al., 2019). Worse still, Iyanda et. al (2022) reported that bullying has a strong association with an increase in attempted suicide among the student population in Ghana. Bullying in schools in Ghana is even more physically violent than is emotionally straining (Antiri, 2017). Aboagye et al. (2021) note that 15% of adolescents have been kicked and 32% have engaged in a fistfight within the context of bullying. Notably, the phenomenon of bullying occurs at very early stages of education (JHS) and continues through to SHS, highlighting the culture and community-based substratum in which bullying is embedded (Iyanda et al., 2022). This also feeds into the organisational theory of bullying that predicts the influence of culture and community-based influences on bullying behaviour (Subedi, 2020).

## **MATERIALS AND METHODS**

This study included 62 university students who completed SHS at 28 different schools, 39% of whom were female and 61% male. The

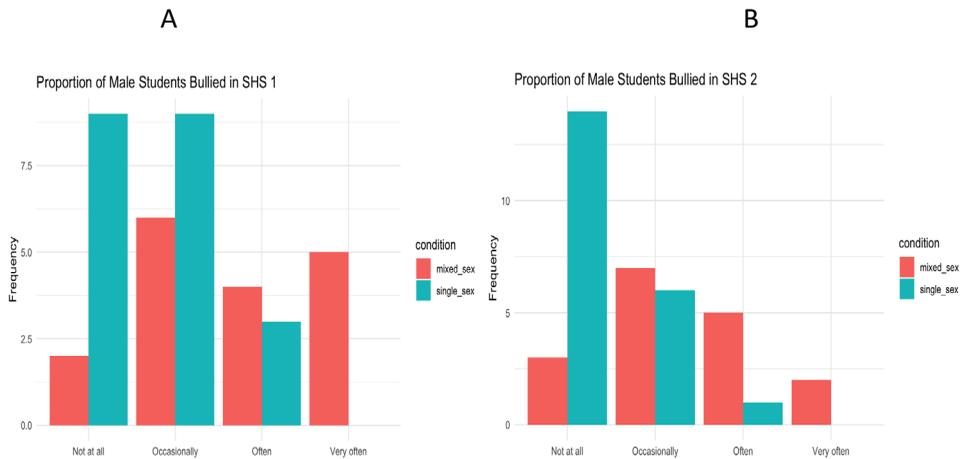
sampling design of the study was a volunteer sample obtained using an online survey distributed through social media platforms. The SHSs represent 8 of the 16 regions in Ghana. The regions represented in this sample were Bono, Ashanti, Volta, Western, Central, Eastern, Greater Accra and the Upper West regions of Ghana. The data collected from the survey included age, sex, frequency of being bullied and bullying others, popularity, personality and place of school. The frequency of being bullied and bullying others was classified under the qualitative descriptions: “Not at all”, “Occasionally”, “Often”, and “Very Often” while popularity was measured using the following descriptions: “Not popular”, “Somewhat Popular”, “Popular” and “Very popular”. The survey questions were developed to empirically test the dominance theory of bullying. As not much work has been done to look at this link empirically, these questions were novelly developed. The two hypotheses presented by the paper—the educational age hypothesis and the dominance-hierarchical model of bullying were tested using Fisher’s exact test. The full list of questions can be found in the supplementary materials. R programming language was used for data analysis and generation of all the figures in the paper.

## RESULTS

The median age of the individuals sampled was  $15 \pm 0.9$  years. The sample was comprised of 24 females and 38 males who were either in single-sex or mixed-sex schools.

In SHS 1 there was no significant difference in the number of male bullying victims in single-sex schools compared to their female counterparts. However, in mixed-sex schools, there was a statistically significant difference between how often males were bullied compared to females in SHS 1 ( $p=0.009$ ). It was observed that in SHS 2 ( $p=0.034$ ) and SHS 3 ( $p<0.001$ ), there was a statistically significant difference between how often males were bullied as compared to females. On the other hand, there was no significant difference in the number of bullies between the sexes in SHS 2 and SHS 3.

