Assessing the Impact of a Group Intervention on the Mental Well-being of Undergraduate Healthcare Students

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Abstract

Introduction: Mental stress is a major health problem among healthcare students. Reasons include academic, economic, and interpersonal factors. The need for wellness programs in healthcare education is being acknowledged globally. “Values in Healthcare – A Spiritual Approach” (VIHASA) is a personal development program for healthcare professionals. The study assessed the change in the mental well-being of undergraduate healthcare students after a VIHASA group intervention.

Methods: A quasi-experimental study design involving a ‘difference-in-difference’ technique with pre-post comparison was used. The final-year dental interns from India were divided into intervention and comparison groups. Data on mental well-being and its determinants were collected using the Warwick Edinburgh Mental Well-Being Scale (WEMWBS).

Results: The mean well-being score was 49.7 points (SD 8.7, Median- 48.5), with 16 per cent having poor well-being. Stressors included exam stress, job and financial concerns, and relationship issues. The well-being of the intervention group improved by 2.1 points more than the comparison. The proportion of students with poor scores reduced in the intervention group while it increased among the comparison group. The dose-response relationship showed a two-times improvement among those who attended more than half of all the sessions. A statistically significant difference was found in the mean scores at a 90 per cent confidence interval.

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Introduction

Considering that mental disorders are one of the leading causes of morbidity globally and in India, mental health has received importance in recent times. (Gururaj et al., 2016; Ritchie & Roser, 2018) Mental illnesses are associated with many non-communicable diseases, substance abuse, crimes, and violence, self-harm and suicides, loss of productivity, and absenteeism - all adding to the economic and societal burden. (Kessler & Üstün, 2004) With an estimated 76-85 per cent of people with severe conditions not receiving care, the treatment gap for mental disorders is very high. This is particularly true for low and middle-income countries, where the stigma, discrimination, and neglect act as barriers. (WHO (World Health Organization), 2001) In such a scenario, in addition to improved access to treatment, preventive and promotive actions are also needed to improve the mental well-being of the population. (WHO (World Health Organization), 2013)

The improvement of the mental well-being of everyone, in contrast to the traditional mental healthcare that focuses on the treatment of those suffering from mental disorders, has gained importance in recent times. (Stewart-Brown, 2008) Declaring positive mental health to be the foundation for well-being and effective functioning for both the individual and the community, the World Health Organization (WHO) defined mental well-being as a state “which allows individuals to realize their abilities, cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their community”. (WHO (World Health Organization), 2001) This is particularly important for the youth, who are especially vulnerable to mental illness, owing to changing socio-economic circumstances.

While mental illness affects everyone, young adults suffer more, as apparent from the fact that suicide is the second most common cause of mortality in the 15-29 age group globally. (Batty et al., 2018; Stallman, 2010) In particular, healthcare students have higher mental distress than the general population and their age-matched peers. (Cuttilan et al., 2016; Dyrbye et al., 2006) The students feel stressed owing to insufficient leisure time, pressure of study and examinations, workload, pressure to perform, fear of not being able to meet the expectations of parents, disharmonious relations with teaching faculty, financial insecurity, uncertain earning potential, and fear of unemployment after graduation. (Kumar et al., 2009; Pohlmann et al., 2005) Mental distress affects the students on both personal and professional levels. On a personal level, it results in physical symptoms, mental distress, emotional exhaustion, burnout, and suicidal ideation. (Dyrbye et al., 2006; Kearns et al., 2015) On a professional level, it adversely affects professional behaviour, ethical conduct, and empathy, thereby negatively influencing patient care. (Dyrbye et al., 2010) Students use a variety of coping techniques to overcome mental stress. While positive coping techniques include social support from teachers, parents, or fellow students, exercise, listening to music, and engaging in spiritual activities, (Ahmad et al., 2011; Muirhead & Locker, 2008; Sugiura et al., 2005) negative coping mechanisms include alcohol use, cigarette smoking, and problematic internet use. (Cuttilan et al., 2016)

