Original Research

The Indonesian Journal of Public Health
Vol 20 No. 3 December 2025
p- ISSN 1829-7005 e- ISSN 2540-8836

ANXIETY, DEPRESSION AND PERCEIVED SOCIAL SUPPORT AMONG COVID-19 PATIENTS ADMITTED TO A COVID CARE CENTRE IN UTTARAKHAND, INDIA

Mohd Najmul Aqib Khan[1*], Mohd Maroof [2], Preeti[3], Rupali Gupta[4], Azmi Naaz[5], Sadhana Awasthi[6]
[1]Department of Community Medicine, Govt. Medical College, Haldwani, Uttarakhand-263139, India
[2]Department of Community Medicine, Rani Durgavati Medical College, Banda, UP-210001, India
[3]Department of Community Medicine, Soban Singh Jeena Government Institute Of Medical Science & Research, Almora, Uttarakhand-263601, India
[4]Department of Community Medicine, SRMS Bareily, Uttar Pradesh-243202, India
[5]Department of Psychiatry, Govt. Medical College, Haldwani, Uttarakhand-263139, India
[6]Department of Community Medicine, Govt. Medical College, Haldwani, Uttarakhand-263139, India
Corresponding Author: Mohd Najmul Aqib Khan
Email: drmnaqib@gmail.com

ABSTRACT

Introduction: The mental health of individuals infected with the COVID-19 pandemic was impacted. There was an increased surge into panic and stresses; in the first year of the COVID-19 epidemic, anxiety and depression-like mental diseases surged 25% globally. **Aims:** This study assessed the levels of anxiety, depression, and perceived social support among individuals diagnosed with COVID-19, their predicting factors, and documented the correlation between these. **Methods:** This cross-sectional study included 346 asymptomatic to mildly ill COVID-19 patients. Hospital anxiety and depression scale assessed depression and anxiety, while MSPSS assessed perceived social support. SPSS version 16 was used for data analysis. Tests used included ANOVA, Pearson's rank correlation test, independent t-tests, and multivariate linear regression. A p-value below 0.05 was deemed statistically significant. **Results:** A total of 13.8 percent patients had comorbid depression and 32 percent, anxiety. 35.2 percent patients did not have enough support. A significant correlation between depression and anxiety, and a relationship of depression and anxiety with social support, was noted. The regression analysis revealed; substantial association between anxiety and depression with age, marital status, covid case in family, and hypertension: an association of diabetes mellitus was seen with anxiety only; and perceived social support was found to have a significant association with age, covid case in family, and presence of diabetes mellitus and hypertension. **Conclusion:** Significant number of COVID-19 experienced anxiety, depression, and a lack of social support.

Keywords: Mental Health, COVID-19, Anxiety, Depression, Perceived Social Support

INTRODUCTION

Ever since COVID-19 swept the entire globe, more than eighteen million cases and almost four million deaths were reported globally until June 2021(World Health Organization, 2021). India had also contributed to these numbers significantly in both the number of cases and related deaths, making us stand second worldwide, immediately after the United States of America (World Health Organization, 2021).

Besides the stunning population data that fell victim to the new disease, researchers illustrated that the mental health of citizens was most affected by the undetermined nature of COVID-19 infectivity and high level of transmissibility in different populations. (Pfefferbaum and North, 2020). During the first year of the COVID-19 pandemic, the number of people with mental illnesses like major depressive disorder and anxiety rose by up to 25% around the world. (World Health

CITE THIS AS: Khan, M.N.A., Maroof, M., Preeti, Gupta, R., Naaz, A., and Awasthi, S, (2025). Anxiety, Depression And Perceived Social Support Among Covid-19 Patients Admitted To A Covid Care Centre In Uttarakhand, India. The Indonesian Journal Of Public Health, 20(3), 404-419. https://doi.org/10.20473/Ijph.v20i3.2025.404-419

Organization, 2022). Other than that, the economic losses, impeded routine life, the disability of involvement in the social activities happening around and fear of staying in isolation/quarantine also lead to psychiatric issues amongst the sufferers.

Previous epidemics studies (Kim *et al.*, 2018), have shown that the majority of infected inpatients suffer from different mental issues such as anxiety and depression. (Sheng *et al.*, 2005). In this pandemic too, COVID-19 cases have been shown to have symptoms of anxiety and depression, in several surveys.(Mazza *et al.*, 2020; Paz *et al.*, 2020; Bo *et al.*, 2021; Halpin *et al.*, 2021) (Mazza *et al.*, 2020; Paz *et al.*, 2020; Zhang *et al.*, 2020) Additionally, diagnosing COVID-19 has been linked to a higher incidence of first psychiatric condition in people who have never had one before. (Taquet *et al.*, 2021).

As soon as the studies came up linking mental health and COVID-19, people who were infected with COVID-19 were more likely to have a mental health problem and anxiety and depression were the most common in those groups.. (Gao *et al.*, 2020; Tan *et al.*, 2020; Wang *et al.*, 2020) However, in the initial studies, mainly health care workers and general public (Y. Dai *et al.*, 2020; Zhu *et al.*, 2020) (Wang *et al.*, 2020) were targeted to know the psychological impact of COVID-19 but knowing about the mental health of hospitalised patients, especially those who were alone and had light to moderate illnesses, stayed in the shadows.(Krishnamoorthy *et al.*, 2020).

Due to various anti-pandemic measures, the social relations became very much disrupted, increasing the risk of psychic difficulties and becoming connected with early mortality. (Holt-Lunstad *et al.*, 2015). Therefore, in relation to mental disorders, the social support and its protective role should also be taken into consideration for COVID-19 patients in different settings. Social support, as perceived, concerns the subjective evaluation regarding the perception by individuals about friends and family members being available to provide much-needed support during difficult times. As a result, its measures are meant to examine individuals' impressions of the general availability and sufficiency of social support. (Eagle, Hybels and Proeschold-Bell, 2019).

Several studies conducted in recent times have concluded that higher levels of perceived social support mitigate the harmful impacts of social isolation and social distancing strategies. (Zhang & Ma, 2020), and are inversely associated with levels of depression(Wang *et al.*, 2018; Liu *et al.*, 2020), anxiety and other mental disorders (Wang *et al.*, 2018). However, the role of perceived social support and its predictors as relates to mental health during the current pandemic has not been brought to the limelight--something unfortunate.