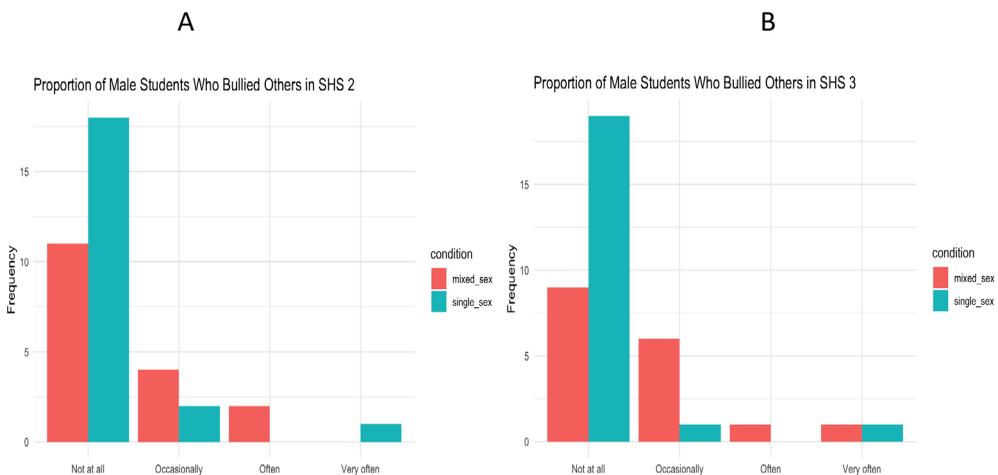
The frequency at which males were bullied in mixed-sex schools was statistically significant compared to their male peers in single-sex schools in SHS 1 ( $p=0.017$ ). Of all the male students sampled in single-sex schools in SHS 1, only 57% were bullied (ie they were bullied occasionally, often, and very often) compared to the 88% of males in mixed-sex schools who reported being bullied. In SHS 2, bullying rates for males dropped significantly in single-sex schools (by 24%,  $p=0.001$ ) but not so significantly in mixed-sex schools (by 6%,  $p=0.322$ ) as compared to the bullying rates in SHS 1. Despite this finding, bullying was still more prevalent in mixed-sex schools (82%) than in single-sex schools (33%,  $p=0.004$ ).



**Figure.1. Differences in the frequency of male student victims of bullying in SHS 1 and SHS 2. A) Male students in SHS 1 in mixed-sex schools were bullied in more significant proportions than in single-sex schools (fisher’s exact test;  $p=0.017$ ). B) In SHS 2, more male students in mixed-sex schools were significantly bullied as opposed to those in single-sex schools (fisher’s exact test;  $p=0.004$ )**

Given that SHS 2 students have academic seniority over SHS 1 students, we determined how often the participants subjected others to bullying. In single-sex schools, 14% of the males in SHS 2 bullied others while in mixed schools the proportion of male bullies was 35%. However, this difference was not statistically significant.

In SHS 3 where students have absolute seniority (ie seniors over SHS 1 and SHS 2 students), 10% of the males bullied others in single-sex schools whereas, in mixed-sex schools, this reached 47%, a statistically significant difference ( $p=0.019$ ).

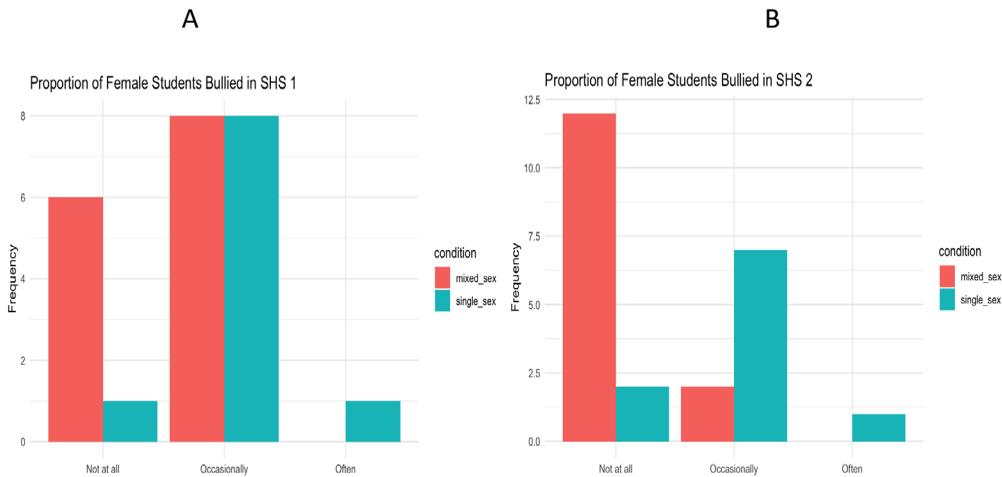


**Figure.2. Differences in the frequency of male student bullies in SHS 2 and SHS 3. A) Males in mixed-sex schools in SHS 2 did not bully victims any more than their counterparts in single-sex**

