



## **Body Dysmorphic Disorder and Social Anxiety as Factors in Suicidal Ideation among Adolescents**

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### **Abstract**

Suicide is currently one of the leading causes of death for young people. The rates of suicidal thoughts and behaviours have been observed to increase exponentially at the transition from childhood into adolescence. The strongest predictor of suicidal behaviour is suicidal ideation. Age of onset, frequency, and duration of suicidal ideation has been shown to predict future suicide attempts among adolescents. Thus, a clear understanding of factors related to the increase in suicidal ideation from early to late adolescence is an important public health priority. In order to prevent suicide attempts and completions, we must understand their most relevant precursor – suicidal ideation. Although there is abundant literature indicating a global prevalence of suicidal attempt in a non-clinical sample, there is a dearth of literature on behavioural and psychosocial correlates of suicidal ideation among adolescents in Nigeria. We, therefore, investigated whether body dysmorphic disorder and social anxiety were associated with suicidal ideation among 400 students in southeast Nigeria (249 females and 151 males), aged 13-19 years, with a mean age of 15.93 years. Applying a cross-sectional design, participants completed Dysmorphic Concern Questionnaire, Social Phobia Scale, and Suicidal Ideation Questionnaire. Hierarchical multiple regression results showed that body dysmorphic disorder was a significant positive predictor of suicidal ideation,  $\beta = .23$ ,  $t = 4.66$ ,  $p < .001$ , while social anxiety did not predict suicidal ideation,  $\beta = .11$ ,  $t = 1.45$ . We conclude that body dysmorphic disorder should not be neglected in suicide prevention programmes for adolescent students.

Keywords: Adolescents, Body dysmorphic disorder, social anxiety, and suicidal ideation

### **Introduction**

Suicide is, to a reasonable extent, a diverse, incomprehensible and disconcerting phenomenon; merely because of people's inability to have comprehensive access and



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knowledge of their potential suicidal fellows (Alicea,2015). Over 800,000 individuals die by suicide annually worldwide (World Health Organization, 2018). In the U.S., suicide is the 10th leading cause of death among all age groups and the 2nd leading cause of death among adolescents (David-Ferdon et al., 2016), resulting in approximately 5000 adolescent deaths each year (WHO, 2014). These statistics, however, represent only the tip of the iceberg, although exact estimates vary. Current epidemiological data indicate that a staggering 4.1–8.6% of U.S. adolescents (1.7–3.6 million individuals) have attempted suicide (Nock et al., 2013; Ordaz, Goyer, Ho, Singh, & Gotlib, 2018; Nock et al., 2013). Though suicide is not common, especially among adolescents (WHO, 2014), suicidal ideation is common (Uddin, Burton, Maple, Khan, & Khan, 2019; McManus, Bebbington, Jenkins, & Brugha, 2016). Suicidal ideation during adolescence can predict unfavourable outcomes in adulthood, such as mental health problems (e.g. anxiety, mood disorders, increase in problem behaviours, maladaptive adaptation, and poor interpersonal relationships in adulthood (Goldman-Mellor et al.; 2014; Howarth et al.; 2020). Other scholars (e.g. Mellesdal, Mehlum, Wentzel-Larsen, Kroken, & Arild Jørgensen, 2010; Goldman-Mellor et al., 2014) reported that early experiences of suicidal thought and behaviour tend to impact physical health, including elevating the risk of ischemic heart disease, cardiovascular disease, metabolic syndrome and elevated inflammation later in life. In order to prevent suicide attempts and completions, we must understand their most relevant precursor – suicidal ideation.



Suicidal ideation is thinking about or an unusual preoccupation with suicide (Law & Tucker, 2018). Suicidal ideation, also known as suicidal thoughts, is thoughts about killing oneself, which can range from a detailed plan to a momentary consideration but does not include the final act of killing oneself. That means ideation is only a valuable marker of suicide risk in as much as it is possible to assert that suicidal thoughts are more likely to translate into action if not handled. While some suicidal ideators proceed to suicide attempt, the majority of attempters and completers have engaged in ideation at some point in their lives (Nock, Millner, Joiner, Gutierrez, Han, Hwang, & Stein, 2018). The majority of people who experience suicidal ideation do not carry it through. Some may, however, make suicide attempts. Some suicidal ideations can be deliberately planned to fail or be discovered, while others might be carefully planned to succeed (Manani & Sharma, 2016).

