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## Research Article

### BELIEFS ABOUT YOGA: A SURVEY IN MUMBAI

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#### ABSTRACT

Surveys about the beliefs and characteristics of yoga practitioners have been carried out in North America, Europe and Australia. To our knowledge no such survey has been carried out in India. 972 participants who returned correctly filled survey forms were included in the survey. They were recruited in the campus of Mumbai University; the average age was 26 years; and male: female ratio was 54.8:45.2. The survey was administered to persons encountered by the experimenter which comprised mainly students (28.9 percent) but other persons (<30 years of age; 73.4 percent) as well. It was not a systematic randomized sampling. The survey had 8 questions, which either required dichotomous (yes/no) responses or selection of one of many options. Results showed that 54.7 % participants practiced yoga whereas 45.3% did not practiced yoga. Among those who did not practice the majority (73.4 percent) was young (<30 years old); 45.2 percent were female and most had at least 15 years of education. 74.0 percent practiced yoga for general fitness; and continued practice for stress reduction, 21.0 percent had a difficulty in finding time for yoga practice, 57.0 percent considered that yoga meant mainly pranayamas while 16.0 percent each believed yoga meant meditation or asanas, and 83.0 percent did not associate yoga with religion. Chi square tests assessed whether the 6 levels of duration of practice or age significantly impacted the reasons for (i) starting yoga practice and (ii) continuing it. This preliminary survey showed certain common features as well as differences in this population in India.

**Keywords:** Beliefs, Indian Metro, University students, Yoga practitioners

#### INTRODUCTION

Yoga is an ancient Indian traditional practice which has become increasingly popular all over the world<sup>1</sup>. According to Swami Kavalayananda (1883-1966), yoga has multiple physical, mental and spiritual benefits and the influence of the mind on body is far more powerful than the influence of the body on mind<sup>2</sup>.

Despite the popularity of yoga in India, little is known about the beliefs of yoga practitioners towards yoga. While yoga was intended for spiritual growth originally, nowadays yoga practice has different applications<sup>3</sup> and so it is worth understanding the reasons why people choose to practice yoga in present day India. Also, understanding the beliefs of yoga practitioners towards yoga will be helpful in the promotion and implementation of yoga practices to benefit a larger population.

In a study conducted in Essen, Germany, a paper-based self-rated questionnaire survey was conducted over a period of 3 years in 2486 participants<sup>4</sup>. This study was conducted to assess whether yoga was used for primary medical complaints by patients attending an internal medicine clinic; and if it was, the perceived benefits of yoga, as well as the perceived harm of yoga practice. It was found that 12.1 percent of patients practiced yoga for primary medical complaints and found it beneficial. It was also found that choosing to practice yoga was associated with socio-demographic factors, mental health, and health locus of control, which is the belief that health depends on the person's behavior<sup>5</sup>. It was also found that yoga practice was not associated with the patients' specific diagnosis.

A similar study was conducted in the U.S. using cross-sectional survey data from the 2008 National Health Interview Survey (NHIS) Alternative Medicine Supplement, in 31,044 participants<sup>6</sup>. It was conducted to characterize yoga practitioners, medical reasons for yoga practice, perceptions of helpfulness, and disclosure of use to medical professionals. Musculoskeletal conditions and mental health were found to be maximally improved after yoga practice in yoga practitioners in this survey.

Another survey was conducted in New York City by developing and validating a questionnaire, 'Beliefs About Yoga Scale (BAYS)<sup>7</sup>. Convenience sampling of 426 participants was done from outside a cafeteria at a medical centre in New York City. This scale assessed the beliefs about yoga which could influence the yoga practice of yoga followers. Beliefs such as health benefits, expected discomfort, and expected social norms emerged in the factor analyses.

