

The Effect of Social Support, Solidarity and Demographic Characteristics on Social Anxiety among Medical Students in Nigeria amid the COVID-19 Public Health Crisis

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ABSTRACT

Populations have suffered from fears of contracting COVID-19, dealing with increased mortality, and the burden of loneliness created by lockdowns. In the midst of this emergency, different groups have dealt with the psychological challenges in a number of unique ways with varying results. The current study explored the associations among social anxiety, solidarity, demographic characteristics, and social support within a group of medical students in Nigeria. Cross-sectional data from 304 medical students in Nigeria were analysed. A correlation matrix was computed to examine the bivariate associations. Furthermore, two models were hypothesised using hierarchical multiple linear regression. The models estimate the predictive effect of social support, solidarity and demographic characteristics on social anxiety. Bivariate analysis shows that lower social anxiety among the medical students in Nigeria was significantly associated with solidarity ($r=0.190$; $p \leq 0.01$) and social support ($r=0.117$; $p \leq 0.05$). The multiple linear regression model suggests a statistically significant association between social anxiety, social support, and solidarity (adjusted $R^2=0.033$; $p<0.001$). Similarly, age and gender had a unique contribution to social anxiety (adjusted $R^2=0.11$; $p<0.001$). These results support the conclusion that the experience of negative thoughts and physiological symptoms of social anxiety during the COVID-19 is mitigated by solidarity and social support. Similarly, age and gender were critical predictors' social anxiety among medical students in Nigeria. Adequate mental health support is therefore necessary for the older medical students in Nigeria.

Keywords: Mental health; Population; Lockdown; Medical students; COVID-19

INTRODUCTION

The COVID-19 public health crisis has channeled approaches to understanding human peculiarities and modes of survival in the environment. Social bonds were tested by restrictions on interactions. Various lessons were learned under the weight of loneliness and anxiety. Abundant evidence shows that the COVID-19 global crisis led to adverse mental health consequences such as stress, anxiety, depression, and disrupted sleep among general populations [1-3]. Fear of contracting COVID-19, dealing with the burden of increased mortality and

healthcare needs, and the loneliness created by lockdown have all contributed to conditions of mental stress which require urgent attention.

Anxiety disorders are the most persistent category of mental health conditions, as 28.8% of individuals experience at least one anxiety disorder in a lifetime [4-6]. Social anxiety is a common human experience characterized by an intense fear of evaluation from others in social situations [4,7-11]. When social anxiety reaches a pinnacle of severity such that functioning is impaired, it is referred to as Social Anxiety Disorder (SAD) or

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social phobia [11]. Persons with anxiety disorder often desire to make a favorable impression of themselves on others in conjunction with marked insecurity about their ability [5,6].

Social anxiety is considered a negating factor in successful academic achievement as prevalence rates in university and college students range from 10% to 33% compared to 7% to 13% in the general population. Evidence shows that the severity of social anxiety is correlated with deficits in social skills, attention difficulties and learning problems in school settings [8]. A significant proportion of patients with social anxiety are reported to leave school prematurely and suffer impaired functioning. Social anxiety is also associated with failure to complete school and an increased risk of exam failure. Individuals with social anxiety often worry about social outcomes, and these worries manifest in behaviours [6]. As a result, the intrapersonal aspects of social anxiety have interpersonal consequences, about which little is known [10].

Based on the realities of the COVID-19 global crisis, solidarity and responsibility have become central normative points of reference in political statements, press conferences, and public media discourses. Disambiguating the term “solidarity” poses a problem as it goes beyond the notion of solidarity that challenges inequity, injustice, and oppression [12]. We adopt the concept of solidarity within the confines of collaborative labour or effort. The COVID-19 public health emergency dramatically affected lives and imposed enormous health and economic costs on people worldwide [13]. This situation led to widespread calls encouraging people to prioritise public health concerns over their self-interest and support those most affected. This is not a unique phenomenon. Solidarity movements of this type emerge in many societies in periods of crisis to cover the basic needs of different population groups, such as providing food and clothing for the impoverished and homeless, medications and vaccines for the uninsured, or the producers of agricultural products selling directly to the public [14,15].