To our knowledge, few research from India have assessed mental health and social support in hospitalised patients with COVID-19. In this study, we not only identified anxiety, sadness, and perceived social support in COVID-19 patients, but also documented a correlation between them and their predictors. This study would thus serve as a guidebook to the healthcare fraternity in rendering holistic care to patients by way of reducing anxiety and depression, and the complications associated with them, and finding out an early solution to it. Additionally, it may function as a resource for similar research and can contribute toward development of future-plan and policies.

METHODS

Study period, location, and type

The study was conducted using a cross-sectional design at Covid Care Centre, Motahaldu, Haldwani, Uttarakhand, India, from January 2021 to June 2021. Prior clearance was taken from the Institutional Ethics Committee. (GMC/IEC/2020/Reg.No.530/IEC/R:17-12-2020).

Study population

This was a study of patients aged 18 and above, admitted at the covid care centre with confirmed COVID-19 during the period of study, willing to participate, and were available at the time of the interview. Diagnosis for COVID-19 was done according to the advisory issued by the Indian government in all patients.(ICMR, 2020, 2021) All the patients who admitted during the study period, either asymptomatic or presented with modest symptoms of the disease and consented were included in the study. This study excluded every person having a previous case of any mental disorder and those who did not give their consent.

Data collection

The interview was conducted on the 2nd day of admission upon obtaining informed consent from the subjects. The questionnaire was three-part. The first section documented socio-demographic and clinical profile that included age group, marital status, education, occupation, any other Covid-19 case in family, and history of Diabetes and Hypertension. The second depression and anxiety scores using HADS, and the third social support using MSPSS. The questionnaire was translated to the patients and their response was noted after maintaining the social distancing norms. Prior to initiating the interview, the patients were provided with a comprehensive explanation of the nature of the study and its subsequent ramifications. The Institutional Ethics Committee of Govt. Medical College, Haldwani granted ethical clearance. Complete secrecy was guaranteed for the identity-related data. All the patients who reported mental health problems were provided help and referred for further evaluation by psychiatrists if so desired, apart from the routine counselling sessions at the respective centre. Throughout the designated research time, a total of 346 individuals successfully filled out the questionnaire.

Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (HADS) was created by Zigmond and Snaith (Zigmond and Snaith, 1983) to assess potential anxiety or depression in patients visiting a non-psychiatric medical facility. Since its development, this instrument has been used at various centres the world over and was validated in various settings outside (El-Rufaie and Absood, 1987, 1995; Malasi, Mirza and El-Islam, 1991) and in India.(Thomas *et al.*, 2005) The Hospital anxiety and depression scale is a 4-point Likert scale ranging from 0 to 3 and comprise of 7 questions each of depression and anxiety. The score ranges from 0-21 which was interpreted as 0-7 – normal, 8-10 – borderline abnormal and 11 or more- "case" of psychiatric comorbidity.(Zigmond and Snaith, 1983)

Multidimensional Scale of Perceived Social Support (MSPSS)

MSPSS is a concise research instrument created to assess individuals' views of support from three specific sources: Family, Friends, and a Significant Other. The overall number of items was 12, with 4 items allocated to each subscale. The measure demonstrated strong internal and test-retest reliability, robust validity, and a consistent factorial structure across multiple languages when translated and implemented.(Zimet, G.D., Dahlem, N.W., Zimet, S.G. , Farley, 1988) The MSPSS consists of 12 questions, each rated on a 1-7 point Likert scale. To determine the average score on this scale, divide the total score by 12. A mean scale score ranging from 1 to 2.9 indicates low support in this technique, while a score of 3 to 5 indicates moderate support, and a value of 5.1 to 7 indicates high support.(Zimet SG, 1988)

Statistical analysis

The data were analysed using SPSS version 16. The mean and standard

deviation were used to express quantitative variables, whereas qualitative factors were expressed as percentages. The continuous variables were examined using either a non-paired Student t-test or a one-way analysis of variance with post hoc analysis. A multivariate linear regression analysis was used to identify the factors that predict depression, anxiety, and social support. The Pearson correlation coefficient was utilised to assess the relationship between the dependent variables in the investigation.

Table 1. The research population's socio-demographic and clinical profile

Variable	Male N(%)	Female N(%)	Total N(%)
Age group			
18-30	109(40.5)	27(35.1)	136(39.3)
31-40	84(31.2)	21(27.3)	105(30.1)
41-50	42(15.6)	15(19.5)	57(16.5)
>50	34(12.6)	14(18.2)	48(13.9)
Marital status			
Married	179(66.5)	55(71.4)	234(67.6)
Unmarried	90(33.5)	22(28.6)	112(32.4)
Education			
Primary	6(2.2)	9(11.7)	15(4.3)
Middle	18(6.4)	14(18.2)	32(9.2)
High school	35(13.0)	8(10.4)	43(12.4)
Intermediate	74(27.5)	6(7.8)	80(23.1)
Graduate and above	127(47.2)	34(44.2)	161(46.5)
Illiterate	9(3.3)	6(7.8)	15(4.3)
Occupation			
Unemployed	41(15.2)	55(71.4)	96(27.7)
Unskilled Labour	44(16.4)	5(6.5)	49(14.2)
Skilled Worker	103(38.3)	3(3.9)	106(30.6)
Professional	60(22.3)	11(14.3)	71(20.5)
Retired	4(1.5)	1(1.3)	5(1.4)
Business	10(3.7)	2(2.6)	12(3.5)
Shopkeeper	7(2.6)	0(0)	7(2.0)
Other family member infected with covid			
Yes	101(37.5)	37(48.1)	138(39.9)
No	168(62.5)	40(51.9)	208(60.1)
Hypertension			
Yes	10(3.7)	5(6.5)	15(4.3)
No	259(96.3)	72(93.5)	331(95.7)
Diabetes			
Yes	6(2.2)	4(5.2)	10(2.9)
No	263(97.8)	73(94.8)	336(97.1)
TOTAL	**269(100)**	**77(100)**	**346(100)**

RESULTS

Study population profile

The mean age of the participants was 35.70 ± 12.17 years, with 39.3 percent under 30 years of age, followed by 30.1 percent in the 31-40-year age group. The majority were males, married, and educated up to the intermediate and above level. By occupation, 30.6 percent were engaged in skilled work, followed by professional occupation, but a good proportion, 27.7 percent, were found to be unemployed at the time of the study. Besides, 39.9 percent of the study participants have other members of the family that contracted covid-19 during the period. Diabetes and hypertension, respectively, was found only in 2.9 and 4.3 percent of the study participants (table 1).

