

Effect of Yoga Practice on Stress Relief

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Abstract: The experience of yoga practitioners revealed the benefit of yoga in reducing psychological stress. A study was undertaken in Kerala, India to analyse the effect of yoga on stress relief among a random sample of 120 yoga practitioners using an interview schedule containing the 'Perceived Stress Scale', the respondent's age and period of yoga practice. Responses to the items in the stress scale were elicited for the pre-yoga and the post-yoga periods. The result shows that the stress score of 90% respondents has markedly increased after yoga practice, when compared to pre-yoga score, indicating a reduction in stress level, with statistically significant difference in the mean scores between the two periods. More than 2-3 years of yoga practice contributes to a statistically significant higher stress score than up to two year's practice for the respondents. Less proportion of respondents are experiencing negative stress parameters, while more of them experience the positive parameters post-yoga practice, when compared to pre-yoga. These results assume significance in the present context of the Covid-19 pandemic, which could be creating uncertainty and stress among people due to its continuing spread and consequences.

Introduction

The term 'Psychological stress' is used broadly to refer to the negative emotional, behavioural, and biological response to a perceived threat. Stress refers to the quality of experience produced through a person-environment transaction that, through either over-arousal or under-arousal, results in psychological or physiological distress (Aldwin, 2007). Mindfulness reduces stress and its consequences (Baer *et al.*, 2006). A significant positive correlation between yoga practice and mindfulness and a significant negative correlation between mindfulness and

perceived stress has been reported by Gard *et al.*, (2012). The objective of the present study was to analyse the effect of yoga on stress relief of the practitioners.

Materials and Methods

The study was carried out by the NGO-WEDO based at Kozhikode, Kerala, India. It was a pre- and post-yoga study carried out among a random sample of 120 yoga practitioners of Kozhikode having minimum of six months of yoga practice using an interview schedule containing the Perceived Stress Scale (Cohen *et al.*, 1983), and the respondent's age and

period of yoga practice. The stress scale had six negative and four positive items / parameters, with five-point responses for each item, scored using the Likert equal interval method. The sum of the item scores was the total stress score of the respondents. A higher stress score indicates less stress. Responses to the items were elicited considering the pre-yoga (pre-test) period and the post-yoga (post-test) period separately. The data was analysed through paired *t* test.

Results

While 90% of people have a score in the range of 21 to 39 only before the practice of yoga, the score markedly increased to 62 to 92 for 90% of people after the practice of yoga (Table 1). The mean stress score of the

respondents after yoga practice is 36.03, when compared to 28.05 before yoga, with statistically significant difference between them (Table 2).

The data shown in Table 2 indicate that after yoga practice, the respondents have obtained an increase in their mean stress score by about 28 %, when compared to before yoga.

It can be made out from Table 3 below that yoga practitioners having 2-3 years of yoga practice have a comparatively higher score than those with up to two year's practice, which is also different statistically ($p < 0.05$). However, the age of the respondents did not show statistically significant influence on the stress score before and after yoga.

Table 1. Mean stress score of the respondents

| Before yoga practice | | After yoga practice | |
|----------------------|-----------------|---------------------|-----------------|
| Mean stress score* | Respondents (%) | Mean stress score* | Respondents (%) |
| 13-20 | 10 | 44-58 | 10 |
| 21-39 | 90 | 62-92 | 90 |
| Total | 100 | Total | 100 |

*Mean stress score expressed as % of the maximum possible stress score of 50

Table 2. Test of significance of the stress score before and after yoga practice

| Details | Before yoga practice | After yoga practice |
|----------------------------|--|---------------------|
| Mean stress score | 28.05 | 36.03 |
| Variance | 29.51 | 29.13 |
| Statistical <i>t</i> value | $t = -6.59$ Significant at $p < 0.001$ | |

Table 3. Test of significance of the stress score under different periods of yoga practice

| Details | Up to 2 years of yoga practice | 2-3 years of yoga practice |
|----------------------------|---------------------------------------|----------------------------|
| Mean stress score | 36.61 | 40.71 |
| Variance | 16.42 | 24.57 |
| Statistical <i>t</i> value | $t = -1.99$ Significant at $p < 0.05$ | |

Table 4 shows the responses of the yoga practitioners to the 10 items in the stress scale before and after practice of yoga. It can be made out from the table that the proportion of yoga practitioners experiencing the negative stress items (Item No.1, 2, 3, 6, 9 and 10) very often has reduced after yoga practice, when compared to pre-practice. However, the proportion experiencing the positive items (item no. 4, 5, 7 and 8) very often has increased after yoga than before it's practice.

a yoga intervention (Li and Goldsmith, 2012). It has been suggested that a 'hatha yoga' workplace intervention could provide breathing and postural techniques that could be used as a means of quietly and unobtrusively coping with the crises that occur during the working day (Heilbronn, 1992). It has been reported that a yoga intervention for students in health science programmes might help them learn to identify stress more quickly and develop coping mechanisms

Table 4. Experience of stress items by the respondents

| Items in the stress scale | | Respondents (%) experiencing Before yoga practice Very often | After yoga practice Very often |
|---------------------------|--|---|-----------------------------------|
| 1. | Upset since something happened unexpectedly | 55 | 10 |
| 2. | Felt that you were unable to control the important things in your life | 37.5 | 17.5 |
| 3. | Felt nervous and stressed | 50 | 10 |
| 4. | Felt confident about your ability to handle your personal problems | 37.5 | 77.5 |
| 5. | Felt that things were going your way | 30 | 67.5 |
| 6. | Could not cope with all the things that you had to do | 42.5 | 10 |
| 7. | Able to control irritations in your life | 30 | 75 |
| 8. | Felt that you were on top of things | 27.5 | 55 |
| 9. | Been angry because of things that were outside your control | 42.5 | 15 |
| 10. | Felt that difficulties were piling up so high that you could not overcome them | 40 | 12.5 |

Discussion

The findings of the study indicate that the respondents are 1.35 to 1.95 times less stressed, when compared to before yoga practice. About 25 out of the 35 published articles on review of yoga's effect on stress reported a significant reduction in stress after

early in their career for managing the high stress of the professional practitioner, thus having long-lasting stress-reduction effects (Rizzolo *et al.*, 2009).

After yoga practice, less proportion of respondents in this study are experiencing the negative stress parameters, while more of them

experience the positive parameters, when compared to pre-yoga. This would be contributing to a higher stress score after yoga practice, indicating less stress. The influence of a comparatively higher period of yoga practice in reducing the level of stress is also evident from the study. It has been reported that the number of years of yoga practice is a factor contributing to the variation observed in the level of mental state improvement of yoga practitioners (Madhava Chandran *et al.*, 2017). Years of yoga practice was reported to be significantly associated with reduced abdominal respiratory rate when facing negative pictures, indicating reduced arousal with yoga experience (Elisabeth Mocanu *et al.*, 2018).

Conclusion

The effect of yoga practice in reducing the level of stress is observed from the present study. When compared to before yoga condition, less proportion of respondents are experiencing the negative stress parameters and more of them experience the positive parameters after yoga practice. Comparatively more period of yoga practice has also shown its effect in reducing stress. Hence, yoga should be considered as a tool for reducing psychological stress. It should be popularised for adoption through suitable programs, particularly through Residents' Associations which are effective in the society due to better trust and dependence among the members.

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