

Original Research Article

Effect of mindfulness on exam anxiety among undergraduate dental students: A quasi-experimental study

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ABSTRACT

Background: Exam anxiety is the primary factor preventing students from achieving their academic goals and is an unpleasant worry-based experience. Where in, Mindfulness helps to uphold consciousness, release oneself from a deeply held connection to ideas, emotions, or sensations, and cultivate a stronger sense of emotional equilibrium and wellbeing. Research indicates, mindfulness education intervention leads to significant reduction in anxiety levels. Hence, the present study aims to assess the effectiveness of mindfulness education intervention on anxiety among undergraduate students.

Methods: A total of 130 Undergraduate students (3rd and 4th year) from the Vokkalighara Sangha Dental College was included in the study. A spielberger anxiety Test Scale (SATS) was used to assess the anxiety level. Mindfulness attention awareness scale (MAAS) was used to assess the stress among the participants

Results: Descriptive statistics was performed to assess the frequencies of responses to the questionnaire items. Statistical analysis to find out the association between the effectiveness of mindfulness education intervention on anxiety. Comparison of change in mindfulness (MAAS) scores among study participants at baseline were 29.30 ± 4.89 and after the intervention was 79.76 ± 2.68 and self-evaluated anxiety (SATS) scores at baseline was 66.03 ± 2.17 and after the intervention was 29.11 ± 2.94 , the mean difference in Anxiety scores and Mindfulness scores was statistically significant ($p \leq 0.001$)

Conclusions: Mindfulness exercise reported significant improvement in overall well-being and effective strategy for promoting Students mental health, academic success and overall flourishing.

Keywords: Mindfulness, Anxiety, Dental students

INTRODUCTION

Adolescence is a critical time for emotional and psychological growth, and it is also a time when self-consciousness changes significantly.¹ It is essential to teach medical students effective, evidence-based stress management techniques in a course on managing the health of others while they are enrolled in a university.² Medical professionals and students frequently experience

stress and psychological anguish, which is widely acknowledged as a serious health concern.^{3,4} Psychiatric morbidity is a prevalent observation among physicians and medical students. While medical students are comparable to the general student body before to the start of their courses, stress becomes more significant as training progresses and when compared to other academic fields. There are more notable declines in psychological well-being among medical students. This will become

evident in the first year, when burnout, sadness, and stress are prevalent. Pre-exam anxiety is at its peak, and depression increases after medical school starts.⁵ Clinical placement and academic achievement might be impacted by psychological strain. The degree of stress experienced by students is determined by their perception of stress and how they respond to a difficult circumstance. This includes managing their emotions, developing effective coping skills, and demonstrating resilience. Situations are not intrinsically stressful.⁶ Tests and exams are an essential aspect of life, particularly in the context of education and employment, where they can cause tension and worry in individuals. Exam anxiety is a major contributor to kids' academic success and comes at a high cost to society. According to Beyrami and Abdi (2009), it is the uncomfortable sensation of anxiety and emotionality when someone feels that they are being evaluated.⁷ In order to help university students become more resilient and less stressed, educators are implementing health promotion initiatives. A mindfulness approach is just one of the many possible forms these interventions might take. Two popular mindfulness-based programs are mindfulness-based cognitive therapy (Williams M) and mindfulness-based stress reduction (MBSR) (Kabat-Zinn). The awareness that arises from paying attention purposefully, in the now, and without passing judgment on the experience as it unfolds moment by minute is known as mindfulness (Kabat-Zinn). Improvements in trait mindfulness may result from state mindfulness practice.⁶

The objectives of mindfulness are to uphold consciousness, release oneself from a deeply held connection to ideas, emotions, or sensations, and cultivate a stronger sense of emotional equilibrium and wellbeing. Being more accountable for one's decisions in life is one of the objectives of mindfulness practice. Because mindfulness engages and strengthens an individual's internal resources for maximizing health in both illness prevention and recovery, it may therefore promote more. Undergraduate students who receive mindfulness education intervention will experience a significant reduction in anxiety levels compared to those who do not receive the intervention. In cases with incurable illnesses, mindfulness practices that modify and hone consciousness may be able to reduce the subjective perception of pain or enhance the capacity to manage pain and impairment.⁸ Students who are anxious about exams can benefit from this interventional study.

METHODS

To evaluate the impact of mindfulness instruction on anxiety among undergraduate students, an interventional study was created. Third- and fourth-year undergraduate students at VS Dental College and Hospital provided the data. The study included people who were willing to participate and were present on the day of the examination; those who were uncooperative were not. Convenience sampling was used in a quasi-experimental

study design. The Mindfulness attention awareness scale (MAAS), which was distributed to each participant, and the spielberger anxiety test scale (SATS) questionnaire was used as study instruments. Before the study began, the study participants signed an informed consent form. The study questionnaire was supplied to those who gave their approval to participate in the study, and information about the study and informed consent were distributed to study participants.