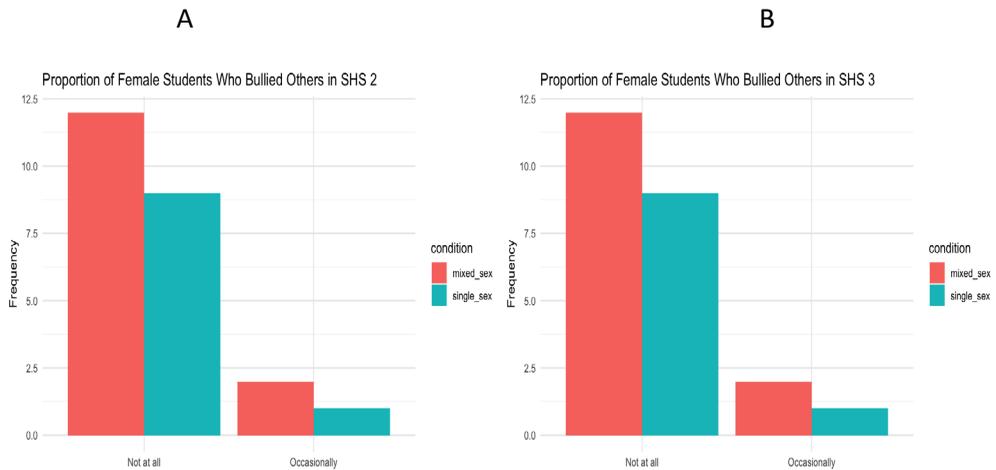
**schools (fisher’s exact test;  $p=0.160$ ). B) In SHS 3, males in mixed-sex schools bullied others more often than their counterparts in single-sex schools (fisher’s exact test;  $p=0.019$ )**

In SHS 1, 90% of females in single-sex schools were bullied whereas the percentage was 57% in mixed-sex schools. In SHS 2, 80% of the females in single-sex schools were bullied, representing a 10% reduction from SHS 1. However, there was no statistical significance between how often females were bullied in mixed-sex and single-sex schools in SHS 1. For females in SHS 2 and in mixed-sex schools, only 14% were bullied, representing a 43% diminution. There was a statistically significant

difference in how often females in mixed-sex and single-sex schools in SHS 2 were bullied ( $p=0.004$ ). Concurrently, 11% of the females in single-sex schools in SHS 2 occasionally bullied victims. Sixteen per cent of the females in mixed-sex schools were occasionally bullied. In SHS 3, the proportion of females who were bullies remained constant. There was no statistical significance between the frequency of female bullies in mixed-sex and single-sex schools in SHS 2 and SHS 3.



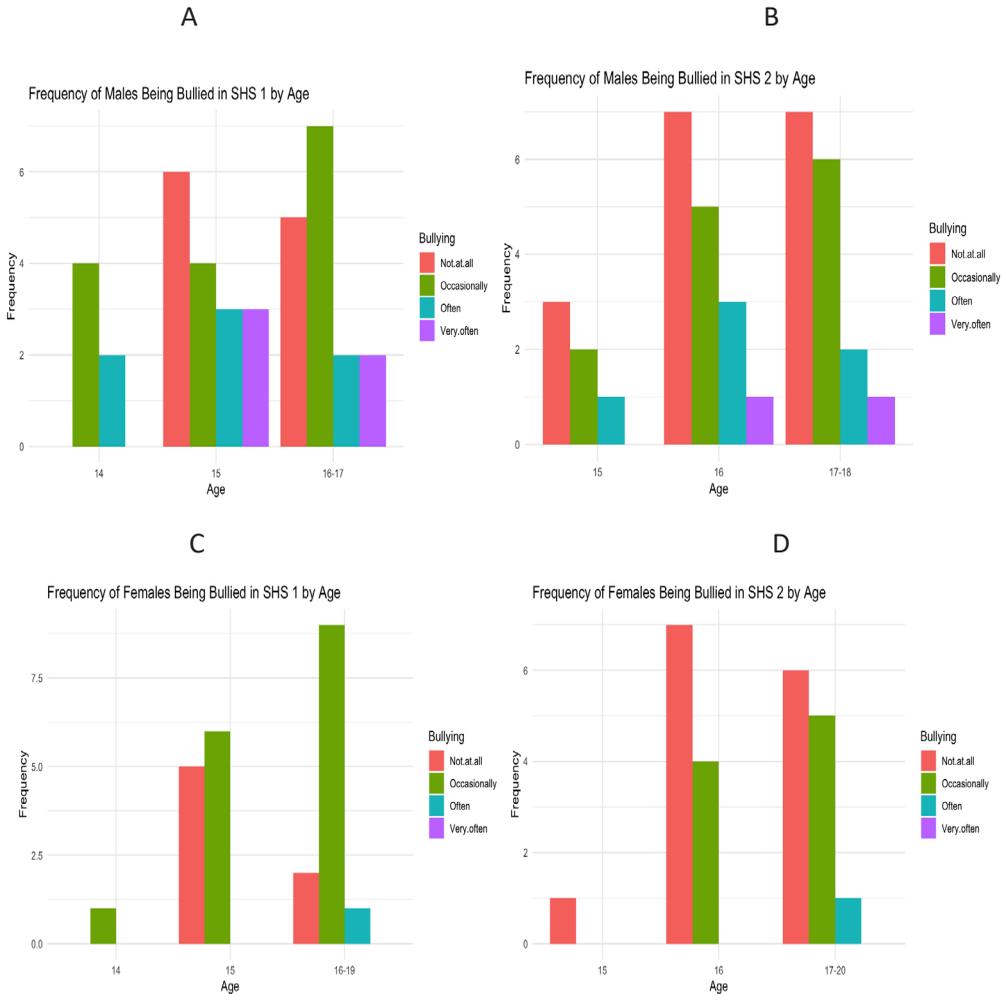
**Figure.3. Differences in the frequency of female student victims of bullying in SHS 1 and SHS 2. A) Female students in SHS 1 in mixed-sex schools were not bullied any more than in single-sex schools (fisher’s exact test;  $p=0.125$ ). B) In SHS 2, more female students in single-sex schools were victims of bullying as opposed to their counterparts in mixed-sex schools (fisher’s exact test;  $p=0.004$ ).**



