

# A Study to Assess the Perceived Stress and Coping Strategies among B.Sc. Nursing Students of Selected Colleges in Pune during COVID-19 Pandemic Lockdown

Deepika Sheroun<sup>1</sup>, Dapple D Wankhar<sup>2</sup>, Amita Devrani<sup>3</sup>, Lissamma PV<sup>4</sup>, S Gita<sup>5</sup>, Keka Chatterjee<sup>6</sup>

<sup>1</sup>MSc Nursing Student (Psychiatric Nursing), Department of Psychiatric Nursing, College of Nursing, AFMC - Pune -40

<sup>2</sup>Asst Professor (Psychiatry Nursing), Department of Psychiatric Nursing, College of Nursing, AFMC, Pune -40.

<sup>3</sup>Principal and HoD Department of Child Health Nursing, College of Nursing, AFMC Pune -40

<sup>4</sup>Professor and Vice Principal, College of Nursing, AFMC Pune-40

<sup>5</sup>Professor and HoD, Department of Med & Surg Nursing, College of Nursing, AFMC, Pune-40.

<sup>6</sup>Asst Professor, Department of Obs & Gynae Nursing, College of Nursing, AFMC, Pune -40.

Corresponding Author: Deepika Sheroun

## ABSTRACT

**Introduction:** The global pandemic has proven to be challenging for students in more ways than one. Ever since in-person classes moved online and “Stay Home Stay Safe” executive order was implemented; many students have faced a distressing change in their employment status. The present study aimed to assess perceived stress and coping strategies amidst the COVID 19 lockdown, among the BSc Nursing students studying in nursing colleges located in Pune

**Objectives:** The objectives of the study are to assess the perceived stress and coping strategies of the BSc Nursing students of all batches in regard to COVID 19 lockdown, and to determine the association of stress and coping with selected demographic variables.

**Materials and Methods:** This cross-sectional online study was undertaken from 15<sup>th</sup> to 20<sup>th</sup> of May 2020. Participants were BSc Nursing Students (1st -4th year), whose perceived stress and coping strategies related to COVID 19, were assessed using an online questionnaire. The tool has 3 sections consisting of demographic data as section A, Perceived Stress Scale as Section B, and Coping Strategies Scale as section C. Score was categorised into three parts as good, moderate and low

**Results:** A total of 427 nursing students completed the questionnaire. Male students had more perceived stress score (22.73) than female students (21.86). Majority of participants were between 21-25 years. The maximum mean perceived stress score (22.56) was observed in 4<sup>th</sup> year students, and least mean perceived stress score (20.20) was found in 2<sup>nd</sup> year students. On the whole the maximum mean coping score (78.45) was found among 1<sup>st</sup> years and least coping score (71.23) was found among 4<sup>th</sup> year BSc Nursing students

**Conclusion:** The present study indicates moderate level of perceived stress with mean perceived stress score of the students Nurses being 21.88 ( $\pm 4.30$ ) and the mean coping strategies score was 74.38 ( $\pm 12.30$ ). The IV Year Nursing students have the highest stress score with a mean of 22.56  $\pm$  4.207. Hence there is a need to take measures by the authorities to reduce stress among the students.

**Keywords:** COVID 19, Pandemic, Perceived Stress, Coping Strategies, Nursing Students, Psychological support

## INTRODUCTION

**‘History has shown us that courage can be contagious and hope can take on a life of its own’**

**-Michelle Obama**

The world has seen outbreaks of epidemics and pandemic since prehistoric times - 5000 BC China , 430 BC Plague of Athens , AD 165-180 Antonine Plague , The Black Death 1346-1353 Asia to Europe , American Plague 16<sup>th</sup> century , to the present age like Great Plague of London 1665-1666 , Great Plague of Marseille 1720-1723 , Philadelphia yellow fever epidemic 1793 , Spanish Flu 1918-1920 , Asian Flu: 1957-1958 , SARS pandemic 2003 , H1N1 Swine Flu pandemic: 2009-2010 , West African Ebola epidemic: 2014-2016 , Zika Virus epidemic: 2015-present day. <sup>[1]</sup> Covid Pandemic, which is currently affecting the world with its origin in Wuhan, China started in Dec 2019. Affecting nearly all the countries in the world it is a historic health emergency condition the world has ever seen which is even worse than world war II.

The rate of contagion and patterns of transmission is threatening the whole mankind.

