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Abid Husain*

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Perceived Stress, Resilience and General Self-Efficacy among University Students Pursuing Yoga and Other Courses

Abid Husain 1*, Noor Shabina 2, Niranjan Parajuli 3, Apoorva Adhikari 4

- ¹ Department of Psychology, Jamia Millia Islamia, New Delhi, India.
- ² Clinical Psychologist, VARANSI, U.P, India.
- ³ Department of Psychology, Jamia Millia Islamia, New Delhi, India.
- ⁴ Department of Psychology, Jamia Millia Islamia, New Delhi, India.
- *Corresponding Author: Abid Husain, Assistant Professor, Department of Psychology, Jamia Millia Islamia, New Delhi-110025.

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Abstract

There a number of universities in India which are now offering professional yoga courses, whereby students can pursue their desire to become a yoga specialist or for their own spiritual growth. Students pursuing yoga courses undergo indepth study of principles of yoga; both theoretical and practical. These students practice yoga on a regular basis as part of their curriculum. Students develop high levels of stress because of academic pressure and future professional plans. The present study aims to focus on identifying and comparing stress, resilience, and self-efficacy among the university students pursuing yoga and other courses. It is hypothesized that there will be a significant difference in the stress levels, resilience and self-efficacy among the students practicing yoga and students pursuing other courses. Data was collected through 110 students pursuing yoga and 114 students pursuing other courses (n=224) from different parts of the country. The tools used are: (a) Perceived Stress Scale (PSS), (b) Connor-Davidson Resilience Scale (CD-RISC), and (c) General Self-efficacy Scale (GSES). The results indicate that there are significant differences in the level of stress and general self-efficacy among students who pursue yoga as a course and students who pursue other courses. No significant difference in resilience was found. Limitations, future implications and suggestions for further study are also discussed.

Keywords: stress; resilience; self-efficacy; academic stress; students

Introduction

Stress is defined as pressure or a response to aversive stimuli. Lazarus and Folkman (1984) defined stress as a dynamic process "between the person and the environment that is being appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being." Stress in students develops as a result of future expectation, anticipated academic challenges, fear, or even fear of failure. Perceived stress measures the thoughts and feelings of individuals about the stressors in their lives and their ability to handle stress (Cohen et al., 1983). Many studies have shown that students from varying backgrounds develop stress in this highly competitive world. They are constantly bombarded with expectations and demands from parents, teachers and peers. Waghachavare et al. (2013) found that students experienced stress irrespective of the field they belong to and academic factors were the significant predictors of stress along with health and lifestyle factors. Stress, whether prolonged or daily hassles, has been shown directly associated with maladaptive health behaviors (Dalton & Hammen, 2018). These maladaptive health behavior practices include lack of physical movement, unhealthy eating, substance use and lack of sleep.

Along with the presence of maladaptive behaviors, individuals are also found to have lower levels of resilience and self-efficacy. Resilience is said to be the capacity to bounce back from stressful situations. It is defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress" (American Psychological Association, 2014). Wilks (2008) found that academic stress negatively affects resilience among students. Self-efficacy is the belief in oneself to influence the events occurring in their lives. Based on Bandura's theory of social cognition, self-efficacy is the foundation of human motivation, performance accomplishments, emotional well-being (Bandura, 1997, 2006). Moeini et al. (2008) found a significant inverse relationship between self-efficacy and stress among students. More stress indicates lower general self-efficacy and poorer mental and physical health.

Yoga is an ancient life science and mindfulness based practice originated in Indian subcontinent. The word "yoga" is derived from the Sanskrit root "yuj" which means a union. Yoga is the union of human spirit and transcendental spirit. It is considered as a way of life and art of self-discovery and self-transformation. Yoga affects all the aspects of life: physical, emotional, psychic and spiritual (Satyananda, 1969). It

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comprises of yogic postures (also known as *Asanas*), breathing exercises (also known as *Pranayama*) and meditation. In Indian tradition, yoga is much more than a physical exercise. It also includes a meditative and spiritual core. Yoga is the science of the right living intended to be integrated in daily life.

