

Research Paper

The Association of Perceived Social Support and General Health with Covid-19 Related Anxiety during the Pandemic

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ABSTRACT

The Covid-19 pandemic has started spreading worldwide after its outbreak in December 2019 in China. This pandemic has greatly disturbed people's lives and endangered their general health. In the milieu of social isolation, people might suffer from anxiety related to the pandemic. Perceived social support, as an external factor, might play a positive role in predicting individuals' general health. This study intended to examine the association of Covid-19-related anxiety with perceived social support and general health among young adults in Bangladesh during the Covid-19 pandemic. The Coronavirus Anxiety Scale (CAS), the General Health Questionnaire (GHQ-28) and the Multidimensional Scale of Perceived Social Support (MSPSS) were used to survey 238 young adults during the Covid-19 pandemic, who submitted valid questionnaires ($M_{age} = 25.90$, $SD_{age} = 8.96$, Range = 18–32 years, 50% female). The perceived social support is significantly and negatively associated with Covid-19-related anxiety and poor general health. The perceived social support and general health jointly explain 34.5% of variances in Covid-19-related anxiety. Further analyses found that there is a significant difference in Covid-19-related anxiety and general health among low, medium, and high perceived social support groups. These results contribute to our understanding and provide new insights into differential psychological outcomes for individuals in the context of the pandemic.

Keywords: Covid-19, Anxiety, Perceived Social Support, General Health, Psychosocial Well-being

A pandemic, like Covid-19, that affects a sizable portion of the world's population hardly occurs in a century (Roy et al., 2023). The novel coronavirus originated in Wuhan, Hubei, China, in late December 2019 and gradually spread to other nations (CDC, 2016). On March 11, 2020, the World Health Organization proclaimed the Covid-19 pandemic. Bangladesh reported the first case of Coronavirus on eight March 2020. To control Covid-19, the vast majority of the nation followed strict lockdown during the initial days of the pandemic (Roy et al., 2023). The larger part of individuals in the metropolitan zone kept themselves generally at home during these underlying long periods of lockdown. This situation has significantly impacted mental health in Bangladesh.

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Epidemics leave an ever-lasting effect on public psyche. Following the 2003 SARS (severe acute respiratory syndrome) pandemic, patients were more likely than usual to experience mental distress, ranging from worry and sadness to fear and anxiety (Chowell et al., 2015). The Middle East respiratory syndrome (MERS) pandemic of 2012 significantly lowered quality of life and resulted in varied degrees of psychological damage (Jeong et al., 2016). Public health initiatives to control the spread of the SARS-CoV-2 virus contributed to Covid-19-related anxiety and panic. Limited contact with loved ones and poor assistance during the epidemic worsened mental health conditions, according to studies. Individuals with poor health, chronic non-communicable illnesses, and restricted access to medications were more likely to experience dread and anxiety (Hajure et al., 2020). Studies have shown high prevalence rates of depression, anxiety, and stress among various populations during the pandemic in Bangladesh (Abir et al., 2020).

The sense of having support, respect, and understanding from others in society is known as perceived social support (Moreland et al., 2018), and it is a cognitive appraisal process that is used to predict mental health. Perceived social support, as opposed to actual social support, ought to be more of a cognitive phenomenon, representing a person's comprehension and assessment of various social relationships. This is because it can more accurately reflect the utilization of actual social support and have a bigger influence on the person (Geuzinge et al., 2020). Research has demonstrated that people's ability to manage stressful situations and their sense of well-being are positively correlated when they experience social support (Haber et al., 2007). Furthermore, studies of perceived social support demonstrate the greatest advantages of social support for mental health, and low levels of perceived social support were found to be a major predictor of psychological issues.

Social support is thought to be a component in lowering psychological suffering during stressful situations because it provides persons coping with stressful events with both psychological and physical compensations (Brummett et al., 2005). The Covid-19 pandemic has significantly impacted the perception of social support and its effects on mental health. Studies have shown that during the pandemic, there has been a decrease in overall self-reported social support which has been associated with increased risks of postpartum depression, anxiety, and impaired parent-infant bonding (White et al., 2023).