**Figure.4. Differences in the frequency of female student bullies in SHS 2 and SHS 3. A) Females in mixed-sex schools did not bully victims significantly more than their colleagues in single-sex schools (fisher’s exact test;  $p=0.820$ ). B) In SHS 3, there was no significant difference in how often victims were bullied in mixed-sex schools and single-sex schools (fisher’s exact test;  $p=0.820$ ).**

Furthermore, the predictive value of age in the propensity of being bullied was examined to test the educational age hypothesis. The median age of biological males starting SHS 1 is  $15 \pm 0.9$  years. All males younger than 15 years of age were bullied either occasionally or often. Sixty-three per cent of males who were 15 years in SHS 1 and 69% of those who were older than 15 years were bullied occasionally, often or very often. In SHS 2, the median age of the males is 16 years. Half the sample of males who were younger than 16 years of age were bullied. This represents a 50% reduction in the fraction of students who were bullied in SHS 1. For students that were 16 years old, 56% of them were bullied in SHS 2 reflecting a 7% reduction. Finally, 56% of male students who were greater than 16 years were victims of bullying in SHS 2, reflecting a 13% decrease.

There was no statistical significance in how often the males between the different age groups were bullied in SHS 1 and SHS 2. All females younger than 15 years were bullied occasionally in SHS 1. Fifty-five per cent of females who were 15 years old were bullied occasionally and 83% of those older than 15 years were bullied occasionally or often. In SHS 2, the trend was notably different. Of the females who were older than 16 years, 75% were bullied either occasionally or often. It was reported that 36% of females who were 16 years in SHS 2 were bullied only occasionally and none of the females younger than 16 were bullied in the same level. There was no statistical significance in how often the females between the different age groups were bullied in SHS 1 and SHS 2.