Existing literature in yogic sciences strongly suggests positive impact of yogic practices on physical and psychological conditions. A study by Potey et al. (2016) was conducted to assess the effects of 3 months of yoga practice on cortisol level and cardiovascular reactivity as a result of examination among medical students. The students (n=40) were divided into two groups: yoga (n=20) and control (n=20). Students in the yoga group were asked to attend an hour long yoga class for 12 weeks. Both the groups were assessed at the baseline and end of the study. The results showed that there is a significant reduction in the serum cortisol, systolic and diastolic blood pressure and pulse rate among students who attended the yoga classes (Potey, Rahul, Chanda, Sanjeev, & Mahapatra, 2016). Regular practices help in reducing psychological distress. Eastman-Mueller et al. (2013) found significant differences in perceived stress, worry and depressive symptoms in a students' group study conducted over a period of one week. Yoga is a holistic approach which not only aims to reduce or treat misery; rather it helps in inculcating more positive behaviors. A study on nursing students shows that yoga practices have positive impact on overall psychological functioning (Mathad, Pradhan, & Sasidharan, 2017). Yoga practices improve mindfulness, selfcompassion and other positive attributes and character strengths.

Numbers of universities in India offer the professional yoga courses. Students pursuing yoga courses under go in depth study of yoga; both theoretical and practical. These students practice yoga in regular basis as part of their course and apply the principle of yoga in their day to day lives. Yoga is found beneficial on numerous grounds for the practitioners and students. The students are encouraged to develop various ways in order to manage and control daily stressors. Yoga also improves mood, behavior, and mindfulness as it creates a positive environment for the students. Yoga helps individuals to become self-aware and increases their confidence in their abilities. When faced with adversity and pain, yoga encourages practitioners to identify with the suffering and turn adversity into an advantage. Kauts and Sharma (2009a) found in a study that with reduced stress, yoga enhances academic performance among students.

The literature is full of yoga and its benefits. Many studies strongly suggest positive impact of yogic practices on both physical and psychological well-being. The students who pursue Yoga as a course are usually assumed to have lower stress levels and higher resilience and self-efficacy. Therefore, the present study focuses on identifying and comparing perceived stress, resilience and self-efficacy among university students pursuing Yoga and other courses. The main objective of the study is to identify the levels of stress among Indian university students and then compare the students who are pursuing Yoga courses to those who are pursuing courses other than Yoga. The other objectives include assessing resilience and self-efficacy among Indian university students and whether or not they differ based on the courses they are enrolled in.

The hypotheses of the present study are as follows:

- There would be a significant difference between university students pursuing yoga and students pursuing other courses on perceived stress.
- There would be a significant difference between university students pursuing yoga and students pursuing other courses on resilience.
- There would be a significant difference between university students pursuing yoga and students pursuing other courses on self-efficacy.

Method

Sample

A total of 224 students were selected from different universities in India. Out of which, 110 students were pursuing yoga and 114 students were

pursuing other courses. The students who used to practice yoga from other courses were excluded from the study.

Before collection of data, an ethical approval and permission for data collection was taken from the university. The participants were recruited using purposive sampling technique. All the participants were contacted individually, and before the beginning of the paper-and-pencil based survey or Google survey, the participants were made sure that any information collected will be kept confidential. The informed consent was taken by all the participants. All the participants were versed with English, hence the language of the survey was chosen as English only. The participants were given the equal and appropriate time to fill the survey. The overall response rate was 99.6% (251/252). Once the survey forms were collected, these were checked for missing entries. 27 forms were excluded due to the missing entries.

The sample consisted of 45% of participants who identified as males and 55% of the participants who identified as females. The age range of the participants was between 18 and 30 years, with a mean age of the participants was 22.31 years.

