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Effects of Online Yoga Training on Self-Perceived Stress of the Students of Certificate Programme in Yoga (CPY) of IGNOU

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Abstract: Yoga and meditation have become widely accepted as nonpharmacologic modalities for stress and anxiety reduction as well as general health. Indira Gandhi National Open University (IGNOU) School of Health Sciences (SOHS) launched a six months-long Certificate Programme in Yoga (CPY) in July 2019 for students who have cleared their 12th class. The objective of this study was to find out the effects of online yoga training on self-perceived stress among the students of the CPY programme enrolled during the academic year 2021. This was a study with both pre- and post-tests and was carried out on the students of the CPY programme between March and December 2021. A total of 69 and 81 students participated from the January 2021 and July 2021 batches, respectively. The Perceived Stress Scale (PSS) was used as a tool to measure the level of stress. A structured close-ended questionnaire was sent by Google Forms to ascertain self-perceived stress. The total mean value of the PSS score after online yoga training decreased from 18 $\pm$ 5.9 SD in the pretest to 13.7 $\pm$ 6.5 SD in the post-test of students from the January 2021 batch, and from 17.4 $\pm$ 5.8 SD in the pre-test to 13.1 $\pm$ 5.6 SD in the post-test of students from the July 2021 batch. The difference of mean value of pre-test and post-test of both the batches of students after online yoga training were significant (p value < 0.0001). The online yoga training was effective in reduction of perceived stress score among the students of the Certificate Programme in Yoga (CPY).

Keywords: yoga, online practical training of yoga, stress reduction with online yoga.

Introduction

School of Health Sciences (SOHS) of Indira Gandhi National Open University (IGNOU) launched a six months' Certificate Programme in Yoga (CPY) in July 2019 for the 12th Pass candidates. Admission was offered in the January and July admission cycle of each year. This programme is offered through open and distance (ODL) mode. Self-Learning Materials (SLM) were given to the students for theoretical as well as for practical courses. Learners had to visit the study centre to attend the practical training in face-to-face mode in this programme. The face-to-face practical training was disrupted during the COVID-19 pandemic. Approximately 1.46 million deaths out of 63.1 million confirmed cases due to the Novel Coronavirus (COVID-19) were reported by November 30, 2020. People were living under tremendous psychological pressure (Chhetri et al., 2021). The study also mentioned that isolation, engaging in online classes, frequent network failure, and peer and parental pressure added to students' perceived stress. As expected, the pandemic influenced the psychological health of students worldwide.

Context

The Certificate Programme in Yoga consists of three courses. Among them two are theory courses and one is practical. All the theory and practical course are compulsory. Theory course 1, and course 2 represent the disciplines of Introduction to Yoga and Yogic Texts and Yoga and health, respectively. The theory course 1 and 2 comprised a total 18 units (chapters) and 14 units respectively. The practical course consisted of a practical manual with seven units, and a log book. There were 12 days of face-to-face compulsory practical training. The practical training was provided online through Google Meet during the pandemic period. Daily practical training sessions were announced to all students in advance. All students were asked to read the practical manual before the online session. Only one teacher provided the online training during the entire session. During the online live session, the teacher initially announced the sequence of activities. Then he described any particular practical activity, subsequently he demonstrated the particular activity by doing it himself. The teacher also kept describing each step of the practical activity. Then he explained other necessary information, like benefits, precautions and contraindications of the activity. He also explained what are the mistakes commonly observed amongst those doing these particular activities. Then he instructed all students to do the same activity and kept correcting the students one by one. One more yoga expert and the author himself also observed the activity of the students and advised the students as necessary. Any questions about the particular activity were discussed before proceeding to the next activity. All students were asked to practice the activities taught on the particular day. On the next day, a quick revision of all practical activities carried out on the previous day were performed by the teachers as well as by the students. Online theory counselling as well as interactive radio counselling sessions were also provided to the students of this programme. Candidates had to go through a structured assessment system for the theoretical and practical course and they had to pass all the courses to earn the degree certificate.

Theoretical Framework

The theoretical framework has four dimensions, namely, stress, pandemic related stress, yoga as a non-pharmacological treatment of stress and the biological plausibility of yoga in the reduction of stress.

