

Title of the project:

Influence of yoga on wellbeing of people

Implementing institution:

Patanjali Yoga Research Centre, Kozhikode, Kerala, India

Project Coordinator:

Yoga Acharyan Sri Unniraman P

Director, Patanjali Yoga Research Centre, Kozhikode

Principal Investigator:

- Dr.K.Madhava Chandran
Trust Member, Patanjali Yoga Research Centre, Kozhikode
- Sri.Devadasan, N
Secretary, Patanjali Yoga Research Centre, Kozhikode
- Sri.Rajan Malayil
Trust member, Patanjali Yoga Research Centre, Kozhikode

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Introduction

Most people find it difficult to adjust life under the fast, hectic and stressful conditions, which finally results in health problems and consequent medical treatment. Reducing stress and achieving a feeling of wellbeing has become extremely necessary in order to reduce psycho-somatic disorders. Personal wellbeing has been conceptualized as optimal functioning rather than merely absence of pathology. Research into wellbeing has centered on the term “subjective wellbeing”, which is measured by overall satisfaction with life and satisfaction across various life domains. The degree to which people experience control over their response to life events is considered to have a buffering effect on adverse events. This will ultimately enhance their wellbeing. Subjective wellbeing indicates how people evaluate their lives in terms of feelings of wellbeing or lack of it.

Yoga is considered to be one of the effective tools to overcome various physical and mental problems. Yoga aims at an integrated and harmonious development of all the potentialities of man, with significant reduction in stress, and consequently, better feeling of happiness and wellbeing. Yoga is reported to have a positive effect on mood, stress, anxiety, depression, mindfulness and other quality of life

measures (Michelson et al., 2005; Granath et al, 2006; Oken et al., 2006). The influence of yoga and meditation on subjective wellbeing of people have been reported (Gopukumar and Hussain Ali, 2002; Kamakhy Kumar, 2004). The effect of yoga on subjective wellbeing would result from its impact on health, purpose in life and perceived control. Setterlind (1983) reported the effect of meditation in bringing a positive change in the well-being of subjects. Malathi et al. (2000) observed a significant improvement in majority of the subjective well-being factors in healthy volunteers after four months of yoga practice.

Objective of the study

This study was carried out to analyze the influence of yoga on the subjective wellbeing of yoga practitioners, in comparison with a control group, who do not practice yoga.

Methodology

The experimental group consisted of a random sample of 100 people practicing yoga, which they learned from Patanjali Yoga Research Centre, Kozhikode. The experimental group contains of people practicing yoga for a period of up to ten years and above. A control group of 100 people, who are not practicing yoga, was also selected randomly.

Both the groups were interviewed using a questionnaire consisting of 13 subjective wellbeing parameters (OECD, 2013). For the parameters, namely, happiness, contentment, calmness, relaxation, enjoyment in life, enthusiasm, concentration and memory, the response requested in the questionnaire was whether there has been “improvement” in these parameters. For tiredness, tension, worry, anger and loneliness, the response requested was whether there has been “reduction” in the parameters. The levels of improvement / reduction in the parameters included in the questionnaire were “very much “improvement / reduction, “slight” improvement / reduction and “no” improvement / reduction. They were allotted score of 3, 2 and 1 respectively. The total score of the parameters was worked out as the subjective wellbeing index of the respondent. Statistical analysis was carried out through Analysis of Variance (ANOVA) and *t* test. The data has been presented in the report as percentages and scores / index.

Results and Discussion

The data on subjective wellbeing parameters and subjective wellbeing index is given in this report for different periods of yoga practice starting from up to two years to more than 10 years. The result of the statistical test of Analysis of Variance

(ANOVA) of the mean (average) scores of various wellbeing parameters under different periods of yoga practice is shown in Table I.

When comparing the subjective well-being of people based on the F value worked out through ANOVA, significant difference in mean (average) scores is observed between different periods of yoga practice for the parameters, namely, happiness, calmness, relaxation, enjoyment in life, tiredness, tension, and loneliness (Table I). It can also be seen from the table that, for happiness, relaxation, tiredness and loneliness, the maximum score of 3 (indicating very much improvement / reduction in the parameter) is observed for all the respondents having more than 10 years of yoga practice. Life enjoyment also shows a very high mean score of 2.80 for this group.

