

# Impact of Short Term Yoga Intervention on Mental Well Being of Medical Students Posted in Community Medicine: A Pilot Study

Rahul Bansal, Monika Gupta, Bhaskar Agarwal<sup>1</sup>, Sachin Sharma<sup>2</sup>

Departments of Community Medicine, <sup>1</sup>Naturopathy and Yogic Sciences, and <sup>2</sup>Psychiatry, Subharti Medical College, Subhartipuram, NH-58, Delhi-Haridwar Bypass Road, Meerut, Uttar Pradesh, India

## ABSTRACT

**Background:** High level of stress, anxiety and depression is seen among medical students. **Aims:** To assess the impact of brief structured yoga intervention on mental well being of MBBS students. **Materials and Methods:** The participants consisted of 82 MBBS students of 3<sup>rd</sup> semester in the age group of 18-23 years. The students were assessed at baseline and at the end of one month of specific yoga intervention by using General Health Questionnaire-28 (GHQ-28). **Results:** The students reported improvement in general and mental well being following the intervention and difference was found to be highly significant. **Conclusion:** A short term specific yoga intervention may be effective in improving general and mental well being in MBBS students. It is feasible and practical to include yoga practice in block postings of community medicine.

**Keywords:** Asana, General Health Questionnaire-28, mental well being, pranayama, yoga

## Introduction

Medical students often experience significant distress during their training. This stress and anxiety along with substance abuse develop early in medical training and may increase with time.<sup>(1-8)</sup> One of the most important aims of community medicine is to promote the Health of the community. As famous saying goes-“Charity Begins at Home”, we should first promote the health of our own students who are going to be the future doctors. Until and unless our students themselves practice health promotional measures, they are very less likely to guide and motivate their patients and the community to do so. As an ancient holistic system of wellness, Yoga is a scientifically validated, time tested and socially

acceptable health promotional technique developed thousands of years ago in our own country.<sup>(9-13)</sup> So far very few studies have been done on effect of yoga on health status of medical students, therefore department of community medicine has done this innovative experiment by introducing yoga in the first block posting of M.B.B.S. 3<sup>rd</sup> semester students to find out the impact as well as the feasibility of short term yoga intervention on mental health status of medical students.

## Materials and Methods

### Subjects

Participants included 90 students of MBBS 3<sup>rd</sup> semester who came for their 1<sup>st</sup> posting in the department of community medicine in different batches. Each batch comprised of around 10 students.

Participants included 40 males and 50 females within the age group of 18-23 years.

### Study period

September 2009-November 2010.

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### Address for correspondence:

Dr. Rahul Bansal, Department of Community Medicine, Subharti Medical College, Subhartipuram, NH-58, Delhi-Haridwar Bypass Road, Meerut, Uttar Pradesh, India. E-mail: meusims2008@gmail.com

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## Study design

Cross sectional pre and post interventional study.

## Procedure

Before initiating yoga practices the students were shown the published research work done on yoga and health in the leading Indian and western medical institutions. Their doubts and apprehension about yoga were cleared by thorough discussion. Timing of yoga practice was kept from 9-10 am daily and it was ensured that yoga practice did not affect the regular teaching program.

Informed consent was obtained from all the students.

## Intervention

The students were given 45 minutes for yoga practice every day in the beginning of posting for one month.

Yoga class consisted of following practices:

1. Preliminary preparation - 5 min.
2. Asana (postures)
  - Suryanamskar - 5 minutes
  - Tadasana
  - Triaktadasana
  - Katichakrasana 10 minutes
  - Halasana
  - Pascimottanasana
  - Shavasana
3. Pranayama (breathing exercise)
  - Anulome-vilome
  - Kapalbhata 15 minutes
  - Bharamri
4. Meditation with sound 10 minutes

These classes were conducted by a trained yoga physician (M.Sc yoga) available full time in the college on regular basis.

## Instrument

In order to assess the impact on general and mental well being, the 28-item general health questionnaire (GHQ-28)<sup>(14)</sup> was applied at baseline i.e., in the beginning of intervention and at the end of study i.e., after completion of intervention on all the participated students.