Depression, anxiety, social support, and their correlation

The mean scores of 346 individuals are shown in table 2. In the present, research found 13.8 percent of covid positives were found to be having depressive symptoms while 32 percent were found to be having anxiety as depicted in figure 1. As far as social support is concerned, 35.2 percent of the patients found it quite difficult to have enough support from near and dear ones, as they were having either low or moderate level of social support, though most of the patients had enough of it during the tough time of COVID-19 pandemic. (figure 1).

Table 2. Average scores for depression, anxiety, and social support among the study participants

Outcome score	Number of Questions	Range of score	Patients score (mean ± SD)
Depression	7	0-21	4.27 ± 2.56
Anxiety	7	0-21	6.04 ± 3.30
PSS Score	12	1-7	5.16 ± 1.70

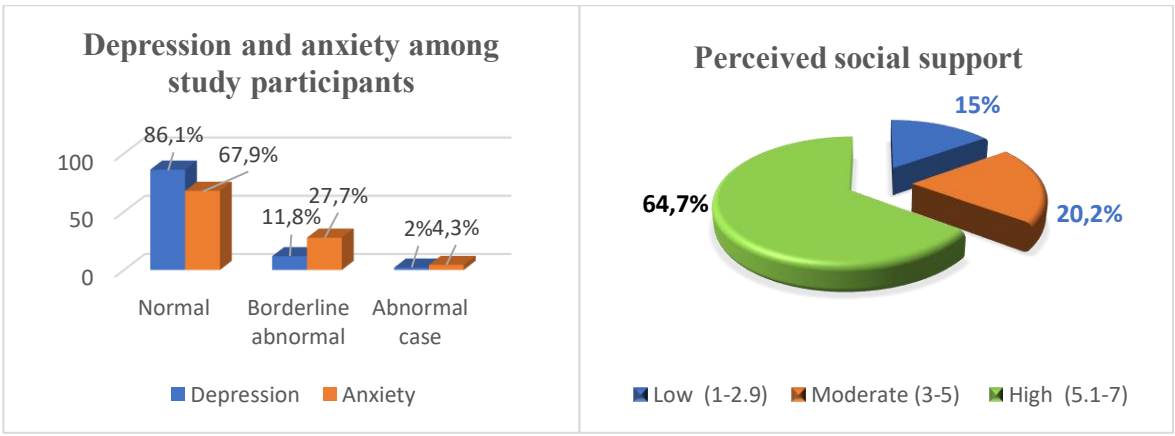

Figure 1. Proportion of study population suffering from depression and anxiety, with level of social support.

It was found that a significant positive correlation existed between depression and anxiety, although a substantial negative connection between social support and depression and anxiety. Depression vs anxiety ($r=0.634$, $p<0.001$), depression vs social support ($r= -0.624$, $p<0.001$), anxiety vs social support ($r=0.583$, $p<0.001$) (figure 2)

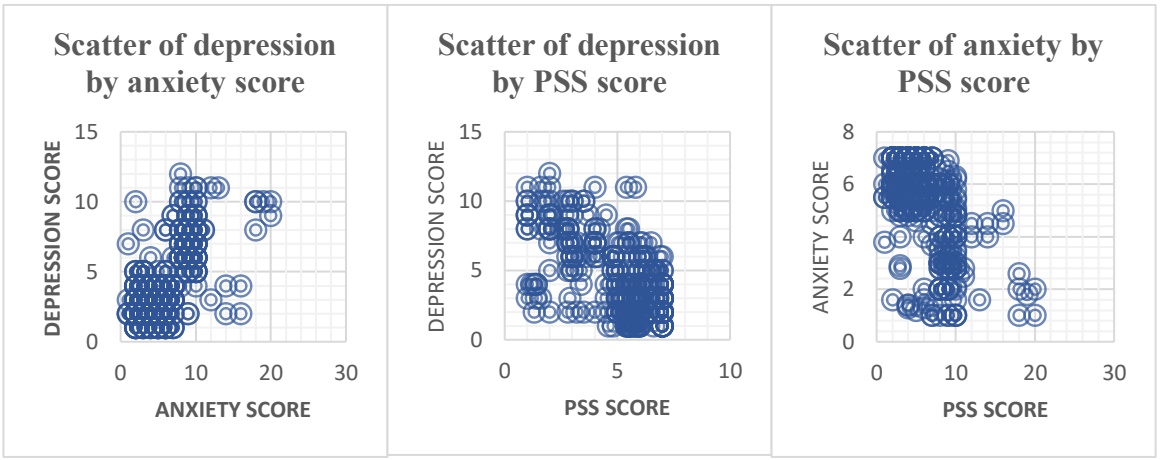

Figure 2. Bivariate correlation coefficients between depression and anxiety (r=0.634, p<0.001), depression and social support (r= -0.624, p<0.001), and anxiety and social support (r= -0.583, p<0.001).

Variables linked to depression, anxiety, and perceived social support

The depression score significantly remains high in females, married people, patients with pre-existing diabetes and hypertension, and among patients who had another covid case in the family. The post hoc analysis concerning age, education, occupation sums up to a significantly higher depression score along successive age groups, among patients with primary levels of education, and retired elderly (table 3).

As in the case of depression, it was noted that anxiety score was significantly more among married individuals, patients having pre-existing diabetes and hypertension, and amongst patients who had another COVID-19 case in the family. Significantly higher scores were also noted for > 50-year-old patients, retired elderly, and those with a primary level of education in post hoc analysis, as depicted in table 3. Perceived social support seemed to get faded away during the pandemic for admitted patients for the females, married individuals, patients with pre-existing diabetes mellitus and hypertension and for those who had another COVID Case in the family. Post hoc analysis showed that social support was relatively not adequate for >50-year-old patients, patients with primary level of education and for nonworking retired elderly patients (Table 3).

Table 3. Socio-demographic characteristics and depression, anxiety, and social support.