Table I. ANOVA of subjective wellbeing parameter scores

Period of yoga practice (years)	Mean (average) score for happiness	Mean (average) score for calmness	Mean (average) score for relaxation	Mean (average) score for enjoyment in life	Mean (average) score for tiredness	Mean (average) score for tension	Mean (average) score for loneliness
Up to 2	2.50	2.38	2.44	2.31	2.38	2.50	2.68
2 - 4	2.75	2.25	2.58	2.50	2.33	2.42	2.25

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4 - 6	2.89	2.56	2.89	2.22	2.22	2.00	3.00
6 - 8	2.33	3.00	2.33	3.00	3.00	3.00	2.67
8 - 10	2.60	2.80	2.40	3.00	3.00	2.80	2.60
> 10	3.00	2.60	3.00	2.80	3.00	2.60	3.00
F = 1.498 Significant ($p < 0.20$)		F = 1.625 Significant ($p < 0.20$)	F = 1.545 Significant ($p < 0.20$)	F = 3.02 Significant ($p < 0.01$)	F = 3.995 Significant ($p < 0.01$)	F = 2.824 Significant ($p < 0.05$)	F = 2.073 Significant ($p < 0.10$)

Table II shows the results of ANOVA for the mean (average) subjective wellbeing index of the yoga practitioners. It can be made out from the table that the mean subjective wellbeing index of yoga practitioners is mostly increasing with more years of yoga practice. More than ten years of yoga practice gives an index of 37, equivalent to about 95% of the maximum possible (attainable) index of 39, while 6 to 10 years of yoga practice contributes to an index of about 34, equivalent to 88% of the maximum possible index. The analysis of variance is statistically significant at $p < 0.05$ (Table II).

From the CD value of 1.68 shown in Table II, it may be made out that there is no statistically significant difference in the subjective wellbeing index of people in the yoga practice categories, namely, up to 2 years, 2 to 4 years and 4 to 6 years. Similarly, the subjective wellbeing index of 6 to 8 years and 8 to 10 years yoga

categories also do not differ significantly. However, based on the CD value given in

Table II, the following two inferences can be drawn:

a. Up to 2 years, 2 to 4 years and 4 to 6 years of yoga practice contribute to subjective wellbeing index values (indices), which are significantly different from the subjective wellbeing indices of people with 6 to 8 years, 8 to 10 years and more than 10 years of yoga practice

b. 6 to 8 years and 8 to 10 years of yoga practice give subjective wellbeing indices, which are significantly different from the subjective wellbeing index of people practicing yoga for more than 10 years

It may be noted from Table II that, even up to 2 years of yoga practice is contributing to a very promising condition of wellbeing for people, since the subjective wellbeing index of this category of yoga practitioners is 31.35, which is equivalent to about 80% of the maximum possible (attainable) subjective wellbeing index of 39. The maximum index value can be obtained only when the yoga practitioner is able to achieve very much improvement / reduction for all the wellbeing parameters.

Table II. ANOVA of subjective wellbeing index of the yoga practitioners

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Period of yoga practice (years)	Mean (average) subjective wellbeing index (SWBI)
Up to 2	31.35
2 - 4	32.17
4 - 6	32.11
6 - 8	34.33
8 - 10	34.20
> 10	37.00
F = 2.494 Significant($p < 0.05$) CD = 1.68	

However, Table III shows that for 12 out of 13 subjective wellbeing parameters, the proportion (percentage) of yoga practitioners reporting very much improvement / reduction is higher under the more than 2 years yoga practice group, when compared to up to 2 years group.

Table III. Respondents reporting very much improvement / reduction in subjective wellbeing parameters through yoga practice

Sl. No.	Level of improvement in the subjective wellbeing parameter	Respondents (%) reporting	
		Up to 2 years yoga practice	> 2 years yoga practice
1	Very much improvement in happiness	64.2	77.3
2	Very much improvement in contentment	71.4	90.9

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3	Very much improvement in calmness	33.3	68.2
4	Very much improvement in relaxation	57.1	72.7
5	Very much improvement in enjoyment in life	42.9	63.6
6	Very much improvement in enthusiasm	60.7	68.2
7	Very much improvement in concentration	39.3	50.0
8	Very much improvement in memory	42.9	50.0
9	Very much reduction in tiredness	35.7	72.7
10	Very much reduction in tension	46.4	50.0
11	Very much reduction in worry	32.1	45.5
12	Very much reduction in anger	39.3	31.8
13	Very much reduction in loneliness	64.2	86.4

Table IV shows that there exists statistically significant difference in the percentage of people experiencing very much improvement / reduction in subjective wellbeing parameters between up to 2 years and more than 2 years yoga practice categories.