GHQ-28 contains four subscales. Each consisting of seven items as follows:

- A. Somatic symptoms (item 1-7).
- B. Anxiety/Insomnia (item 8-14).
- C. Social dysfunction (item 15-21).
- D. Depression (item 22-28).

Questionnaire required approximately 10-15 minutes to complete. Participants rated their symptoms over the past few weeks on a four point Likert scale. The Likert

scoring method is continuous and scores of (0, 1, 2, 3) were assigned to each item and summed up giving a score ranging from 0-84. A higher score indicates more severe condition.

Anonymous feedback was also taken at the end of intervention to understand students' experience of yoga.

## Data analysis

Data was collected, tabulated and statistical analysis was done using Microsoft Excel 2007 software and paired *t*-test was applied to compare the means of before and after intervention.

$P < 0.001$  was considered significant.

## Results

Out of the 90 students posted in the community medicine, eight students were not regular. They were absent either at the time of pre or post test, therefore excluded from the study and final analysis included only 82 students.

On comparison of mean total scores of before and after intervention, there was a decrease in the score from baseline. This difference was statistically significant ( $P < 0.001$ ) [Table 1].

On comparing the mean scores according to four subscales of GHQ-28, there was a significant decrease in the mean of each subscale before and after specific yoga intervention [Table 2].

Students scoring on each question before and after intervention is given in Tables 3-6 for all the four subscales i.e., Somatic symptoms, Anxiety/Insomnia, Social dysfunction, Depression respectively.

**Table 1: Comparison of mean total scores before and after intervention**

Category	Pre mean	Post mean	Probable value of <i>t</i>	<i>P</i> value
Total score	18.02439	10.81707	3.05867 E-10 (0.0000)	<0.001

**Table 2: Comparison of mean subscale mental scores before and after intervention**

Category	Pre mean	Post mean	Probable value of <i>t</i>	<i>P</i> value
Somatic symptoms	4.292683	2.585366	2.22724E-05 (0.000022)	<0.001
Anxiety/Insomnia	5.049383	2.97561	7.13E-06 (0.0000071)	<0.001
Social dysfunction	6.5	4.353659	6.16314E-07 (0.00000061)	<0.001
Depression	2.243902	0.902439	6.16314E-07 (0.00000062)	<0.001

**Table 3: Distribution of students answers in relation to Somatic symptoms**

Have you recently	Score [0]		Score [1]		Score [2]		Score [3]	
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
	%	%	%	%	%	%	%	%
Been feeling perfectly well and in good health?	14.6	66.7	68.7	33.3	16.7	-	-	-
Been feeling in need of a good tonic?	45.8	68.7	35.4	25	18.8	6.3	-	-
Been feeling run down and out of sorts	47.9	70.8	43.7	29.2	8.4	-	-	-
Felt that you are ill?	56.3	79.2	33.3	20.8	10.4	-	-	-
Been getting any pains in your head?	39.6	62.5	47.9	37.5	12.5	-	-	-
Been getting a feeling of tightness or pressure in your head?	43.8	68.7	37.5	31.3	18.7	-	-	-
Been having hot or cold spells?	43.7	64.5	52	33.3	4.3	2.1	-	-

**Table 4: Distribution of students answers in relation to Anxiety/Insomnia**

Have you recently	Score [0]		Score [1]		Score [2]		Score [3]	
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
	%	%	%	%	%	%	%	%
Lost much sleep over worry?	50	56.2	27	41.7	14.6	2.1	8.4	-
Had difficulty in staying asleep once you are off?	37.5	77.0	45.8	22.9	10.4	-	6.3	-
Felt constantly under strain?	37.6	60.4	45.8	39.6	12.6	-	4.2	-
Been getting edgy and bad-tempered?	35.4	60.4	39.6	37.5	16.7	2.1	8.4	-
Been getting scared or panicky for no good reason?	64.5	75.0	14.6	25	18.7	-	2.0	-
Found everything getting on top of you?	45.8	58.3	47.9	41.7	6.3	-	-	-
Been feeling nervous and strung-up all the time?	50	66.7	27	33.3	20.8	-	2.0	-