Following the distribution of the questionnaire, participants received an intervention in the form of a 7-minute movie with slow, meditative music. They were instructed to close their eyes and experience the music, which helped them feel less stressed and anxious. In January 2021 for a period of 1month intervention was given two times a week. Finally, the same subjects were asked to complete the identical mindfulness, anxiety, and stress questionnaire. All 130 participants in the study (N=130) submitted the completed questionnaire. Students are shown an audiovisual video for mindfulness meditation. A seven-minute video was playing on the screen. To evaluate the frequency of replies to the questionnaire items, descriptive statistics were used. To determine the relationship between the impact of a mindfulness education intervention on anxiety, statistical analysis was used.

RESULTS

For the final study, all 130 undergraduate students from Bangalore's VS Dental College and Hospital were included. Of the study's participants, 35.4% were between the ages of 20 and 21, 60.0% were between the ages of 22 and 23, and 4.6% were between the ages of 24 and 25. Sixty-six percent of the study participants were female, and thirty-seven percent were male (Table 1). The mindfulness scores of 130 study participants were found to be low (15-45) at baseline on the Mindfulness Attention Awareness Scale (MAAS) and high (61-90) following the intervention (Table 2). According to the Mindfulness Attention Awareness Scale (MAAS), the study participants' mean mindfulness score was low (1-3) at baseline, or 7 (5.4%), 110 (84.6%), and 13 (10%), and high (4-6) after the intervention, or 0%, 105 (80.8%), and 25 (19.2%), respectively (Table 3).

All 130 research participants had high anxiety levels between 41 and 80 at baseline, and following the intervention, their anxiety levels dropped to 20 to 40. (Table 4) Study participants' mean mindfulness scores were 29.30 ± 4.89 at baseline and 79.76 ± 2.68 after the intervention; the mean difference is -50.46, indicating statistically significant changes in this score ($p < 0.001$) (Table 5) The study participants mean self-evaluated anxiety (SATS) scores were 66.03 ± 2.17 at baseline and 29.11 ± 2.94 following the intervention. The mean difference between the two scores is 36.92, indicating statistically significant changes in the score ($p < 0.001$). (Table of contents) According to the study, there is a

statistically significant beneficial association between college students' anxiety and mindfulness ($p=0.006$) (Table 7).

Table 1: Distribution of age and gender of study participants.

	Frequency (N)	Percentage (%)
Age (years)	20-21	46 (35.4)
	22-23	78 (60.0)
	24-25	6 (4.6)
	Total	130 (100)
Gender	Males	43 (33.07)
	Females	87 (66.9)
	Total	130 (100)

Table 2: Distribution of total mindfulness score of study participants at baseline and after intervention using mindfulness attention awareness scale (MAAS).

MAAS	Frequency (%)
Baseline	Low (15-45) 130 (100)
	Moderate (46-60) 0
	High (61-90) 0
After intervention	Low (15-45) 0
	Moderate (46-60) 0
	High (61-90) 130 (100)

Table 3: Distribution of mean mindfulness score of study participants at baseline and after intervention using Mindfulness Attention Awareness Scale (MAAS).

	MAAS (median)	Frequency (%)	Total
Baseline	Low (1-3)	1 7 (5.4)	130 (100)
		2 110 (84.6)	
		3 13 (10.0)	
	High (4-6)	4 0	0
		5 0	
		6 0	
After intervention	Low (1-3)	1 0	
		2 0	
		3 0	
	High (4-6)	4 0	130 (100)

Table 4: Distribution of total anxiety score of study participants at baseline and after intervention using spielberger anxiety test scale (sats).

	SATS	Frequency (%)
Baseline	Low (20-40)	0
	High (41-80)	130 (100)
After intervention	Low (20-40)	130 (100)
	High (41-80)	0

Table 5: Comparison of change in mindfulness (MAAS) scores among study participants at baseline and after intervention.

	MAAS Scores (Mean±SD)	Mean difference	95% CI		t statistic ^a	P value
			Lower	Upper		
At baseline	29.30±4.89					
After intervention	79.76±2.68	-50.46	-51.44	-49.48	-102.002	<0.001*

*Significance at $p<0.05$

Table 6: Comparison of change in self-evaluated anxiety (SATS) scores among study participants at baseline and after intervention.

	SATS scores (Mean±SD)	Mean difference	95% CI		t statistic ^a	P value
			Lower	Upper		
At baseline	66.03±2.17					
After intervention	29.11±2.94	36.92	36.23	37.61	105.884	<0.001*

*Significance at $p<0.05$

Table 7: Distribution of correlation between the maas scale and sats scale.