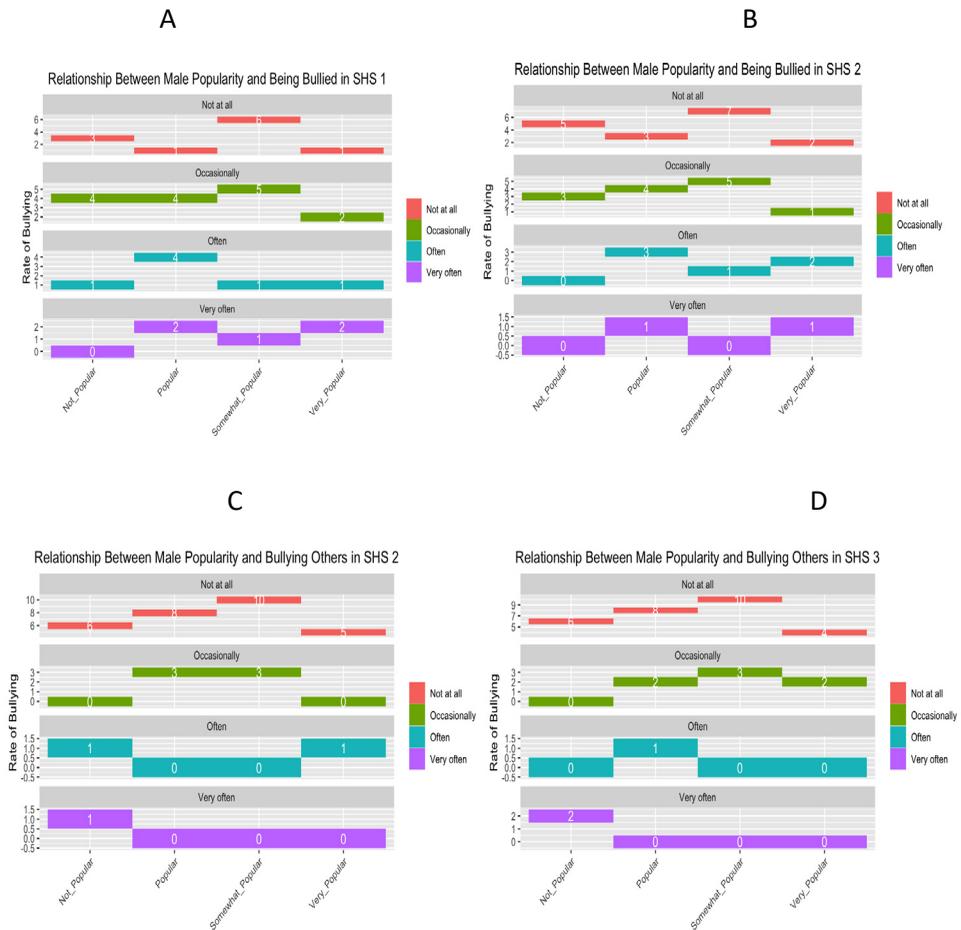
**Figure.5. Bullying is not dependent on age.** A) The propensity of being a victim of bullying was independent of the age of male students in SHS 1 (fisher’s exact test;  $p=0.402$ ). B) There was no association between how many male students in SHS 2 were victims of bullying and their age (fisher’s exact test;  $p=1$ ). C) The propensity of being a victim of bullying was independent of the age of female students in SHS 1 (fisher’s exact test;  $p=0.458$ ). D) There was no association between how many female students in SHS 2 were victims of bullying and their age (fisher’s exact test;  $p=1$ )

Additionally, we investigated the relationship between popularity and bullying to test the dominance-hierarchy theory of bullying that our paper implored. The greatest proportion of males that were not bullied in SHS 1 were

those that were “somewhat popular”. Notably, those who were bullied “often” in the highest proportion were “popular” males. Finally, those who were bullied “very often” were those who were “popular” and “very popular”.

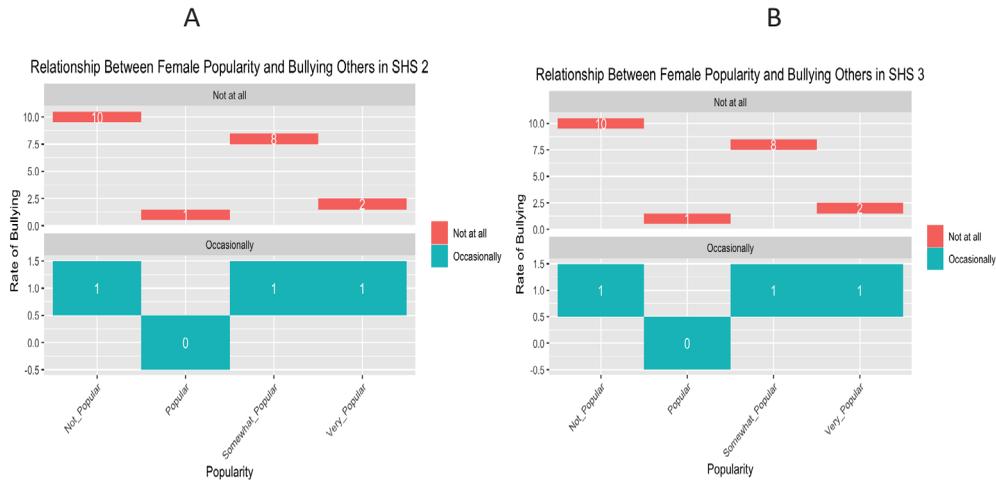
In SHS 2, a similar trend was found. With respect to bullying others in SHS 2, “somewhat popular” males were less likely to bully those from other popularity groups (ie Not popular, Popular, Somewhat popular and very popular). An equal proportion of “popular” and “somewhat popular” males were bullied “occasionally”. Interestingly, males who were “not popular” and individuals who were “very popular” were just as likely to bully “often” while males who were “not popular” recorded

the highest incidence of frequent bullying. Likewise, in SHS 3, “somewhat popular” males were the least likely to bully others and a small proportion of these individuals “occasionally” bullied others compared to the other popularity groups. However, those who were popular were most likely to bully often similar to that in SHS 2 whereas those who were bullied very frequently were males who were “not popular”.