An anonymous online survey was conducted in fifteen Iyengar yoga studios in the U.S. in 18,160 participants, most of whom had chronic health conditions<sup>8</sup>. Only 1045 surveys were completed and used for statistical analysis. The survey was conducted to assess yoga practice and the health characteristics of yoga practitioners, and to study their beliefs regarding effects of yoga practice on their health. A cross-sectional design was used for the survey. Freiberg Mindfulness Inventory, Mental Health Continuum (subjective well-being), Multi-factor Screener (diet), PROMIS sleep disturbance, fatigue, and social support, and the International Physical Activity Questionnaire were used for the survey. It was found that yoga improved happiness (86.5 percent), energy (84.5 percent), sleep (68.5 percent), social relationships

(67.0 percent), and weight (57.3 percent), while beliefs did not differ substantially according to race or gender.

A survey conducted in Australia in 2005-2006 was intended to investigate the practice of yoga in Australia. This was a 30 minute web-based questionnaire developed by yoga experts<sup>9</sup>. It was found that the respondents started practicing yoga for health and fitness, but the reason for continuing yoga practice was stress management. It was observed that one in five respondents practiced yoga for a specific health or medical condition, which was found to improve with yoga practice. It was also observed that the promotion of positive mental health was the primary health related motivation for practicing yoga as more people practiced yoga for stress management and anxiety rather than for musculoskeletal problems. It was observed that the respondents, who practiced yoga for a longer period of time, made healthy lifestyle choices such as vegetarianism, stopping smoking, reduced alcohol consumption, and increased physical activity with reduced stress.

According to a review done in the U. S., yoga practices were found to be as effective as or better than exercise in improving several health conditions in healthy as well as diseased populations<sup>10</sup>.

A survey conducted in a non-clinical population in the U. S. aimed at assessing the use of yoga in a real-world setting<sup>11</sup>. According to this survey, yoga was perceived in several ways such as an exercise activity, a spiritual activity, or a way to treat a health condition. The reasons for practicing yoga were general wellness, physical exercise, and stress management. The majority of the respondents practiced yoga for better health, while the remaining practiced yoga for specific health conditions.

Nine hundred and fifty six patients with cancer were given a descriptive questionnaire to assess the use of complementary and alternative medicine (CAM) across a number of European countries<sup>12</sup>. It was observed that CAM had a high usage rate among patients with cancer. Herbal medicines and remedies were the most widely used CAM therapies, along with homeopathy, vitamins/minerals, medicinal teas, spiritual therapies and relaxation techniques. Yoga (considered along with several other mind-body interventions) was practiced by a considerably smaller group. Multivariate analysis was done and it was found that CAM users were mainly younger people, female and with high educational qualifications. CAM-related information was provided from friends or family and the media. CAM was used to increase the body's ability to fight cancer, and improve emotional and physical well-being.

In India, a questionnaire based survey was conducted in a hospital using conventional medicine to assess the extent of use of complementary and alternative medicine (CAM) in patients with epilepsy, those who were HIV positive, rheumatoid arthritis (RA) and diabetes mellitus (DM)<sup>13</sup>. Patients' satisfaction with CAM was also assessed. A questionnaire, 'Treatment Satisfaction Questionnaire for Medication' (TSQM)<sup>TM</sup> was administered to assess satisfaction in domains such as effectiveness, no side-

effects, convenience and global satisfaction in 650 patients. It was observed that Ayurveda was the most commonly used CAM; 46.0 percent in epilepsy, 97.0 percent in HIV positive persons, 72.0 percent in rheumatoid arthritis, and 14.0 percent in diabetes mellitus. The percentage who selected yoga as a therapy was lower: 22.0 percent for epilepsy, 1.0 percent for HIV positive persons, 9.0 percent in rheumatoid arthritis, and 35.0 percent in diabetes mellitus. It was observed that the 'no side-effect' domain had the highest score for all four diseases, across therapies.

The present survey was conducted in University students and staff to understand whether persons of a younger age group (average 26 years) practiced yoga, and if they did practice, their reasons for doing so and other aspects of their beliefs.