An example of solidarity amid the height of the COVID-19 crisis is the actions of educators in United States Schools were shut down, limiting the support students’ access to resources from schools and agencies as well as the support of interpersonal relationships. Consequently, students experienced financial hardship, given the restriction of businesses and sources of income. Teachers and volunteers provided social solidarity by securing food from the school district and local agencies and delivering it to students and their families, given that many do not have transportation or adequate information about how to access such services [13]. Solidarity is the cementing force that binds individuals based on normative obligations that facilitate collective action and social order. Within the context of the present pandemic, social solidarity is also quite helpful in reducing social distance, social exclusion, and stigmas that were generated due to health risks, prejudices, apprehensions and rumours, which rupture social integration [16].

Social support is a network-based social phenomenon that has become the focus of research attention in the last three decades [17]. Social support is the feeling of awareness of assistance available from other people, especially among supportive social

networks. The feeling of being cared for brings positivity, particularly in times of distress. Lack of such support within an immediate social network could threaten mental wellbeing [18]. Social support is multidimensional [17]. It includes informational, emotional, esteem, tangible and social network dimensions [19]. The positive impacts of social support on health outcomes are strongly associated with offline, face-to-face encounters and online interactions, while evidence further shows that social support benefits are not restricted to support recipients only. Thus, the provision of social support benefits the provider of the support and the recipient. Other evidence revealed that people who report more supportive social relationships have better physical and mental health, engage in more positive health behaviors and have lower mortality rates than their counterparts [20].

It therefore becomes increasingly worthy of critically investigating and understanding the nexus of the elements of solidarity, how members of groups are affected by domains of social anxiety and how they provide social support for one another amid the COVID-19 global health crisis. The understanding of the social anxiety experience among medical students in particular is limited and warrants extensive investigation. Medical students have been found to experience enormous stress and burnout, suicidal situations and other psychological challenges [21-23]. The objectives of this study, therefore, are:

- To establish the association among social anxiety, solidarity and social support among medical students in Nigeria, and
- To examine the predictive effects that degree of solidarity, degree of social support, gender and age have on social anxiety among medical students in Nigeria

MATERIALS AND METHODS

Study design, population and data collection

A cross-sectional survey was conducted to collect data and investigate the relationship among social support, solidarity, and social anxiety within a group of medical students in Nigeria. Data were collected between the 1st and 22nd of June, 2021 using an online questionnaire. Study participants were recruited using a snowballing sampling method. The questionnaire was shared on various medical students’ groups, platforms in Nigeria.

Inclusion and exclusion

The research respondents of this study were mainly medical sciences students studying medicine and surgery, human anatomy, physiology/physiotherapy, nursing, medical laboratory, pharmacy, and others (radiography, human kinetics, dental surgery, and anatomy). All other medical sciences students not part of the inclusion criteria were excluded from data collection and data analysis.

Ethical consideration

This study adhered to the Helsinki declaration of global ethical standards for human subject research. The research participants were informed of the voluntary nature of participation and were asked to respond to the research questionnaire's consent question.

Measures

Outcome: The outcome of interest focuses on negative thoughts and physiological symptoms of social anxiety among medical students in Nigeria. Therefore, the social anxiety and social phobia subscale was adopted to measure "negative thoughts and physiological symptoms" among the medical students [24]. The scale uses 5 items, e.g. "I often think others would notice my anxiousness," to measure aggregate negative thoughts and physiological symptoms. The internal reliability of the construct measuring negative thoughts and physiological symptoms was estimated at 0.71.

Predictors: This study employed two critical, independent variables to evaluate social anxiety's negative thoughts and physiological symptoms. We considered and hypothesised social support and solidarity as a significant predictor of reduced negative thoughts and physiological symptoms of social anxiety among medical sciences students. The solidarity constructs were derived via 5-point Likert scale responses (5=strongly agree, 4=agree, 3=undecided, 2=disagree, and 1=strongly disagree) to four separate questionnaire items with internal reliability Cronbach's alpha of 0.68. Solidarity was conceptualised from the subscale of bridging focusing on the diffusion of reciprocity within large groups [25].