**Figure.6. There is No Statistically Significant Relationship Between Popularity and Male Bullying. A)There was no significant link between the popularity of male victims of bullying and their propensity to be bullied in SHS 1 (fisher’s exact test;  $p=0.410$ ). B) In SHS 2, there was no significant association between the popularity of male victims of bullying and their propensity to be bullied (fisher’s exact test;  $p=0.414$ ). C) There was no significant link between the popularity of male bullies and their propensity to be bullies in SHS 2**

(fisher’s exact test;  $p=0.242$ ). D) In SHS 3, there was no significant association between the popularity of male bullies and their propensity to be bullies (fisher’s exact test;  $p=0.273$ ).



**Figure.7. Relationship Between Popularity and Female Bullying.** A) There was no significant link between the popularity of female bullies and their propensity to be bullies in SHS 2 (fisher’s exact test;  $p=0.560$ ). B) There was no significant link between the popularity of female bullies and their propensity to be bullies in SHS 3 (fisher’s exact test;  $p=0.560$ ).

Lastly, there was no significant effect of bullying or being a victim of bullying on one’s grades. Additionally, personality types and the frequency by which one was bullied or a victim of bullying were unassociated except for males in single-sex schools who were in SHS 3. Males in SHS 3 who did not indicate that they bullied others were found high in neuroticism ( $p=0.029$ ).

## DISCUSSION

Male students in SHS 1 and SHS 2 who attended mixed-sex schools experienced a higher prevalence of bullying compared to their counterparts in single-sex schools. Additionally, they exhibited a greater tendency to bully others during SHS 3. Among female students in SHS 2, those enrolled in single-sex schools encountered significantly higher levels of bullying when compared to their counterparts in mixed-sex schools. Moreover, there was no discernible correlation between

age groups and the likelihood of being bullied. While not reaching statistical significance, a clear pattern emerged indicating that popular males faced frequent instances of bullying in both SHS 1 and SHS 2, whereas unpopular males exhibited a propensity for frequently engaging in bullying behaviours in SHS 2 and SHS 3.

In this study, we conducted a subgroup analysis by sex and the type of boarding school given that the previously published articles show that there are more male bullies than female bullies (Batsche & Knoff, 1994) and were more likely to experience bullying in single-sex schools than in mixed-sex schools (Gee and Cho, 2014).

Many regions in Ghana were represented in the study. Although the study reflects 8 of the 16 regions in Ghana, it can still be generalisable because, until 2018, only 10 regions existed in Ghana. Hence, it is reasonable to suggest that there are no regional differences obscured by

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the number of regions sampled in the study since not enough time has elapsed for these newly classified regions to have a culturally distinct impact on bullying.

We found that generally, male students were more likely to experience bullying than their female counterparts. This is consistent with Nii-Boye Quarshie and Andoh-Arthur's (2020) findings which show a similar trend. Furthermore, males in mixed-sex schools were more likely to be bullied than those in single-sex schools. Inconsistent with our findings, researchers who studied bullying in single-sex male schools in South Korea found that the rates of bullying were greatest in all-male schools (Gee and Cho, 2014). Data also shows that a higher proportion of males in mixed-sex schools bullied others when they were in SHS 2 and SHS 3. In SHS 2, 24% of males bullied others and this fraction expectedly increased to 26% when these individuals entered their final year (SHS 3). This is consistent with previous findings given that males who are more frequently bullied, in turn, are more likely to be bullies themselves (Preidt, 2016). For females, those in single-sex schools were bullied more often than those in mixed-sex schools. This is again opposite to the findings of the researchers that studied the relationship between bullying and single and mixed-sex schools in South Korea. They found that girls in all-girls schools exhibited relatively lower bullying behaviours than their counterparts in mixed-sex schools (Gee and Cho, 2014). These inconsistencies are likely to be due to cultural differences in the way boys and girls are brought up in different geographical contexts (Ellemers, 2018).

