Original Research Article

Nursing students' perceptions of resilience, social support, and coping strategies during the COVID-19 pandemic: a multi-center study

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ABSTRACT

Background: Resilience found to be an important factor in protecting the nursing students against the stress during coronavirus outbreak. Aim of the study was to evaluate the relationships between resilience and perceived social and organizational support and coping strategies among nursing students.
Methods: This web-based survey carried out among nursing undergraduates (n=1017) across the country. Data was collected using self-reported questionnaires in May 2021.
Results: Majority of the students had a normal level of resilience, perceived a high level of social and organizational support and used effective coping strategies. Also, the variables of resilience, social support, organization support and coping strategies were positively correlated (p<0.001). While ag e was positively correlated with resilience, younger (t=4.647, p<0.001) and females (t=-0.3620, p<0.001) perceived a higher level of social support than others.
Conclusions: The results suggest that strengthening resilience and improving coping skills and social support may promote psychological wellbeing for nursing undergraduates during the coronavirus pandemic.

Keywords: Coping strategies, COVID-19, Nursing students, Resilience, Social support, Organization support

INTRODUCTION

Globally, the COVID-19 pandemic has affected adversely every aspect of nursing education and healthcare. During the COVID-19 pandemic, nursing students have experienced disruptions in education, including a switch from offline to online classes, and missed clinical opportunities. Earlier studies also have found that these stressful situations negatively affect nursing students' psychological well-being.[1] A recent systematic review and meta-analysis found that during the COVIOD-19 pandemic, student nurses were more likely to suffer from depression (52%), stress (30%), fear (41%), anxiety (32%), and sleep disturbances (27%).[2] There is substantial evidence that resilience protects nursing students from the negative effects of COVID-19.[3]

Resilience is defined as the ability to overcome adversity and cope effectively with problems faced which also includes how one learns to develop stronger flexibility

from situations encountered. Researchers have found that trait resilience, family functioning, social support, social relationships, and trust in healthcare institutions are positively associated with mental well-being.[4] However, nurses being frontline health care workers (HCWs) were affected physically and emotionally by the COVID-19 pandemic. An earlier study found that the prevalence of mental health disorders in health care workers is much higher than in the general population.[5] Another umbrella review and meta-analysis showed a high prevalence of post-traumatic stress disorders (PTSD) (13.52%) among HCWs during the COVID-19 pandemic.[6] Nonetheless, research conducted during the COVID-19 pandemic found that resilience, coping strategies, and social support protect frontline healthcare workers' psychological well-being.[7,8]

Published evidence is emerging regarding social support, psychological wellbeing, and resilience among nursing students.[9] Also, studies showed that nursing students' perceptions of social support (mainly from peers and faculty) contribute to their resilience.[10,11] Coping strategies help individuals to maintain psychological adaptability during stressful times such as COVID-19 pandemic. Several studies have shown that positive coping skills help college students combat stress and prevent psychological problems such as loneliness, anxiety, depression, stress.[12] Furthermore, the World Health Organization (WHO) has recommended positive coping strategies that adults, adolescents, and children should use to cope with stress and mental health concerns caused by the global pandemic of COVID-19.[13] However, nursing students are experiencing increased psychological distress during the coronavirus disease 2019 outbreak. A recent review highlighted the importance of resilience in empowering nursing students to cope with academic and practical challenges.[14] In this context, it is crucial to explore nursing students' perceptions of resilience factors to improve their psychological wellbeing. Furthermore, nursing students being young and are exposed to clinical postings may be vulnerable during the COVID-19 pandemic.[15] Coping strategies enable nursing students to cope with COVID-related stress and maintain mental well-being. Hence, it is necessary to explore the relationship between resilience and coping among nursing students to develop intervention strategies. On the other hand, most of literature globally have focused on mental health concerns of nurses and it remains unclear how resilience interacts with factors such as family support, organizational support, and coping strategies among nursing students. Further, it is crucial to understand the resilience factors when developing health promotion strategies to build resilience in nursing students. Hence, our study aimed to evaluate the relationship between resilience and perceived social and organizational support as well as coping strategies among nursing students.

METHODS

This online survey was carried out in May 2021 among conveniently selected nursing undergraduates those enrolled in the Bachelor of Science in Nursing (4 years) program in India. The present survey included students who were enrolled in a BSN program during the conduct of the study. Students who were unable to access the internet and unaware of how to complete the Google forms were excluded from the study. We developed a structured survey questionnaire using Google Forms. The questionnaire link was shared with students from various colleges through emails and social media (Facebook, WhatsApp).

The preliminary part of the questionnaire included a brief introduction to the study and information on objectives and data collection. This section also comprised declarations on the anonymity and confidentiality of the data. The students were instructed to click a link to complete the questionnaire and the responses were recorded automatically. There were 1017 responses to the questionnaire from student nurses. During the second wave of the COVID-19 pandemic, data were collected.