The rates of suicidal thoughts and behaviours increase exponentially at the transition from childhood into adolescence (Nock et al., 2013). The strongest predictor of suicidal behaviour among adolescents and the general population is suicidal ideation (Bromet et al., 2017; Prinstein, 2008). Previous research has illuminated pathways in suicidal ideation over adolescence from low-risk normative thoughts about death and dying to persistent consideration of self-injury (Vander Stoep et al., 2009). Age of onset, frequency, and duration of suicidal ideation predict future suicide attempts

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among adolescents (Miranda, Ortin, Scott, & Shaffer, 2014; Nock et al., 2013). A systematic review of literature by Carballo et al. (2019) linked psychological factors (depression, anxiety, previous suicide attempt, drug and alcohol use, and other comorbid psychiatric disorders); stressful life events (family problems and peer conflicts); and personality traits (such as neuroticism and impulsivity) as some of the factors predicting suicidality among adolescents. The evidence highlights the complexity of suicidality and points towards the interaction of factors contributing to suicidal behaviour. A similar systematic review of a study on suicidal behaviours among adolescents from 90 countries by Campisi et al. (2020) revealed that being bullied or having no close friends was associated with suicidal ideation among girls 13-15 years and 16-17years, respectively, while for boys, being in a fight and having no close friends were associated with suicidal ideation with the addition of serious injury for boys 13-15years.

Being bullied was linked to suicidal attempt and was common to all younger adolescents. Having no close friends was associated with suicide attempts in older adolescents, with the addition of being bullied in older girls and severe injury in older boys. Thus, a clear understanding of risk factors related to the increase in suicidal ideation, especially those attributable to the individual, is an important public health priority (Asante et al., 2017) which calls for a lot of researches in the area. A good approach taken to alleviate suicidal thought helps in preventing suicidal



attempt. Drawing from this perspective, what is needed to help develop appropriate harm-reduction programmes for the school-going adolescents living in Nigeria is the knowledge of risk factors associated with suicidal ideation among them. This could also help inform psychological risk assessments and psychological interventions. Though it (suicide) has been recognised as a public health concern, yet comprehensive empirical evidence about suicidal behaviours among Nigerian adolescents is limited. Most of the studies in the literature on the risk factors of suicidal ideation and attempts were done in the western world and mainly on adults (Rukundo et al., 2018). Therefore, there is an urgent need to study the same variable among the younger population (adolescents) in a low-income country like Nigeria. Earlier studies (e.g., WHO, 2014, McKinnon et al., 2016; Amare, Woldeyhanes, Haile, & Yeneabat, 2018) reported that the rising rate of suicidal behaviour among young people between the ages of 15 and 25 years is alarming. Therefore, there is a need to study suicidal ideation risk factors among this age group so that appropriate intervention strategies to be designed will be targeted at them.

### **Conceptual framework of adolescent suicidal ideation**

The General Strain Theory of suicidal ideation by Agnew (1992) is the theoretical framework that guided the present study. This framework posits that individuals with higher excessive pressure and strain are more likely to commit suicide. That means deviant acts are kind of adjustment techniques to daily strains and are

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responses to anger ((Broidy & Agnew, 1997). Drawing from the perspective of this theory among adolescents, the sources of strain are BDD and social anxiety, which pushes them to consider suicidal ideation and attempt as an option.

Previous studies (e.g., Roberts et al., 1998; Johnson et al., 2000; Portzky et al. 2005; Brent & Mann, 2006; Holliday et al. 2020) have shown that multiple factors, which may be personal and environmental, are implicated in adolescents' suicidal ideation and attempts, while in the present study we considered BDD and social anxiety. The reason is that these disorders are very common among adolescents and begins in adolescence (Adewuya, & Oladipo, 2019; Constantian, 2018; Pickard, Hirsch, Simonoff, & Happé, 2020). A time during which bodily changes are dramatic and appearance concerns often prominent; (Phillips, Atala, & Albertini, 1995) suggested that BDD may be a pathological response to adolescence's physical and physiological changes. BDD refers to the preoccupation with one or more perceived defects or flaws in physical appearance that are not observable or appear slight to others (American Psychiatric Association, 2013). Individuals with BDD are highly distressed due to defects they perceived in their physical appearance that are not noticeable to others. The body defects or flaws may be real or non-existent. Adolescents with such a disorder (BDD) have a pervasive feeling of ugliness and are convinced that some part of their body is defective (Mufaddel, Osman, Almagaddam, & Jafferany, 2013). The most frequent areas of concern are the face and head, and the main worries are