For the social support questionnaire, the construct's responses were categorised as "1-strongly disagree" to "5-strongly agree" for five separate questionnaire items with internal reliability Cronbach's alpha of 0.70. Social support derived from Williams, accessed from the subscales for "Social Capital in an Online Era" with questions focusing on the access to scarce or limited resources: "If I needed an emergency loan of \$50, I know someone I can turn to [24]."

Sociodemographic variables: We examined several sociodemographic characteristics of medical students such as age, gender, program of study and degree of study.

Analysis

Descriptive statistics were used to explore sample sociodemographic characteristics, social anxiety and social support and solidarity variables. A correlation matrix was computed to examine the bivariate associations between social anxiety, solidarity, social support and sociodemographic characteristics of medical students in Nigeria. The correlation coefficients were interpreted as small ($r=0.10$), medium ($r=0.30$) or large ($r=0.50$) based on the guidelines of behavioral statistics [26,27]. Two different models were hypothesised using hierarchical multiple linear regression. The models estimate the predictive effect of social support, solidarity and demographic characteristics on social anxiety. In Model 1, the predicting

effects of solidarity and social support on social anxiety were explored. Model 2 explored the added predictive effect of age and gender on Model 1.

The effect sizes and p-values were reported and interpreted for the regression model using the overall fit of the models evaluated by adjusted R² statistics [28]. R-Change and F-test suggest the significance of changes in model fit. The explanation of regression coefficients of the regression models (β), guidelines by Cohen [27] was used where $\beta=1$ indicated a small, $\beta=3$ a medium, and $\beta=5$ a robust effect. The statistical significance level was determined as $p<5$ for all analyses. Data analyses were carried out with IBM SPSS Version 26.

RESULTS

The distribution of the sociodemographic characteristics of the 304 study participants are represented in Table 1, and the descriptive psychometric properties for the solidarity, social support, and social anxiety scales are in Table 2. More than half of the medical student participants were female, and most were within 20 to 24 years of age. Meanwhile, the study program with the most significant proportion of medical students that participated in the survey was in Medicine and Surgery with about 94.1% BSc students.

Characteristics	n	%
Gender	Male	47
	Female	53
Age	19 and less	21
	20-24	57
	25 and above	21
Program of study	Medicine and surgery	53
	Human anatomy	3
	Physiology and physiotherapy	8.6
	Nursing	7.9
	Medical laboratory	7.6
	Pharmacy	10
Degree	Others (Radiography, human kinetics, dental surgery, and Anatomy)	10
	BSc	94

MSc	11	3.6
PhD	7	2.3

Table 1: Sociodemographic characteristics of participating medical science students in Nigeria (N=304).

The psychometric information of medical students' shows an overall mean score of social anxiety (M=17.74, SD=3.67). Among the male medical students, the mean score was estimated at 19.94 (SD=3.46) and female medical students' had a mean score of 18.65 (SD=3.70). The social anxiety psychometric property was statistically significant at ($t=4.164, p<0.001$).

	α	Total Mean	SD	Male Mean	SD	Female Mean	SD	t	Sig. (2-tailed)
Social anxiety	1	18	3.7	16.94	3	18.7	4	4	0
Solidarity	1	20	2.6	19.83	3	20.1	2	1	0.36
Social support	1	17	3.3	17.24	3	16.9	3	-1	0.43

Table 2: Descriptive and psychometric properties for the solidarity, social support and social anxiety scale among medical science students in Nigeria (N=304).

The output in Figure 1 shows the score of social anxiety, solidarity, and social support characteristics of the study population. Social support among medical students was found to be high were only approximately 19.4% had low social support and there was robust solidarity experience among the study group. The score evidence of social anxiety indicator for the medical students under investigation revealed that about one in five of the medical students experiences social anxiety.

