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IMPACT OF YOGA ON QUALITY OF LIFE

Yoga

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ABSTRACT

Long working hours and a stressful work environment negatively affect Quality of Life (QOL). Yoga, an ancient mind–body discipline rooted in the Indian philosophical tradition, has gained growing scientific recognition as a complementary approach for enhancing physical, psychological, and social well-being. This study reports the impact of yoga training on the Quality of Life of 91 IT professionals aged 30–55 years. Participants attended a 45-minute daily yoga session for 12 weeks. QoL was assessed before and after the intervention using a self-reported questionnaire developed by Sarika Sharma and Dr. Nakhat Nasreen of Aligarh Muslim University (Uttar Pradesh, India). Because the pre- and post-intervention QOL scores were not normally distributed, Wilcoxon signed-rank test was applied to compare the two groups. The median QOL scores increased from 72 (pre-intervention) to 94 (post-intervention), and the p-value was less than 0.05, indicating a statistically significant improvement in QOL following yoga practice. Further subgroup analysis showed improvement across all categories of the participants. The improvement in QOL after 12 weeks of yoga may be attributed to yoga's combined physical, psychological, and spiritual benefits. Yoga promotes mental calmness, enhances stress-coping ability, reduces the negative effects of stress, improves emotional well-being, and lowers depressive symptoms. Based on these findings, incorporating yoga into daily life may be recommended as an effective strategy to promote a healthier, happier, and more peaceful lifestyle

KEYWORDS

Quality of Life, Yoga, Normality Test, One Sample Wilcoxon test

INTRODUCTION

Yoga, an ancient mind–body practice rooted in the Indian philosophical tradition, has gained increasing scientific attention as a complementary intervention for improving physical, psychological, and social well-being. Quality of life (QOL) is a multidimensional concept encompassing physical health, psychological status, social relationships, and environmental factors, and is widely recognized as a key outcome measure in health research.

Emerging evidence suggests yoga yields beneficial effects on health-related quality of life across diverse populations. Systematic reviews have reported that yoga can improve health-related quality of life (HRQOL) in individuals with chronic neurological conditions such as Parkinson's disease, multiple sclerosis, stroke, and dementia, although the strength of evidence varies across conditions and study designs.[1] Meta-analyses focusing on specific patient groups, such as those with rheumatic diseases, have found that yoga improves functional capacity, physical and emotional aspects, and general health, indicating broad QOL benefits.[2] Studies in pulmonary tuberculosis patients demonstrated significant enhancements in physical, psychological, and social domains of QOL following an integrated yoga intervention, compared to standard care alone.[3] In menopausal women, systematic evidence indicates yoga has a positive influence on QoL, supporting its role as a low-cost intervention for symptom relief and well-being.[4] Moreover, yoga-based programs have been associated with improved QOL among older adults, suggesting benefits in physical functioning and self-rated health.[5] Caregiver studies show that even brief yoga interventions can significantly reduce psychological distress and increase overall QOL measures, indicating yoga's potential to benefit both patients and their support networks.[6] In the context of chronic pain populations, systematic research supports a positive correlation between yoga practice and improvements in physical, emotional, and social components of QOL.[7] Pallavi et al had reported improvement in blood pressure and occupational stress among IT professionals in India.[8-9] Neerja et al in her research showed significant improvement in Quality of life among Breast Cancer patients after 12 weeks of yoga training.[10]

Despite these encouraging findings, heterogeneity in study designs, intervention types, and QOL measurement instruments has posed challenges to comparability. Many studies employ WHO-QOL, WHOQOL-BREF, or disease-specific instruments, and there is a growing call for culturally relevant tools that capture nuanced changes in QOL. The questionnaire developed by Sharma and Nasreen fills this gap in the Indian context by providing a culturally anchored measure of QOL that is suitable for evaluating pre-post changes following yoga interventions.

In the present study, the impact of yoga practice on quality of life was assessed using the Questionnaire of Quality of Life developed by Sarika Sharma and Dr. Nakhat Nasreen at Aligarh Muslim University, Uttar Pradesh, India.[11] This questionnaire provides a structured and culturally contextualized measure of multiple QOL domains. By administering the instrument before and after a structured yoga intervention, the study aimed to evaluate whether regular yoga practice is associated with statistically and practically meaningful changes in quality-of-life indicators.

