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Assessment of knowledge, attitude and practice of yoga and meditation after foundation course (FC) at the beginning of MBBS studies amongst first year students in a Medical College, Ahmedabad, Gujarat

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Abstract

Title: Foundation Course (FC) for medical students gives an opportunity to sensitize medical students about Yoga right at the beginning of their medical studies. This study investigated the perceived benefits of yoga on a five-point Likert scale before and after FC.

Aims: 1) To study socio-demographic profile and anthropometric indices of study population. 2) To study the perceived benefits of yoga as assessed on five-point Likert scale before and after FC. 3) To study the practice of yoga and motivation behind adopting the practice of yoga.

Settings and Design: Cross sectional study with pre-deigned and pre-tested questionnaire

Methods and Material: Cross sectional study was carried out amongst students of first MBBS by using a pre-deigned and pre-tested questionnaire. Response was taken from 1st year MBBS 2022 batch students after yoga session of FC.

Statistical analysis used: Descriptive statistics.

Results: Age range was 17-20 years. 64 (41.02%) were boys and 92 (58.98%) were girls. Mean BMI for boys and girls was 22.49 ± 4.54 kg/m² & 20.20 ± 4.48 kg/m² respectively. Mean Likert score before and after FC was 3.76 ± 0.82 & 4.08 ± 0.90 respectively and Practice of yoga was 112 (64%) & majority were doing meditation. Mean frequency and duration of yoga was 3.56 ± 2.10 days per week & 22.92 ± 11.25 Minutes respectively.

Conclusions: Benefits perceived by students for doing yoga were mental peace & stress relaxation. There is increase in Likert score after FC.

Keywords: Five-point likert scale, foundation course, meditation, undergraduate students, yoga

Introduction

Impact of non-communicable diseases (NCD) amongst youngsters is quit alarming in India. Most of the NCDs are related to some common risk factors like lack of physical activity, unhealthy diet and stress. Medical students are more prone to develop stress at the initial stage of their studies. That's why physical as well as mental health of medical students is utmost important to be taken care of ^[1]. NMC introduced one month FC since 2019 with various components like enhancement of skills, professional development including ethics, language and computer skill, sports, yoga and meditation which can be stress busters for them in their MBBS studies. FC gives opportunity to teach yoga and meditation to first year MBBS students which help them to focus on studies and to cope up with day-to-day challenges ^[2]. Yoga and meditation is one of the most widely used lifestyle medication approach across the globe in not only management but also for prevention of many NCDs including mental disorders ^[3]. Yoga is ancient Eastern practice that combines physical postures, breath control and meditation. The yoga has been proven to reduce blood pressure as many trials were conducted to compare standard treatment guidelines and planned yoga intervention in addition with standard treatment. The outcome variables of these trials have proven the effectiveness of yoga intervention in pre hypertensive and hypertensive patients ^[4]. Yoga has been proven as beneficial as psychiatric medication for any psychological disturbance amongst youngsters ^[5].

Stress can also exacerbate disorders such as cardiovascular disease, obesity, and chronic pain as well as mental health, gastrointestinal, and sleep disorders. Similarly, anxiety is the strongest risk factor for depression, and both conditions are associated with anomalies in mood-related areas of the brain. Shambhavi mahamudra kriya is a yogic practice that includes both deep breathing and meditation techniques. If it is done with proper norms, it improved long term cardiac response to daily stress and improvise general wellbeing [6]. The present study assessed knowledge, attitude and practice of yoga and meditation of first year MBBS students during FC and enhanced them with proper guidance of importance of yoga and meditation and sensitise them to cultivate this practice in day-to-day life.

Material and Methods

This is a cross-sectional study with retrospective pre-post analysis before and after the conduction of yoga session during foundation course. The study was conducted amongst first year MBBS students of batch 2022-23 at Medical College during the month of November 2022. During foundation course two hours long yoga session was conducted. The first 30 minutes session had a presentation on benefits of yoga followed by next 45 minutes session of demonstration and real time performance of basic asanas like Bhujangasana, Paschimottanasana, Halasana, Dhanurasana, Trikonasana, Vajrasana, Shavasana etc., breathing exercises like Anulom-Vilom, Omkar Chanting, Kapal Bhati and meditation like Sambhavi Mudra by training faculty and student's volunteers. Then next 45 minutes session was followed by demonstration and real time performance of asanas, pranayama and meditation session which helped students to learn breathing exercises and meditation technique. Students were sensitized to do this practice in their daily routine. After one month of the session, the students were assessed by retrospective pre-post technique. Out of total 200 students, 156 were enrolled as remaining 44 students got admission after Foundation course. All the first MBBS students were given a pre-designed and pre-tested questionnaire based google form via link in class room. Informed consent was taken and all the fields of the form were explained to them by the investigators. Students were given 15 minutes time to fill the Google form and submit the same. The demographic details and responses on Five-point Likert scale were obtained and the same were analyzed using Microsoft excel and trial version of SPSS 2022 program. Descriptive statistics were used to summarize the data.