Pandemic is the outbreak of a disease that occurs over a wide geographic area and affects an exceptionally high proportion of the population: a pandemic outbreak of a disease. <sup>[2]</sup>

The occurrence of Pandemic had increased over the last years with global warming, urbanization, globalization, and exploitation of natural resources. With the previous epidemic and pandemic, the International Health Regulation and WHO prepared to meet specific standards for detecting, reporting on, and responding to outbreaks. <sup>[3]</sup> Despite these improvements, significant gaps and challenges exist in global pandemic preparedness. Pandemics not only impact the mortality morbidity but also stagger the economic growth, delays development. There is social disruption, political tension and individual behavioural changes, such as fear-induced aversion to workplaces and other public gathering places. <sup>[4]</sup> Pandemic affects the mental health of individual as a total result.

Pandemics like COVID 19, affects the mental health due to numerous reasons –

Uncertainty, poor prognosis, economic loss, insecurity, confusion, emotional isolation, stigma, school/work closure, inadequate resources for medical response, and deficient distribution of necessities. As a result people experience a lot of emotional disturbances such as stress, insomnia, frustration, irritability which could lead to psychiatric disorders like depression, anxiety, behavioural changes (substance abuse), also post-traumatic stress disorder in later stages. <sup>[5]</sup> Some groups may be more vulnerable than others to the psychosocial effects of pandemics. In particular, people who contract the disease, those at heightened risk for it (including the elderly, people with compromised immune function, and those living or receiving care in congregate settings), and people with pre-existing medical, psychiatric, or substance use problems are at increased risk for adverse psychosocial outcomes. <sup>[6]</sup>

The psychological issue can worsen with social distancing and the lockdown measures taken by administrations as observed in many countries worldwide.

Limacaoco et al (Apr 2020) In a descriptive study titled Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic, March 2020 which was conducted in 41 countries, revealed that significant higher scores of perceived stress were observed among women, youth, students, and among those who expressed concern and those who perceived increased susceptibility to the COVID-19. <sup>[7]</sup>

Lee J in an article published in Lancet (Apr 2020) explains the effects of COVID 19 pandemic on students. In a survey, which included 2111 participants up to age 25 years with a mental illness history in the UK, 83% said the pandemic had made their conditions worse, 26% said they were unable to access mental health support; peer support groups and face-to-face services have been cancelled, and support by phone or online can be challenging for some young people. <sup>[8]</sup>

According to India Today (07 Apr 20) there are three major education

problems that students and educators currently face due to the Covid-19 pandemic: 1. Students caught in the cross-wire. These are those students who are caught in the limbo on account of education outcomes being withheld due to the Covid-19 pandemic. Some of them do not have a result because exams either did not happen or were left in the middle. 2. Students one year away from school or college-leaving exams. 3. Education disruption. In response to the Covid-19 scare, many schools and colleges have moved online and parents seem to have assumed the role of teachers. Again, while there are a ton of fantastic resources which are available, there are not too many resources which mimic the school that is, provide for multidisciplinary learning, encourage connections across different domains and inspire ideas which help a child develop 21st century skills and prepare themselves for the jobs of the future. [9]

A survey done was by Dartlet et al 2020 (US) to assess the effect of COVID 19 on college students. 4 in 5 students see their institutes as trustworthy sources of COVID-19 information. 4 in 5 students report having to make large or drastic life changes to accommodate the current COVID-19 situation. Despite being digital natives, most students are not fully comfortable with an exclusive online learning medium. [10] Thus it is obvious that the covid 19 pandemic has a negative impact on the student's life.

With the imposing stress of COVID 19 on the students, the present study is focused on the perceived stress by the BSc nursing students. Previous studies from UK and India have revealed that nursing students face comparatively higher level of stress as compared to their counterparts in other colleges. [11-12]

Senturk et al (2018) in Turkey determined in a descriptive study done on the nursing students that the level of stress faced by them was above moderate level. [13]

Therefore, dealing with the hectic student nursing life the drastic lifestyle changes imposed due to COVID 19

pandemic can be very challenging. As there is no current study done in India among nursing student, the present study attempts to explore the perceived stress and the coping strategies utilized by the BSc nursing students in the COVID 19 pandemic lockdown.

**Title of the study:** A study to assess the perceived stress and coping strategies among BSc Nursing students of selected colleges in Pune during covid 19 pandemic lockdown.

**Objectives:**

1. To assess the perceived stress of the BSc Nursing students of all batches in regard to covid 19 lockdown.
2. To assess the coping strategies adopted by the BSc Nursing students of all batches in regard to covid 19 lockdown.
3. To find the association of the perceived stress level of the BSc Nursing students with selected socio demographic variable.
4. To find the association of Coping strategies adopted by the BSc Nursing students with selected socio demographic variable.