The findings from this research are expected to contribute to the growing body of evidence supporting yoga as a complementary lifestyle practice for enhancing wellbeing. Moreover, the use of a locally developed and validated QOL instrument allows for assessment that is sensitive to sociocultural context—an aspect that is often underrepresented in global QOL research. This study therefore holds relevance both for public-health practitioners and for researchers exploring holistic approaches to quality-of-life enhancement.

METHODOLOGY

A sample of 91 IT professionals (60 males and 31 females), aged 30–55 years, was selected from a technology engineering firm in Ahmedabad, Gujarat. None of the participants were engaged in any formal exercise program at the time of the study. A control group was not included; therefore, the analysis was based on pre- and post-intervention measurements. The sample size of 91 exceeded the minimum required sample size of 31 as calculated using a significance level (α) of 0.05, statistical power ($1-\beta$) of 0.80, and a moderate effect size ($d = 0.5$).[12] Participants were included if they were not enrolled in a structured exercise program and voluntarily agreed to participate in the study.

Yoga training was delivered in three separate batches of approximately 30 participants each. A 45-minute daily yoga session was conducted for 12 weeks as the study intervention, and three such training cycles were carried out between January 2025 and December 2025. Each participant completed a self-reported Quality of Life questionnaire both before and after the intervention.

The detail of the yogic module is provided below:
Prayer and Awareness: 3 minutes
Sukshm Vyayam: 10 minutes
Breathing exercises: 5 minutes (2 round of each) a. Nostril Breathing b. Sectional Breathing
Pranayam a. Anulom Vilom – 3 minutes b. Bhramri – 9 rounds – 2 minutes
Deep Relaxation Technique: 20 minutes
Prayer and Gratitude: 2 minutes

Quality of Life Scale (QOLS) Questionnaire was developed by Sarika Sharma and Dr Nakhat Nasreen of Aligarh Muslim University, Aligarh UP [11]. The QOLS questionnaire consists of 42 questions, 34 positive and 8 negative questions. The positive questions are marked as 1 (Never), 2 (Seldom), 3 (Always) and negative questions are marked opposite 3 (Never), 2 (Seldom), 1 (Always).

The total raw score is calculated based on the participant's feedback. The raw score is converted to normalized score, known as z score. Normalized Score (z score) is calculated by

z score = (Raw score - Mean score) / Standard deviation

In the QOL questionnaire, Level of Quality is defined based on z score, and denoted by Grade level A, B, C, D, E, F and G. A being Extremely High-level Quality of Life and G is Extremely Low-level Quality of Life. The details relationship between Level of Quality-of-Life, grade and Z score range is provided in QOLS questionnaire and shown below:

Sr. No	Level of QOL	Grade	Range of z-Scores
1	Extremely High of Quality of Life	A	2.01 and above
2	High Level of Quality of Life	B	1.26 to 2.00
3	Above Average of Quality of Life	C	0.51 to 1.25
4	Average of Quality of Life	D	-0.50 to + 0.50
5	Below Average of Quality of Life	E	-0.51 to -1.25
6	Low Level of Quality of Life	F	-1.26 to -2.00
7	Extremely Low Level of Quality of Life	G	-2.01 and below

RESULTS & DISCUSSION

To determine the appropriate statistical test for data analysis, it was first necessary to assess whether the pre- and post-intervention QoL scores (QOLS) followed a normal distribution. Normality of both datasets was examined using the Anderson–Darling (AD) test. The p-values for the pre- and post-QOLS data were 0.006 and 0.041, respectively. Since both p-values were less than 0.05, the Anderson–Darling test indicated that neither the pre- nor post-QOLS data were normally distributed. The graphical summary of the normality assessment is presented in Figure 1.