Addressing the emerging need, certain medical colleges have implemented interventions based on proactive and reactive approaches. (Drolet & Rodgers, 2010; Ludwig et al., 2015) The reactive approaches include arrangements like a student support system for counselling when needed. (Drolet & Rodgers, 2010) However, students often hesitate to seek help due to stigma and group identity. (Chew-Graham et al., 2003; Kearns et al., 2015) Proactive approaches in the form of wellness programs aim to promote mental health before they face such a crisis through knowledge and skill development regarding mental well-being. (Drolet & Rodgers, 2010; Yusoff et al., 2013) Successful interventions have decreased depressive symptoms, stress and anxiety, suicidal ideation, and improved student satisfaction. (Drolet & Rodgers, 2010; Moutier et al., 2012; Thompson et al., 2010)

The literature suggests that programs promoting self-awareness and well-being of medical students, though in the nascent stage due to inadequate resources, have been found to offer positive results in terms of lowering stress levels and reducing burnout among medical students immediately, (Awa et al., 2010; Cuttilan et al., 2016; de Vibe et al., 2013) as well as with sustained effects lasting for around three months after the course. (Finkelstein et al., 2007) The intervention, specially designed for healthcare professionals, “Values in healthcare - a spiritual approach” (VIHASA) uses tools like reflection, listening, appreciation, meditation, and role-plays to explore themes of building resilience, compassion, cooperation, peace, positivity, and valuing oneself. (Bendomir & Morrison, 2013) Using the facilitated experiential learning technique, VIHASA helps healthcare professionals rediscover their values and use them in their professional and personal lives. (Parkes et al., 2010) A study in South Africa indicated that VIHASA offered as an elective subject of the medical school curriculum with eight sessions of four hours each, spaced over 16 weeks, indicated positive results. (Tin Maung Maung, 2017)

While there is little research globally, there is a dearth of such evidence on the impact of mental health promotive programs on Indian healthcare students. (Saunders et al., 2007) This research aims to fill this gap in knowledge by a) describing the mental well-being and its determinants among undergraduate healthcare students, and b) measuring the magnitude of change in their mental well-being after a VIHASA group intervention.

Methodology

This was a quasi-experimental study that measured the impact of an intervention using a ‘difference-in-difference’ approach. While an experimental study design would have been ideal for such evaluation research, in the absence of a pre-baseline assessment of mental well-being, random assignment of participants to intervention and comparison groups was not possible in this research.

The study population comprised undergraduate dental interns who were pursuing their one-year internship at a dental college in Maharashtra, India. Keeping in

consideration a small group setting of intervention, a convenient sampling technique was used to enroll fifty-seven students who were willing to join the study. The students were invited to voluntarily join either the intervention or comparison groups. The intervention group of 29 students received eight facilitated sessions of four hours' duration each, spaced over the duration of three weeks. The comparison group comprised the remaining 28 students.

Two-phase data collection was done using a self-administered questionnaire, which had sections on background information, stressors and coping techniques, and self-assessed mental well-being using the Warwick Edinburgh Mental Well-Being Scale (WEMWBS). With good psychometric properties, internal consistency, and low social desirability bias, the WEMWBS tool is recommended for interventions lasting more than 2 weeks. (Taggart & Stewart-Brown, 2015) Developed by the University of Warwick, the tool is widely used in the United Kingdom and has been validated in different cultures as well. (Stewart-Brown et al., 2011; Taggart et al., 2013; Tennant et al., 2007) It covers fourteen positively worded statements describing different aspects of positive mental well-being, including positive functioning, harmonious interpersonal relationships, and positive feelings. The respondents then score themselves along these fourteen aspects on the Likert scale of 1 (None of the time) to 5 (All the time). Accordingly, the total mental well-being scores in the tool can range from 14 to 70. For the study, these scores were then categorized into three categories: a) Poor mental well-being (mean score below 1 standard deviation (SD)), b) Average mental well-being (mean score within 1 SD), and c) Good mental well-being (mean score above 1 SD), as described in similar studies elsewhere. (Braunholtz S et al., 2007; Deacon et al., 2009)

The data was analyzed to ascertain the socio-demographic profile of the participants, their stress-causing factors and coping techniques, mental well-being status, and the factors affecting them. In addition, the impact of the intervention was measured by comparing the change in intervention and comparison group scores across time using the difference-in-difference analysis for statistical significance. The Microsoft Excel version 2016 and IBM SPSS version 20 software were used for analysis.