Stress is defined as "a state of mental or emotional strain or tension resulting from adverse or very demanding circumstances" (Lemay et al., 2019). Stress is a commonly experienced aversive state purported to impact the course of disease and illness at a systemic level (Cohen et al., 2015). Increased stress, depression and anxiety are the features of modern lifestyles (Hidaka, 2012). Stress affects students' physical, mental, social, and intellectual health. Students do not always possess the necessary stress management skills and coping strategies.

An international study among 9,565 individuals from 78 countries, during the height of the lockdown (April – June, 2020), the pandemic was experienced as at least moderately stressful for most people, and 11% reported the highest levels of stress (Gloster et al., 2020). Physical activity is one coping strategy that is perhaps underutilised by many students (Sharma, 2013).

A nationwide lockdown and call for home quarantine has been an unprecedented action taken by the authorities in India to control the spread of COVID-19 during the pandemic, but it is also associated with psychological effects in the form of both posttraumatic stress disorder (PTSD) and depression (Singh & Khokhar, 2021). It was observed that the psychological effect during the pandemic of losing loved ones would have been worse compared to the psychological effects due to lockdown. Seeking information one or twice a day, staying connected with the family and friends, exercise and yoga at home, nurturing hobbies, amplifying positive and hopeful stories, etc., are some of the activities that can calm our minds and reduce anxiety (Patnaik & Maji, 2020).

Physical activity such as yoga is a key element in health promotion (Tripathi et al., 2018). This study also suggest that the traditional expressions of yoga as a lifestyle is firmly rooted in and committed to the classic texts (e.g., Yoga Sutra by Patanjali, and Hatha Yoga texts like Hatha Yoga Pradeepika, Gheranda Samhita) and also embrace the concept of the eight limbs, or aspects, of yoga. Yoga is a Sanskrit word meaning unity of mind and body, which has been used in Eastern societies for the past 5,000 years and has recently received much attention from Western countries (Barnes et al., 2004). Yoga and meditation have become widely accepted as nonpharmacologic modalities for stress and anxiety reduction as well as general health (Erogul et al., 2014; Ross et al., 2015). In Patanjali Yogasutras, yoga is defined as, "Yogas citta vritti nirodhah" and it means 'Yoga is the ability to calm/direct/restrain/cease the fluctuations of the consciousness/mind where all misconceptions (*vrittis*) that can exist in the mutable aspect of human beings (*citta*) disappear, thereby, leading to Samadhi (a state where the perceiver abides in his or her own/true nature or identity) (Swami Niranjanananda Saraswati, 2002). Yoga holds potential as a self-empowering, nonpharmacological method for enhancing stress management and wellness in college students (Sengupta, 2012). It was observed that Suryanamaskara, a yogic practice was effective in leading to relaxation dispositions, such as physical relaxation, mental quiet, being at ease/peace, being rested and refreshed, having strength, awareness and joy and in reducing sleepiness, somatic stress, worry and negative emotion at a dispositional level (Tripathi et al., 2018). Literature shows that yoga intervention increases immune function and promotes brain activity in areas associated with positive emotions, reduces anxiety and negative affect, and prevents a relapse of depression (Jain et al., 2007).

The practice of yoga can reduce the allostatic load in stress response systems and restore optimal homeostasis; increase the parasympathetic nervous (PN) and decrease the hypothalamic-pituitary-adrenal (HPA) axis; increase GABA activity; stretch receptors in the alveoli, baroreceptors, chemoreceptors, and other sensors throughout the respiratory structures and send information about the state and activity of the respiratory system through vagal afferents and brainstem relay stations to other CNS structures (Streeter et al., 2012). Furthermore, it was observed that the practice of yoga helped decrease SNS activity, reduce inflammatory markers (tumor necrosis factor, interleukin-2, C-reactive protein), reduce stress markers (cortisol), increase strength, flexibility, circulation and cardiorespiratory capacity, reduce social isolation, foster networks that reinforce physical activity, and increase awareness of physical and mental states (Wren et al., 2011).