Variable	Depression score (mean± SD)	Anxiety score (mean± SD)	PSS score (mean±SD)	p value
Age				
18-30	2.98 ± 1.70	4.69 ± 2.64	6.18 ± 1.02	**D (<0.001 w*)**
31-40	4.32 ± 2.18	6.38 ± 3.12	5.09 ± 1.37	**A (<0.001, w*)**
41-50	4.50 ± 2.31	5.85 ± 2.80	4.66 ± 1.60	**P (<0.001, w*)**
>50	7.52 ± 2.74	9.35 ± 3.54	3.05 ± 1.79	
Gender				
Male	4.10 ± 2.43	5.88 ± 3.11	5.30 ± 1.59	**D (0.042)**
Female	4.85 ± 2.93	6.61 ± 3.87	4.69 ± 1.97	**A (**0.134) **P (0.015)**

Variable	Depression score (mean± SD)	Anxiety score (mean± SD)	PSS score (mean±SD)	p value
Marital status				
Married	4.93 ±2.66	6.71 ± 3.42	4.74 ± 1.78	**D (<0.001)**
Unmarried	2.89 ± 1.67	4.65 ± 2.55	6.05 ± 1.08	**A (<0.001)**
				P (<0.001)
Education				
Primary	6.26 ± 3.30	8.86 ± 4.20	3.76 ± 2.18	
Middle	4.25 ± 2.63	6.12 ± 3.56	5.39 ± 1.72	**D (0.043, a*)**
High school	4.48 ± 2.72	5.16 ± 2.88	5.22 ± 1.81	**A (0.004, a*)**
Intermediate	3.87 ± 2.21	5.50 ± 3.08	5.53 ± 1.58	**P (0.002, a*)**
Graduate and above	4.21 ± 2.54	6.26 ± 3.26	5.13 ± 1.61	
Illiterate	4.40 ± 2.61	6.13 ± 3.15	4.31 ± 1.63	
Occupation				
Unemployed	4.16 ± 2.79	5.86 ± 3.65	5.25 ± 1.80	
Unskilled Labour	4.40 ± 2.63	6.08 ± 3.07	5.35 ± 1.63	
Skilled Worker	3.98 ± 2.46	5.94 ± 3.17	5.22 ± 1.59	**D (0.029 a*)**
Professional	4.38 ± 2.27	5.83 ± 2.81	5.17 ± 1.60	**A (0.029 a*)**
Retired	8.0 ± 2.23	11.0 ± 4.00	2.60 ± 0.89	**P (0.016 a*)**
Business	5.16 ± 2.03	7.41 ± 3.96	4.30 ± 2.10	
Shopkeeper	3.85 ± 2.67	6.14 ± 2.79	5.02 ± 1.76	
Other covid-19 case in family				
Yes	5.97 ± 2.64	8.12 ± 3.68	4.42 ± 1.88	**D (<0.001)**
No	3.13 ± 1.76	4.66 ± 2.11	5.65 ± 1.37	**A (<0.001)**
				P (<0.001)
Diabetes				
Yes	7.10 ± 2.99	15.0 ± 3.65	2.97 ± 1.29	**D (0.013)**
No	4.18 ± 2.51	5.77 ± 2.90	5.23 ± 1.67	**A (<0.001)**
				P (<0.001)
Hypertension				
Yes	9.40 ± 0.91	12.33 ± 4.48	2.19 ± 0.88	**D (<0.001)**
No	4.03 ± 2.36	5.76 ± 2.95	5.30 ± 1.60	**A (<0.001)**
				P (<0.001)

w-welch, a*- annova*

On multiple linear regression analysis, the association of depression with COVID-19 patients was related to age, marital status, covid case in family, and hypertension with $\beta = 0.257$, $p < 0.001$, $\beta = -0.230$, $p < 0.001$, $\beta = -0.483$, $p < 0.001$, and $\beta = -0.189$, $p < 0.001$, respectively. It means that married patients and those who were older, had hypertension, and other covid cases in the family tend to present with depressive symptoms. Likewise, age, $\beta=0.163$, $p=0.001$, marital status, $\beta=-0.163$, $p<0.001$, covid case in family, $\beta =-0.409$, $p<0.001$, diabetes mellitus, $\beta =-0.361$, $p<0.001$ and hypertension, $\beta =-0.181$, $p<0.001$ were associated with anxiety among COVID-19 patients which indicate that married patients with older age, other covid infected family member, diabetes mellitus and hypertension were more likely to be depressive, table 4. Moreover, social support came up to be predicted by age, covid case in family, presence of diabetes mellitus, and hypertension with $\beta =-0.5$, p

＜0.001; β =0.241, p＜0.001; β =0.150, p ＜0.001; and β =0.165, p＜0.001 respectively, meaning an elderly person who has a chronic disease and individual who had other family members infected will be subjected to relatively poor social support in this trying moment of the COVID-19 period, as indicated in table 4.

Table 4. Regression analysis of the variables linked to depression, anxiety, and social support.

	B	Std	Beta	t	Sig.	VIF
Depression						
Age group	0.447	0.081	0.257	5.493	**<0.001**	1.692
Marital status	-1.260	0.244	-0.230	-5.168	**<0.001**	1.529
Other covid-19 case in family	-2.532	0.196	-0.483	-12.910	**<0.001**	1.084
Hypertension	-2.377	0.495	-0.189	-4.802	**<0.001**	1.195
Anxiety						
Age group	0.365	0.106	0.163	3.459	**0.001**	1.711
Marital status	-1.153	0.325	-0.163	- 3.546	**<0.001**	1.552
Other covid-19 case in family	-2.763	0.259	-0.409	-10.664	**<0.001**	1.134
Diabetes	-7.117	0.734	-0.361	-9.689	**<0.001**	1.067
Hypertension	-2.936	0.643	-0.181	-4.564	**<0.001**	1.210
Education	0.196	0.099	0.073	1.984	**0.048**	1.036
Perceived social support						
Age group	-0.557	0.050	-0.500	-11.637	**<0.001**	1.145
Other covid-19 case in family	0.837	0.145	0.241	5.762	**<0.001**	1.084
Diabetes	1.523	0.416	0.150	3.657	**0.001**	1.042
Hypertension	1.382	0.379	0.165	3.651	**0.008**	1.205

DISCUSSION

The objective of this study was to determine the frequency of depression and anxiety among COVID-19 patients who were admitted to the COVID care centre and finding out the social support available to them. In recent times, several studies have linked the occurrence of depression and anxiety in patients with various disorders. (Polikandrioti *et al.*, 2015; Natale *et al.*, 2019), but the current study aimed to evaluate the prevalence of anxiety and depression among patients, as well as their level of social support. Additionally, we analysed the relationship between anxiety, depression, and social support, and identified the factors that influenced these outcomes.