While the baseline data for both groups were collected a day before the first session of the intervention, the end line was measured nine days after the intervention to a) remove the bias of any immediate effect and b) capture the essence of sustained effect. The confidentiality of the respondents was ensured by using unique identification numbers, and informed consent was ensured before their participation. The study, which spanned from February to July 2018, received ethical clearance from the institutional ethics committee of the Indian Institute of Public Health Gandhinagar (IIPHG). Due approval was secured from the University of Warwick to use the WEMWBS Tool.

Results

Before presenting the results of the mental well-being and impact of the intervention, a summary of the socio-demographic profile of the respondents is presented in Table 1. The study predominantly comprised young, urban, unmarried women.

Table 1. Socio-demographic profile of the participants (n=57)

Characteristics	Categories	Proportion (%)
Age	20-25 years	93
	25-30 years	7
Gender	Male	10.5
	Female	89.5
Religious beliefs	Believe	86
	Don't believe	14
Relationship status	Married	2
	Currently in a relationship	33
	Currently not in a relationship	26
	Never been in a relationship	39
Place of upbringing	City	78.9
	Town	17.5
	Village	3.5
Annual family income	Mean	INR 5,17,000/-

Source: The author

The major causes of stress among the respondents were classified across three categories: Work (66 per cent), Relationships (24 per cent), and Self-development (10 per cent). Expectedly, career and future-related concerns, study and workload-related pressures, and relationship-related issues were among the top causes of stress among the young respondents in their twenties.

The coping techniques used by the participants were broadly divided into personal techniques and solitary pursuits followed by most respondents (85 per cent), and interpersonal techniques that involved interaction with other people, for the remaining 15 per cent of respondents. Meditation and music-related activities were preferred personal coping mechanisms, and talking to a friend was the most preferred interpersonal method. None of the respondents indicated group therapy as a coping mechanism, making the intervention a unique experience.

At the baseline, the mean well-being scores of participants (n=57) were 49.7 points on a scale of 14-70, with a standard deviation (SD) of 8.7, a median of 48.5, and a range of 22-65 points. The mean well-being scores of the intervention group were slightly lower at 49.1 (SD=8.3, Median=48), compared to 50.2 (SD=8.1, Median=49) for the control group respondents. For the majority of the participants (63 per cent), the well-being score was within 1 SD indicating 'average mental well-being'. This was followed by 21 per cent who reported 'good mental well-being' with their scores above 1 SD. The remaining 16 per cent had their scores below 1 SD indicating 'poor mental well-being' and a higher risk of depression. The proportion of respondents with 'poor mental well-being' was higher in the intervention group (21 per cent) as compared to the control group (11 per cent).

The mental well-being scores of the respondents before and after intervention for both control and intervention groups were analyzed after ensuring the normal distribution of the sample in the intervention and control groups. This was done using the Shapiro-Wilk test which yielded a p-value of more than 0.05.

As can be seen from Figure 1, while there was an increase in average mental well-being scores of both the groups over time, the improvement among the respondents of the intervention group was 6.1 points, compared to 4 points among the comparison group.