Measures

Perceived Stress

Perceived Stress Scale (PSS; Cohen, 1994) was used to assess perceived stress among students. PSS is a self-report questionnaire consisting of 10-items to assess perception of stress in a person's day-to-day life. Each item on PSS is rated on a 5-point Likert scale ranging from 0 (never) to 4 (very often). The scores on item 4, 5, 7 & 8 were reversed as they were positively state items and a total score is obtained by summing scores all the items. The score on PSS ranges from 0-40; score ranging from 0-13 would be considered low stress, score ranging from 14-26 would be considered moderate stress and a score ranging from 27-40 would be considered high stress (Cohen & Janicki-Deverts, 2012). Coefficient alpha reliability for PSS was 0.84 among college student population with a test-retest correlation of 0.85 (Cohen, Kamarck & Mermelstein, 1983).

Resilience

The Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) consisted of 25-items is used to measure the ability to cope with adversity. Each item on CD-RISC is rated on a 5-point Likert scale ranging from 0 to 4. The total score is obtained by summing scores across all scale items and ranges from 0 to 100. The higher score on CD-RISC reflects greater resilience. CD-RISC is a reliable and valid tool to measure resilience with Cronbach's alpha of 0.89 among Indian student population (Singh & Yu, 2010).

Self-efficacy

General Self-efficacy Scale (GSES; Schwarzer & Jerusalem, 1995) is a scale originally constructed in German and later adapted to different languages. The English version of the scale has been used in this study. GSES is used to assess a general sense of perceived self-efficacy to predict coping with daily hassles as well as adaptation after experiencing stressful life events. It is a self-administrated 10 item-questionnaire. The items are rated on a 4-point Likert scale ranging from 1 to 4. All the scores on 10 items are summed to yield a final composite score ranging from 10 to 40. Higher score means higher general perceived self-efficacy. It is a valid and reliable tool with Cronbach's alpha range from .76 to .90, with majority in the high .80s (Luszczynska et al., 2005).

Design

For the purpose of the present study, a cross-sectional correlational design was employed. A cross-sectional study is a type of observational study that aims to collect and analyze data from a population or representative sample at a specific point of time. A correlational research design is used to examine changes in one variable in relation to other variables.

Procedure

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A one-time assessment of 252 university students pursuing yoga and other courses from different universities in India was done after thorough explanation and discussion of the study. After taking the informed consent, the students were asked to fill the demographic details and complete the survey forms. Data was collected through both paper-and-pencil forms and Google forms. One of the participants refused to participate in the study. Of the remaining, 27 participants were excluded from the study for missing entries. The final sample consists of 224 participants (110 on yoga courses and 114 on other courses).

Data Analysis

Statistical analysis was done by using IBM statistics SPSS Software (version 25.0). Data was found to be normally distributed (p>0.05) for PSS and CD-RISC for both the groups and was found to be normally

distributed for GSES of yoga group (p<0.05) when tested with Shapiro-wilk test. Independent t-test was used to compare PSS and CD-RISC scores and Mann-Whitney U test was used to compare GSES scores. To obtain number of students having low, intermediate and high resilience, quartile (Q) was computed and to obtain the number of students having low and high self-efficacy median split was done.

Results

Descriptive statistics are provided in Table 1. The means and standard deviations show that students pursuing yoga scored lower in perceived stress and higher in resilience and general self-efficacy.

Variables	Mean		Std. Deviation	
	Yoga	Other courses	Yoga	Other Courses
PSS	16.28	19.46	5.40	6.95
CD-RISC 25	67.68	67.25	14.19	15.21
GSES	32.10	30.18	4.72	4.84

Table 1: Descriptive statistics for students pursuing yoga (n=110) and other courses (114)

It has been found that out of 110 students pursuing yoga courses 3(2.73%), 75 (68.18%) and 32 (29.09%) reported of high, moderate and low stress respectively. Similarly out of 114 students pursuing other courses 18 (15.79%), 76 (66.67%) and 20 (17.54%) of students pursuing other courses reported high, moderate and low stress respectively. The results suggest that the university students pursuing yoga and other courses experience moderate stress in average.