## MATERIALS AND METHODS

### Participants

One thousand five hundred and thirty seven persons who had completed fifteen years of education and were enrolled for different courses of study in Mumbai University or employed as staff were included in the trial (males : females were 54.8 percent : 45.2 percent). This study was approved by the Ethics committee of Patanjali Research Foundation, Haridwar and Kaivalyadhama Yoga Institute, Lonavla. All respondents gave their consent to use the data, while concealing their identity. To be included in the trial participants had to know adequate English to fill in the questionnaire correctly. This was not difficult as the language of instruction was English. No specific method was used to recruit participants. There were no incentives or punitive measures (such as additional marks or reduced marks related to their participation). Nine hundred and seventy two participants returned completed questionnaires. The baseline characteristics of the participants are given in Table 1.

### Assessment

There was no attempt to establish the reliability or validity of these questions which were part of a survey.

### Data Extraction and Analysis

Data were scored after masking the identity of each individual. Chi-square tests were used to determine if there were significant relationships between (i) The duration of experience of yoga practice (Question 2) and the reasons for practicing yoga (Question 4); (ii) The duration of experience of yoga practice (Question 2) and the reasons for continuing to practice yoga (Question 6); (iii) The age of the participants and their reason to practice yoga (Question 4); and (iv) The age of the participants and the reason why they continued practicing yoga (Question 6). The analysis was done using PASW (SPSS version 18.0).

The power of the Chi square statistical test was 0.95 based on calculation of the effect size in the comparison between number of persons with (i) specific duration of experience in yoga and their reasons for practicing (ii) Their reasons for practicing based on G power version 3.1<sup>14</sup>.

**Table 1. Baseline characteristics of 972 participants**

Baseline Characteristics of 972 participants		
S. No.	Characteristics	Details
1	Gender (D1)	
	M:F, percent values	494:408;54.8:45.2
2	Age (in yrs) (D2)	
	i) less than 15	63; 6.6 percent
	ii) 15-20	455; 47.6 percent
	iii) 20-30	183; 19.2 percent
	iv) 30-40	86; 9 percent
	v) 40-50	110; 11.5 percent
	vi) 50-60	35; 3.7 percent
	vii) 60-70	19; 1.9 percent
	viii) 70+	4; 0.41 percent
3	Annual Income (D3)	
	i) Below 1.5 lakh	530; 59.1 percent
	ii) 1.5 lakh to 2.5 lakh	231; 25.8 percent
	iii) 2.5 lakhs to 5 lakhs	98; 10.9 percent
	iv) 5 lakh to 10 lakh	25; 2.8 percent
	v) 10 lakhs to 20 lakhs	7; 0.8 percent
	vi) 20 lakhs +	6; 0.7 percent
4	Occupation (D4)	
	i) Government service	82; 9.5 percent
	ii) Service MNC	51; 5.9 percent
	iii) Service Indian Corporate/MNC	41; 4.7 percent
	iv) Business	339; 39.2 percent
	v) Professional	84; 9.7 percent
	vi) Doctor	17; 1.9 percent
	vii) others	250; 28.9 percent

**Table 2: Questionnaire**

S. No.	Questions	Possible responses
1.	Do you practice yoga (The remaining questions were for those whose response to 1 was 'yes')	a. Yes b. No
2.	For how long have you been practicing yoga	a. < 6 months b. 6 months-1 year c. 1-2 years d. 2-5 years e. More than 5 years f. I don't practice regularly
3.	What yoga techniques do you practice?	a. Mostly asanas b. Pranayama c. Kriya d. Meditation
4.	Why did you start practicing yoga?	a. General fitness b. Curative benefits c. Mental fitness d. Some specific benefit e. My friends introduced me f. It was the trend
5.	Where do you practice yoga	a. A yoga center/class b. Nearest garden/park c. My home d. Others
6.	Why do you continue practicing yoga?	a. It helps me keep flexible b. It improved my general fitness c. It has become a way of life d. It helps me de-stress e. No particular reason. It has become a habit for me
7.	Do you have any difficulties in practicing yoga?	a. It is difficult to find time for it to exercise b. The exercises are difficult c. I don't know how to exercise d. It is useless e. I do it regularly
8.	Do you associate yoga with a particular religion?	a. Yes b. No