related to problems such as acne, wrinkles, scars, the size and shape of the nose or ears, asymmetric or disproportional face, thinning hair or excessive facial hair (Phillips, 2009). However, there may be a concern regarding any part of the body or with more than one part of the body (Phillips, 2009). Individuals with BDD engage in excessive grooming, skin picking, mirror checking, and camouflaging of their appearance, with the aim of correcting, hiding, or distracting others from perceived defective parts of the body, focusing on unattractive parts, rumination, mental rituals or other mental acts also often reported by individuals with BDD (Kollei & Martin, 2014). These preoccupations are very time consuming and occur on average, 3-8 hours per day; they are typically difficult to resist or control (Phillips & Hollander, 2008; Eskander, Limbana, & Khan, 2020). BDD is associated with significant distress, disability, unnecessary cosmetic surgery, and suicidal behaviour (Phillips, 2007). Body dysmorphic disorder seems to be a relatively common disorder, affecting about 1-2% of the general population (Veale, Gledhill, Christodoulou, & Hodsoll, 2016). BDD is of two forms: muscle dysmorphia, a situation where one is associated with a number of thoughts and beliefs about one's self, including the belief that one's body is not sufficiently muscular and large enough, while body dysmorphic disorder by proxy (BDDBP) is a variation of BDD in which an individual is overly concerned with perceived imperfections with another person's appearance. Although appearance concerns are common during adolescence, BDD should be diagnosed when concerns

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with a slight or non-existent physical defect become preoccupying and cause clinically significant distress or impairment in functioning (Phillips, 2006).

Orbach (1996) proposed that one's attitude towards and investment in the body is related to and can predict suicidal behaviour arguing that body dissatisfaction contributes to a greater propensity for self-harm because a person develops disregard for the body. Body dissatisfaction and or disregard increases the likelihood that a person will view the body as an object separate from self, making it easier to harm (Constantian, 2018). Preliminary support for this idea was identified by Brausch and Muehlenkamp (2007), who found that suicidal adolescents report significantly more negative attitudes and feelings toward the body, less body protection and more body aberration than non-suicidal adolescents. Some empirical studies have been reviewed to support the above assertion, for instance, Mollmann, Dietel, Hunger, & Buhlmann (2017) study on the prevalence of BDD and appearance-related suicidality sample of German adolescents. The results revealed that body dysmorphic symptoms are common in adolescents and young adults and are associated with high rates of comorbid symptoms and suicidal ideation.

A similar study by Phillips and Menard (2006) examined suicidality and body dysmorphic disorder to show that individuals with body dysmorphic disorder (BDD)





have high rates of suicidal ideation and attempts. Two hundred subjects were enrolled in this prospective observational study of BDD's course. Fifty-two per cent of subjects were self-referred; professionals referred 48%. A total of 126 of 185 subjects (68.1%) were women, 138 (74.6%) were unmarried, 157 (85.8%) were white, and 13 (7.2%) were Hispanic. At intake, the mean age was 33.0 years (SD=12.2), and the mean duration of BDD was 16.0 years (SD=12.5). At intake, 164 (88.6%) of the subjects met full DSM-IV BDD criteria (11.4% were in partial or complete remission but had met full BDD criteria in the past). At intake, 147 of 185 subjects (79.5%) reported a history of suicidal ideation; 51 (27.6%) had a history of a suicide attempt. This prospective study found that individuals with BDD had high rates of suicidal ideation and attempts. The mean annual suicidal ideation rate of 57.8% is approximately 10–25 times higher than in the U.S. population, and the mean annual suicide attempt rate of 2.6% is an estimated 3–12 times higher (Crosby, Cheltenham & Sacks, 1994). With adjustment for age, gender, and geographic region, our completed suicide rate was approximately 45 times higher than in the general population (Sleet et al., 2012); that is, the standardised mortality ratio for BDD was approximately 45. Although rates of completed suicide for other disorders vary, depending on the study, and comparisons should be made with caution, examples of estimated standardised mortality ratios for suicide for other mental disorders (based on meta-analyses) are 23 for eating disorders, 20 for major depression, and 15 for bipolar disorder (Harris & Barraclough, 1997). Thus, our standardised mortality ratio

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for BDD appears markedly high. This result is preliminary. The completed suicide rate is preliminary but suggests that the rate of completed suicide in BDD is markedly high. Hence, we hypothesise that among Nigerian adolescents, BDD will significantly be associated with suicidal ideation.