Literature Review

A systematic review of yoga interventions for helping health professionals and students demonstrates that mental and physical benefits, particularly reduction in stress and musculoskeletal pain, can be obtained through implementation of yoga interventions for students across a variety of settings and backgrounds (Ciezar-Andersen et al., 2021). A randomised crossover trial was conducted from July 2017 to May 2018, on 20 female nurses in their 20s to 30s who were working the night shift at a university hospital. After yoga training the mean questionnaire score for "psychological and physical stress reactions" was significantly reduced after the group yoga session. In addition, the mean score was significantly lower after four weeks of at-home practice than before or after group yoga, or after four weeks of the usual stress relief methods (Miyoshi, 2019). A quasi-experimental study with pre-post-tests where the DASS-21 (Depression Anxiety Stress Scale-21) was used as a study instrument in which Hatha yoga exercises and training sessions were held for four weeks (three times a week; 60-70 minutes each time) by a specialist. A total 52 women with a mean age of 33.5 ± 6.5 were included for analysis. Depression, anxiety, and stress decreased significantly in women after 12 sessions of regular hatha yoga practice ($P < 0.001$). Further, this study also concluded that yoga has an effective role in reducing stress, anxiety, and depression (Shohani et al., 2018). A Systematic Review conducted by Rosario Andrea Cocchiara et al. observed that yoga appears to be effective in the management of stress in healthcare workers, but it is necessary to implement methodologically relevant studies to attribute significance to such evidence (Cocchiara et al., 2019). A study on college students with a six-week pilot program that consisted of a 60-minute vinyasa flow yoga class once weekly, was followed by guided meditation delivered by trained faculty members at the University of Rhode Island College of Pharmacy in which the students experienced a reduction in stress and anxiety levels after completing a six-week yoga and meditation program preceding final examinations. Results suggest that adopting a mindfulness practice as little as once per week may reduce stress and anxiety in college students (Lemay et al., 2019). Students experienced a reduction in stress and anxiety levels after completing a six-week yoga and meditation program preceding final examinations. Results suggest that adopting a mindfulness practice as little as once per week may reduce stress and anxiety in college students (Lemay et al., 2019). A Systematic Review and Meta-Analysis observed that workplace yoga interventions were more effective when compared to no treatment in a work-related stress management (Della Valle et al., 2020).

Research Question

Traditionally, yoga training is carried out in face-to-face mode and it was proven that yoga training is effective in reducing stress in an individual. However, the effects of online yoga training in reduction of stress in an individual is not clear. Is online yoga training helpful in reducing the stress of an individual?

Objective

This study aims to find out the effects of online yoga training on self-perceived stress among the students of the CPY programme enrolled during the academic year 2021.

Methods

This was a pre- and post-test study, and was carried out on the students of the Certificate Programme in Yoga (CPY) programme during March to December 2021.

The practical training was comprised of prayer, sohamjapa, four types of shatakarma (cleansing practices), eight types of sandhichalana (loosening exercises), Surya-Namaskara, Asana (Standing asana = 9, Seating asana = 20, Prone asana = 6, Supine asana = 12), six types of Pranayama (regulation of breath), three types of Mudra and four types of Bandha. The following practical training was provided under this programme.

The first online practical training session was conducted from March 31 to April 28, 2021 and the second online practical training session was conducted from October 12 to November 20, 2021. Each day around two hours (7 – 9 a.m.) of live online practical demonstration, practice under supervision and doubt clarification sessions were conducted. The abovementioned practical activities were divided into daily sessions and announced to the students in advance. It helped students read in advance for each practical activity. The recorded sessions were uploaded to YouTube and links were provided to the student asynchronous learners for future guidance. A few days' gap between the two live sessions were provided to the learners for their own practice.

Tools

The Perceived Stress Scale (PSS) was used as a study instrument to measure the stress of an individual. This scale consisted of 10 questions. For each question option, students could choose zero to four (0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often). The scores were reversed for questions 4, 5, 7, and 8. In these four questions, the scores (4 = never, 3 = almost never, 2 = sometimes, 1 = fairly often, 0 = very often) were different. Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress. Individual scoring from 0 - 13, 14 -26, and 27 - 40 would be considered low stress, moderate stress and high perceived stress, respectively (Cohen & Williamson, 1988). These structured close-ended questions were sent to the candidates through email in Google Forms. A few questions on demographic profile, like, age, gender, place of residence, education, and occupation were also asked in this questionnaire.

Sample Size and Sampling Techniques

Two groups of students, i.e., the batch of students enrolled in the January 2021 session and the students enrolled in the July 2021 admission session were enrolled in this programme. There were a total 167 and 293 students enrolled in the January 2021 and July 2021 sessions, respectively. All students in both the batches were included in this study. Questionnaires were sent to all students enrolled in both sessions. However, a total of only 69 students from January 2021 and 81 students from July 2021 participated in this study.