Table IV. ANOVA of respondents reporting very much improvement / reduction in subjective wellbeing parameters through yoga practice

Period of yoga practice (years)	Respondents (%*) reporting very much improvement / reduction in subjective wellbeing parameters	F
Up to 2	47.7	9.23
> 2	65.9	Significant ($p < 0.01$)

***Mean (average) percentage considering all the subjective wellbeing parameters**

Under the up to 2 years yoga practice category, if we add the percentage of people reporting very much improvement / reduction in the parameters and the percentage of people reporting slight improvement / reduction in the parameters (which are presented in Table III and Table V respectively), it can be inferred that more than 89% of people with up to 2 years of yoga practice are able to experience either “very much” or “slight” improvement / reduction in all the wellbeing parameters. This is a positive trend, indicating that lesser period of yoga practice also can help the practitioner in attaining a good sense of wellbeing. This information will be useful in correcting the outlook of some people that a very long

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period of yoga practice is required to attain psychological benefits (personal observation of the authors)

Table V. Respondents reporting slight improvement / reduction in subjective wellbeing parameters through yoga practice

Sl. No.	Level of improvement in the subjective wellbeing parameter	Respondents (%) reporting	
		Up to 2 years yoga practice	> 2 years yoga practice
1	Slight improvement in happiness	32.1	22.7
2	Slight improvement in contentment	25.0	09.1
3	Slight improvement in calmness	63.0	31.8
4	Slight improvement in relaxation	35.7	27.3
5	Slight improvement in enjoyment in life	53.6	36.4
6	Slight improvement in enthusiasm	28.6	31.8
7	Slight improvement in concentration	53.6	50.0
8	Slight improvement in memory	53.6	50.0
9	Slight reduction in tiredness	64.3	22.7
10	Slight reduction in tension	53.6	45.5

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11	Slight reduction in worry	64.3	40.9
12	Slight reduction in anger	53.6	59.1
13	Slight reduction in loneliness	27.3	13.6

It can be made out from Table VI that there is a statistically significant difference in the percentage of people reporting slight improvement / reduction in the subjective wellbeing parameters between up to 2 years and more than 2 years yoga categories. Table VI shows that comparatively more people under the up to 2 years category report slight improvement / reduction in the parameters than the more than 2 years category.

Table VI. ANOVA of respondents reporting slight improvement / reduction in subjective wellbeing parameters through yoga practice

Years of yoga practice	Respondents (%*) reporting slight improvement / reduction in subjective wellbeing parameters	F
Up to 2	46.8	4.87
> 2	33.9	Significant ($p < 0.05$)

***Mean (average) percentage considering all the subjective wellbeing parameters**

Data on the wellbeing parameters of yoga practitioners compared with people who do not practice yoga is given in Table VII. It may be observed from the table that the percentage of people reporting “very much” improvement / reduction in all the

wellbeing parameters is more in the case of yoga practitioners (experimental group) than people who do not practice yoga (control group).

The above mentioned finding indicates that through the practice of yoga, people are able to achieve more happiness, contentment, calmness, relaxation, enthusiasm, concentration, memory, enjoyment in life and less tension, worry, anger, tiredness and feeling of loneliness, when compared to people who do not practice yoga.

Table VII. Wellbeing of people practicing yoga in comparison with people not Practicing yoga

Level of improvement in the wellbeing parameter	Mean (average) percentage of people reporting	
	People practicing yoga	People not practicing yoga
Very much improvement in happiness	71	27
Very much improvement in contentment	81	18
Very much improvement in calmness	50	18
Very much improvement in relaxation	65	08
Very much improvement in enjoyment in life	53	27

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Very much improvement in enthusiasm	64	09
Very much improvement in concentration	45	27
Very much improvement in memory	46	36
Very much reduction in tiredness	54	Nil
Very much reduction in tension	48	18
Very much reduction in worry	39	18
Very much reduction in anger	36	27
Very much reduction in loneliness	75	36

In order to statistically compare the data of the experimental group (people practicing yoga) and the control group (people not practicing yoga), the scores of people reporting very much improvement / reduction as well as slight improvement / reduction in the wellbeing parameters were considered for both the groups. The results of which are presented in **Table VIII**

It can be made out from Table VIII that since the *t* test is highly significant (at $p < 0.01$), there exists statistically significant difference in the mean (average) score of yoga practitioners and non-practitioners with regard to improvement / reduction in various wellbeing parameters.