**Inclusion Criteria:**

1. All BSc Nursing students can participate in the survey
2. Age should be 17-25 yrs

**Exclusion Criteria:**

1. Participants residing in other cities than Pune city were not included in the study.

**Operational Definition:**

**1. BSc Nursing Students:** All students undergoing I, II, III, IV Basic BSc Nursing course in various Nursing colleges in Pune.

**2.Lockdown:** Restrictions imposed on the general public to remain indoors and maintain social distancing with each other in the outbreak of pandemic.

**3. Perceived Stress:** Perceived stress is the feelings or thoughts which the BSC Nursing students have about how much stress they are since being under lockdown in the past one month.

**4. Coping strategies:** Coping strategies refer to the specific efforts, both behavioral and psychological, that the BSc Nursing students are employing to master, tolerate, reduce, or minimize stressful events during lockdown.

## **MATERIALS AND METHODS**

**Design :** Cross sectional Descriptive study

**Population :** College Students

**Target population:** BSc Nursing students

**Accessible population :** BSc Nursing Students of various colleges in Pune

**Sampling Method :** Purposive sampling

**Data collection tool :** Online Questionnaire consisting of 3 sections

- i) Sociodemographic data
- ii) Modified Perceived Stress Scale
- iii) Modified Brief Coping Strategies Scale

### **i) Sociodemographic Data :**

It consists of 10 questions – Gender , Age , Year of study , Basic qualification , Religion , Residing with family or in hostel , Family status , Parents qualification, Comorbidity in the family and Source of information about COVID 19 .

### **ii) Perceived Stress Scale**

Perceived Stress Scale was developed by Sheldon Cohen in the year 1983. <sup>[14]</sup>

The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. The scale also includes a number of direct queries about current levels of experienced stress. The items are easy to understand, and the response alternatives are simple to grasp. Moreover, the questions are of a general nature and hence are relatively free of content specific to any subpopulation group. The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way.

Stress among nursing students was measured using a previously validated (Cronbach's  $\alpha$  coefficient of internal consistency 0.85) perceived stress scale (PSS). The scale yielded a single score, with high scores indicating higher levels of stress

and lower levels indicating lower levels of stress. <sup>[13]</sup>

### **iii) Brief Coping Strategy Scale :**

The Brief-COPE is a 28 item self-report questionnaire designed to measure effective and ineffective ways to cope with a stressful life event. <sup>[15]</sup> “Coping” is defined broadly as an effort used to minimize distress associated with negative life experiences. The scale can determine someone’s primary coping styles such as Emotion Focused Coping, Problem Focused Coping, Adaptive Coping and Maladaptive Coping.

**Validity:** The Brief-Cope was developed as a short version of the original 60-item COPE scale (Carver et al., 1989), which was theoretically derived based on various models of coping. The Brief-Cope was initially validated on a 168 participant community sample whom had been impacted by a hurricane (Carver, 1997), and shown to have adequate factor structure.

**Data Measurement :** Data measurement was done by self administered online survey

### **Method of data collection :**

1. Permission was taken from the psychiatric department to conduct the study and ethical clearance was obtained.
2. Participants who were meeting the inclusion criteria were selected by convenient sampling.
3. Consent from the participants were obtained and the purpose of the study was explained to them through online survey questionnaire.
4. The self administered questionnaire consisted of socio demographic data, Perceived Stress Scale and Brief Coping Strategies Scale.
5. An email was provided to the participants to give their comments or to write to the authors.
6. Participants who were unwilling to complete the questionnaire due to personal reasons were free to withdraw from the study .

7. The questionnaire were taken from the participants and analysis was done further .
8. Confidentiality of the collected data was maintained and used only for the research purpose .
9. Data collection was done from 427 participants on in the second week of May.

### Statistical Analysis:

The collected data were organized as descriptive, and they included the student's age, gender, year of study etc, the data were analysed and tabulated as percentage distribution (Table 01). The mean score and SD were tabulated for each of the measures under research, year in college, gender, age, religion, basic qualification, family type, parents's occupation, comorbidity in the family and place of residing presently.

Inferential statistical analysis was done for the perceived stress and coping strategies. The mean score and SD were tabulated. The data were analysed using the Statistical Package for the Social Sciences statistical software (SPSS -21) .

Association between socio demographic data was analysed using ANOVA and Mann Whitney test

## RESULTS

A total of 427 responders took the survey from different Nursing Colleges. The study was carried out through online survey after the questionnaires were prepared on Google form and passed on to the participants through email and WhatsApp messages. The main findings of the study indicate that the mean perceived stress score among the participants was 21.88 ( $\pm 4.30$ ) and the mean coping strategies score was 74.38 ( $\pm 12.30$ ).