Median score of CDRISC of student pursuing yoga courses is 68 with first quartile (Q1), second quartile (Q2), third quartile (Q3) and fourth quartile (Q4) being 0-58, 59-68, 69-76 and 76-100 respectively. Out of 110 students pursuing yoga courses 27 (24.55%), 58 (52.56%) and 25 (22.73%) have low, intermediate and high resilience respectively. Similarly median score of students pursuing other courses is also 68 with first quartile (Q1), second quartile (Q2), third quartile (Q3) and fourth quartile (Q4) being 0-56, 57-68, 69-77 and 78-100 respectively. Out of 114 students pursuing other courses 30 (26.32%) have low, 56 (49.12%) have intermediate and 28 (24.56%) have high resilience.

The mean and median score for GSES of students pursuing yoga courses were 32.11 and 32 respectively. Similarly the mean and median score for GSES of students pursuing other courses were 30.18 and 30 respectively. The median split showed out of 110 students pursuing yoga courses 47.27% have high and 52.73% have low self-efficacy whereas out of 114 students pursuing other courses 43.86% have high and 56.14% have low self-efficacy.

Table 2 represents the t-values and degrees of freedom on PSS and CD-RISC 25. The mean scores of both groups were 16.26 and 19.46 respectively but the finding of study suggest students pursuing yoga courses have significantly lesser stress (df = 222, t= -3.82, p<0.05) in comparison to the students pursuing other courses. The results in Table 2 also shows that there are no significant differences in resilience (df = 222, t=0.22, p>0.05) between both the groups. Table 3 represents the z-score and p-value on GSES and suggests that the students from yoga courses reported significant high self-efficacy (z = -2.84, p<0.05) than student from other courses.

Scale	T	df	P- value
PSS	-3.82	222	.000
CD-RISC 25	.22	222	.825

Table 2: t-values, degrees of freedom and p-value on PSS and CD-RISC 25

Mann-Whitney U	Z score	P- Value
4895.00	-2.842	0.004

Table 3: z-score and p-values on GSES

Discussion

The present study aimed to identify and compare the stress levels, resilience and general self-efficacy among Indian university students who opt for yoga courses and students who opt for courses other than yoga. For the purpose of the present study, students from different universities in India were chosen. They were divided into two groups: those who opt for yoga courses and those who opt for courses other than yoga. It was hypothesized that there would be no significant differences on perceived stress, resilience and general self-efficacy among the two groups.

Since literature review suggests that practicing yoga has numerous physical and psychological benefits, this study aimed to find out whether these benefits are reaped by the students who practice yoga as a part of their curriculum. The finding of the study suggests students pursuing yoga courses as well as other courses perceived moderate level of stress in average. The possible reason for moderate stress among students pursuing yoga courses and other courses could be the academic pressure (Alzahem, van der Molen, Alaujan, Schmidt, & Zamakhshary, 2011). Academic pressure causes inescapable stress upon students irrespective of the field or course they opt. It is due to parental and teachers' demands and expectations to do well and comparisons among the peers. Another possible reason could be the stress of examination because the data was collected after the announcement of examination dates. Interesting aspect of this study is even the students pursing yoga courses were moderately stressed. The reason could be because of academic responsibility; even they are not free from it. But in comparison to students from other courses

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only few reported high stress. The statistical analysis shows students from yoga courses have significantly lower stress than students from other courses with the moderate effect size therefore the hypothesis of the study is accepted.

As per our knowledge, this is the first study conducted any to compare the stress resilience and self-efficacy of students pursuing yoga and other courses. But several scientific studies suggested that yoga practice reduces the stress among the students and helped to enhance their academic performance (Kauts & Sharma, 2009). The possible reason of students from yoga group having significantly lower stress could be yoga brings self-compassion, causes inhibition of the posterior hypothalamus, and salivary cortisol (K. E. Riley & Park, 2015). Yoga increases the overall brain wave activity, gray matter and amygdala and frontal cortex activation (Desai, Tailor, & Bhatt, 2015). Yoga balances autonomic nervous system reactivity; increases parasympathetic nervous system activity and heart rate variability (Nagendra, Kumar, & Mukherjee, 2015). The regular practice of yogic exercises enhances the secretion of neurotransmitter called gamma-amino butyric acid (GABA) (Streeter et al., 2007) which is inhibitory neurotransmitter and helps to minimize anxiety and depression (Kuffler & Edwards, 1958). Yoga practice leads to better regulation of the sympathetic nervous system and hypothalamicpituitary-adrenal system, and decreases symptoms of depression and anxiety in a variety of populations (Pascoe & Bauer, 2015).