The high bullying rates observed in males in mixed-sex schools may be explained by the desire to display aggressive behaviour to attract female students (Giebel et al., 2013). This is evidenced by the observation that females tend to be attracted to males who display non-retaliative aggression which is

unprovoked and is displayed when one is a bully victim in SHS (Giebel et al., 2013). On the contrary, we can postulate that bullying is higher in female single-sex schools compared to mixed-sex because males are generally attracted to docile femininity (O'Connor et al., 2013). Physical aggression implicated in bullying, which accounts for roughly half the cases of bullying in SHS, is notably attributed to a more masculine trait (Im et al., 2018). Therefore, females who are in an environment with males in mixed-sex schools will be less likely to exhibit aggressive and "undesirable" traits as compared to females within single-sex schools.

In the current analysis, we tested the educational age hypothesis. The educational age hypothesis asserts that the grade (or education age), not the actual age, of the individual plays a role in the tendency to be bullied. According to our data, this hypothesis failed to be rejected. In all samples, there was no significant difference between age group and frequency of being bullied. This implies a group phenomenon within which bullying occurs—insofar as they are in a lower level (ie SHS 1 or SHS 2) they experience equal amounts of bullying regardless of their age.

We also examined the dominance-hierarchical underpinning of bullying under the dominance theory of bullying introduced in our second hypothesis. The high display of bullying among males in both mixed and single-sex schools may also be an attempt to climb social hierarchies within the school. Although not seen in our current analysis as significant, this idea is supported by other research studies (Kowalski et al., 2014). Additionally, De-Valera and Boahen-Boaten (2022) aver that bullying in schools in Ghana is structured on dominance-based hierarchies which is consistent with our postulation. Those at the top of the hierarchy are feared which often correlates with the level of bullying these individuals engage in. Research shows

that males associate physicality with power (Weick, 2020). It then becomes obvious why the most prevalent form of bullying in Ghana, especially among males, is physical bullying which accounts for slightly less than half of the bullying cases recorded (Antiri, 2016). This is because most male students want to climb the social hierarchy to obtain the power to exhibit assert fear.

The rates of bullying others in SHS 3, as recorded by the participants are generally low. Compared to the amount of bullying they received from their seniors in SHS 3, there seems to be an underrepresentation. This may be why we do not find significance in the relationship between popularity and bullying. It remains possible that the participants reported low bullying rates because of guilt or the underestimation of what accounts for bullying. In that regard, further studies should aim to standardise and clearly delineate the definition of bullying.

Although most people indicated that they were not bullies in SHS 3, this surprisingly low proportion of bullies is likely due to self-serving bias. Self-serving bias refers to attributing desirable outcomes to oneself and assigning negative attributes to others (Zhang et. al, 2022). Nonetheless, we can indirectly infer that the seniors who bullied the participants were attempting to rise to the top of the social hierarchy. This is because juniors who were “popular” and “very popular” were the most bullied in SHS 1 and SHS 2. This speaks to the type of social hierarchy set in place. That is, to rise within the “dominance-based social hierarchy”, the male students pick on the juniors that are high in the “popularity” group. Interestingly, the highest proportion of male participants who bullied others very often in SHS 2 and SHS 3 were those who were “not popular”. Although the sample size is small and there may be an underrepresentation of the true bullying rates, it is speculated that a reason for the high incidence of bullying

among those who were not popular may have been due to the motivation to climb up the social hierarchy. This makes sense in light of the dominance theory of bullying which presents exerting dominance as a means of gaining social status in the community. In the females, the trend was less clear.

There is also reason to correlate how boarding schools operate with the inclinations of otherwise “good” people to do “bad” things as stated in Zimbardo’s seminal Stanford Prison Experiment (SPE) paper (American Psychological Association, 2022). The SPE simulated prison and randomised civilian men in the United States as prisoners and guards. Zimbardo found that although the prisoners and guards had no prior experience in a prison setting, they behaved much like their assigned roles of prisoners and guards. Guards often mistreated the prisoners and the prisoners also participated in inhumane acts toward other fellow prisoners, especially at the command of the guards (American Psychological Association, 2022). Simply put, Zimbardo describes that any situation can be primed to elicit the worst in otherwise “normal” individuals. Taken together, boarding schools are set much like the experimental setting of the SPE. In most boarding schools, students are made to wear identical uniforms, haircuts and shoes. Students lack technological privileges in most cases. There is a lack of constant communication with guardians given that they are only allowed to visit their ward once a month. Although a harsh comparison, it is an observation that parallels a prison setting where juniors in SHS 1 and SHS 2 are analogous to the prisoners in the SPE where the seniors in SHS 3 are analogous to guards. It comes as no surprise that the juniors begin to adopt bullying practices as they transition to SHS 3—they are victims of the situation much like the prisoners and guards in the SPE. This also explains why, for the most part, there are no personality differences in bullying rates. This is because the situation is the factor

eliciting the behaviour and not the personality of the perpetrators.