In this study, 13.8 percent Covid positive individuals were found to have depression, while 32 percent were found to be suffering from anxiety. Contrary to our study, many other researchers reported a higher prevalence of depression,(Al Omari *et al.*, 2020; Kong *et al.*, 2020; Nie *et al.*, 2020; Dereseh *et al.*, 2021; Kumar *et al.*, 2021; Mitra, Mitra and Dutta, 2021; Saidi *et al.*, 2021), but a similar prevalence to our study was also reported in a shelter hospital setting in china.(L. L. Dai *et al.*, 2020) Compared to this study, anxiety was found to affect a larger proportion in other researchers (Al Omari *et al.*, 2020; Kong *et al.*, 2020; Nie *et al.*, 2020; Mitra, Mitra and Dutta, 2021; Saidi *et al.*, 2021) but also other studies reported a lower proportion of study participants suffered from anxiety.(L. L. Dai *et al.*, 2020; Dereseh *et al.*, 2021)

It has been evident that social isolation along with loneliness has been linked with unfavourable mental health outcomes,(Leigh-Hunt *et al.*, 2017) and a number of studies have surfaced, indicating that, in the case of any illness, a patient's search for social support increases their coping up with the difficulty, which includes physical as well as psychological assistance given by near and dear ones along with medical people.(Ozbay *et al.*, 2007) We also established the extent of social support and found most of the patients to have high social support while 15 and 20 percent had low and moderate, respectively.

Since co-occurring psychiatric illnesses are the rule, nearly for all psychiatric disorders, anxiety and depression go together with their symptoms.(Kessler *et al.*, 1994) The lifetime comorbidity of anxiety disorder with depression varies between 20% and 70% for those with social anxiety disorder (Dunner, 2001), and approximately 50% for individuals with panic disorder.(Dunner, 2001). The correlational analysis conducted in our study revealed a statistically significant positive correlation between depression and anxiety. Previous research have similarly documented nearly identical correlations between depression and anxiety in the recent past.(Kong *et al.*, 2020) (Dereseh *et al.*, 2021) We have also found an almost equally significant negative correlation of depression and anxiety with social support, corresponding to many previous studies conducted in different settings in order to show the protective role social support plays in keeping these mental instabilities in control.(Pinar *et al.*, 2012; Davaridolatabadi and Abdeyazdan, 2016; Hosseini, Sharifi and Jamali, 2020; Khademloo *et al.*, 2020; Guo *et al.*, 2021)

In the regression analysis, it has been found that old age patients had higher chances to fall into depression, anxiety, and to have poor social support. Other studies also found old age as a significant contributing factor for anxiety and depression.(Kong *et al.*, 2020; Dereseh *et al.*, 2021; Saidi *et al.*, 2021)

Married status of the study participants did contribute towards having more anxiety and depression, but in contrast to that, research from Kuwait finds marriage to be a predictor for allaying depressive symptoms while not finding an association with anxiety, (Alsharji, 2020) whereas that by Khademian et al. reported no variation of mental stress for those married(Khademian *et al.*, 2021). However, the plausible explanation of the observed association could be that among the married patients admitted to the Covid Care Center, they didn't have space for isolation back at home and had dependents in the family.

Additionally, the study revealed that the identification of COVID-19 in family members was a distinct factor that predicted elevated levels of depression and anxiety. This outcome was highly anticipated, given the significant worry for family members who are infected and the absence of familial support for them. These circumstances can lead to feelings of hopelessness and uncertainty about the illness, a phenomenon that has been shown in several other research conducted in various contexts.(Kong *et al.*, 2020; L. L. Dai *et al.*, 2020; Nie *et al.*, 2020)

Hypertension and diabetes were identified as possible risk factors, either individually or in combination, for severe COVID-19 infection or fatality.(de Almeida-Pititto *et al.*, 2020; Fang, Karakiulakis and Roth, 2020; Sun *et al.*, 2021) Being aware of that, even mild covid patients can feel the exaggerated anxiety or can present with depressive symptoms, which rightly can be the case in this study as well; significantly higher depression and anxiety score was reported among hypertensives. However, we found a significant association of diabetes only with a higher anxiety score.

Misinformation has reached almost everyone in the current pandemic, and there is a pretty well-established fact that the

education level plays a huge role in how people assimilate and further process information. According to a study published recently, vulnerable populations with less education are more likely to believe in and share misinformation,(Seo *et al.*, 2021) that can foster psychological distress including anxiety.(Lee *et al.*, 2020) This might be the reason why, in this study, lower education background predicted the higher level of anxiety among infected patients, which concurs with the findings from other studies.(Kong *et al.*, 2020) Surprisingly, in contrast to our results, previous studies have discovered that individuals with higher levels of education experience higher levels of anxiety, despair, and stress. This is attributed to their heightened self-awareness regarding their own health.(Salari *et al.*, 2020; Zhang and Ma, 2020) (Zhang and Ma, 2020)

On the other hand, it's interesting to note that low social support was apparently predicted by old age, β =-0.5, $p<0.001$, covid case in family, β = 0.241, $p<0.001$, pre-existing diabetes and hypertension. Existing literature has consistently found that older individuals tend to experience higher levels of social isolation and receive less social support. (Heylen, 2010; Melchiorre *et al.*, 2013). People have found themselves falling into the temptation of stigmatization more often than living in mutual association, especially in the wake of the recent pandemic. Support generally became scarce for the patients in case of infection occurrences by other family members, the research finds. People are afraid of ending up in something unknown and vague; this is why they seek guidance from the famous saying "better safe than sorry" (Sng, Williams and Neuberg, 2018). This maxim can also explain the discriminatory attitude towards the infected or suspected individuals and the ones considered responsible for spread of the disease.