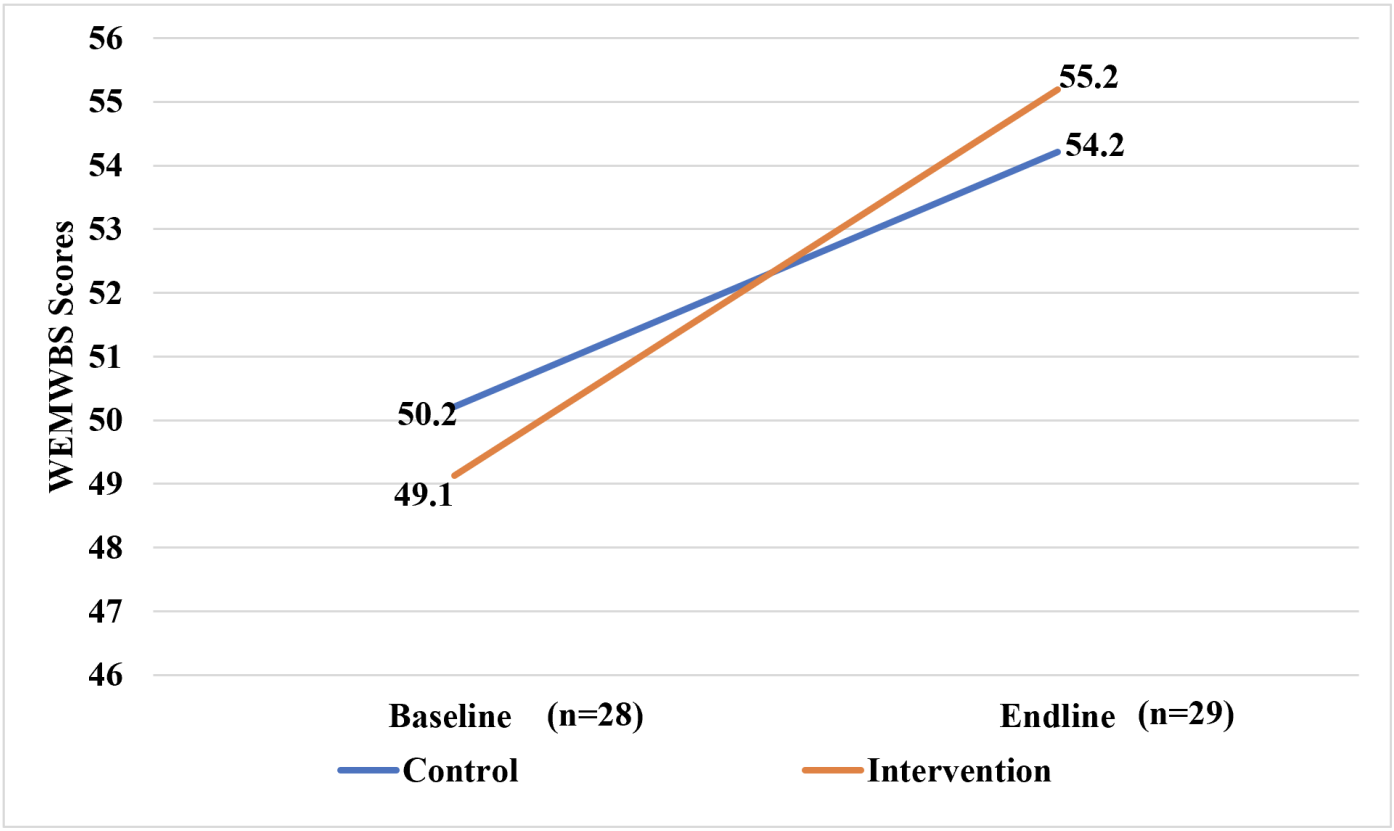

Figure 1. Change in mean mental well-being scores of both groups

Source: The author

The greater increase in the mean scores of the intervention group was corroborated well with a decline in the proportion of respondents with 'poor mental well-being' from 21 to 8 per cent from baseline to end-line assessment. This proportion increased from 11 to 21 per cent among the respondents of the control group.

The impact of the intervention was measured by the difference-in-difference analysis between the well-being scores of both groups before and after intervention (Table 2). The dual difference of 19 per cent in the mean score of well-being was found to be statistically significant at a 90 per cent confidence interval.