Results

Out of 200 students, response was taken of 156 students as 44 students were admitted after FC. Age range was 17-20 years. Mean age of boys and girls was (18.34±0.70 years) & (18.15±0.77 years) respectively. Out of 156 students, 64 (41.02%) were boys and 92 (58.98%) were girls. (Table 1)

Table 1: Age and Gender wise distribution

Sr. No.	Variable	No (%)
1	Age (years)	
	17	22 (14.10)
	18	83 (53.21)
	19	44 (28.21)
	20	7 (4.49)
2	Gender	
	Boys	64 (41.03)
	Girls	92 (58.97)

Mean BMI for boys and girls was 22.49 ± 4.54 kg/m² & 20.20±4.48 kg/m² respectively. This difference was statistically significant (t=3.13, p=0.0021) (Table 2).

Table 2: BMI wise distribution

BMI (kg/m ²)	Boys (No %)	Girls (No %)	t-value/p-value
< 18.5	13 (20.31)	31 (33.70)	3.13/0.0021
18.5 - 24.9	35 (54.69)	53 (57.61)	
25 - 29.9	12 (18.75)	5 (5.43)	
30 - 34.9	3 (4.69)	3 (3.26)	
35 - 39.9	1 (1.56)	0 (0.00)	
> 40	0 (0.00)	0 (0.00)	

After one month of attending our yoga session 112 (64%) students were regularly doing yoga and meditation. Out of 64 boys, 40 (62.5%) were practicing yoga and out of 92 girls, 72 (78.26%) were practicing yoga and practice of yoga was statistically significant (z= 2.15, p=0.031). As far as type of relaxation exercises are concerned meditation was practice by 33 (82.5%) boys and 61(84.72%) girls followed by breathing techniques was practice by 33 (82.5%) boys and 56 (77.78%) followed by relaxation exercises and physical posture was practice by 32 (80%) boys and 43 (59.72%) girls. Mean frequency of yoga amongst boys was 3.75±2.44 days whereas amongst girls it was 3.42±2.03 days and this difference was statistically not significant (t=0.76, p=0.44). Mean duration of yoga amongst boys was 18.94±14.16 minutes whereas amongst girls it was 22.34±10.93 minutes and this difference was statistically not significant (t=1.41, p=0.15). The most common motivation for performing yoga amongst boys and girls was weight loss and other health benefits. This difference was statistically not significant (chi-square= 2.73, 0.43) (Table 3).

Table 3: Retrospective pre-post knowledge & attitude towards yoga

Sr. No	Variable	Likert score (Mean ± SD)		t value	p value
		Before FC	After FC		
1	Yoga helps in maintaining fitness	3.71±0.91	4.06±0.94	6.57	<.00001
2	Benefits in weight loss	3.47±0.93	3.81±1.02	5.9	<.00001
3	Yoga relieves stress	3.90±0.98	4.21±0.99	5.82	<.00001
4	Yoga gives inner peace	3.90±0.97	4.19±0.96	6.1	<.00001
5	Yoga improves immunity	3.80±0.99	4.10±0.98	6.57	<.00001
6	Yoga improves memory	3.72±1.00	4.06±0.99	6.04	<.00001
7	Makes you feel more energetic	3.76±0.97	4.13±0.96	5.95	<.00001
8	Makes all joints more flexible	3.91±0.95	4.12±1.02	4.11	0.0006
9	Yoga can improve musculoskeletal & mental health	3.80±0.97	4.12±1.00	5.85	<.00001
10	Yoga can prevent/improve health in NCD like type 2 diabetes, CVD, stroke etc.	3.65±0.98	4.00±0.98	6.56	<.00001
	Overall score	3.76±0.97	4.08±0.98	13.84	<.00001

Knowledge, attitude and practice of yoga was assessed using Five-point Likert scale by retrospective pre-post assessment method. The different benefits of the yoga like role of yoga in maintaining fitness, helping in weight loss, stress relaxation giving inner peace, improvement in immunity, improvement in memory, making one feel more

energetic, making joints more flexible, improvement in Musculo-skeletal and mental health and prevention of NCD was assessed. Mean Likert score for knowledge, attitude and practice towards yoga and pranayama before and after FC was 3.76 ± 0.82 & 4.08 ± 0.90 respectively and difference was statistically significant ($t=3.28$, $p=0.0011$) (Table 4).