**Demographic Characteristics:** The demographic characteristics of the participants are presented in Table 01. Most of participants were of age group 21-25 years (60.2). Out of total 427 participants, 11 were males and rest

females. The maximum number of participants were in their final year of study (31.9%).

Hinduism was the most followed religion (81.0%). Almost all of the participants were residing in hostel (92.3%) belonging to nuclear family (86.2%) and with basic qualification of higher secondary school (82.9%).

The participants reporting of comorbidity in the family were only 20.2% and 61.4% of the participants parents were government employed. Maximum of the participants received information of COVID 19 through the internet.

### Perceived Stress Score (PSS) in nursing Students:

- The high PSS score was seen in 13.35 % of the participants while 82.67% of the participants experienced moderate perceived stress. (Fig 1)
- Among the years of study, fourth year students had the highest scores for PSS, followed by third -year students. Second-year students had the lowest score.

None of the socio demographic variables showed association with the PSS score.

### Coping Strategies Adopted by the students:

- As depicted in Table 2, maximum of the participants were found to be having moderate coping strategies score 76.58 %, while as only 18.5% of the participants had high coping strategy scores and 4.9% of the participants had low coping strategies.
- On observing the type of coping strategy style as seen in Table 3 – Maladaptive coping scores were highest with mean – 31.5 ( $\pm 5.19$ ) and adaptive coping being the least 9.44 ( $\pm 2.64$ ).
- Association of age with coping strategies was seen, with age group of 17-20 years showing higher scores of coping strategy as against age group of 20-25 yrs.
- Significant association was found out with the year of study and coping

strategies score with F value of 7.93 at  $p < 0.0001$ . Higher coping strategies score was seen in I year followed by III year and least by IV year participants.

- Association of coping strategies was also seen with the place of residence, the participants staying with relatives having highest score than staying alone or with family.

Table No 1 Socio economic data

Criteria	Parameters	No of cases	Percentage (n=427)
Age (Yrs)	17 – 20	167	39.1
	21 – 25	257	60.2
	26 & above	3	0.7
Gender	Male	11	2.6
	Female	416	97.4
Year of education	I year BB Sc Nsg.	112	26.2
	II year BB Sc Nsg.	101	23.7
	III year BB Sc Nsg.	78	18.3
	IV year BB Sc Nsg.	136	31.9
Religion	Hindu	346	81.0
	Muslim	12	2.8
	Christian	56	13.1
	Others	13	3.0
Residing presently	Hostel	394	92.3
	With family	27	6.3
	With relatives	3	0.7
	Others	3	0.7
Basic qualification	Higher secondary	354	82.9
	Graduation	67	15.7
	Post graduation	6	1.4
Type of family	Joint	59	13.8
	Nuclear	368	86.2
Parent occupation	Govt. employee	262	61.4
	Pvt. Employee	82	19.2
	Self employee	63	14.8
	Unemployed	20	4.7
Comorbidity	Present	86	20.1
	Absent	341	79.9
Source of information for COVID 19	Internet	285	66.7
	Television	122	28.6
	Peers	7	1.6
	Others	13	3.0

Table 2: Coping strategies adopted by BSc Nursing students in regard to COVID 19 lockdown

Coping score	No of students	Percentage
28 – 56 (Low)	21	4.92
57 – 84 (Moderate)	327	76.58
85 – 112 (High)	79	18.5
Total	427	100

Table 3: Coping strategies adopted by BSc Nursing students in regard to COVID 19 lockdown

	Minimum	Maximum	Mean	SD
PFC	6	24	16.57	4.14
EFC	6	24	16.87	4.16
AC	4	16	9.44	2.64
MAC	13	48	31.5	5.19

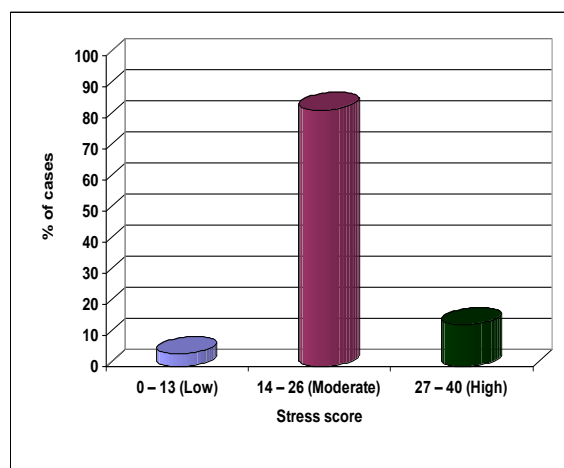


Figure 1: Perceived stress score of BSc Nursing students in regard to COVID 19 lockdown

## DISCUSSION

Public health emergencies can have psychological effects on the students like

stress, anxiety, worry etc With COVID19 having psychological impact on college students like anxiety and distress; [14] nursing students do not remain untouched with this gigantic problem. The aim of the study was to assess the perceived stress and coping strategies adopted by the BSc Nursing students during COVID 19 pandemic.