Table 3: Result of chi square test

S. No.	Factor 1	Factor 2	Chi square value (df)	p value
(A)	<b>Duration of yoga practice</b>	<b>Reason for practicing yoga</b>		
1.	< 6 months experience of yoga	General fitness	30.0 (25)	p<0.05
2.	6-12 months experience of yoga	Therapeutic benefits of yoga	30.0 (25)	p<0.05
3.	12-24 months experience of yoga	Psychological benefits of yoga	24.0 (20)	p<0.05
4.	More than 60 months experience of yoga	My friends introduced me	18.0 (15)	p<0.05
(B)	<b>Duration of yoga practice</b>	<b>Reason for continuing yoga practice</b>		
1.	< 6 months experience of yoga	Flexibility	30.0 (25)	p<0.05
2.	12-24 months experience of yoga	It has become a way of life	24.0 (20)	p<0.05
3.	24-60 months experience of yoga	It helps me de-stress	30.0 (25)	p<0.05

## RESULTS

Out of the 972 responses correctly completed and returned 54.7 percent of respondents practiced yoga, while 45.3 did not. The maximum number of those practicing yoga had duration of experience between 6 months and a year (44.0 percent), followed by those who had been practicing for less than six months (24.0 percent), while 10.0 percent of those practicing yoga were not regular in their practice.

The maximum number of respondents considered that yoga meant mainly yoga breathing techniques or pranayamas (57.0 percent), while equal proportions thought yoga meant mainly physical postures (asanas; 16.0 percent) or meditation (16.0 percent).

Most participants started practicing yoga for general fitness (74.1 percent). Finally, it was interesting to note that the majority of respondents (83.0 percent) did not associate yoga with a particular religion.

The Chi square analysis compared the number of participants who had specific characteristics [such as (i) the duration of experience in yoga, and (ii) age] with their reasons for practicing yoga (such as general fitness, psychological benefits, and as a therapy). These results are summarized in Table 3.

## DISCUSSION

Among the respondents to the survey, 54.7 percent were practicing yoga, while 45.3 percent were not. Most of them were young, with 47.6 percent between 15-20 years, and an average age of 26 years. The least number were aged over 70 years (0.4 percent). These findings are not surprising as the target group were students at the University of Mumbai. The findings of a young population being yoga users is in keeping with a survey carried out in the U. S. based on the 2008 National Health Interview Survey<sup>6</sup>.

However, the proportion of males and females among yoga users was almost comparable, with 54.8 percent males and 45.2 percent females; whereas the U.S. based survey showed a predominance of females. There could be cultural reasons for this, as in India males more commonly undertake higher studies<sup>15</sup>.

Most of the population had at least 15 years of education (73.4 percent) which is once more comparable to surveys carried out in the U. S. which reported that yoga users were more likely to be educated<sup>6, 11</sup>. Male dominance among the educated in India is particularly the case among those having a lower income among which the likelihood of females getting a higher education is low<sup>15</sup>. Among yoga users 59.1 percent belonged to the low income group whose annual income was less than Rs. 1.5 lakhs in contrast the percentage of upper income (income Rs. 10.0 lakhs and above) yoga users was small (1.4 percent). This is contrary to

the survey done in the U. S.<sup>6, 11</sup> and Australia<sup>9</sup> which indicated that yoga users were likely to be employed and hence economically stable.

Unlike the survey carried out in Australia<sup>9</sup>, the yoga users in this survey in Mumbai associated yoga with pranayama or yoga breathing (57.0 percent), while a smaller number (16.0 percent in both cases) associated yoga with yoga postures (asanas) or with meditation. In the survey in Australia, in contrast, 61.0 percent of the time of yoga users was spent in practicing asanas, while lesser time (39.0 percent) was spent for relaxation, pranayama, meditation, and instruction<sup>9</sup>.