Table 2. Difference in difference analysis

Baseline				End line			
Outcome variable	Comparison	Intervention	Diff (I-C)	Comparison	Intervention	Diff (I-C)	Diff-in-Diff
Well-being scores	50.214	49.126	-1.089	54.211	55.083	0.873	1.961
S. Err.			2.132			2.471	3.263
T			-0.51			0.35	0.60
P>|t|			0.611			0.725	**0.549**

R-square: 0.09

** Means and Standard Errors are estimated by linear regression*

***Inference: *** p<0.01; ** p<0.05; * p<0.1*

Source: The author

Lastly, a statistically significant dose-response relation was also found in terms of the frequency of interventions and improvement in mental well-being. As can be seen from Figure 2, the improvement in the mean score of well-being among the participants who attended more than half of the eight sessions (n=15) was double that of those who attended four or fewer sessions (n=7).

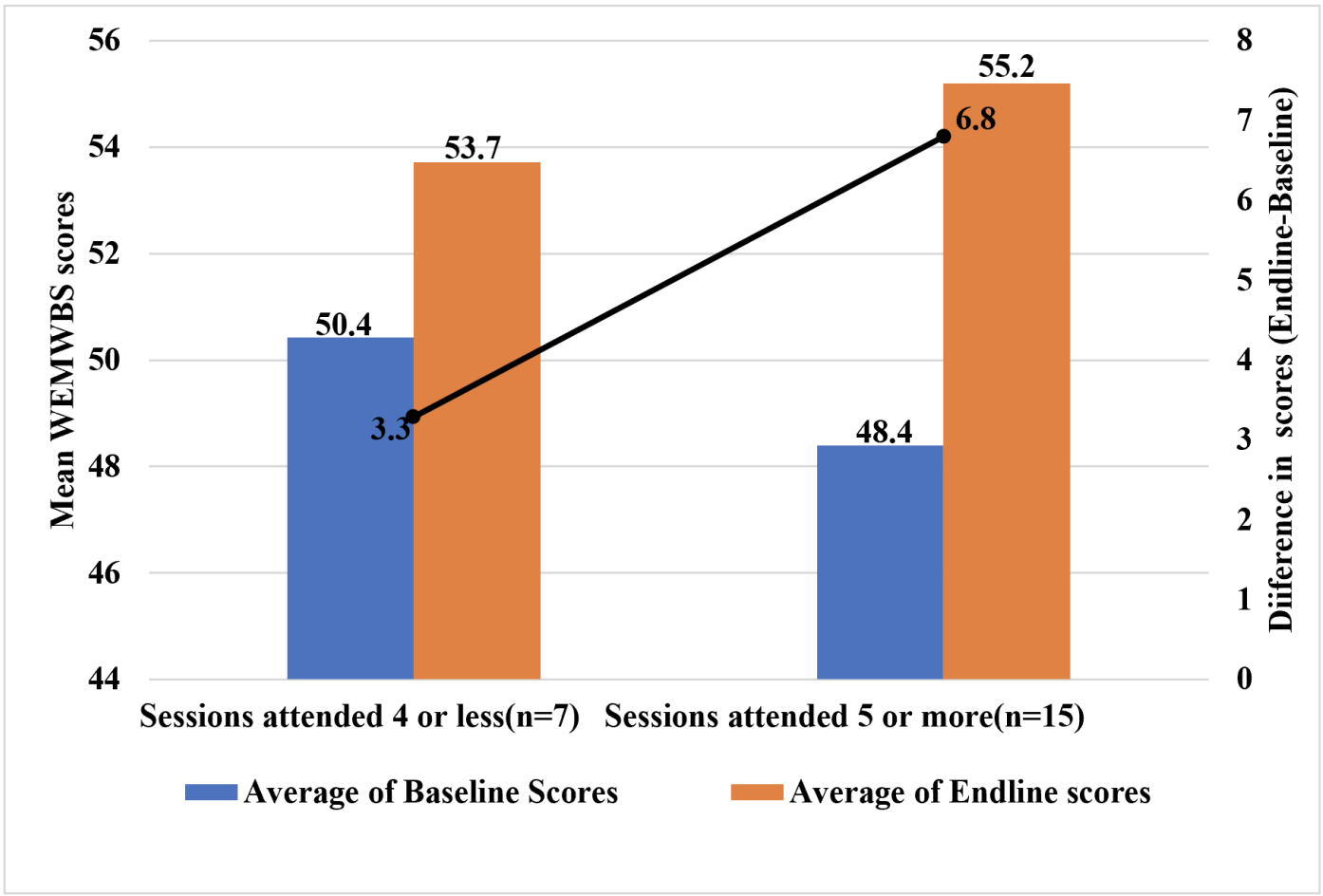

Figure 2. Average change in well-being scores with no. of sessions attended among the intervention group