The statistical analysis showed there is no significant difference in resilience among student pursuing yoga and other courses therefore we failed to accept the second hypothesis of the study. Though previous studies showed mindfulness based practice like yoga has positive relationship with resilience of university students (Keye & Pidgeon, 2013), the present study failed to support the previous finding. Selfacceptance, sense of self-growth and autonomy and positive relationship are factors to improve resilience. Mindfulness practices improve individual's self-acceptance (Carson & Langer, 2006). It also enhances sense of self-growth and autonomy (Birnie, Speca, & Carlson, 2010). Mindfulness practice increases empathy and help to build up positive and warm relationship with other (Ryan, Huta, & Deci, 2008). Therefore students pursuing yoga courses should have higher resilience than students doing other courses, but the present study shows no significant differences in resilience between yoga and other groups. The finding should be validated by similar types of studies in future.

The statistical analysis shows there is significant difference in the self-efficacy of the students pursuing yoga and other courses, therefore the third hypothesis of the study is also accepted. Even the earlier study by Caldwell et al. (2010) supports this finding. Mindfulness based practices has positive relationship with students self-efficacy (Keye & Pidgeon, 2013). The mindfulness based practices are supposed to enhance the self-efficacy of the individuals. The possible reasons of higher self-efficacy among yoga students could be the less stress that they experienced as compared to the students from other courses. The previous study suggested that when an individual feel less stressed he/she may feel greater self-efficacy (Schunk & Mullen, 2012). The level of anxiety, stress and fatigue is negatively correlated with self-efficacy (Bresó, Schaufeli, & Salanova, 2011).

Yoga practices also improve higher cognitive functions like memory, attention, executive functioning etc. enhancement of cognitive function has positive correlation with self-efficacy. Yoga also enhances emotional intelligence and a study shows positive relationship between emotional intelligence and self-efficacy (Rastegar & Memarpour, 2009). Yoga practices also improved positive affect and reduced negative affect (Narasimhan, Nagarathna, &Nagendra, 2011). Increased in positive affect and reduced in negative affect could improve self-efficacy of an individual.

Limitations and Future Directions

Like any other study, the present study is not free from limitations. Therefore, it is recommended to interpret the results of this study in the light of its limitations. First, the design of the study is itself one of the

limitations. The design of the present study is cross-sectional which means it is one time measurement of exposure and outcome. So, it is difficult to establish cause-and-effect relationship. Second, the sampling method used in the study is purposive sampling. The subjectivity and non-probability based nature of unit selection in this sampling may not defend the representativeness of the sample. Third, the total sample size was 224 (110 students pursuing yoga courses and 114 students pursuing courses other than yoga). The sample size is comparatively small and it may be difficult to generalize the findings. Fourth, the samples of the study were taken from different parts of the country. The variation in place may also affect the stress, resilience and self-efficacy of the students. Lastly, in order to measure the variables in the present study, only questionnaire were used. There can be chances of superficial and socially-desirable responses.

Future research could be done on a larger sample size to gain better research insights. The sample can be divided according to the places. Objective variables like serum cortisol and salivary cortisol can also be added to conform to the findings of the questionnaires. A longitudinal study or a randomized control study can be pursued to establish cause-and-effect relationship as well as to control the effects of extraneous and confounding variables. The sample can be randomly selected such that it can represent the whole population under study. This will help in generalizing the findings.

Conclusion

The present study aimed to identify and compare perceived stress, resilience and general self-efficacy among students who opt for yoga courses and those who opt for courses other than yoga. It was found that both the groups had moderate levels of perceived stress. The students from yoga courses reported significantly lesser stress than students from other courses. The finding of study showed significant different in the self-efficacy among student from yoga courses and other courses whereas there was no significant difference in the resilience. The finding of the study suggests yoga practice can be incorporated by universities to manage stress of the students and to enhance their general self-efficacy. The finding of study is needed to be supported by further study with robust research methodology and larger sample size.

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