Apart from BDD, another variable that is of interest in the present study is social anxiety. The DSM-V (American Psychiatric Association, 2013) defines social anxiety as a marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny or evaluation by others. It is characterised by social fears, excessive discomfort, negative rumination, and somatic symptoms such as trembling, blushing and sweating before, during, and after social interactions (Heiser, Turner, Beidel, & Roberson-Nay, 2009). An adolescent who suffers from this kind of anxiety avoids social interactions (e.g., having a conversation, meeting unfamiliar people). He/she also avoids being observed (e.g., eating or drinking) and performing in front of others (e.g., giving a speech). However, public speaking is the most commonly feared social situation (Hinojo-Lucena, Aznar-Díaz, Cáceres-Reche, Trujillo-Torres, & Romero-Rodríguez, 2020) for adolescent that suffers from such anxiety.

Social anxiety disorder (SAD) is one of the most common psychiatric conditions (Schmidt, Richey, Buckner, & Timpano, 2009); and the epidemiological literature reports lifetime prevalence in western countries ranging between 7% and 12% of the population (Kessler, Chiu, Demler, Merikangas & Walters, 2005). In Africa, precisely



in Nigeria, Chinawa et al. (2018) reported a prevalence rate of social anxiety to be 7-10%. The disorder affects men and women relatively equally as evaluated in community studies. Social anxiety disorder often begins in the mid-teens but can also occur in early childhood. Social anxiety disorder is often associated with shyness, behavioural inhibition, overanxious disorder, mutism, school refusal, and separation anxiety during childhood. If the problem is left untreated, it typically follows a chronic, unremitting course and leads to substantial impairments in vocational and social functioning (Coping, 2010).

Social anxiety disorder has been reported to relate to high rates of suicidal ideation (S.I.) even after controlling for co-occurring depression and other psychopathology (Sareen et al., 2005). For instance, previous scholars (Sonntag, Wittchen, Hofler, Kessler, & Stein, 2000; Seabra, Valentim, Fernandes, & Severino, 2020; Villalobos, 2020) reported in their studies that social anxiety is often related to other detrimental conditions, including suicidal ideation, substance-related impairment, and depression. In a similar study by Bomyea et al. (2012) on the risk factors of suicidal ideation among 1620 African-American adolescents with social anxiety. The result revealed that suicidal thoughts and behaviours are common among adolescents with social anxiety. Gallagher, Prinstein, Simon and Spirito (2014) carried out a similar study on social anxiety symptoms and suicidal ideation in a Clinical Sample of Adolescents. Participants were 144 adolescents (72 % female) between the ages of 12 and 15 years ( $M=13.51$ ,  $SD=0.81$ ) at baseline. Approximately



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75 % of the participants identified as White/Caucasian, 4% Latino-American, 3% African- American, and 17% of mixed ethnicity. The participants were recruited from a psychiatric inpatient facility in the northeastern United States, and the relevant Institutional Review Board approved study procedures. Symptoms of social anxiety and suicidal ideation were assessed via structured interviews and self-report instruments. Structural equation modelling revealed a significant direct relationship between social anxiety symptoms at baseline and suicidal ideation at 18 months post-baseline, even after controlling for baseline depressive symptoms and ideation. Findings suggest that loneliness may be particularly implicated in the relationship between social anxiety and suicidality in teens. Clinicians should assess and address feelings of loneliness when treating socially anxious adolescents.