Data Collection

The questionnaire was sent through Google Forms to the students and they were asked to fill in the form before the beginning of any theory as well as any practical training. Form filling was not mandatory for the students and they had the choice to not fill in this form. Forms filled in by the students after starting the practical training were not included in this study. Students were requested to fill in the same form again after completion of the online practical training. A second reminder was sent through email after a week to those students who filled in the form before the online practical training and had not filled in the form after the completion of that training. Students who filled in the

form again after the second week of the first reminder were not included in this study. The same mechanism was followed to collect data from the second batch also.

Nature of Data

The Perceived Stress Scale (PSS) is an ordinal type of categorical variable. The ages of the students were taken as continuous variables. Other categorical variables like, gender, place of residence are binary (dichotomous) data. However, education and occupation of the students are nominal types of categorical data.

Data Analysis

The demographic profile, like, gender, place of residence, education and occupation variables were initially described in percentage (frequency). The ages of the students were described in terms of mean age. Mean score of Perceived Stress Scale (PSS) were categorised into low stress, moderate stress and high perceived stress.

The number of students in low stress, moderate stress and high perceived stress in both pre-test and post-test were compared with the Chi square test.

Differences of the mean value of pre-test and post-test of the total PSS score were analysed with the Spearman correlation coefficient test. Comparison between low, moderate and high PSS scores among pre-test and post-test were calculated by the Spearman correlation coefficient test. Comparison of the mean value of pre-test and post-test of the total PSS score among dichotomous variables (gender and place of residence) were analysed by Wilcoxon's two-sample test. Comparison of the mean value of pre-test and post-test of the total PSS score among nominal variables (education and occupation) were analysed by Kruskal-Wallis test.

Analysis of the data was carried out in Epi Info (Version 7.2). P values less than 0.05 were taken as significant difference between pre-test and post-test.

Limitation and Delimitation

This study was carried out only in the group of students enrolled in the certificate programme in yoga. Only motivated students who were willing to learn yoga were accepted into this programme. The group of students enrolled in this group may not represent all of society. Many students chose not to fill in the feedback form for this study. There was no control group in this study.

Findings and Discussion

The students that participated in this study were very diverse in age, occupation and place of residence. The students represented almost all states of the Indian nation. The total number of students enrolled in the January 2021 and July 2021 sessions were 167 and 293, respectively. A total of 69 students (41.3% of total) and 81 (27.6% of total) students from the January 2021 and July 2021 batch responded, respectively. A total of 17 students (10 from the January 2021 batch and seven from the July 2021 batch) filled in the online form pre-test but did not fill in the post-test form and were not included in the analysis of this study.

Table 1: Total Number of the Enrolled Students and Students who Responded

Item	Students of January 2021	Students of July 2021	Total
Total Enrolled Students	167	293	460
Male	63 (37.8%)	133 (45.6%)	196 (42.6%)
Female	104 (62.2%)	160 (54.6%)	264 (57.4%)
Responded on the Online Google Form	69 (41.3% out of total students)	81 (27.6% out of total students)	150 (32.6% out of total students)
Male	28 (40.6%)	36 (44.4%)	64 (42.7%)
Female	41 (59.4%)	45 (55.6%)	86 (57.3%)

The number of students who responded pre- and post-test were 69 (41.3%) and 81 (27.6%) in the January 2021 and July 2021 batches, respectively. The total number of student respondents were 150 (32.6%) of a total of 460 students from both batches. Male and female respondents were 28 (40.6%) and 41 (59.4%) in the January 2021 batch and 36 (44.4%) and 45 (55.6%) in the July 2021 batch, respectively. Mean age of the male and female students were 34.2 $\pm$ 11.6 SD and 30.4 $\pm$ 7.7 SD for the January 2021 session and 31.7 $\pm$ 10.8 SD and 31.7 $\pm$ 9.1 SD for July 2021 session.