The presence of chronic diseases such as diabetes and hypertension were found to predict low social support for covid patients in this study as well. Any chronic illness can easily disrupt family life; this is likely to be more so in low socioeconomic scenarios. Chronically ill individuals may experience guilt due to the burden their illness places on their family. The family's reaction to chronic illness depends on factors such as the age and developmental stage of the ill family member, the family's resilience and coping strategies, and the stage of the family's life cycle. These factors can contribute to a lack of social support for those affected by the illness.(Lawrence, 2012)

Policy implications

The study indicates that a significant number of COVID-19 patients exhibit symptoms of anxiety and depression. This suggests a need for healthcare systems to prioritize mental health care alongside physical health treatments. Integrating mental health support into routine COVID-19 care could help alleviate psychological distress and improve overall patient outcomes.

The findings show that individuals with lower education levels and pre-existing conditions like diabetes and hypertension are more susceptible to anxiety and depression during the pandemic. Policies should focus on providing targeted mental health interventions and accurate information to these vulnerable groups to mitigate the psychological impact.

The study highlights the correlation of perceived social support with mental health outcomes. Policies could be developed to enhance social support mechanisms, especially for older adults and those with chronic illnesses, to reduce feelings of isolation and improve mental well-being.

The research suggests that individuals with COVID-19, especially those with family members who are also infected, may experience low social support due to stigmatization. Public health policies

should include campaigns to reduce stigma and promote solidarity and community support, ensuring that patients and their families receive the care and empathy they need.

The study's findings underscore the importance of a holistic approach to healthcare during pandemics, addressing both physical and mental health needs. Policies should encourage healthcare providers to adopt comprehensive care strategies that include psychological assessments and interventions for COVID-19 patients.

CONCLUSION

This study addresses the mental health impacts of COVID-19 on patients, which is a critical issue during a global pandemic. The relevance is heightened due to the focus on anxiety, depression, and social support among COVID-19 patients, a relatively underexplored area, especially in India. The use of established tools like the Hospital Anxiety and Depression Scale (HADS) and the Multidimensional Scale of Perceived Social Support (MSPSP) ensures that the data collected are standardized and reliable. This enhances the validity of the findings. Our study showed that majority of the patients admitted to the facility with a COVID-19 infection exhibited signs of anxiety and depression. Advanced age, marital status, having a family member with a COVID-19 case, and hypertension were identified as significant factors linked with anxiety and depression. The presence of anxiety was also significantly associated with diabetes mellitus. Furthermore, it is reported to have major confounding variables for perceived social support based on age, COVID-19 case in the family, presence of diabetes mellitus, and hypertension.

The study not only identifies a considerable prevalence of anxiety and depression among the patients but also establishes significant correlations between the mental health issues and perceived social support with factors like age, marital status, family COVID-19 cases, and comorbid conditions such as hypertension and diabetes. The study provides insights that could inform healthcare providers and policymakers in improving mental health support systems during crises like COVID-19. It also sets a precedent for future studies to explore similar issues**.**

Limitations

Similar to any other investigation, our study also has its own set of constraints. One limitation of this study is that it was conducted as a cross-sectional study, meaning that data was collected at a single point in time. Additionally, the patients' stay at the facility was short, making it difficult to establish the sequence of events accurately. Another factor contributing to weakness is the presence of deficiencies in the thorough monitoring of mental health symptoms in individuals. Furthermore, the data was gathered on the day following admission, preventing any meaningful analysis of any changes that may have taken place during the duration of the stay. Due to the limited scope of this study, conducted at a single COVID care centre, the findings cannot be applied to the entire community. Therefore, it is necessary to conduct a multi-centric investigation with a bigger sample size to validate the results of this study. Despite these limitations, this study examines the levels of anxiety and sadness in COVID-19 patients within the context of this novel disease.

REFERENCES

Almeida-Pititto, B. *et al.* (2020) 'Severity and mortality of COVID 19 in patients with diabetes, hypertension and cardiovascular disease: a meta-analysis', *Diabetology & Metabolic Syndrome 2020 12:1*, 12(1), pp. 1–12. https://doi.org/10.1186/s13098-020-00586-4

Alsharji, K. E. (2020) 'Anxiety and depression during the COVID-19

pandemic in Kuwait: the importance of physical activity', *Middle East Current Psychiatry*. https://doi.org/10.1186/s43045-020-00065-6

Bo, H. *et al.* (2021) 'Posttraumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China', *Psychological medicine*, 51(6), pp. 1052–1053. https://doi.org/10.1017/S0033291720000999

Dai, L. L. *et al.* (2020) 'Anxiety and depressive symptoms among COVID-19 patients in Jianghan Fangcang Shelter Hospital in Wuhan, China', *PLoS ONE*, 15(8 august), p. e0238416. https://doi.org/10.1371/journal.pone.0238416

Dai, Y. *et al.* (2020) 'Psychological impact of the coronavirus disease 2019 (COVID-19) outbreak on healthcare workers in China', *medRxiv*, p. 2020.03.03.20030874. https://doi.org/10.1101/2020.03.03.20030874

Davaridolatabadi, E. and Abdeyazdan, G. (2016) 'The Relation between Perceived Social Support and Anxiety in Patients under Hemodialysis', *Electronic Physician*, 8(3), p. 2144. https://doi.org/10.19082/2144

Dereseh, B. *et al.* (2021) 'Prevalence and Factors Associated with Depression and Anxiety of Hospitalized Patients with COVID-19 in St. Peter Specialized Hospital Treatment Centers', *Austin Psychiatry*, 4(1). https://doi.org/10.26420/AustinPsychiatry.2021.1009

Dunner, D. (2001) 'Management of anxiety disorders: the added challenge of comorbidity', *Depression and anxiety*, 13(2), pp. 57–71. https://doi.org/10.1002/da.1018

Eagle, D. E., Hybels, C. F. and Proeschold-Bell, R. J. (2019) 'Perceived social support, received social support, and depression among clergy', *Journal of Social and Personal Relationships*, 36(7), pp. 2055–2073. https://doi.org/10.1177/0265407518776134

El-Rufaie, O. E. F. A. and Absood, G. (1987) 'Validity study of the Hospital Anxiety and Depression scale among a group of Saudi patients', *British Journal of Psychiatry*, 151(NOV.), pp. 687–688. https://doi.org/10.1192/bjp.151.5.687