**Table 5: Distribution of students answers in relation to social dysfunction**

Have you recently	Score [0]		Score [1]		Score [2]		Score [3]	
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
	%	%	%	%	%	%	%	%
Been managing to keep yourself busy and occupied?	18.7	31.2	75	64.5	4.2	2.1	2.1	-
Been taking longer over the things you do	-	22.9	87.5	75	12.5	2.1	-	-
Felt on the whole you were doing things well?	54.2	62.5	27	35.4	18.7	2.1	-	-
Been satisfied with the way you've carried out your task?	16.7	52	54.2	39.6	29.2	8.4	-	-
Felt that you are playing a useful part in things?	16.7	35.4	77.0	62.5	6.2	2.1	-	-
Felt capable of making decisions about things?	45.8	52	37.5	43.7	16.7	4.2	-	-
Been able to enjoy your normal day-to-day activities?	20.8	58.3	56.2	41.7	22.9	-	-	-

**Table 6: Distribution of students answers in relation to depression**

Have you recently	Score [0]		Score [1]		Score [2]		Score [3]	
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
	%	%	%	%	%	%	%	%
Been thinking of yourself as a worthless person?	70.8	97.9	12.5	2.1	12.5	-	4.2	-
Felt that life is entirely hopeless?	89.5	95.8	6.2	4.2	4.2	-	-	-
Felt that life isn't worth living?	85.4	95.8	10.4	4.2	4.2	-	-	-
Thought of the possibility that you might make away with yourself?	54.2	77.0	37.5	33.0	-	-	8.3	-
Found at times you couldn't do anything because your nerves were too bad?	68.7	89.6	29.2	10.4	2.1	-	-	-
Found yourself wishing you were dead and away from it all?	87.5	93.8	8.3	6.2	4.2	-	-	-
Found that the idea of taking your own life kept coming into your mind?	70.8	91.7	27.0	8.3	2.1	-	-	-

Apart from the improvement observed in mental well being score, the students also reported other beneficial effects of yoga in their anonymous feedback such as:

1. Better sleep-30%
2. Better concentration in studies-40%.

3. Better control of anger and other negative symptoms-25%.
4. More relaxed and active throughout the day-80%.
5. Getting positive energy at the beginning of the day-60%.

All the students appreciated this intervention in their feedback.

## Discussion

Our study has found significant improvement in the mental well being in all the four tested areas (somatic symptoms, anxiety, social dysfunction, depression) of medical students following short term yoga intervention. Our results are consistent with other studies on yoga among medical students—a study done by Simard, Henry<sup>(15)</sup> showed improvement in overall health, perceived stress and depressive symptoms following the 16 week yoga intervention among 14. 1<sup>st</sup> year medical students assessed by GHQ-12, perceived stress scale and centre for epidemiology depression scale.

Another study by Malathi, Damodaran<sup>(16)</sup> also showed a statistically significant reduction in anxiety among 50 first year medical students following yoga practices assessed by Spillberger's anxiety scale. So far the studies assessing the impact of yoga on medical student's health and particularly mental health have been few in India and rare in this part of country.

The unique feature of this study is that it is not a time bound funded project. It is a continuous ongoing program included in the community medicine schedule for the block posting of MBBS students (3<sup>rd</sup> semester). For this intervention no separate time or space has to be requested from any other department. Space for yoga is available within the department itself. Yoga classes are held within the time scheduled for block postings. There it is likely to be continued batch after batch since it has been very well accepted by the students as well as college authorities.

## Conclusions and Recommendations

If there is such a significant improvement in mental health after doing yoga for only one month then we can imagine what can be the impact if yoga practice is continued for longer time or included in the daily routine by the medical students.

Since the aim of both community medicine and yoga is health promotion and disease prevention, there is strong reason to include yoga in teaching of community medicine.

Yoga is an easy, safe, low cost, acceptable and scientifically validated preventive and promotive approach for health therefore it should be included it in the teaching

curriculum of community medicine in MBBS course so that our future doctors adopt and maintain positive health and disseminate the same to their patients and the community.

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