Source: The author

Among the fourteen themes of WEMWBS, interpersonal relationships, self-confidence, relaxation, and clear thinking remained areas of concern at the time of baseline, as fewer than 40 per cent of the respondents indicated that they often or all the time feel positive about these categories. Although, at baseline, both the groups had poor scores in relaxation and self-confidence, the comparison group had better scores in the ability to think clearly and make decisions, feeling cheerful and good about oneself, and feeling interested in other people as compared to the intervention group.

While more respondents in the intervention than in the comparison group indicated improvement across all the fourteen themes of WEMWBS, the positive change was

higher in the themes that were identified as challenge areas at the baseline. The highest improvement was reported for “thinking more clearly” and “dealing with problems well” among functioning and “feeling more relaxed, cheerful, and confident” and “closer to other people” among the feelings-related themes.

Discussion

To the best knowledge of the authors, this is the first study in India that quantitatively assessed the impact of the VIHASA program on the well-being of emerging healthcare professionals through a difference-in-difference approach. The need for interventions aiming at improving positive mental well-being is evident, especially among healthcare students. The results indicated stress and anxiety as well as their risk of depression among young healthcare professionals. The finding, comparable to similar studies among medical students who were reluctant to seek help due to stigma (Chew-Graham et al., 2003; Drolet & Rodgers, 2010), contextualized the need for successful mental health interventions.

The findings that college-going youth in their mid-twenties face workload and exam-related stress, poor relationships, lack of relaxation and sleep, and low self-confidence largely resonate with the existing literature. (Ahmad et al., 2011; Muirhead & Locker, 2008; Sugiura et al., 2005) The poor mental well-being among the students is also comparable to the general population elsewhere. (Braunholtz S et al., 2007; Health Survey for England, 2011; Waqas et al., 2015)

The success of a three-week-long group intervention among paramedical students was measured in terms of improvement in well-being scores comparable to a similar intervention spaced over 16 weeks. (Tin Maung Maung, 2017) This provides important evidence for sustained inputs to improve the mental well-being of healthcare professionals so that the psychological morbidity of medical professionals can be reduced (Dyrbye et al., 2006), and compassionate patient care can be improved (Dyrbye et al., 2010).

Given the small-scale nature of this study, there were a few limitations. First, the scope and duration of the study were limited due to logistical constraints. A more spaced-out intervention would allow for the maturation of the intervention. A longer study period would also allow for measuring the sustainability of the improvement in mental well-being status at different points after the intervention. Second, the study involved a smaller sample. A larger sample would have been beneficial for more rigorous impact evaluation using propensity score matching techniques across a wider range of background variables. Future studies can improve upon these parameters.

Conclusion

Mental health is an important health issue among healthcare students who are reluctant to seek care due to stigma despite the suffering. Mental well-being promotive interventions are successful in restoring positive mental health and preventing burnout, stress, and depression among healthcare students. Through impact evaluation research, this study found considerable improvement in the mental well-being of healthcare students with multiple stressors. It is recommended that higher educational institutes, especially the field of medical and paramedical faculties, should a) monitor the well-being of their staff and students, b) develop and implement suitable well-being promotive programs like the VIHASA intervention, and c) measure their impact for knowledge building in the longer run. Although the improvement in mental well-being can be attributed to the VIHASA intervention, it is suggested that more such studies with larger sample sizes, interventions spaced over longer periods, and post-intervention follow-up may be undertaken to assess the sustainability of such efforts.

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