Data collection tools

The present study adapted the following questionnaires.

Socio-demographic data sheet

It included the items to gather background information of the participants such as age, gender, year of education, and college name, state, whether vaccinated for and infected with coronavirus and attitudes towards COVID-19.

The brief resilience scale (BRS)

It comprised six items that were used to measure the perceived resilience of the participants. This was a 5-point Likert scale, ranging from 1=strongly disagree to 5=strongly agree. Among the six items, three items were negatively phrased (2, 4, 5). Hence, the possible score for each item ranges from 1 (low resilience) to 5 (high resilience). This scale has a good internal consistency with a Cronbach's alpha value, ranging from .80 to .91. Based on the mean score, resilience was classified as low (1.00-2.99), normal (3.00-4.30), and high (4.31-5.00).[16]

Multidimensional scale of perceived social support

This scale was used to measure nursing students perceived social support.[17] This scale comprised 12 items with three domains: significant other (items 1, 2, 5, and 10), family (items 3, 4, 8, and 11), and friends (items 6, 7, 9, and 12). This was a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). Hence the possible score ranges between 12 and 84. The higher score reflects greater perceived social support. We adapted this scale because it is easy to administer and one of the few scales to identify the source of support with excellent psychometric properties.[18]

COVID-19 organizational support (COVID-OS)

This scale was used to assess participants' perceived COVID-19-specific support offered by their organizations. This was a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). This scale consisted of eight items with three domains: work support (items 1, 3, and 7), personal support (items 5 and 6), and risk support (items 2, 4, and 8). The possible score ranges from 7-56 and the higher score reflects higher organizational support.[19] A recent study among nurses found a Cronbach's alpha of 0.67 for this scale, which is considered acceptable for exploratory research.[20]

Coping strategies

This scale with 12 items was originally developed by Lee et al (2005) to identify the personal coping strategies during the 2003 SARS epidemic.[21] Using this scale, the participants could identify possible behaviours they used to cope with outbreak stress. The participants were asked to rate the frequency of coping strategies used on a four-point scale (0=almost never; 1=sometimes; 2=often; 3=almost always). The possible score ranges from 0 to 36. The higher score reflects use of effective coping strategies.

The English version of the questionnaires was piloted among a small group (n=50) of students and found that the study was feasible. Then, the questionnaire was circulated among the student groups.

Ethical consideration

Ethical approval for this study was obtained from the institute ethics committee. We also sought permission from the concerned authorities of the nursing colleges for data collection. It was explained to the students that participation in this study was voluntary and would not affect their academic performance. As part of the consent process, participants were requested to click on the Google link consent page which may further direct them to complete the questionnaire.

Statistical analysis

Data analysis was performed using appropriate statistical software (SPSS 21 version). Descriptive statistics such as frequency, percentage, mean and standard deviation were performed. Inferential statistics (independent t-test, one-way analysis of variance) were used to examine the relationship between socio demographic variables and participants' resilience, perceived social support, organizational support and coping strategies. The level of significance was fixed at 0.05 levels.

RESULTS

The sample for the present study consisted of 1017 undergraduate nursing students, of whom 87% were females. The mean age of the participants was 21 years (SD, 2.16). Most of the participants were from Karnataka (33%), Andhra Pradesh (27.4%), and Maharashtra states (13.7%). Despite the fact that the vast majority of participants (81.4%) received COVID-19 vaccinations, 18.6% of students were not vaccinated due to allergic reactions or religious beliefs. According to the present study sample, 14.6% of the students had a Coronavirus infection. More than half of them had positive attitudes towards patients infected with COVID-19 (Table 1).

Table 1: Description of the participants.

Variables	Frequency (n)	Percentage (%)
Age (years)		
≤20	513	50.4
≥21	504	49.6
Gender		
Male	130	12.8
Female	887	87.2
State		
Andhra Pradesh	279	27.4
Karnataka	336	33.0
Madhya Pradesh	72	07.1
Maharashtra	139	13.7
Odisha	21	2.1
Uttara Pradesh	99	9.7
West Bengal	63	6.2
Others	08	0.8
Year of education		
First year	240	23.6
Second year	314	30.9
Third year	220	21.6
Fourth year	243	23.9
Vaccination status		
Yes	828	81.4
No	179	17.6
May be	16	1.0
Infected with COVID-19		
Yes	148	14.6
No	869	85.4
Attitudes towards COVID-19		
Positive	557	54.8
Neutral	393	38.6
Negative	67	6.6

Table 2 represents the mean scores of resilience, social support, and coping strategies. The mean resilience score (19.84±3.06) indicates that participants had a normal level of resilience. The overall score on the multidimensional perceived social support scale was 66.60 (SD=12.5), and the total score for the three sub-dimensions of significant other, family, and friends were 21.37 (SD=5.76), 23.60 (SD=4.49), and 21.63 (SD=4.82). The results suggest that 79% of participants experienced a high level of support from family, friends, and significant others. The participants perceived a high level of support from their

institutes as the mean score was 39.69 (SD=9.01). However, the participants perceived a greater work support (15.91±3.75) followed by personal support (10.39±2.85) and risk support (13.38±4.43). The mean score on the coping strategies scale was 25.00 (SD=5.15), indicating that 69% of participants had effective coping strategies (Table 2).

