

A study on perceived stress among young adults during social isolation

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ABSTRACT

Background: As Kolkata (metropolitan city of West Bengal, India) has gone under lockdown due to the outbreak of covid-19 since March, 2020 social distancing has become a local term. It's been reported in news, journals and researches that there are increasing cases of stress and anxiety due to the pandemic. The World Health Organization also issued a journal "Mental health and psychosocial considerations during the COVID-19 outbreak" stating the possible increase of stress and anxiety due to the pandemic which includes social isolation, constant stream of news reports and misinformation. **Aim:** The objective of the study is to find and compare the perceived stress among the young adults of Kolkata during social isolation. **Materials and Method:** The study was conducted on the age group of 18-25-year-old (N=100) of Kolkata by using two versions of PSS Item Inventory (Perceived Stress Scale by Sheldon Cohen) -PSS 10 and PSS-14, which was emailed to them. The scores were then calculated after which the Mean and Standard Deviation was compared between males and females; students and working individuals. **Results:** The study shows that females have higher perceived stress than men in both of the versions of PSS (10 and 14). It was also seen that working individuals have more perceived stress than students. **Conclusion:** Stress among young adults is not out of the ordinary these days and with the effect of social isolation it can have a havoc on one's mental and physical health. Some stress relieving techniques like yoga and exercise, engaging in art or a hobby, meditation, staying connected with loved ones virtually, keeping a journal can help people during isolation.

Keywords: Pandemic, Social Isolation, Stress, Perceived Stress Scale, Social Distancing, Stress Relieving Techniques, Covid-19

Lazarus and Folkman (1984) defines stress "a pattern of negative physiological responses occurring in situations where people perceive threats to their well-being which may be unable to meet." It can manifest itself either as eustress or as distress. Eustress, translated as 'good stress', is a positive form of stress that motivates an individual to continue working while distress is the 'bad stress'. Stress is caused by events or situations in our environment which are known as stressors which can be of many kinds -psychological, physiological, environmental and social stressors. The most common are daily hassles, crowding, job stress, loss of loved ones and financial problems.

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Pandemic/epidemic are one of the many environmental stressors. Research during the 2003 SARS outbreak showed that healthcare workers who were at high risk of contracting the diseases appear not only to have chronic stress but also higher levels of depression and anxiety (McAlonan et al, 2003). With contagious diseases causing pandemics, social isolation among people is a must which provokes mental health issues. A review of research in *The Lancet* evaluated 24 studies looking at the psychological outcomes of people who were quarantined, an extreme form of social distancing, during outbreaks of SARS, H1N1 flu, Ebola and other infectious diseases since the early 2000s. Most reviewed studies reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger. Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. (Department of Psychological Medicine, King's College London, London, UK ;S K Brooks , R K Webster, L E Smith, L Woodland , Prof S Wessely , Prof N Greenberg, G J Rubin, 2020) Separation from loved ones, the loss of freedom, uncertainty over disease status, and boredom can, on occasion, create dramatic effects.

Adolescence is the transition period between childhood and adulthood and it is a period of stress and strain (Byrne, Davenport, & Mazanov, 2007).

A large body of research implicates stress in various mental health disorders among youth and adults. Several large studies among adults have linked chronic work-related stress and mental disorders in adults. High job strain, increased psychological demands, and job insecurity are strongly associated with depression, particularly among men (Cohen et al., 2007; Virtanen et al., 2007; Wang, 2005; Wang, Lesage, Schmitz, & Drapeau, 2008).