Table 2: Demographic Profile of the Students who Responded

Item	Students of January 2021	Students of July 2021
Residence		
Rural	20 (29%)	29 (35.8%)
Urban	49 (71%)	52 (64.2%)
Education level		
12th Pass	4 (5.8%)	15 (18.5%)
Graduate	36 (52.2%)	33 (40.7%)
Post Graduate	26 (37.7%)	30 (37%))
Above Post Graduate	3 (4.3%)	3 (3.7%)
Occupation		
Students	21 (30.4%)	25 (30.9%)
Housewife	7 (10.1%)	10 (12.3%)
Employed in Govt. Sector	16 (23.2%)	16 (19.8%)
Employed in Private Sector	10 (14.5%)	18 (22.2%)_
Self Employed	11 (15.9%)	6 (7.4%)
Others	4 (5.8%)	6 (7.4%)
Mean Age		
Male	34.2 $\pm$ 11.6 SD	31.7 $\pm$ 10.8 SD
Female	30.4 $\pm$ 7.7 SD	31.7 $\pm$ 9.1 SD

The percentage of students in low stress, moderate stress and high stress as per Perceived Stress scale (PSS) Score of pre- and post-test was 12 (17.4%) [95 % CI 9.3 – 28.4%], 52 (75.4%) [95 % CI 63.5 – 84.9 %], 5 (7.2%) [95 % CI 2.3 – 16.1%] and 34 (49.1%) [95 % CI 37 – 61.6%], 34 (49.1%) [95 % CI 49.2 – 50.7%], 1 (1.4%) [95 % CI 0.04 – 7.8 %] of the students of January 2021, respectively. The percentage of students in the low stress PSS category increased from 17.4% in the pre-test to 49.1% in the post-test. However, the percentage in moderate stress PSS decreased from 75.4% in the pre-test to 49.1% in post-test. Percentage in the high stress PSS also decreased from 7.2% in the pre-test to 1.4% in the post-test. This means a number of the students with moderate stress and high stress were shifted to the low stress category after the online practical training of yoga. The difference of the number in low stress, moderate stress and high stress in pre- and post-test was significant (p value < 0.0001).

Table 3: Frequency of Level of Self Perceived Stress among the Students

Perceived Stress Score (%)	**Students of January 2021**		
	Pretest	Posttest	P Value
Low Stress (0 – 13)	12 (17.4%) [95 % CI 9.3 – 28.4%]	34 (49.1%) [95 % CI 37 – 61.6%]	Chi square 17.7; P value < 0.0001
Moderate Stress (14 – 26)	52 (75.4%) [95 % CI 63.5 – 84.9 %]	34 (49.1%) [95 % CI 49.2 – 50.7%]	
High Stress (27 – 40)	5 (7.2%) [95 % CI 2.3 – 16.1%]	1 (1.4%) [95 % CI 0.04 – 7.8 %]	
Total Students	69 (100%)	69 (100%)	
	Students of July 2021		
	Pretest	Posttest	
Low Stress (0 – 13)	22 (27.2%) [95 % CI 17.8 – 38.2%]	42 (51.9%) [95 % CI 40.5 – 63. %]	Chi square 12.9; P value < 0.001
Moderate Stress (14 – 26)	55 (67.9%) [95 % CI 56.6 – 77.8%]	39 (48.1%) [95 % CI 36.9 – 59.5%]	
High Stress (27 – 40)	4 (4.9%) [95 % CI 1.3 – 12.1%]	0	
Total Students	81 (100%)	81(100%)	

The percentage of students in low stress, moderate stress and high stress as per Perceived Stress scale (PSS) Score of the pre- and post-test was 22 (27.2%) [95 % CI 17.8 – 38.2%], 55 (67.9%) [95 % CI 56.6 – 77.8%], 4 (4.9%) [95 % CI 1.3 – 12.1%]; and 42 (51.9%) [95 % CI 40.5 – 63. %], 39 (48.1%) [95 % CI 36.9 – 59.5%] of the students of July 2021, respectively. The percentage of the students in the low stress PSS category increased from 27.2% in the pre-test to 51.9% in the post-test. However, the percentage in moderate stress PSS decreased from 67.9% in the pre-test to 48.1% in the post-test. The ercentage in high stress PSS also decreased from 4.9% in the pre-test to 0% in the post-test. This means a number of

the students with moderate stress and high stress were shifted to the low stress category after the online practical training of yoga.

The difference of the number in low stress, moderate stress and high stress in pre- and post-test was significant (p value < 0.0001). This means the online practical training of yoga was useful in the reduction of stress.