Previous researches showed that there is a relationship between perceived social support and anxiety. Apart from that, anxiety has increased a lot during Covid-19 pandemic and our general health has been affected to a great extent. Given the shortage of current empirical evidence on association among perceived social support general health and anxiety in the context of Covid-19 in Bangladesh, this study aims to contribute to the extant literature in general health during the Covid-19 pandemic and incorporates the study using a Bangladeshi sample. The main aim of the study was to investigate the association among Covid-19 anxiety, general health and perceived social support which would help to promote the mental status of the general population of Bangladesh. Specifically, we hypothesized that –

1. There would be significant differences in male and female in Covid-19 anxiety, general health and perceived social support.
2. There would be a significant correlation among Covid-19 anxiety, perceived social support and general health.
3. Covid-19 anxiety level would be affected by perceived levels of social support.

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4. Perceived social support and general health would function as a significant predictor for Covid-19 anxiety.

METHODS

Sample

This cross-sectional study was conducted with feedback from online self-reported questionnaires completed by 238 young adults ($M_{age} = 25.90$, $SD_{age} = 8.96$, Range = 18–32 years, 50% female) from around Bangladesh using a convenience sampling approach. The only inclusion criterion to participate in this study was that participants had to be at least 18 years old.

Data Collection

The questionnaire was developed using a survey link created on a Google Form which was distributed via email and social media platform like Facebook messenger and WhatsApp. While designing the online questionnaire, we employed this platform's relevant function to ensure that all questions within the questionnaire were properly answered before submission. In order to further ensure the quality of our survey, we made sure that a single IP corresponded to one submission. In addition, questionnaires with obvious inappropriate response patterns, such as those featuring the same response to all questions, were discarded. Each participant received BDT 50 mobile recharge as incentive upon submission of their response.

Ethics

The Helsinki Declaration and its following revisions, as well as similar ethical principles, were followed throughout the study. The survey was "open" to everyone who clicked on the link. Online communication was used to establish a preliminary connection with the prospective participants. Electronic informed consent was obtained from each participant. They were informed about the nature and goals of the study, and they were guaranteed the privacy and confidentiality of their information as well as the freedom to discontinue participation at any moment.

Measurements

The following measures were used in the current study, and they were administered in the following sequence: (1) The Covid-19 Anxiety Scale (CAS); (2) The General Health Questionnaire (GHQ-28) and (3) Multidimensional Scale of Perceived Social Support (MSPSS). Description of these measures are given below:

1. **The Coronavirus Anxiety Scale (CAS):** The Coronavirus Anxiety Scale (CAS) (Lee, 2020) is one of the first published screening instruments for diagnosing dysfunctional anxiety brought on by the current Covid-19 pandemic and is a valid unidimensional tool. The CAS was translated into Bangla in accordance with the International Test Commission's guidelines for the adaptation study (Ahmed et al. 2020) and placed in an online survey ($N=737$, with a mean age of 26.55, $SD= 7.166$ years) to evaluate the psychometric qualities of the Bengali version of the scale. The CAS Bangla version is a reliable instrument that has adequate psychometric properties for evaluating dysfunctional coronavirus anxiety in Bangladeshi individuals. The CAS Bangla version demonstrated satisfactory consistency reliabilities (Cronbach's alpha, 0.872; McDonald's omega, 0.879; and split half reliability through the Spearman-Brown formula, 0.864), test-retest reliability ($r = 0.764$, $p < 0.001$; 95% CI 0.522, 0.893) and composite reliability (0.882).