Table 4: Practice of Yoga amongst study population

Sr. No	Variable	Boys (No %)	Girls (No %)	Total	z-value	p-value
Practice of yoga						
1	Yes	40 (62.5)	72 (78.26)	112 (71.79)	-2.15	0.031
	No	24 (37.5)	20 (21.74)	44 (28.21)	2.15	0.031
Type of Relaxation exercises						
2	Relaxation exercises & physical posture	32 (50)	43 (46.74)	75 (48.08)	0.4	0.68
	Breathing techniques	33 (51.56)	56 (60.87)	89 (57.05)	-1.15	0.24
	Meditation	33 (51.56)	61 (66.30)	94 (60.26)	-1.85	0.06
Age of start yoga (Years)						
3	5 to 9	2 (5)	7 (9.72)	9 (8.04)	-0.88	0.37
	10 to 14	13 (32.5)	32 (44.44)	45 (40.18)	-1.23	0.021
	15 to 19	25 (62.5)	33 (45.83)	58 (51.79)	1.69	0.09
Frequency of yoga per week						
4	1	11 (27.5)	10 (13.89)	21 (18.75)	1.76	0.07
	2	3 (7.5)	18 (25)	21 (18.75)	-2.27	0.02
	3	7 (17.5)	17 (23.61)	24 (21.43)	-0.75	0.44
	4	5 (12.5)	7 (9.72)	12 (10.71)	0.45	0.64
	5	3 (7.5)	7 (9.72)	10 (8.93)	-0.39	0.68
	6	1 (2.5)	1 (1.39)	2 (1.79)	0.42	0.66
	7	10 (25)	12 (16.67)	22 (19.64)	1.06	0.28
Time per session (Min)						
5	0-15	18 (45)	27 (37.5)	45 (40.18)	0.77	0.43
	16-30	20 (50)	39 (54.17)	59 (52.68)	-0.42	0.67
	31-45	0 (0.00)	4 (5.56)	4 (3.57)	-1.51	0.12
	46-60	2 (5)	2 (2.78)	4 (3.57)	0.6	0.54
Motivation to start yoga						
6	Compulsory school activity	9 (14.06)	11 (11.96)	20 (12.82)	0.38	0.69
	Lecture during Foundation Course	5 (7.81)	4 (4.35)	9 (5.78)	0.91	0.36
	Weight loss & health benefits	36 (56.25)	63 (68.48)	99 (63.46)	-1.56	0.11
	Motivation through parent, friends, relatives & other role models	14 (21.87)	14 (15.22)	28 (17.95)	1.06	0.28

Discussion

The present study was carried out amongst 156 newly admitted first MBBS students to whom training of Yoga was imparted as a part of FC. In another study the yoga training was imparted to first year medical students [7]. The age range of the students was 17-20 years with median age of 18 years. Several other studies were carried out amongst the similar age group students [8-10]. The proportion of girls was more as compared to boys in the present study whereas in another study by Rubina *et al.* the proportion of boys and girls was almost equal [11]. In the present study girls had statistically significantly lower BMI as compared to boys and mean BMI of study population was in normal range and the results were similar to another study [11]. BMI of males was found to be significantly higher in a study [12]. Various benefits of the Yoga benefits of yoga are mentioned in many other studies [8, 13, 14, 15, 16]. In an another study the majority of study participants either agreed or strongly agreed that yoga had improved their physical health (88%), mental health (86.2%), stress levels (82.6%), strength (87.1%) and flexibility (91.6%). The practice of Yoga was 71.79% amongst the study population in the present study. In another study by Hari *et al.*, 42% of the respondents were practicing Yoga [17]. The practice of yoga was statistically significantly higher in females as compared to males and these observations are similar to the observations in study by Hari *et al.* [17]. As far as type of relaxation practice is

concerned, the most common practice was of meditation which was practiced by 60.26% of the medical students in the present study. The mean frequency and duration of yoga in the present study were respectively. In another study it was observed. In another study the frequency of yoga sessions per week was 3.88 days. The observations were similar [12]. The motivating factors of the study population for performing yoga were analysed and weight loss and health benefits were the most common motivation factors mentioned by the respondents. These findings were similar to the findings of Hari *et al.* [17]. Knowledge and attitude towards yoga was assessed by retrospective pre-post analysis which was assessed for ten benefits of yoga on a Five-point Likert scale before and after Yoga training sessions during the FC. The mean score for all the benefits significantly increased after FC.

Conclusion

The present study revealed that the most important benefit perceived by students for doing yoga is mental peace and stress relaxation. There is increase in Likert scale score in regards to perceived benefits of yoga after FC. The practice of yoga is fairly good amongst the study population the most important motivation for pursuing yoga amongst study population is weight loss and other health benefits.

Recommendation

The yoga-based life style interventions may be cost effective for enhancing general wellbeing of medical students and shorter sessions for every day practice can be considered for having a prominent place in under graduate medical curriculum. However, in depth research is required for more specific benefits.

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