Bentleya, Franklin, Ribeiro, Kleiman, Fox, and Nock (2016) carried out a meta-analysis on anxiety and its disorders as risk factors for suicidal thoughts and behaviours. This meta-analysis aimed to examine the magnitude and clinical utility of anxiety and its disorders as risk factors for suicide ideation, attempts, and deaths. They conducted a literature search through December 2014; of the 65 articles meeting their inclusion criteria, they extracted 180 cases in which an anxiety-specific variable was used to predict a suicide-related outcome longitudinally. Results indicated that anxiety is a statistically significant, yet weak, predictor of suicide ideation and attempts, but no deaths. Estimates were reduced after accounting for



publication bias, and diagnostic accuracy analyses indicated acceptable specificity but poor sensitivity. Overall, the extant literature suggests that anxiety disorders, at least when these constructs are measured in isolation and as trait-like constructs, are relatively weak predictors of suicidal thoughts and behaviours over long follow-up periods. With this result, one can easily say that the situation is not always the case, thereby making the research area inconclusive. This could also be seen in a study by Ibrahim, Amit, and Suen (2014), who reported that social anxiety was not a significant predictor of suicidal ideation in a Malaysian sample. The current situation in Nigeria is likely to make adolescents fear many social situations due to fear of the unknown; and many of them live their everyday life without knowing that such can make them consider suicide as an option, and Nigerians pay little attention to mental health issues (Gureje et al., 2015). So from this perspective, we hypothesise that social anxiety will significantly predict adolescents' suicidal ideation.

Although there are studies on the risk factors of suicidal thoughts, most of the studies were on the western samples and mainly on adults. Studies that have identified the risk factors of suicidal ideation among in-school adolescents in Nigeria are limited. BDD and social anxiety are the most common psychiatric conditions for adolescents (Mastro, Zimmer-Gembeck, Webb, Farrell, & Waters, 2016), yet little attention has been paid to whether BDD and social anxiety will predict suicidal ideation among this vulnerable group. Therefore, the purpose of the current study was to examine whether BDD and social anxiety will significantly predict suicidal ideation among



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adolescent students in Nigeria. The specific hypotheses are as follows: (1) BDD will significantly predict suicidal ideation among adolescent students. (2) Social anxiety will significantly predict suicidal ideation among adolescent students.

## **Methods**

### **Participants and Procedure**

A total of four hundred (400) students comprising boys (n= 151) and girls (n= 249) drawn from four co-educational secondary schools in Enugu State, Nigeria, participated in the study. Using stratified random sampling technique in the selection process: 25 students were drawn from each stratum: JSS 3, SS1, SS2, and SS3. Thus a total of 100 participants were selected from each of the four schools studied. Their ages were between 13-19 years, with a mean age of 15.93 and a standard deviation of 1.37. It is considered that a combination of junior and senior students with varying ages would give a reasonably representative sample of adolescent students' characteristics. All participants were duly informed that their participation is voluntary and that their data would remain confidential. The questionnaires were administered to the students in their different schools during break time. No time limit was imposed on the participants for the completion of the questionnaires. After the respondents finished filling out the questionnaires, the researcher collected them and thanked them. Twenty copies of the questionnaires were discarded due to incomplete data, and the other ten were not returned. Thus, 400 copies were used



for the study showing 93 percent returns. The Ethics Committee of the Department of Psychology, University of Nigeria, Nsukka, gave ethical approval

## **Measures**

### **Dysmorphic Concern Questionnaire (Mancuso, Knoesen, & Castle, 2010)**

Adolescents' BDD was assessed using Dysmorphic Concern Questionnaire (DCQ), which was developed by Oosthuizen, Lambert and Castle (1998) and validated by Mancuso, Knoesen, and Castle (2010) for BDD. It is a practical, seven-item questionnaire and was based on the General Health Questionnaire (GHQ), an instrument that was devised to quantify the risk of developing psychiatric disorders, which measures common mental health problems including depression, somatic symptoms, and social withdrawal. The Dysmorphic Concern Questionnaire is focused on BDD and asks about individuals concern with physical appearance and past attempts to deal with the issue. Each item is answered on a four-point Likert format scale with the response options ranging from 0 (not at all) to 3 (much more than most people) points. The developers of DCQ reported a Cronbach's  $\alpha$  reliability coefficient of .88 and validity as demonstrated by strong correlations with distress, work, and social impairment. In the present study, we obtained .72 as its Cronbach's  $\alpha$  for internal consistency reliability.