While stress is a negative physical and emotional experience, perceived stress is the feelings or thoughts that an individual has about how much stress they are under at a given point in time or over a given time period. Perceived stress incorporates feelings about the uncontrollability and unpredictability of one's life, how often one has to deal with irritating hassles, how much change is occurring in one's life, and confidence in one's ability to deal with problems or difficulties. It is not measuring the types or frequencies of stressful events which have happened to a person, but rather how an individual feels about the general stressfulness of their life and their ability to handle such stress. (Phillips A.C. (2013) Perceived Stress. In: Gellman M.D., Turner J.R. (eds) *Encyclopedia of Behavioral Medicine*. Springer, New York, NY)

Perceived stress also has serious effects on health like tension, headaches, pain, anxiety, depression, eating disorder and sleep disorders. (Health Assured Team, 2019)

In a research conducted on medical postgraduate students it was seen that perceived stress was associated with higher scores on general psychopathology and burnout. Postgraduate students who displayed positive coping strategies had lesser perceived stress. Females had higher scores on perceived stress and psychopathology. (Guruprakash KV, Mehta SG, Atul B, Prakash J, Divinakumar KJ, Khan SA, et al. 2018.)

The relevance of perceived stress in research leads to the need for valid and reliable instruments to measure it. The perceived stress scale (PSS) is one of the most widely used psychological instruments for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale

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also includes a number of direct queries about current levels of experienced stress. (Cohen S, Williamson G. Perceived stress in a probability sample of the United States. In: Spacapan S, Oskamp S, editors. *The Social Psychology of Health: Claremont Symposium on Applied Social Psychology* (pp. 31-67). Sage Publications; 1988.)

A study conducted in UAE among medical students, trainees, and university faculties using a questionnaire based on Cohen's Perceived Stress Scale, showed that 65% of the students perceived stress (PS) levels too high. Relationship between stress scores and students' opinions regarding whether stress perceived was too high or not was significant. No statistically significant gender or stage of medical training differences was found. (Stucky ER, Dresselhaus TR, Dollarhide A, Shively M, Maynard G, Jain S, et al. Intern to attending: Assessing stress among physicians. *Acad Med* 2009; 84:251-7.)

The ability to measure stress reliably among young adults during social isolation would be useful for further research on how interventions and techniques can reduce anxiety during such unconventional times.

The aim of the current study was to assess the perceived stress among young adults of Kolkata, India during the government-imposed lockdown leading to social distancing in order to reduce the spread of Covid-19 pandemic.

MATERIALS AND METHOD

Objective

1. To evaluate the level of perceived stress among young adults during social isolation.
2. To compare the perceived stress between females and males of the given age group.
3. To compare the perceived stress between students and working individuals of the given age group.

Hypothesis

Null hypothesis (1)- There is no gender difference of perceived stress level among young adults. Alternative Hypothesis (1)- There is a gender difference of perceived stress among young adults.

Null hypothesis (2)- There is no difference of perceived stress level between students and working individuals.

Alternative Hypothesis (2)- There is a difference of perceived stress between students and working individuals

Participants

The study was conducted on 18-25-year olds of Kolkata. The survey included 100 participants (male=50; female=50). The sample contained both students and working individuals.

Materials

The PSS item inventory (Perceived Stress Scale by Sheldon Cohen) was used to measure the degree to which situations in an individual's life are appraised as stressful, over the last one-month duration. The 10-item version (PSS-10) consists of six negative and four positive items. The PSS-14 consists of 14 items- seven positives and seven negatives. Individuals rate items on a five-point Likert scale ranging from 0- "never" to 4- "very often". For the

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ease of participants, the inventory was presented to them as a questionnaire. It was sent to the participants via email.

Perceived stress is not merely assessing stressful life events but assessing the degree to which life situations are considered stressful, which is the primary appraisal (Lazarus and Folkman, 1984).

According to Lazarus and Folkman, this primary appraisal (i.e., perceived stress) determines the degree of confidence individuals possess regarding their ability to cope with stressful situations (i.e., secondary appraisal).

Past examination of the factor structure of the PSS has supported a two-factor structure for the original English (Cohen, 1988; Lee, 2012; Taylor, 2015) version. The two-factor structure of the PSS includes one-factor that is grouped by negative wording of items (non-reverse-worded scoring), and a second factor that is grouped by positive wording of items (reverse-worded scoring). Some researchers have posited that the negative-worded factor measures perceived helplessness or negative stress, and that the positive-worded factor measures perceived self-efficacy or positive stress (Reis, Hino, torch, 2006).