	Pearson correlation		P value
	MAAS difference	SATS difference	
MAAS	1	0.241	0.006*
SATS	0.241	1	0.006*

*Significance at $p<0.05$.

DISCUSSION

Stress, anxiety, and depression rates are extremely high among university students. Throughout their academic careers, undergraduate students studying health and social care face high levels of stress (Butler and Constantine, 2005). This can have a variety of negative effects, such as depression, burnout, and suicide at rates higher than those of age-matched controls (Dyrbye, Thomas, and Shanafelt,

2006).⁹ Professionals in the medical and psychological fields who experience stress are linked to worse patient outcomes, an increased risk of medical errors, melancholy, anxiety, and lower life satisfaction.¹⁰⁻¹³ Stress-reduction strategies for psychology and medical students can help avoid such issues, albeit they have not yet been thoroughly studied and there are few studies including psychology students in this field of study. Positive psychologists have recently become interested in the idea of mindfulness and how to practice or receive training to increase awareness. It is a condition of being fully present in the moment, without the need of discursive or discriminating cognition to mediate the experience (Brown and Ryne, 2003, Ryne and Creswell, 2007). In a 2013 study, Sasidharan, K. Rajesh, Judu, V. llavarsu, and TM Srinivasan investigated the relationship between impulsivity and dispositional mindfulness in college students.¹⁴⁻¹⁶

The affective and cognitive processes that underpin a variety of clinical problems may be modified by mindfulness intervention. These results are in line with research showing mindfulness meditation reduces anxiety and negative affect while increasing positive affect.¹⁷ Mindfulness-based interventions have the potential to improve students' psychological well-being by reducing stress and anxiety and raising self-efficacy, mindfulness, and empathy. By decreasing stress and anxiety and increasing self-efficacy, mindfulness, and empathy, mindfulness-based interventions have the potential to improve student psychological well-being.^{18,19} They may also help to facilitate a more patient-centered and psychosocial approach to care which may include a higher capacity for being present, open, and responsive to clients (Gockel).^{20,21} The health sciences include professional practice threshold standards that pertain to roles as a professional, communicator, and reflective practitioner. These standards include communication, client-centered practice, resilience management, and mental health and mental health management competence. Comparable to other studies conducted among medical students by Hassed et al, Warnecke et al, and Jain et al. the compliance with regular practice was maintained.²²⁻²⁴ The results show that medical students find acceptance and benefit from mindfulness practices used in secular contexts to reduce anxiety. The findings, which are consistent with research by Roghayeh Sohrabi et al., O. P. Sharma, and Deepika Vijay, demonstrated that mindfulness training reduces exam anxiety, affective anxiety, worry, and cognitive disposition of test anxiety among students.^{25,26} The current study found that mindfulness lowers anxiety levels in undergraduate students, which is consistent with research by Azargan et al that demonstrated mindfulness's ability to lower depression and rumination of thoughts in Isfahan University students.²⁷ Kaviani et al (2005) looked at how well cognitive therapy worked with mindfulness to reduce depressive, anxious, and egocentric thoughts over the course of 60 days. 28 Similar to the current study, the results demonstrated that the cognitive treatment

approach involving mindfulness is beneficial in reducing anxiety and depression. According to the current study, undergraduate students' anxiety and mindfulness have a favorable link (0.241). This suggests that an individual with high mindfulness and low anxiety and vice versa, and it is significant at 0.01 ($p=0.006$) levels, which is comparable to the research conducted by Palmer A, et al and Rodger S, et al.²⁹ Meditation has wide-ranging impacts on mental health and other associated effects on memory and concentration skills. It also assists several experts and trainees on the benefits of mental health and aids in other such research. The use of mindfulness in the classroom to promote efficient learning is becoming more and more popular. There was no difference in the final academic results from the two studies that directly examined student learning outcomes, but students did report that their learning had improved. It is not possible to make mindful students. This program's broader approach allowed pupils to participate and eventually practice mindfulness. A core curriculum that included mindfulness with an emphasis on managing stress and anxiety, boosting learning, and advancing professional practice may potentially benefit all students pursuing health-related careers.

Limitations being, undergraduate students often miss their classes which can make it challenging to maintain a regular mindfulness practice. Some undergraduate students may be resistant to the idea of mindfulness, perceiving it as a form of meditation or a waste of time. Effective implementation of mindfulness programs for undergraduate students often requires trained facilitators or instructors who Can provide proper guidance and support. Further research is warranted to explore the long-term impacts of mindfulness training and to identify the specific mechanisms through which benefits the undergraduates.

CONCLUSION

In conclusion, the findings of this study demonstrate the benefits of mindfulness practices for undergraduate students. The results indicate the students who engaged in regular mindfulness exercises reported significant improvement in overall wellbeing. Encouraging the widespread adoption of mindfulness on students may be effective strategy for promoting students' mental health, academic success, and overall flourishing.

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