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- 2. The General Health Questionnaire (GHQ-28).** A popular study tool for screening and assessing mental symptoms and psychosocial well-being is the 28-item scale with four response possibilities (Goldberg, 1978). The four responses on the GHQ-28 can be scored using one of two methods: either 0-1-2-3 or the more conventional 0-0-1-1. This results in a score range of either 0 to 84 or 0 to 28. While the 0-1-2-3 scoring is mostly utilized for broad research purposes, the conventional 0-0-1-1 scoring is employed for screening. A higher GHQ-28 score, which is divided into four subscales—somatic symptoms, anxiety and insomnia, social withdrawal, and severe depression—indicates more distress. Mean scale score ranging from 1 to 2.9 (12 to 35) could be considered low support; a score of 3 to 5 (36 to 60) could be considered moderate support; a score from 5.1 to 7 (61 to 84) could be considered high support. In 2001, Banoo translated the GHQ-28 into Bangla, and it had sufficient test-retest reliability (Spearman rho = .682) (unpublished MPhil thesis, University of Dhaka).
- 3. Multidimensional Scale of Perceived Social Support (MSPSS).** The MSPSS is one of the most widely used psychological tools which was used for measuring an individual's perceived social support (Zimet et al., 1988). The original English MSPSS (Zimet et al., 1988) was translated into Bangla by Shimul (2007). The translation process of the MSPSS-B was standard as it followed the guidelines by International Test Commission (2001). Like the original MSPSS, the Bangla version is a self-report measure of perceived social support of individuals, consisting of 12 items with three different social support sources (e.g., family, friends and significant others). It uses a 7-point Likert type scale, ranging from 1 (not at all appropriate) to 7 (very appropriate). A significant test-retest reliability ($r = .648, p < .01$) of the MSPSS-B was obtained by the author of the original adaptation (Shimul, 2007). It independently reports three subscale scores and one full scale score. It has no negative items or reverse scores, so the total score on the scale is obtained by summing all 12.

Data Processing and Analysis

SPSS version 20 was used for analysis of data obtained through the scales as well as socio-demographic information. Reliability of the measures was estimated by computing coefficient α . We computed mean, standard deviation, and range for all variables. Then independent sample t-test was carried out to examine the difference between males and females in the major variables. A Pearson product-moment correlation was calculated to examine the relationships among major variables. Finally data were analyzed using multiple regression. The following assumptions are relevant here:

1. Multivariate normality is shown as residuals are normally distributed.
2. The relation between the predictor (independent variable) and the outcome (dependent variable) was linear as revealed in the scatter plot.
3. Multicollinearity is revealed to be absent through testing the Variance Inflation Factor (VIF).

RESULTS

238 valid questionnaires out of a total of 260 were retrieved, yielding an effective recovery rate of 91.54%. Of the 238 participants, 86.1% ($n = 205$) identified as being from a middle-class socioeconomic background, 72.7% ($n = 173$) were students, and 50% ($n = 119$) were female. Their ages ranged from 18 to 32 years old, with an average age of 25.90, ($SD = 8.96$). 48.7% ($n = 116$) of the participants had received a higher secondary degree, and

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27.3% (n = 65) had a bachelor's degree. Additionally, 10.5% (n = 25) reported having a chronic illness.

Table 1: Descriptive Statistics and Test of Gender Difference

Variables	Male (n=119)		Female (n=119)		t	p
	Mean	SD	Mean	SD		
Covid-19 Anxiety	6.80	3.11	8.28	3.95	-3.19	.000
General Health	51.47	14.18	56.56	15.74	-2.62	.01
Social support	44.23	14.54	43.60	13.61	.35	.73

To test gender differences in major variables in this research, an independent sample t-test was carried out. Results of the t-test shown in Table 1 revealed significant gender differences in Covid-19 Anxiety and general health. The gender difference was not statistically significant ($t = 0.35$, $p = 0.73$) for perceived social support. The t-test was statistically significant, with the mean covid-19 anxiety of females ($M=8.28$, $SD=3.95$.) significantly higher, than the males ($M= 6.80$, $SD=3.11$), $t=-3.19$, $p<.05$, two-tailed. Similarly, mean of general health for females ($M=56.56$, $SD=15.74$.) was significantly higher, than that of the males ($M=51.47$, $SD=14.18$), $t=-2.62$, $p<.05$, two-tailed.

Table 2: Simple Correlations among Major Variables

Variables	1	2	3
1. Covid-19 Anxiety	1		
2. General Health	.57**	1	
3. Social support	-.47**	-.63**	1

** Correlation is significant at the 0.01 level (2-tailed).

Table 2 shows significant correlation among three variables Covid-19 anxiety, general health and perceived social support. There is a significant positive relationship between general health and Covid-19 anxiety ($r =.57$, $p<.01$). Social support is negatively correlated with general health ($r=-.63$, $p<.01$) and Covid-19 anxiety ($r=-.47$, $p<.01$).