El-Rufaie, O. E. F. and Absood, G. H. (1995) 'Retesting the validity of the Arabic version of the Hospital Anxiety and Depression (HAD) scale in primary health care', *Social Psychiatry and Psychiatric Epidemiology*, 30(1), pp. 26–31. https://doi.org/10.1007/BF00784431

Fang, L., Karakiulakis, G. and Roth, M. (2020) 'Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection?', *The Lancet Respiratory Medicine*, 8(4), p. e21. https://doi.org/10.1016/S2213-2600(20)30116-8

Gao, J. *et al.* (2020) 'Mental health problems and social media exposure during COVID-19 outbreak', *PLOS ONE*, 15(4), p. e0231924. https://doi.org/10.1371/journal.pone.0231924

Guo, K. *et al.* (2021) 'Assessing social support impact on depression, anxiety, and stress among undergraduate students in Shaanxi province during the COVID-19 pandemic of China', *PLOS ONE*, 16(7), p. e0253891. https://doi.org/10.1371/journal.pone.0253891

Halpin, S. *et al.* (2021) 'Postdischarge

symptoms and rehabilitation needs in survivors of COVID-19 infection: A cross-sectional evaluation', *Journal of medical virology*, 93(2), pp. 1013–1022. https://doi.org/10.1002/jmv.26368

Heylen, L. (2010) 'The older, the lonelier? Risk factors for social loneliness in old age', *Ageing and Society*, 30(7), pp. 1177–1196. https://doi.org/10.1017/S0144686X10000292

Holt-Lunstad, J. *et al.* (2015) 'Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review', *Perspectives on Psychological Science*, 10(2), pp. 227–237. https://doi.org/10.1177/1745691614568352

Hosseini, F. S., Sharifi, N. and Jamali, S. (2020) 'Correlation Anxiety, Stress, and Depression with Perceived Social Support Among the Elderly: A Cross-Sectional Study in Iran', *Ageing International 2020 46:1*, 46(1), pp. 108–114. https://doi.org/10.1007/s12126-020-09376-9

ICMR (2020) *Advisory on Strategy for COVID-19 Testing in India*, *Indian Council of Medical Research*.

ICMR (2021) *Advisory for COVID-19 testing during the second wave of the pandemic*, *Indian Council of Medical Research*. India.

Kessler, R. *et al.* (1994) 'Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey', *Archives of general psychiatry*, 51(1), pp. 8–19. https://doi.org/10.1001/archpsyc.1994.03950010008002

Khademian, F. *et al.* (2021) 'An investigation of depression, anxiety, and stress and its relating factors during COVID-19 pandemic in Iran', *BMC Public Health 2021 21:1*, 21(1), pp. 1–7. https://doi.org/10.1186/s12889-021-10329-3

Khademloo, M. *et al.* (2020) 'Correlation between Social Support with Anxiety and Depression in the Elderly: a Study in Northern Iran', *Journal of Population Ageing 2020*, pp. 1–10. https://doi.org/10.1007/s12062-020-09290-7

Kim, H.-C. *et al.* (2018) 'Psychiatric Findings in Suspected and Confirmed Middle East Respiratory Syndrome Patients Quarantined in Hospital: A Retrospective Chart Analysis', *Psychiatry Investigation*, 15(4), pp. 355–360. https://doi.org/10.30773/pi.2017.10.25.1.

Kong, X. *et al.* (2020) 'Prevalence and Factors Associated with Depression and Anxiety of Hospitalized Patients with COVID-19', *medRxiv*, p. 2020.03.24.20043075. https://doi.org/10.1101/2020.03.24.20043075

Krishnamoorthy, Y. *et al.* (2020) 'Prevalence of psychological morbidities among general population, healthcare workers and COVID-19 patients amidst the COVID-19 pandemic: A systematic review and meta-analysis', *Psychiatry Research*, 293. https://doi.org/10.1016/j.psychres.2020.113382

Kumar, P. *et al.* (2021) 'Prevalence of anxiety and depression among COVID-19 patients admitted to tertiary care hospital', *Indian Journal of Social Psychiatry*, 37(1), pp. 88–92. https://doi.org/10.4103/ijsp.ijsp_377_20

Lawrence, E. (2012) 'The Impact of Chronic Illness on the Family', *IG Living*, pp. 20–25.

Lee, J. *et al.* (2020) 'Associations Between COVID-19 Misinformation Exposure and Belief With COVID-

19 Knowledge and Preventive Behaviors: Cross-Sectional Online Study', *Journal of medical Internet research*, 22(11). https://doi.org/10.2196/22205

Leigh-Hunt, N. *et al.* (2017) 'An overview of systematic reviews on the public health consequences of social isolation and loneliness', *Public health*, 152, pp. 157–171. https://doi.org/10.1016/j.puhe.2017.07.035

Liu, C. H. *et al.* (2020) 'Factors associated with depression, anxiety, and PTSD symptomatology during the COVID-19 pandemic: Clinical implications for U.S. young adult mental health', *Psychiatry Research*, 290, p. 113172. https://doi.org/10.1016/j.psychres.2020.113172

Malasi, T. H., Mirza, I. A. and El-Islam, M. F. (1991) 'Validation of the Hospital Anxiety and Depression Scale in Arab patients', *Acta Psychiatrica Scandinavica*, 84(4), pp. 323–326. https://doi.org/10.1111/j.1600-0447.1991.tb03153.x

Mazza, M. G. *et al.* (2020) 'Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors', *Brain, Behavior, and Immunity*, 89, p. 594. https://doi.org/10.1016/j.bbi.2020.07.037

Melchiorre, M. G. *et al.* (2013) 'Social Support, Socio-Economic Status, Health and Abuse among Older People in Seven European Countries', *PLOS ONE*, 8(1), p. e54856. https://doi.org/10.1371/journal.pone.0054856

Mitra, S., Mitra, D. and Dutta, A. (2021) 'The State of Anxiety, Depression, and Stress in Hospitalized Patients with Confirmed Covid-19 Infection', *Asian Journal of Pharmaceutical and Clinical Research*, 14, pp. 135–136. https://doi.org/10.22159/ajpcr.2021.v14i5.41135

Natale, P. *et al.* (2019) 'Psychosocial interventions for preventing and treating depression in dialysis patients', *The Cochrane Database of Systematic Reviews*, 2019(12). https://doi.org/10.1002/14651858.CD004542.pub3

Nie, X. D. *et al.* (2020) 'Anxiety and depression and its correlates in patients with coronavirus disease 2019 in Wuhan', *International Journal of Psychiatry in Clinical Practice*, 25(2), pp. 1–6. https://doi.org/10.1080/13651501.2020.1791345

Al Omari, O. *et al.* (2020) 'Prevalence and Predictors of Depression, Anxiety, and Stress among Youth at the Time of COVID-19: An Online Cross-Sectional Multicountry Study', *Depression Research and Treatment*, 2020. https://doi.org/10.1155/2020/8887727

Ozbay, F. *et al.* (2007) 'Social Support and Resilience to Stress: From Neurobiology to Clinical Practice', *Psychiatry (Edgmont)*, 4(5), p. 35.