The instructions were clearly mentioned in the email as to how the responses were to be given and care was taken to ensure that they understood the questionnaire. Each participant was requested to respond to each item in the questionnaire freely and frankly without any hesitation. Each participant was asked to clarify if they were unable to understand something.

Ethical Consideration

Informed consent was taken from the respondents before the questionnaires were sent to them. It was also stated to them that any information given by the respondents will be kept confidential and their anonymity was assured.

Scoring

PSS-10 scores are obtained by adding the six negatively stated items (items 1,2,3,6,9,10) as the responses given and reversing the responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. PSS-14 scores are obtained by adding the response of negatively stated items and reversing the responses for positively stated items.

Individual scores on the PSS-10 can range from 0 to 40 with higher scores indicating higher perceived stress.

1. Score ranging from 0-13 would be considered low stress.
2. Score ranging from 14-26 would be considered moderate stress
3. Scores ranging from 27-40 would be considered high perceived stress.

The scores in PSS-14 ranges from 0-56, with higher scores indicating greater perceived stress. The PSS-14 is not a diagnostic instrument; therefore, there are no cut off scores. (Shirley Ryan Ability lab, 2015)

The data was analyzed using appropriate statistical tools- Mean, Standard Deviation and T-test.

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Variables

Gender and occupation are the independent variables whereas stress levels is the dependent variable.

RESULTS

In the present study, there were a total of 100 respondents from Kolkata among which 50 were male and 50 were female. 92% of the respondents were students while 8% were working individuals. Sociodemographic profile is brought out in Fig.1. All the respondents belonged to the age group of 18-25 therefore the mean age is 21.5.

Self-administered questionnaire of PSS was given to subjects in the month of April after 30 days of government-imposed lockdown on account of covid-19 leading to social isolation.

Fig 1: Sociodemographic Profile of the study

Parameters	Variable	n (%)
Sex	Male	50 (50%)
	Female	50 (50%)
Occupation	Student	92 (92%)
	Working Individuals	8 (8%)

Comparison between the parameters in both versions of PSS-10 and 14 are shown in fig.2.1 and 2.2. The study shows that the mean for females in PSS-10 and PSS-14 is 22.18 and 30.18 respectively which is higher than the mean for males in PSS-10 and PSS-14 that is 19.28 and 27.22 respectively indicating that females have more perceived stress than men. The t-test is significant ($p < .05$) for both the versions of PSS (fig 2.1) suggesting that there is a significant gender difference of perceived stress which means that null hypothesis (1) is rejected and the alternative hypothesis (1) is accepted.

To compare the results to a previous study conducted by L. Harris Poll who gathered information on 2,387 respondents in the U.S using PSS it can be seen that in the Norm Table for the PSS 10 item inventory(Cohen S et al., 1988), mean for the female i.e., 13.17 is more than the mean for the male i.e, 12.1 which is alike to the outcome of the present study. The mean for both male and female in the present study is more than the norm which could be due to several factors one being social isolation and difference in place of the study conducted.

Research on ‘Gender Differences in Perceived Stress levels and Coping Strategies among College Students’(Anbumalar C, Dorathy A P, Jaswanti V P, Priya D & Reniangelin D, 2017) shows that females show higher rates on perceived stress level than males among college students which is similar to the results of present study conducted.

Fig 2.1: Comparison between male and female in both versions of PSS (10 and 14)

Category	PSS-10			PSS-14		
	Mean	SD	T-test	Mean	SD	T-test
Male	19.28	6.62	2.08	27.22	7.6	1.83
Female	22.18	7.24		30.18	8.54	

Note: The t-value is significant at $p < .05$. PSS- Perceived Stress Scale. SD- Standard Deviation

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The study also shows the perceived stress among students and working individuals in fig. 2.2. The mean for working individuals in both versions of PSS-10 & 14 is 21 and 29.12 respectively which is higher than the mean for students which is 20.7 and 28.6 respectively in PSS version-10 and 12 indicating that working individuals have more perceived stress than students. But the sample data do not provide sufficient evidence to show a significant difference (t-test is insignificant) in perceived stress levels among students and working people. Hence there is no evidence that the null hypothesis (2) is false.