Table 3: One-way analysis of variance showing the effect of social support on Covid-19 anxiety

Measure	Group	M	SD	F	p
Social support	12 to 35	10.18	4.29	36.53	.000
	36 to 60	6.48	2.72		
	61 to 84	5.97	1.60		

Table 3 shows how Covid-19 anxiety vary with perceived social support. One-way analysis of variance (ANOVA) with post-hoc Bonferroni test was used to examine the effects of perceived social support (12 to 35, 36 to 60, and 61 to 84) on Covid-19 anxiety. There was a statistically significant difference at the $p < .05$ level in Covid-19 anxiety for three groups: $F = 36.53$, $p = .000$. Specifically, individuals with lower level (12 to 35) of perceived social support exhibited significantly higher Covid-19 anxiety compared to those with middle (Mean Difference = 3.70, $p < 0.001$) and higher (Mean Difference = 4.21, $p < 0.001$) level of perceived social support.

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Table 4: Regression of general health and perceived social support on Covid-19 anxiety

Variable	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	Collinearity statistics	
	β	Standard Error	Beta			Tolerance	Variance inflation factor (VIF)
Constant	3.63	1.50		2.41	.017		
General Health	.11	.016	.46	6.74	.000	.600	1.666
Social Support	-.05	.018	-.18	-2.60	.010	.600	1.666

Note: Dependent Variable: Covid-19 anxiety ($R^2 = .345$, Adj. $R^2 = 0.340$, $F = 61.92$, $p = 0.00$)

A multiple regression was run to predict covid-19 anxiety by general health and perceived social support. A statistically significant model ($F = 61.92$, $p = 0.00$) is revealed by the multiple regression analysis, where general health ($\beta = 0.11$, $p < 0.001$) and perceived social support ($\beta = -2.60$, $p = 0.010$) have been found as significant predictors. The R-squared value of 0.345 shows that the model explains roughly 34.5% of the variation Covid-19 anxiety scores. An adjusted R-squared value of 0.340 demonstrates the model's robustness when the number of predictors is taken into account.

DISCUSSION

The purpose of this study was to investigate the association of perceived social support and general health with Covid-19-related anxiety among young adults in Bangladesh during the Covid-19 pandemic. The findings and their practical implications are discussed in this section. Significant gender differences in Covid-19 anxiety and general health have been found in this study. However, the gender difference was not statistically significant ($t = 0.35$, $p = 0.73$) for perceived social support. Female participants scored higher both in Covid-19 anxiety and general health indicating higher Covid-19 related anxiety and poorer general health than male participants. Gender differences in Covid-19 anxiety and psychosocial well-being have been observed in various studies. Women tend to experience higher levels of anxiety during the pandemic compared to men (Arcand et al., 2023; Cholankeril et al., 2023). Additionally, women have been found to have higher fear and anxiety related to Covid-19, along with a greater perceived susceptibility to the disease, even one year after the pandemic began (Sasaki et al., 2022). Furthermore, women have shown a slower recovery of mental health post-confinement compared to men, with a decrease in self-efficacy to regulate negative emotions and an increase in anxiety being more pronounced among women during confinement (Cuadrado et al., 2022).

Factors contributing to this gender disparity include greater caregiving responsibilities, higher levels of health anxiety, and more significant economic impacts on sectors where women are predominantly employed (Tsukamoto et al., 2021). Women reported feeling overwhelmed by household chores and informal caregiving, leading to higher levels of depression compared to men. Additionally, the pandemic exacerbated pre-existing vulnerabilities for women, such as gender-based violence, further deteriorating their mental health (Fenollar-Cortés et al., 2021). These gender differences highlight the importance of tailored mental health interventions for women during the Covid-19 pandemic, considering the differential impact and coping mechanisms between men and women.

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The data from the previous researches suggest that there is indeed no gender difference in perceived social support during the Covid-19 pandemic. Specifically, a study involving university students found no gender difference in perceived social support (Ji et al., 2023). Additionally, another study focusing on nursing students also concluded that there was no gender disparity in the association between perceived social support and psychological well-being (Cahuas et al., 2022). These findings indicate that both male and female individuals experienced similar levels of perceived social support during the pandemic. Therefore, based on the data from these studies, it can be inferred that gender did not play a significant role in influencing perceived social support levels amidst the challenges posed by Covid-19.