Paz, C. *et al.* (2020) 'Anxiety and depression in patients with confirmed and suspected COVID-19 in Ecuador', *Psychiatry and Clinical Neurosciences*, 74(10), pp. 554–555. https://doi.org/10.1111/pcn.13106

Pfefferbaum, B. and North, C. S. (2020) 'Mental Health and the Covid-19 Pandemic', *New England Journal of Medicine*, 383(6), pp. 510–512. https://doi.org/10.1056/NEJMp2008017

Pinar, G. *et al.* (2012) 'The relationship between social support and the level of anxiety, depression, and quality of life of Turkish women with gynecologic cancer', *Cancer nursing*, 35(3), pp. 229–235.

https://doi.org/10.1097/NCC.0b013e31822c47bd

Polikandrioti, M. *et al.* (2015) 'Factors Associated with Depression and Anxiety of Hospitalized Patients with Heart Failure', *Hellenic Journal of Cardiology) Hellenic J Cardiol*, 56, pp. 26–35.

Saidi, I. *et al.* (2021) 'Factors associated with anxiety and depression among patients with Covid-19', *Respiratory Medicine*, 186, p. 106512. https://doi.org/10.1016/j.rmed.2021.106512

Salari, N. *et al.* (2020) 'Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis', *Globalization and Health 2020 16:1*, 16(1), pp. 1–11. https://doi.org/10.1186/s12992-020-00589-w

Seo, H. *et al.* (2021) 'Vulnerable populations and misinformation: A mixed-methods approach to underserved older adults' online information assessment', *New Media and Society*, 23(7), pp. 2012–2033. https://doi.org/10.1177/1461444820925041

Sheng, B. *et al.* (2005) 'The effects of disease severity, use of corticosteroids and social factors on neuropsychiatric complaints in severe acute respiratory syndrome (SARS) patients at acute and convalescent phases', *European Psychiatry*, 20(3), pp. 236–242. https://doi.org/10.1016/j.eurpsy.2004.06.023

Sng, O., Williams, K. E. G. and Neuberg, S. L. (2018) 'Evolutionary Approaches to Stereotyping and Prejudice', in Padstow Cornwall (ed.) *The Cambridge Handbook of the Psychology of Prejudice*. 2018th edn. Cambridge University Press, pp. 40–68. https://doi.org/10.1017/9781316161579.002

Sun, Y. *et al.* (2021) 'Independent and combined effects of hypertension and diabetes on clinical outcomes in patients with COVID-19: A retrospective cohort study of Huoshen Mountain Hospital and Guanggu Fangcang Shelter Hospital', *Journal of clinical hypertension (Greenwich, Conn.)*, 23(2), pp. 218–231. https://doi.org/10.1111/jch.14146

Tan, B. Y. Q. *et al.* (2020) 'Psychological Impact of the COVID-19 Pandemic on Health Care Workers in Singapore'.

Taquet, M. *et al.* (2021) 'Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62 354 COVID-19 cases in the USA', *The Lancet Psychiatry*, 8(2), pp. 130–140. https://doi.org/10.1016/S2215-0366(20)30462-4

Thomas, B. C. *et al.* (2005) 'Reliability & validity of the Malayalam hospital anxiety & depression scale (HADS) in cancer patients', *Indian Journal of Medical Research*, 122(5), pp. 395–399.

Wang, C. *et al.* (2020) 'Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China', *International Journal of Environmental Research and Public Health*, 17(5), p. 1729. https://doi.org/10.3390/ijerph17051729

Wang, J. *et al.* (2018) 'Associations between loneliness and perceived social support and outcomes of mental health problems: A systematic review', *BMC Psychiatry*, 18(1), pp. 1–16. doi:

https://doi.org/10.1186/s12888-018-1736-5

World Health Organization (2021) *WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data | WHO Coronavirus (COVID-19) Dashboard With Vaccination Data*, *World Health Organization*.

World Health Organization (2022) *COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide*.

Zhang, J. *et al.* (2020) 'The differential psychological distress of populations affected by the COVID-19 pandemic', *Brain, Behavior, and Immunity*, 87, p. 49. https://doi.org/10.1016/j.bbi.2020.04.031

Zhang, Y. and Ma, Z. F. (2020) 'Impact of the COVID-19 Pandemic on Mental Health and Quality of Life among Local Residents in Liaoning Province, China: A Cross-Sectional Study', *International Journal of Environmental Research and Public Health*, 17(7). https://doi.org/10.3390/ijerph17072381

Zhu, Z. *et al.* (2020) 'COVID-19 in Wuhan: Sociodemographic characteristics and hospital support measures associated with the immediate psychological impact on healthcare workers', *EClinicalMedicine*, 24, p. 100443. https://doi.org/10.1016/j.eclinm.2020.100443

Zigmond, A. S. and Snaith, R. P. (1983) 'The Hospital Anxiety and Depression Scale', *Acta Psychiatrica Scandinavica*, 67(6), pp. 361–370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

Zimet, G.D., Dahlem, N.W., Zimet, S.G. , Farley, G. K. (1988) 'Zimet_MSPSS.pdf', *Journal of Personality Assessment*, pp. 30–41. https://doi.org/10.1207/s15327752jpa5201_2

Zimet SG, F. G. Z. G. D. N. (1988) *Multidimensional Scale of Perceived social support*. https://doi.org/10.1037/t02380-000