### **Social Phobia Scale (Niles, Mesri, Burklund, Lieberman, & Craske, 2013)**

Social Anxiety (Social Phobia) was assessed using Social Phobia Scale developed by Craske et al. (2013). It is a 10-item measure that assesses the severity of symptoms of social anxiety (social phobia) in individuals. Items contained in the measure is rated on a Five-point scale: 0=Never, 1= occasionally, 2=Half of the time, 3=Most of the time, and 4=All of the time. The total score ranges from 0 to 40, with higher scores indicating greater severity of social anxiety disorder (social phobia). The average total score reduces the overall score to a 5-point scale, which allows the researcher to think of the severity of the individual's social anxiety in terms of none (0), mild (1), moderate (2), severe (3), or extreme (4). The developers reported an internal consistency, Cronbach alpha of .86. In the present study, we obtained .79 as its Cronbach's  $\alpha$  for internal consistency reliability.

### **Suicidal Ideation Questionnaire (Reynolds, 1987)**

The Suicidal Ideation Questionnaire is a 15 item scale developed by Reynolds (1987). The scale assesses an individual's degree of suicidal thought. Sample items in the questionnaire include "I thought about death" and "I wished I were dead". The developer reported a Cronbach alpha reliability coefficient of .96. It is rated on a 7 point scale from (1) almost every day to (7) I never had this thought. In the present study, we obtained .93 as its Cronbach's  $\alpha$  for internal consistency reliability.



## Design / Statistics

This work is survey research, and a cross-sectional design was adopted in the study. Pearson's correlation ( $r$ ) analysis was conducted among the demographic factors (as gender, age, and class), predictors and dependent variables in the study. Hierarchical multiple regression analyses were used to analyse the data because more than one independent variable was tested on a dependent variable.

## Results

The results of the findings of this study are presented here. The correlations of the demographic variables and study variables are shown in Table 1, while the regression analysis findings are in Table 2.

**Table 1: Correlations of demographic variables, body dysmorphic disorder, social anxiety and suicide ideation**

Variables	1	2	3	4	5
1 Gender	-				
2 Age	-.14**	-			
3 Class	.02	.45***	-		
4 Body Dysmorphic	-.02	.12*	.12*	-	
5 Social Anxiety	-.00	.05	-.04	.49***	-
6 Suicide Ideation	.02	-.03	.02	.23***	.17**

Note \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; Gender (0 = male; 1 = females).

In Table 1, older age was associated with being male ( $r = -.14, p < .01$ ) and being older was associated with being in higher classes ( $r = .45, p < .001$ ), as well as having higher symptoms of body dysmorphic disorder ( $r = .12, p < .05$ ). Those in higher classes reported higher symptoms of body dysmorphic disorder ( $r = .12, p < .05$ ). Body dysmorphic disorder symptoms were associated with higher social anxiety ( $r = .49, p < .001$ ) and higher suicidal ideation ( $r = .23, p < .001$ ). Social anxiety was also positively related to suicide ideation ( $r = .17, p < .01$ ).

**TABLE 2: HIERARCHICAL MULTIPLE REGRESSION PREDICTING SUICIDAL IDEATION BY BODY DYSMORPHIC DISORDER AND SOCIAL ANXIETY**

Predictors	Step 1			Step 2		
	B	$\beta$	T	B	$\beta$	t
Body dysmorphic	1.21	.23	4.66***	.93	.19	3.38***
Social anxiety				.22	.08	1.45
$R^2$	.05			.05		
$\Delta R^2$	.05			.00		
$F$	21.73(1, 398)***			11.94 (2, 397)***		
$\Delta F$	21.73(1, 398)***			2.10 (1, 397)		

\*\* $p < .01$ ; \*\*\* $p < .001$ ;  $\Delta R^2$  = Change in  $R^2$ ;  $\Delta F$  = Change in  $F$



Results of the hierarchical multiple Regressions for the test of the hypotheses are shown in Table 2. Body dysmorphic disorder symptoms were the predictor in Step 1 of the regression analysis, and it was shown to be a significant positive predictor of suicide ideation,  $\beta = .23$ ,  $t(400) = 4.66$ . The unstandardised regression coefficient (B) showed that each one-unit rise in body dysmorphic disorder symptoms was associated with 1.21 increases in suicide ideation. The contribution of body dysmorphic disorder in explaining the variance in suicide ideation was 5% ( $R^2 = .05$ ), and the model was significant,  $F(1, 398) = 21.73$ ,  $p < .001$ .