Table VIII. Mean score for improvement / reduction in wellbeing parameters of people practicing yoga in comparison with people not practicing yoga

Mean score*for improvement / reduction in wellbeing parameters	
People practicing yoga	People not practicing yoga
2.583	2.283
$t = 4.05$ Significant ($p < 0.01$)	

*The mean score of people reporting very much as well as slight improvement / reduction in the wellbeing parameters

Conclusions

The following conclusions are drawn from the study:

1. Statistically significant difference in the mean (average) scores is observed between different periods of yoga practice for the subjective wellbeing parameters, namely, happiness, calmness, relaxation, enjoyment in life, tiredness, tension, and loneliness. For happiness, relaxation, tiredness and loneliness, the maximum score of 3 (indicating very much improvement / reduction in the parameter) is observed for all the respondents having more than 10 years of yoga practice. Life enjoyment also shows a very high mean score of 2.80 for people practicing yoga for more than 10 years.
2. The mean subjective wellbeing index of yoga practitioners is mostly increasing with years of yoga practice. More than ten years of yoga practice

gives an index of 37, equivalent to about 95% of the maximum possible (attainable) index of 39, while 6 to 10 years of yoga practice contributes to an index of about 34, equivalent to 88% of the maximum possible index. The analysis of variance of subjective wellbeing index for different years of yoga practice is also statistically significant

3. For 12 out of 13 subjective wellbeing parameters, the proportion (percentage) of yoga practitioners reporting very much improvement / reduction is higher under the more than 2 years yoga practice group, when compared to up to 2 years group. Also, there exists statistically significant difference in the proportion of people experiencing very much improvement / reduction in subjective wellbeing parameters between up to 2 years and more than 2 years yoga practice categories
4. However, even up to 2 years of yoga practice is contributing to a very promising condition of wellbeing for people, since the mean (average) subjective wellbeing index of this category of yoga practitioners is 31.35, which is equivalent to about 80% of the maximum possible (attainable) subjective wellbeing index value. More than 89% of people with up to 2 years of yoga practice are able to experience “very much” and “slight” improvement / reduction in all the wellbeing parameters. This is a positive

trend, indicating that lesser period of yoga practice also can help people in attaining a good sense of wellbeing. This information will be useful in correcting the outlook of some people that a very long period of yoga practice is required to attain psychological benefits

5. There is no statistically significant difference in the subjective wellbeing index of people with up to 2 years, 2 to 4 years and 4 to 6 years of yoga practice. Similarly, the subjective wellbeing index of people with 6 to 8 years and 8 to 10 years of yoga practice also do not differ significantly.
6. However, up to 2 years, 2 to 4 years and 4 to 6 years of yoga practice contribute to subjective wellbeing index values (indices), which are significantly different from the subjective wellbeing indices of people with 6 to 8 years, 8 to 10 years and more than 10 years of yoga practice
7. Similarly, 6 to 8 years and 8 to 10 years of yoga practice give subjective wellbeing indices, which are significantly different from the subjective wellbeing index of people practicing yoga for more than 10 years
8. This study clearly shows that people are able to achieve more happiness, contentment, calmness, relaxation, enthusiasm, concentration, memory power, enjoyment in life through the practice of yoga, when compared to people who do not practice yoga.

9. This study clearly shows that people are able to feel reduction in tension, worry, anger, tiredness and feeling of loneliness through the practice of yoga, when compared to people who do not practice yoga. Statistically significant difference is also observed between the mean (average) score of yoga practitioners and non-practitioners with regard to improvement / reduction in various subjective wellbeing parameters
10. Improvement in feeling of wellbeing can be expected to contribute to better physical health also, considering the fact that lack of feeling of wellness at the level of the mind is an important factor influencing the incidence of many diseases. Hence, the occurrence of many psycho-somatic disorders in our society can be reduced considerably through the practice of relaxation techniques such as yoga and meditation. This assumes relevance in the present day context, where people mostly lead a fast, hectic and tense life as an outcome of the unavoidable necessities of family / social commitments, work pressure etc.

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