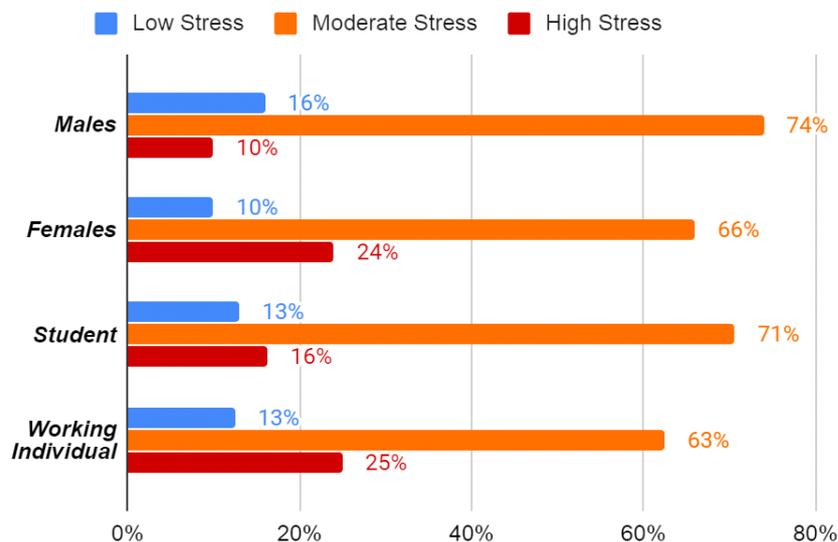
The study revealed that 25% of working individuals have high stress followed by 24% of females experiencing high stress. (fig 3)

Fig 2.2: Comparison between students and working individuals in both versions of PSS (10 and 14)

Category	PSS-10			PSS-14		
	Mean	SD	T-test	Mean	SD	T-test
Student	20.7	6.91	-0.11	28.6	8.2	-0.15
Working Individual	21	9.11		29.12	8.47	

Note: The t-value is insignificant. PSS- Perceived Stress Scale. SD- Standard Deviation

Fig 3: Category wise comparison of levels of stress (according to PSS-10 scores and interpretation scale)



DISCUSSION

The purpose of the study was to evaluate the level of perceived stress among young adults during social isolation. This study also probes into the matter whether there is any gender difference in stress levels during such uncommon times and to also investigate if there is a significant difference of stress level between students and working individuals. It was however found out that the females do experience higher stress levels than men and the working individuals perceive higher stress than students in the present study.

The comparison between previous studies and the present one drawn prior in this paper focuses generally on the relationship between perceived stress and the parameters of sex and occupation and not the condition of 'social isolation'. We have to keep in mind that the data

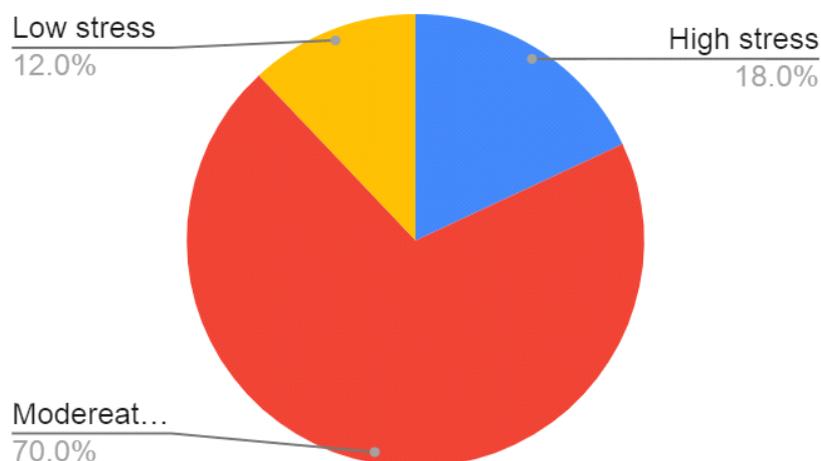
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collected in this study is during when the respondents were socially distanced. There are very few researches showing a relationship between levels of stress and gender/occupation in a population aged 18-25 during social isolation.