Table 4: Mean Value of Self Perceived Stress Score among the Students

Perceived Stress Score (Mean)	**Students of January 2021**			**Students of July 2021 (mean ± SD)**		
	Pretest ± SD	Posttest ± SD	P Value	Pretest ± SD	Posttest ± SD	P Value
Low Stress (0 – 13)	9.2 ± 4	8.3 ± 3.7	0.33	10 ± 3.1	8.7 ± 3.6	0.18
Moderate Stress (14 – 26)	18.9 + 3.4	18.7 ± 3.7	0.63	19.4 ± 3.1	17.8 ± 2.8	0.01
High Stress (27 – 40)	29.2 ± 2.3	29 ± 0		29.7 ± 1.9	0	
Total Participants	18 ± 5.9	13.7 ± 6.5	P < 0.0001	17.4 ± 5.8	13.1 ± 5.6	< 0.0001

Total mean value of the Perceived Stress scale (PSS) Score after online practical yoga training decreased from 18 ± 5.9 SD in the pre-test to 13.7 ± 6.5 SD in the post-test of students of January 2021, respectively. Differences of mean value of pre- and post-test of PSS were statistically significant (p value < 0.0001). The mean value of low stress, moderate stress and high stress of pre- and post-test was 9.2 ± 4 SD,18.9 ± 3.4 SD, 18.9 ± 3.4 SD and 8.3 ± 3.7 SD, 18.7 ± 3.7 SD, 29.2 ± 2.3 SD of the students of January 2021, respectively. Total mean value of the low stress PSS decreased from 9.2 ± 4 SD in the pre-test to 8.3 ± 3.7 SD in the post-test. In a similar manner the mean value of the moderate stress PSS decreased from 18.9 + 3.4 SD in the pre-test to 18.7 ± 3.7 SD in the post-test. Differences in the mean value of the pre- and post-test of both the categories, i.e., the low stress and moderate stress of students were not significant (p value > 0.05).

Total mean value of the Perceived Stress scale (PSS) Score after online practical yoga training decreased from 17.4 ± 5.8 SD in the pre-test to 13.1 ± 5.6 SD in the post-test of students of July 2022, respectively. Differences of mean value of the pre- and post-test of PSS were statistically significant (p value < 0.0001). The mean value of low stress, moderate stress and high stress of pre- and post-tests was 10 ± 3.1 SD, 19.4 ± 3.1 SD, 29.7 ± 1.9 SD and 8.7 ± 3.6 SD, 17.8 ± 2.8 SD of the students of July 2021, respectively. Total mean value of the low stress PSS decreased from 10 ± 3.1SD in the pre-test to 8.7 ± 3.6 SD in the post-test. In a similar manner the mean value of the moderate stress PSS decreased from 19.4 ± 3.1 SD in the pre-test to 17.8 ± 2.8 SD in the post-test. Differences in the mean value of pre- and post-tests of low stress PSS of students were not significant (p value > 0.05). However, differences in the mean value of pre- and post-tests of moderate stress PSS of students were not significant (p value > 0.05).

Table 5 suggests that the mean value of the pre- and post-tests of PSS in males decreased from 16.9 ± 6.2 SD to 13.8 ± 6.8 SD and 15.8 ± 6.4 SD to 12.6 ± 5.7 SD among the students of the January 2021 sessions and July 2021 sessions, respectively. The mean value of pre- and post-tests of PSS in females decreased from 18.8 ± 5.7 SD to 13.7 ± 6.5 SD and 18.6 ± 6.5 SD to 13.5 ± 5.5 SD among the students of

the January 2021 sessions and July 2021 sessions, respectively. The difference in the mean value of pre- and post-tests of PSS in both genders, i.e., male and female, were observed as significant ($p < 0.05$) in students of the January and July 2021 batches.

The mean value of the pre-test and post-tests of PSS in students staying in rural areas decreased from 19.3 ± 2.8 SD to 14.5 ± 4.9 SD and 17.5 ± 6.5 SD to 14.5 ± 6.1 SD among the students of the January 2021 and July 2021 sessions, respectively. The difference in the mean value of the pre- and post-tests of PSS in students staying in rural areas were observed as significant ($p < 0.005$) in the students of January 2021 but were not significant ($p < 0.089$) among the students of the July 2021 batch.