To test the hypothesis related to correlation among Covid-19 anxiety, perceived social support and general health, we carried out Pearson product-moment correlation test. There exists a notable association among the three variables: Covid-19 anxiety, general health, and perceived social support. A statistically significant positive correlation was observed between general health and covid-19 anxiety ($r = .57, p < .01$) which indicates that higher anxiety is associated with poorer general health. Conversely, perceived social support exhibited a negative correlation with both general health ($r = -.63, p < .01$) and Covid-19 anxiety ($r = -.47, p < .01$) showing that higher levels of perceived social support are associated with lower levels of anxiety.

A correlation was observed between poor psychosocial health and Covid-19 anxiety in recent studies (Tomás Caycho-Rodríguez et al., 2022; Paredes et al., 2021). Fear of Covid-19 and related anxiety were identified as significant mediators in the relationship between repetitive negative thinking and psychopathology, highlighting the role of anxiety in mental health during the pandemic (Maria Manuela Peixoto & Cunha, 2023). A study on pre-hospital emergency medicine clinicians revealed a significant correlation between Covid-19 anxiety and general health, indicating that higher anxiety scores were associated with poorer general health and a higher likelihood of mental disorders (Sabbaghi et al., 2022). These findings underscore the impact of Covid-19 anxiety on psychosocial health outcomes during the pandemic. Understanding this correlation is crucial for implementing effective mental health interventions, especially for high-risk groups, during pandemics like Covid-19.

In the present study, one way analysis of variance revealed significant differences in anxiety related to Covid-19 based on different levels of perceived social support indicating a crucial role of perceived social support in anxiety related to Covid-19 pandemic. Previous studies have shown this kind of association of levels of social support with anxiety, depression, and stress (Grey et al., 2020; Szkody et al., 2020; Wang et al., 2020). Specifically, higher levels of perceived social support are associated with lower levels of anxiety and mental health issues (Al-Bashaireh et al., 2021; Bdier et al., 2021; Largani et al., 2022). Pre-pandemic perceived social support was linked to greater psychological resilience and better mental well-being during the pandemic (Zhou et al., 2020), emphasizing the importance of social support in protecting mental health, especially during times of social disruption like the Covid-19 pandemic.

Current study suggests that general health and social support play a role of significant predictors of Covid-19 anxiety. Social support appears to play a mediating role in the context of pandemic, often buffering the impact of Covid-19-related fear on various mental health outcomes, including anxiety (Bdier et al., 2021; Largani et al., 2022; Li et al., 2023). However, there are nuances in the findings. For instance, one study found that social support

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did not moderate the association between fear of Covid-19 and anxiety among college students in the United States (Mauer et al., 2022). This suggests that the relationship between social support and anxiety may vary across different populations and contexts. Additionally, while social support generally shows a negative correlation with anxiety, indicating a protective effect, the strength of this association can vary, with some studies reporting weak correlations (Al-Bashaireh et al., 2021). In summary, the preponderance of evidence suggests that social support is inversely related to Covid-19-related anxiety, serving as a mitigating factor against the psychological impact of the pandemic.

The study conducted on Bangladeshi young adults for investigating whether general health and social support play a role of significant predictors of Covid-19 anxiety has potential limitations. Firstly, a standardized measure of these components is not available in the Bangladeshi context, as their definition, operationalization, and measurement can have different meanings and outcomes. Secondly, this study has focused on the general population, with limited attention given to specific subgroups such as healthcare workers, students, and vulnerable populations. Moreover, the cross-sectional nature of this study limits the ability to establish causal relationships between social support, anxiety, and general health outcomes. There is a need for longitudinal studies to examine the long-term effects of perceived social support on mental health outcomes during and after the pandemic in Bangladesh. Additionally, research focusing on the specific needs of vulnerable populations, such as children and adolescents, is essential to develop targeted interventions. Furthermore, investigating the mediating and moderating factors that influence the relationship between social support and general health outcomes would provide a more comprehensive understanding of the mechanisms involved.

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Conflict of Interest

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