However, in a study after the containment of SARS outbreak in 2004 (Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. 2004) psychological effects of quarantine in Toronto, Canada were measured. The 129 quarantined persons who responded to a Web-based survey exhibited a high prevalence of psychological distress. Symptoms of posttraumatic stress disorder (PTSD) and depression were observed in 28.9% and 31.2% of respondents, respectively. Longer durations of quarantine were associated with an increased prevalence of PTSD symptoms. All respondents described a sense of isolation. The mandated lack of social and, especially, the lack of any physical contact with family members were identified as particularly difficult. Confinement within the home or between work and home, not being able to see friends, not being able to shop for basic necessities of everyday life, and not being able to purchase thermometers and prescribed medications enhanced their feeling of distance from the outside world.

Another observational study on SARS home-quarantined college students in a support group in Taiwan shows the psychological effects of staying in isolation. The support group involved 6 male and 6 female members. The participants' ages ranged from 20 to 24. Some of them responded to the SARS incident with severe helplessness, fear, or horror during the period of home quarantine (Ho & Chang, 2003). One female member reported that she was experiencing a strong negative effect in response to the SARS event. She was just too depressed to get out of bed and face the day. Another female student mentioned that she was manifesting intense psychological reactions such as disgust, depression, and tension when watching TV news programs, and she had difficulty facing information about SARS. Members commonly stated that they no longer had strong feelings, or that they felt numb, even bored when talking about the SARS quarantine. This sort of pervasive detachment may interfere profoundly with the individual's ability to relate to others, enjoy daily life, remain productive, and plan for the future. (Peter J. D. Pan, Shih-Hua Chang & Yen-Yen Yu ,2005)

Fig.4 showing Percentage of population experiencing stress levels



Looking into the present study, it is seen that 18% of young adults (aged 18-25) have high perceived stress, 70% have moderate perceived stress and 12% have low perceived stress level during social isolation (Fig.4).

CONCLUSION

To conclude, females are seen to have higher perceived stress than men during social isolation. In this study, it has been seen that the working individuals have higher perceived stress than students during the same time period. These results were true for both the versions of PSS-10 & 14.

Implication: Times during a long period of social isolation and quarantine period can be extremely stressful leading to health issues. There is a need for an increase in online counselling services, to help mitigate the level of stress faced by people. Teaching appropriate coping skills to adolescents and adults can help them avoid maladaptive coping skills. Other ways to keep stress under control is to have a healthy lifestyle with a proper diet, exercise and a daily schedule while staying connected with others virtually. One can rely on pets for emotional support. One can also download smartphone applications that deliver mindfulness and relaxation exercises (Keeping your distance to stay safe: American Psychological Association). Even art can help people release stress.

Even after times become normal some people might still face issues. Providing counselling services for such individuals from college, schools and even work, can aid the mass population to go back to their original routines with no difficulties.

Limitations of the study

Although this study has made some contribution to the existing literature, the findings of this study are only limited to young adults (18-25 year). The family construct was not given much importance which is one of the main factors influencing stress level. Other stressors were also not taken into account. Non- binary individuals of the same age group were excluded. Since the information was collected on a self-administered questionnaire because of the respondent's interpretation of the questions or simply because of inaccuracies of responses or desire to report their emotions in a certain way, we cannot fully rule out information bias, even though we made adequate efforts at clarification, simplification.

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Conflict of Interest

The author declared no conflict of interest.

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