Table 5: Mean Value of Self Perceived Stress Score among Different Groups of the Students

Perceived Stress Score Mean Value	Students of January 2021 (Mean ± SD)			Students of July 2021 (Mean ± SD)		
	Pretest ± SD	Posttest ± SD	P Value	Pretest ± SD	Posttest ± SD	P Value
Total Participants	18 ± 5.9	13.7 ± 6.5	<0.0001	17.4 ± 5.8	13.1 ± 5.6	< 0.0001
Gender						
Male	16.9 ± 6.2	13.8 ± 6.8	< 0.04	15.8 ± 6.4	12.6 ± 5.7	< 0.03
Female	18.8 ± 5.7	13.7 ± 6.5	< 0.004	18.6 ± 6.5	13.5 ± 5.5	< 0.001
Residence						
Rural	19.3 ± 2.8	14.5 ± 4.9	< 0.005	17.5 ± 6.5	14.5 ± 6.1	< 0.089
Urban	17.4 ± 5.9	13.4 ± 7.1	< 0.003	17.3 ± 5.5	12.4 ± 5.2	< 0.001
Education						
12th Pass	17.2 ± 2.8	17.7 ± 6.1	0.9	16.7 ± 5.9	12.8 ± 4.3	< 0.07
Graduate	18.8 ± 6.4	14.7 ± 6.6	< 0.006	18.1 ± 6.2	13.7 ± 5.7	< 0.008
Post Graduate	17.5 ± 5.6	12.3 ± 6.4	< 0.004	17.2 ± 5.5	12.6 ± 6.1	< 0.003
Above Post Graduate	14 ± 5.5	8.6 ± 4.7	< 0.12	18.6 ± 4.6	14.6 ± 6.1	< 0.2
Occupation						
Employed in Govt Sector	18.1 ± 5.6	15.1 ± 5.6	< 0.78	16.3 ± 5.8	11.6 ± 7.1	< 0.06
Employed in Private Sector	19.6 ± 7.8	13.5 ± 5.1	< 0.05	17.3 ± 4.1	14.7 ± 5.8	< 0.15
Housewife	17.4 ± 5.5	8.2 ± 5.9	< 0.012	18.3 ± 6.9	11.7 ± 5.4	< 0.02
Self Employed	16. 4 ± 5.1	14.6 ± 7.4	< 0.5	17.1 ± 6.1	9.8 ± 2.6	< 0.036
Students	19.2 ± 4.7	15.1 ± 6.2	< 0.01	18.2 ± 7.1	14.5 ± 4.7	< 0.02
Others	13.6 ± 9.6	9.5 ± 10.8	< 0.46	15.8 ± 3.4	11.2 ± 2.3	< 0.08

The mean value of the pre-test and post-tests of PSS in students staying in urban areas decreased from 17.4 ± 5.9 SD to 13.4 ± 7.1 SD and 17.3 ± 5.5 SD to 12.4 ± 5.2 SD among the students of the January 2021 and July 2021 sessions, respectively. The difference in the mean value of the pre- and posttests of

PSS in the students staying in rural and urban areas were observed as significant ($p < 0.05$) in the students of the January and July 2021 batches, respectively.

The difference in the mean value of the pre-test and post-tests in graduate and post-graduate candidates, employed in the private sector, housewives, and student groups were observed as significant ($p < 0.05$) in the students of the January 2021 batch. The difference in the mean value of the pre- and post-tests in graduate and post-graduate candidates, housewives, the self-employed and student groups was observed as significant ($p < 0.05$) in the students of the July 2021 batch. The mean value of the total stress score was significantly reduced in both batches of the students. The percentage of students under the category of low stress, moderate stress and high stress were significantly improved after the training.

The difference in the mean value of the pre- and post-tests in the 12th pass and above post-graduate candidates, those employed in the government sector, and self-employed groups were observed as not significant ($p < 0.05$) in the students of the January 2021 batch. The difference in the mean value of the pre- and post-tests in the 12th pass and above post-graduate candidates, those employed in government and private sector groups were observed as not significant ($p < 0.05$) in the students of the July 2021 batch.

Conclusion and Recommendation

In this study, it was concluded that online yoga training could reduce the self-perceived stress levels in the students of the CPY programme. These results suggest that adopting the regular practice of yoga may reduce stress levels among the students. It may not be feasible for everyone to join yoga training through the face-to-face mode. Future online yoga training with a larger number of students and long-term follow-up are needed to ensure a sustained beneficial effect. Higher education institutions may consider the inclusion of online yoga practice regularly to reduce the stress of students.

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