Bullying may operate within the context of “dominance-based social hierarchies” which finds its basis in the dominance theory of bullying. Therefore, dissolving this hierarchy may possibly abate bullying. This includes ensuring that juniors can compete equally with their seniors for leadership positions within the school. Research in corporate spaces shows that organisations with flattened hierarchies show fewer conflicts between employees (Kubheka et al., 2013). Other research shows that a flat hierarchy is ideal for “human-capital-intensive industries” like schools (Rajan, 2001). If the corporate context can be superimposed with that of the organisational structure of boarding schools, the students may become conflict-free or conflict-averse.

## **CONCLUSION**

The study demonstrates that the grade level is a more potent indicator of being a victim of bullying than age. It also suggests that bullying has a hierarchical underpinning. This trend, grounded in the dominance theory of bullying seems to suggest that bullying is a means by which individuals move up the social ladder in SHS. Additionally, we show that more males than females are bullied while, on balance, males in mixed-sex schools are the major victims of bullying than their counterparts in single-sex schools.

Any attempt to eradicate bullying must be multifaceted. Given that bullying is rooted in anti-social behaviour, successful interventions should include programs that promote pro-social behaviour. Indeed, Juvonen et al. (2016) report that the most effective anti-bullying program involves the immersive-based teaching of empathy and situation-based bullying tests to prime students to recognize and stop bullying.

Similar programs can be implemented by the Ministry of Education in Ghana to target bullying in schools. Additionally, flattening avenues for dominance-based hierarchies by allowing juniors and seniors alike to occupy leadership positions may be a potent strategy for eradicating bullying. This can be facilitated by various school officials who can open student governance-based leadership roles for juniors to participate in. This will balance the asymmetrical distribution of power among juniors and seniors in boarding schools. Lastly, these suggestions, alongside punishments for indecent behaviour and other mainstream strategies for curtailing bullying, if implemented, should be sufficient in eradicating the canker of bullying.

## **LIMITATIONS AND FUTURE RESEARCH**

Key limitations of the study include sampling bias associated with volunteer responses and the lack of a rigorous online personality test to determine the personality types of participants. The personality test was chosen because it had the shortest completion time to lower the attrition rate of participants. Lastly, the study could have been made more rigorous with a higher sample size.

Future research will benefit from testing the dominance-hierarchical model of bullying that we propose using a larger sample size as our results show a promising trend to that effect. Finally, we have proposed a novel approach to solving the problem of bullying by flattening hierarchies in schools. This involves making leadership positions open to both junior and senior students. It will be interesting for future studies to test this hypothesis in an experimental setting to determine if the breakdown of leadership hierarchies will disrupt and stifle the social urge to bully in schools in Ghana.

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## DECLARATION OF CONFLICT OF INTERESTS

The author declares no conflict of interest.

## SUPPLEMENTAL MATERIAL

Below are the questions asked in the survey

“This form is anonymous. Only people who attended SHS and were in boarding school should answer. Please answer truthfully. Fill out to enter a raffle for \$20.

1. What is your name (Optional, if participants want to enter a draw for \$20)
2. What was your age in your first year of high school?
3. What type of boarding school were you in (Mixed sex school, Single sex school)?
4. What is your Big 5 personality test score (ie Neuroticism, Extroversion, Agreeableness, Openness, Conscientiousness? If you don't know this (ie you have not taken a Big 5 personality test before) use this link to find out (it takes less than 2 min to complete)
5. How popular will you say you were in boarding school (Very popular, popular, somewhat popular, not popular)?

6. Estimate your average exam percentage at the end of your first year of SHS
7. Estimate your average exam percentage at the end of your second year of SHS
8. Estimate your average exam percentage at the end of your last year of SHS
9. How often were you bullied in your first year of SHS?
10. How often were you bullied in your second year of SHS?
11. How often did you bully in your second year? (“Not at all”, “Occasionally”, “Often”, and “Very Often”)
12. How often did you bully in your final year? (“Not at all”, “Occasionally”, “Often”, and “Very Often”)
13. What is your gender? (Male, Female)
14. What is your date of birth?
15. What SHS did you attend?”

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