Correlational analysis revealed a statistically significant relationship between age, resilience, social support, and coping strategies. The age of participants was positively correlated with resilience (r=0.064, p<0.04) and negatively correlated with social support (r=-0.113, p<0.001). There were also significant positive correlations between resilience and social support (r=0.143, p<0.001), organizational support (r=0.183, p<0.001) and coping strategies (r=0.120, p<0.001). Also, the perceived social support was positively correlated with organizational support (r=0.241, p<0.001) and coping strategies (r=0.356, p<0.001) (Table 3).

There were no significant differences between the groups concerning resilience levels among the nursing students. Nevertheless, there were statistically significant differences between social support and coping strategies based on age, gender, and state. The younger age group (≤20 years) and females perceived higher support from friends, family, and significant others compared to the participants older than 21yeras (t=4.647, p<0.001) and males (t=-0.3620, p<0.001). The mean score on organizational support was significantly differed on participants' age (t=2.188, p<0.02), gender (t=-0.3062, p<0.002), state (t=9.436, p<0.001) and attitudes towards COVID-19 (t=7.213, p<0.001). The nursing students from Maharashtra perceived higher social support (F=7.346, p<0.001) and possessed better coping strategies (F=3.871, p<0.001) than students from other states. The participants who vaccinated for COVID-19 showed better coping strategies (F=5.247, p<0.005), and students with positive attitudes toward COVID-19 perceived higher social support (F=17.90, p<0.001) and better coping strategies (F=5.420, p<0.005) than others (Table 4).

Table 2: Perceived resilience, social support and coping strategies of the participants.

S. no.	Scales/subscales	Minimum	Maximum	Mean	Standard deviation
1	Resilience	12	30	19.84	3.06
2	Social support	12	84	66.60	12.5
	Significant others	04	28	21.37	5.76
	Family	04	28	23.60	4.49
	Friends	04	28	21.63	4.82
3	Organizational support	12	56	39.69	9.01
	Work support	03	21	15.91	3.75
	Personal support	02	14	10.39	2.85
	Risk support	03	21	13.38	4.43
4	Coping strategies	06	36	25.00	5.15

Table 3: Correlation between nursing students' resilience, social support and coping strategies.

Variables	1	2	3	4
Age (years)				
R value	-	-	-	-
P value	-	-	-	-
Resilience				
R value	0.064	-	-	-
P value	0.04*	-	-	-
Social support				
R value	-0.113	0.143	-	-
P value	0.001*	0.001*	-	-
Organizational support				
R value	-0.024	0.183	0.241	-
P value	0.437	0.001*	0.001*	-
Coping strategies				
R value	0.014	0.120	0.356	0.285
P value	0.64	0.001*	0.001*	0.001*

Significance level >0.05

Table 4: Association between nursing students' resilience, social support and coping strategies with socio-demographic variables.

Variables	t/F statistics	Resilience	Social support	Organizational support	Coping strategies
Age (years)	T value	0.056	4.647	2.188	-0.024
	P value	0.95	0.001*	0.02*	0.98
Gender	T value	0.827	-3.620	-0.3062	-0.219 Continued.
	P value	0.41	0.001*	0.002*	0.82
Year of education	F value	0.426	6.554	5.761	2.846
	P value	0.73	0.001*	0.001	0.03*
State	F value	1.587	7.346	9.436	3.871
	P value	0.14	0.001*	0.001*	0.001*
Vaccination status	F value	0.051	1.815	2.770	5.247
	P value	0.95	0.16	0.06	0.005*
Infected with COVID-19	T value	1.536	-0.86	1.321	-0.311
	P value	0.12	0.93	0.18	0.75
Attitudes towards COVID-19	F value	0.130	17.90	7.213	5.420
	P value	0.87	0.001*	0.001*	0.005*

Significance level >0.05.

DISCUSSION

The present study aimed to evaluate the relationships between nursing students' resilience with social support and coping strategies during the COVID-19 pandemic. In the study, 14.6% of students infected with Coronavirus infection, while 18.6% were unvaccinated against coronavirus. Most of the students demonstrated a normal level of resilience, received good support from families and organizations, and used effective coping mechanisms. Participants' resilience level was positively associated with their level of social support and coping strategies.