In step 2, social anxiety was included in the regression analysis. Social anxiety did not significantly predict suicide ideation,  $\beta = .108$ ,  $t(400) = 1.45$ . Social anxiety did not make any significant contribution in explaining the variance in suicide ideation ( $R^2 = .00$ ), and the model was not significant,  $F\Delta(1, 397) = 2.10$ ,  $p < .01$ . The overall contribution of body dysmorphic disorder symptoms and social anxiety in explaining the variance in suicide ideation was 5% ( $R^2 = .05$ ).

## **Discussion**

This study aimed to examine whether BDD and social anxiety will predict suicidal ideation in a sample of adolescent students in Nigeria. In line with the previous studies (Orbach, Stein, & Mirit-har, 2001; Phillips, William & Menard, 2006; Mollmann et al., 2017) showed that BDD predicted suicidal ideation. The first

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hypothesis, which stated that BDD would significantly predict suicidal ideation among adolescents, was confirmed. This finding is consistent with that of Akinboro et al., 2019, who found that adolescents who constantly complain of body flaws are likely to contemplate suicide in Nigeria. Mollmann et al. (2017) also found BDD to be positively associated with suicidal ideation in a German sample. The finding indicates that those with higher body dysmorphic disorder symptoms reported higher suicidal ideation. The present finding could be explained by the General Strain Theory of suicidal ideation by Agnew (1992). The central tenet of the theory is that people ideate suicide due to the negative experiences in their daily hassles, and in a bid to get some relief, they begin to consider suicide as an option. Also, adolescence is when many females and males experience dissatisfaction with their bodies (Kostanski & Gullone, 1998). Once these negative feelings are in place, adolescents may develop a general disregard or even hate their bodies. Adolescents who view their body negatively may have less investment in protecting it from harm, making suicide seem a more feasible option during times of distress, thus increasing their suicide ideation and risk for completion.

The result also indicated that social anxiety did not significantly predict suicidal ideation among adolescent students ( $\beta = .108, t(400) = 1.45$ ). Thus, the second hypothesis, which stated that social anxiety would significantly predict suicidal ideation, was not supported. It implies that having social anxiety as an adolescent



student would not necessarily amount to having thoughts of taking one's life. That means individual differences may play a role in showing that some socially anxious adolescents can easily overcome the situation and may not consider suicide an option. This finding is consistent with the findings of Ibrahim, Amit, and Suen (2014). They researched Psychological Factor (social anxiety) as Predictor of Suicidal Ideation among Adolescents in Malaysia and found out that social anxiety was not a predictor for suicidal ideation. Also, Bentleya, Franklin, Ribeiro, Kleiman, Fox, and Nock (2016) meta-analytic study on anxiety and its disorders as risk factors for suicidal thoughts and behaviours revealed that anxiety was a weak predictor suicidal ideation.

It could be because adolescents might not see social anxiety as a big problem. After all, they are at the developmental stage and believe they will outgrow it. Therefore it will not lead them to depression which brings about thoughts of suicide. It could also be explained on the premise that social anxiety might be indirectly associated with suicidal behaviour through undiagnosed factor not studied in the current study. Studies of individuals with specific anxiety disorders, including social anxiety, indicating that the additional presence of depression, mental disorders and substance use disorders increase suicide risk (Warshaw, Dolan, & Keller, 2000; Bomyea et al., 2013). Social anxiety predicts a higher rate of suicidal ideation (Nelson, Grant, Bucholz, Glowinski (2000). Another reason for the inconsistency may be due to the different cultural background of the current samples.

### **The implication of the Findings**

The findings of this study have some implications for adolescents in Nigerian secondary schools, families, teachers, clinicians, policymakers, and the society at large. The findings indicate that body dysmorphic disorder significantly predict suicidal ideation among adolescent students in Nigeria. The literature review showed that it is a fact that Suicidal ideation is the first stage before suicidal attempts and completed suicides. So with the increase in the suicide rate among adolescents in the country, it is necessary to identify and control those factors that lead to suicidal ideation, leading to completed suicide.