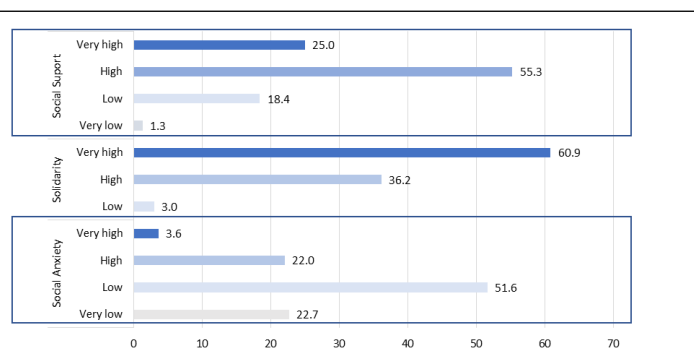


Figure 1: Descriptive distribution of social anxiety, social support among medical students in Nigeria (N=304).

	Social anxiety	Solidarity	Social support	Age
Social anxiety	1	-0.190**	-0.117*	0.233**
Solidarity		1	0.316**	0
Social support			1	0.011
Age				1

Note: **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

Table 3: Correlation matrix (N=304).

Table 3, presents a Pearson correlation coefficient matrix exploring the association among social anxiety, solidarity, social support, and age. The results show that social anxiety among the medical students in Nigeria was significantly and negatively associated with solidarity ($r=-0.190; p \leq 0.01$) and social support ($r=-0.117; p \leq 0.05$). The bivariate relationship between social anxiety and the age of medical students in Nigeria was significantly and positively correlated ($r=0.233; p \leq 0.01$). The association between social support and solidarity among the medical student was positively correlated ($r=0.316; p \leq 0.01$).

The multiple linear regression model statistically significant aggregate association on outcome social anxiety (negative thoughts and physiological symptoms), of predictors “social support (access to scarce or limited resources)” and “solidarity (diffusion of reciprocity within large groups)” (adjusted $R^2=0.033; p<0.05$). In Model 1, the bulk of the predicting effects were found in solidarity, as social support among medical students in Nigeria was insignificant in estimating the overall predicting effect. In Model 2, the added effect of age and gender was explored, resulting in an added predictive effect (adjusted $R^2=0.11; p<0.05$). The change in effect size from Model 1 (Change in $F=6.24, p<0.002$) to Model 2 (Change in $F=9.481, p<0.001$) was significant for the total sample of medical students explored in the study. Model 1 presents solidarity as a significant predictor of social anxiety among the medical students ($\beta=-0.241; p<0.05$). In Model 2, the predictive effect of gender and age estimated as ($\beta=1.119; p<0.05$) and ($\beta=0.915; p<0.05$) respectively.

DISCUSSION

The research evidence presented in this study explored social anxiety contextualized in negative thoughts and physiological symptoms during the COVID-19 global crisis among medical science students in Nigeria in connection with social support and solidarity. The study objectives establish negative correlation of social support, solidarity, and social anxiety among and positive association of sociodemographic characteristics on social anxiety, within the group investigated. The analysis further demonstrated a mixed predicting effect of age, gender, social support, and solidarity on social anxiety among medical students in Nigeria.

The understanding from the study shows that solidarity among medical students in Nigeria is negatively associated with social anxiety emanating as negative thoughts and physiological symptoms during the ongoing global pandemic. The condition exposed in this result indicates that while the medical science students in Nigeria actively engage in social bonds through the diffusion of reciprocity and it significantly reduced the exhibition of negative thoughts and evidence of physiological symptoms. These conditions among medical students in Nigeria support the process of solidarity that is generally seen as a domain that fosters group cohesion among individuals and communities, especially during the COVID-19 global health crisis. Similarly, social support received by medical science students in Nigeria followed the same direction as solidarity. There is an inverse association between social anxiety and social support among the students. The more social support displayed and received by the study population, the less severe negative thoughts and physiological symptoms experienced. The results of the correlation analysis resonate with the study assumption that more social support received by the medical students would result in decreased social anxiety among the group. Thus, the evidence presented in this study supports other study findings among college students where social support helped to cope with COVID-19-related stress [27].