The largest number (74.0 percent) practiced yoga for general fitness which is in accordance with results of surveys carried out in other countries<sup>6, 11</sup>, as well as reports that yoga improves physical fitness<sup>16</sup>. Other yoga users chose to practice yoga for the psychological benefits, which is again comparable to the results of surveys in the U. S.<sup>6, 11</sup> as well as multiple reports that yoga increases psychological well-being. Far smaller numbers practiced yoga as a therapy, which is possibly related to the fact that on the whole the population was young with an average age of 26.0 years. Interestingly, very few (1.5 percent) chose to practice yoga as they considered it 'trendy' or the 'fashionable-looking'.

In keeping with a trend to create and use 'green' areas within the growing urban development world- wide<sup>17</sup> it was interesting to note that 54.0 percent of yoga users practiced yoga in a nearby park, 31.0 percent practiced yoga at home, while 11.0 percent practiced at a yoga center or yoga studio. Again this could be associated with factors, such as the traditional description of yoga, as ideally being practiced in an open space<sup>18</sup>. Another possible factor is that most of the respondents were students and also most of them were from the lower economic stratum. While some classes in certain yoga centers are not charged or free, many yoga studios are more suitable for the affluent and charge fairly high fees.

Many people begin a yoga program with enthusiasm to drop-out later on for diverse reasons<sup>19</sup>. It was of interest that the present population continued to practice yoga mainly because they found that it helped them de-stress (38.0 percent). This is in keeping with numerous reports that practicing different yoga techniques reduces the response to stress and increases the ability to cope with stress<sup>20</sup>.

In understanding reasons which enable a yoga user to continue practicing yoga, it is of equal interest to determine the factors which can result in a yoga user stopping the practice. Most of the yoga users reported no difficulty in continuing with their practice (59.0 percent) while 21.0 percent reported that a shortage of time prevented them from continuing with the practice with ease, while 5.0 percent of yoga users said they wished to stop their practice as they felt no particular benefits.

The Indian subcontinent has people of different faiths<sup>21</sup>; including Hindu (80.5 percent), followers of Islam or Muslims (13.4 percent), Christians (2.3 percent), Sikhs (1.9 percent), Buddhists (0.8), Jains (0.4), and others (0.6)<sup>22</sup>. Yoga has its origins in the ancient scriptures of India<sup>1</sup>, but describes a way of life and certain guidelines which are not restricted by a person's beliefs. It was interesting to note that 83.0 percent of yoga users said that they believed yoga had no association with any religion while just 16.0 percent associated yoga with religion.

The present survey carried out in Mumbai city showed some trends which were comparable to those of surveys carried out elsewhere (for example in the U. S., Europe and Australia), while other findings were different and distinct. This appears to be the first survey carried out about beliefs related to yoga, in India.

The results are interesting but the study has certain limitations. (i) Perhaps the most serious is the study design which was a cross-sectional study, without systematic randomized distribution of the questionnaires. The questionnaires were given to university students who the investigator met in the university campus, and staff who they encountered. This method of distribution was not random, and hence not ideal. (ii) The sample was primarily composed of university students and hence the majority of respondents were less than 30 years of age. (iii) The survey covered students who belonged to an urban area, in one of the metropolitan cities. This sample hence is not representative of the large numbers of people living in semi-urban and rural areas in India. (iv) The questions did not elicit information about the frequency and duration of yoga practices.

Despite these limitations, the survey has shown that certain beliefs about yoga in this population in India, resemble those seen in North America, Europe and Australia, whereas other beliefs appear unique to India possibly related to social and cultural influences.

## CONCLUSION

A sample of 972 persons in Mumbai city responded to a survey regarding their beliefs about yoga, as well as their reasons to practice it or reasons for stopping the practice.

The most salient points were:

1. Comparable numbers practiced yoga, and did not practice yoga 54.7 percent, 45.3 percent respectively.
2. Of those who did practice the majority (73.4 percent) was young (<30 years old); 45.2 percent were female and most had at least 15 years of education.
3. 74.1 percent practiced yoga for general fitness; and continued practice for stress reduction.
4. 21.0 percent had difficulty in finding time for yoga practice.
5. 57.0 percent considered that yoga meant mainly pranayamas while 16.0 percent each believed yoga meant meditation or asanas.
6. 83.0 percent did not associate yoga with religion.

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