The majority of participants (81.4%) in the present study were vaccinated against COVID-19. However, 18.6% of the students did not receive vaccination for COVID-19 because of allergic reactions or felt they had adequate immunity. These results were consistent with recent studies showing that 17.6% of nursing students and 10.6% of medical students did not receive the coronavirus vaccine.[22] Similar to the findings of a recent study, 14.6% of the nursing students in this study were infected with coronavirus.[22] There is an urgent need to develop and implement educational interventions to encourage positive attitudes and improve knowledge of coronavirus and vaccination among health care students.

In line with earlier studies, a majority of the students had a normal level of resilience (66%).[23,24] However, the present study findings suggest the need to improve the resilience of nursing students. Social support is an important factor that helps individuals in helping stressful situations. In Indian culture, family plays a key role in supporting their family members. Most of the participants (66.60±12.5, 79%), perceived a high level of social support from family, friends, and significant others, in line with earlier findings with slightly different scores which were lower than the findings in the present study.[25] The majority of the nursing students (71%) in this study perceived a high level of work

support (15.91±3.75) followed by risk support (13.38±4.43) and personal support (10.39±2.85) from administrators of their institutes (39.69±9.01). These findings were consistent with earlier studies among health care workers which suggested support from colleagues and managers and a positive workplace climate has positive effects on perceived psychological distress.[26,27] In the present study, 69% of participants reported that they used effective coping strategies and very few students (7.9%) used maladaptive strategies such as substance abuse.

These findings were similar to a qualitative study, in which a majority of students reported that they utilized positive coping strategies, such as positive reframing, acceptance, and religion.[28] However, in a recent study, 83.40% of the nursing students endorsed a moderate level of coping during the COVID-19 pandemic.[24] The differences could be attributed to the different scales used for data collection.

In this study, nursing students' resilience was positively correlated with social support (r=0.143, p<0.001), organizational support (r=0.183, p<0.001) and coping strategies (r=0.120, p<0.001). Earlier studies also have confirmed these findings that showed a positive association between resilience and coping strategies.[24] Similarly, published evidence showed a positive relationship between resilience and social support among student nurses.[29,30] According to Iranian research, university students can reduce their vulnerability to stress by modifying variables such as resilience, social support, and coping strategies.[31] Based on the findings of the current study, nursing students had a greater level of support from their families and organizations, which helped them to cope with stressful situations, such as the COVID-19 pandemic.

In line with earlier research, age of participants was positively correlated with resilience (r=0.064, p<0.04).[9] Similarly, younger age group (≤20 years) and females

perceived higher support which was consistent with a study among students of medical sciences which showed a significant relationship between the perceived social support and sex (p=0.02).[32] In this study, positive coping style significantly correlated with gender (r=0.106, p<0.001). Similar findings were demonstrated in a recent study among Chinese undergraduates in which females had higher scores for positive coping styles than males (p<0.01).[33] It is critical to provide adequate social and organizational support to student nurses to manage stressful situations, such as COVID-19. There was a positive correlation between perceived social support and organizational support (r=0.241, p<0.001). Exhaustive literature also suggests that inadequate social support and organizational support were the predictors of burnout among nurses.[34] However, younger students (t=2.188, p<0.02) and females (t=-0.3062, p<0.002) perceived high organizational support than older students and males. This study disproves the findings of an earlier study in which younger (p<0.001) and female (p=0.002) health care workers perceived lower organizational support.[35] Also, students, who had received the vaccination, hold positive attitudes and from Maharashtra state have perceived higher social support (p<0.001) and better-coping strategies (p<0.005). These findings suggest that coping strategies in India are diverse based on demographic and regional differences, even though there has not been a study to compare them.

Limitations

The current study has several limitations, including the use of a convenience sample and an online cross-sectional survey with self-reported questionnaires. Hence, we could not establish a causal relationship between resilience, social support, and coping strategies. Furthermore, self-reported questionnaires may lead to response bias. Therefore, the findings were limited in their generalizability.

This study, however, included a large sample of undergraduate nursing students nationwide. However, this study contributes to a better understanding of the impact of social support and coping strategies on students' resilience during the COVID-19 pandemic.

CONCLUSION

This study revealed that most students were normally resilient, experienced high levels of support from families, and organizations, and adapted effective coping strategies during the COVID-19 pandemic. Students' resilience level was positively associated with social support and coping strategies. Furthermore, age was positively correlated with resilience and gender was significantly associated with social support and coping strategies. The results suggest that strengthening resilience and improving coping skills and social support may promote psychological well-being for nursing undergraduates during the coronavirus pandemic. Also, future studies should focus on

educational interventions to improve resilience and nurture positive coping styles among nursing students to empower future nursing professionals, thereby helping them to encounter stressful situations like the COVID-19 pandemic and ensuring the quality of care.

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