However, the influence of the ages of the medical students under investigation presented another lens for understanding social anxiety among the research group. There was a direct relationship between age and social anxiety whereby the increase in age suggests a rise in social anxiety. This evidence is different from other studies that have found younger students show higher sociality scores in association with psychological distress about COVID-19. However, based on the current study premise and result, there is an assumption that there are elevated negative thoughts and physiological symptoms among the medical students in Nigeria with increasing age. The younger groups may display less social anxiety based on the current study positive correlation movement. Thus, this evidence suggests that age is a significant domain to explore to understand further the coping mechanisms among the medical students based on the rigorous study schedule and stresses they are exposed to in their processes. In comparison, there is positivity between social support and solidarity. In other words, solidarity is a significant booster of social support among the medical students.

The current evidence revealed no predicting effect of social support on the social anxiety experience of medical sciences students in Nigeria. However, to a certain extent, solidarity is responsible for about 3% of the social anxiety experience among the student group which is relatively low. The predicting effect of solidarity on the social anxiety in these groups is relatively minor, thus facilitated the reduction of negative thoughts and physiological symptoms among the medical students. Based on the study evidence, we established that social anxiety exists among this group evidenced in the scale of social anxiety explored [28]. Therefore, other psychosocial explanations need to be examined to understand the causative factors of social anxiety.

Considering the inclusion of age, gender, social support, and solidarity as predictors of social anxiety among medical students in Nigeria, social support had no predicting significance on social anxiety. Other indicators such as age, gender and solidarity in aggregation account for about 11% of the social anxiety found among the medical students under investigation. The predicting effects of age highlight a spike in social anxiety exhibited as negative thoughts and physiological symptoms when the ages increase. It appears that advancement in age may increase mental health problems emanating from social anxiety among the medical students. Gender difference was also consequential to the social anxiety experience among the medical students. Therefore, urgent mental health intervention and social integration support are required for older medical students to overturn the mental health vulnerabilities evidenced. For instance, as these older groups are impacted negatively, solidarity and social support designed to foster communal fellowship and improve general wellbeing should be provided through programs that can enhance their experience as a group.

Although there is limited empirical evidence on social support and solidarity among the medical student groups in Nigeria resonating on social anxiety, this study provided a point-in-time understanding of the experience of this unique but important population during the COVID-19 global health crisis. This study's understanding also presents the medical students experiencing reduced mental health vulnerabilities whereby solidarity lower social anxiety manifestation. Further research should consider age and gender as predictive factors which spike negative feelings and physiological symptoms among medical students in Nigeria during the ongoing global health crisis [29].

A few limitations are considered based on the study approach and methodology. The recruiting of medical students was through an online cross-sectional survey and may not be a comprehensive representation of the medical students in Nigeria. However, the sample size presented in this study is large enough to make substantial inferences within the study population. Also, the analytical strategy only explores the predicting effects of solidarity, social support, age and gender in the study population. There are other psychosocial predictors that we did not explore in this study. We encourage other researchers to examine other domains to provide further empirical evidence on predictors of social anxiety among the medical student group, especially during the global pandemic.

CONCLUSION

This research has established that the medical students in this study experience social anxiety in the form of negative thoughts and physiological symptoms during the COVID-19 public health crisis. Although social support shows negative association with negative thoughts and physiological symptoms, it has no predictive effect on the experience. Solidarity, however, was a supporting psychosocial function reducing some of the negative experiences in the group? Similarly, age and gender were critical risk factors for social anxiety among medical students in Nigeria. We, therefore, conclude that older medical students need extensive support to enjoy the benefits of social support and solidarity to reduce social anxiety.

COMPETING INTEREST

The authors declare no conflict of interest in respect of this publication.

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