Perceived stress is a measure of the degree to which situations in one's life are appraised as stressful. This survey revealed that as much as 82.67 % of the students had moderate level of perceived stress score and 13.35% had high perceived stress scores because of COVID 19 outbreak and lockdown. Lockdown and social distancing were undertaken throughout the country in order to prevent the spread of infection and due to the devastating effect on health due to increasing mortality and morbidity as seen in many other countries. [16] The state of lockdown which was followed in many parts of the world has leads to changes in everyday routine life. With the spread of COVID19 anxiety, worry and stress has increased among the masses, including in India. [17] The shortage of sanitizers, medical supply, the overwhelming and sensational news headlines, and erroneous news reports have also added to anxiety and fear. [18]

Social distancing amidst the crisis has contributed greatly to the perceived stress as reduction in interpersonal communication leads to increase in psychological distress. [19] Maximum of the students (92.3%) had been residing in hostels away from home (Table 01) which could be contributing factor to stress in students. This stress adds on to the already stress perceived by nursing students who experience stress related to assignments and clinical work. [20]

Analysis of variance reveals that there is no association between perceived stress and any of the socio demographic variables. This is in contrast with study by **Limacao 2020**, where age (less than 30 yrs), and sex (females) was associated with higher perceived stress. However perceived

stress is higher in students than employed or unemployed individuals co-relating to the findings of the present study. [7]

The second aspect explored in the study is the coping strategies adopted by the students. "Coping is the process of managing demands that are appraised as taxing or exceeding the resources of the person." (Shelley E. Taylor, 2003). [21] Thus, coping is not a one-time action that someone takes; rather, it is a set of responses, occurring over time, by which the environment and the person influence each other's. [22]

Coping helps individual to adapt to new and challenging situations and is important for stabilization. In the times of lockdown and COVID 19 pandemic it important to adapt ourselves to the new and modified routine. In the present study Brief Cope was used to assess the Coping Strategies of the students using 'Brief Cope – By Carver '.

The study revealed that 76.58 % of the participants had moderate Coping Strategies, while as 18.5 had high Coping Strategies and only 4.92 % had low Coping Strategies. Maximum of the participants utilized maladaptive coping as compared to the other types of emotion focused , problem focused and adaptive coping .

Analysis of variance revealed that the socio demographic variable like age were significantly associated with Coping strategies utilized by the participants. Age group of 17-20 had maximum coping strategies. Religion, gender, basic qualification, type of family of the participants, co morbidity in family and sources of information regarding COVID 19, was not associated with the coping strategies. The year of study was associated significantly with coping strategies, with I year adopting maximum coping strategies, followed by III year and least by IV year. Maximum coping was showed by those participants who were residing with relatives than those staying in hostel or home. Those participants whose parents

were private employees showed maximum coping.

Coping strategies in the pandemic and lockdown have been utilized by the masses indifferent ways, along with the mentioned coping styles; the behavioural coping includes – washing or disinfecting their hands more often than usual , avoiding public places/events , avoiding public transport (subway, tram, bus, train), avoiding contact with risk groups (old people, people with previous illnesses) etc are being used by the masses today. [23]

In the difficult times like the COVID 19 pandemic, living in lockdown is requires a lot of lifestyle modification leading to psychological distress and stress. The present study focuses on the perceived stress by the Nursing Students and the Coping Strategies adopted by them. In the present times the coping strategies adopted by the students would help them not only in the present difficult situation but have outlasting effects in the future too.

## CONCLUSION

The present study highlights the perceived stress by nursing students who already lead a hectic routine and lifestyle. The mean perceived stress score among the participants was 21.88 ( $\pm 4.30$ ), the mean coping strategies score was 74.38 ( $\pm 12.30$ ) with maladaptive coping strategy being the highest in the participants. Stress was not affected by any of the socio demographic variables, while as coping strategies score was found to be more in the I year of study as compared to other years and in the age group of 17-20 yrs. We believe that providing Nursing students psychological support and assurance can help the students to overcome the stress to cope in the lockdown and perform better in their studies.

### Conflict of Interest

The authors have no conflict of interest.

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