Body dysmorphic disorder, which is one of the factors indicated by this study, is an essential contributor to adolescent global self-esteem. Also, negative body image is associated with depression, anxiety and suicidal ideation based on previous studies. This finding has implication for the family, the primary agent of socialisation, teachers and guardians of society. They should try as much as possible to enlighten their children or wards about the likely bodily changes that can occur during adolescence to avoid being taken unawares and how to take good care of themselves properly during that stage. Also, adolescents should be taught to love and appreciate their bodies the way they are and should not be comparing their body parts with others. Family support and good relationships between adolescents who have



suicidal ideation and relatives are crucial at this stage. Both at school and home environment, educators and parents need to recognise the importance of adolescents' body perception and identify the sources of negative body image to alter them. In cases of actual body deformities that can be corrected, healthy solutions such as exercising, healthy diets and visiting experts should be suggested. This study also has implications for the clinical setting. Clinicians should handle cases of body dysmorphic disorder with care to prevent the risk of suicidal ideation. They can use cognitive behavioural therapy in altering negative thoughts and teaching flexible and realistic ways of thinking. In cases of suicidal ideation, proper counselling and follow up also need to be made after treatment to prevent reoccurrence. Mental health professionals can work with schools to improve education and understanding of mental health. The current Nigerian legislation mandates one-year imprisonment for attempting suicide needs to be reviewed; with such legislation in place, it may hinder reporting and seeking help. Thus, if adolescents are guided properly, it will go a long way to prevent suicidal ideation and reduce suicides.

### **Limitations of the study**

Our study has some notable limitations. The cross-sectional design of our study involving self-report measures does not allow for causal inferences. There is also the limitation of generalizability of findings to a larger population due to limited sample size that may not tap the population characteristics adequately to reflect the actual population dynamics. Also of concern was that only adolescent students in Enugu

were used, which limited the sample to mainly south-eastern origin participants whose attitude might differ from people of other geo-political zones in Nigeria. In conclusion, this study has extended the existing literature on the relationship between BDD, social anxiety and suicidal ideation among adolescent students in Nigeria. BDD is the most important contributor to adolescent global self-esteem and is associated with suicidal ideation from the present findings. This finding has implication for the family, which is the primary agent of socialisation, teachers and guardians of society. They should try as much as possible to enlighten their children or wards about the likely bodily changes that can occur during adolescence to avoid being taken unawares and how to take good care of themselves properly during that stage. Also, adolescents should be taught to love and appreciate their bodies the way they are and should not be comparing their body parts with that of others. Family support and good relationships between adolescents who have suicidal ideation and relatives are crucial at this stage. Both at school and home environment, educators and parents need to recognise the importance of adolescents' body perception and identify the sources of negative body image to alter them. In cases of actual body deformities that can be corrected, healthy solutions such as exercising, healthy diets and visiting experts should be suggested. This study also has implications for the clinical setting. Clinicians should handle cases of BDD with care to prevent the risk of suicidal ideation. They can use cognitive behavioural therapy in altering negative





thoughts and teaching flexible and realistic ways of thinking. In cases of suicidal ideation, proper counselling and follow up also need to be made after treatment to prevent reoccurrence. Mental health professionals can work with schools to improve education and understanding of mental health. The current Nigerian legislation, which mandates one-year imprisonment for attempting suicide, needs to be reviewed. With such legislation in place, it may hinder reporting and the seeking of help. Thus, if adolescents are guided properly, it will go a long way to prevent suicidal ideation and reduce suicides.

### **Suggestion for Further Research**

Based on the limitations encountered in the study, the following suggestions are given to guide subsequent researchers in the area. Firstly, the sample size should be increased to a larger sample that also cut across different geo-political zones to adequately tap the dynamics and characteristics of the entire adolescent population to enable even better generalisation. Secondly, future researchers may focus on longitudinal design and intervention studies to explain suicidal ideation more precisely. Other risk and protective factors related to suicidal ideation, such as social support and economic status, should be considered in studying suicidal ideation among adolescents. Thirdly, apart from direct relationships between the independent and the dependent variable, the role of other moderating and mediating variables should be examined in future studies in order to help in the detailed

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understanding of the causal pathways between BDD, social anxiety, and suicidal ideation.

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