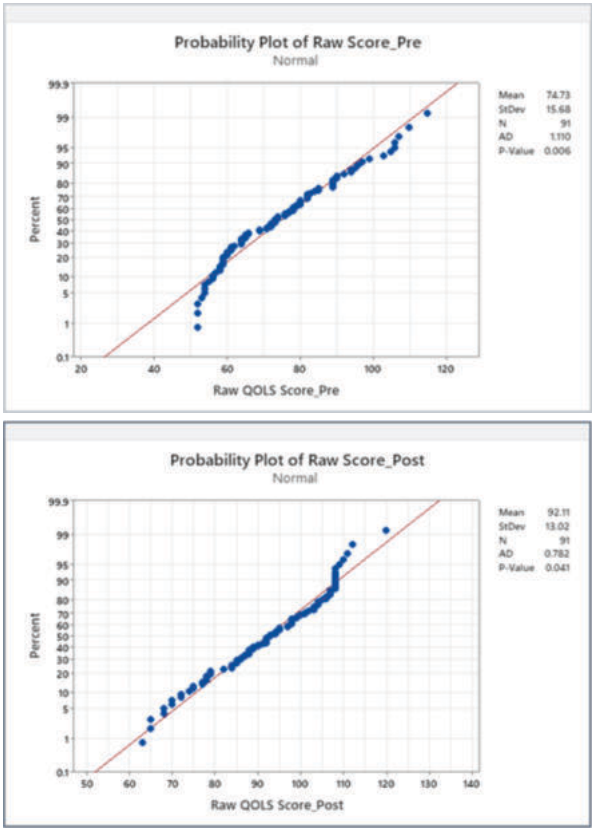

Figure (1) Graphical Summary of Normality Test on Pre and Post QOLS Data from Minitab

Since both the pre- and post-QOLS datasets were not normally distributed, standard parametric statistical tests such as the t-test or ANOVA, which compare mean values between groups, were not appropriate for data analysis. When data do not follow a normal distribution, non-parametric statistical tests such as the Mann–Whitney U test, Kruskal-Wallis test, Moods Median test, Friedman test or the Wilcoxon signed-rank test are recommended, as these compare medians rather than means. In the present study, Wilcoxon signed-rank test was employed to evaluate the effect of yoga on Quality of Life (QOL). Wilcoxon signed-rank test is used for the non-parametric paired data sets while other Statistical tests are more suited for the independent data sets. The null hypothesis stated that the population medians of the pre- and post-QoL scores were equal, whereas the alternative hypothesis proposed that the medians differed.

Figure 2 presents the descriptive statistics and box-plot graphical summary of the One sample Wilcoxon test results for the pre- and post-intervention QOL scores generated using Minitab. The median pre- and post-QoL scores were 72 and 94, respectively. The p-value obtained from the Wilcoxon signed-rank test was less than the significance level of 0.05, leading to the rejection of the null hypothesis. A p-value < 0.05 indicates a statistically significant difference between the pre- and post-QOL scores. The higher post-intervention QoL score demonstrates a significant improvement in Quality of Life following yoga practice.

Statistics

Variable	Level	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Raw Score	Post	91	0	93.42	1.28	12.21	68.00	85.00	94.00	104.00	120.00
	Pre	91	0	73.42	1.54	14.72	52.00	61.00	72.00	82.00	110.00

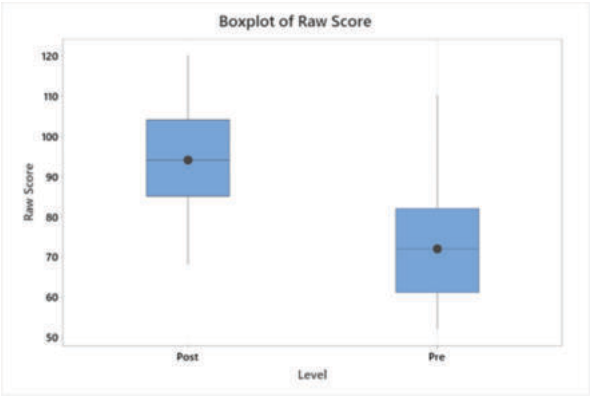

Figure (2): Box Plot Summaries of Pre and Post QOL Scores

Wilcoxon Signed Rank Test: Diff

Method

η: median of Diff

Descriptive Statistics

Sample	N	Median
Diff	91	20.5

Test

Null hypothesis $H_0: \eta = 0$

Alternative hypothesis $H_1: \eta \neq 0$

Sample	N for Test	Wilcoxon Statistic	P-Value
Diff	90	3759.50	0.000

To ascertain which participant groups derived the greatest benefit from yoga training and exhibited the most substantial improvement in Quality of Life (QOL), bar charts illustrating pre- and post-intervention QOL levels were generated (Figure 3). The analysis indicates a consistent enhancement in QOL across all categories following the intervention. Notably, the proportion of participants

classified as having an extremely high QOL remained unchanged, whereas the proportion of those with below-average QOL declined markedly—from 28 to 15—after the training. These findings provide compelling evidence that yoga training is an effective modality for improving Quality of Life.

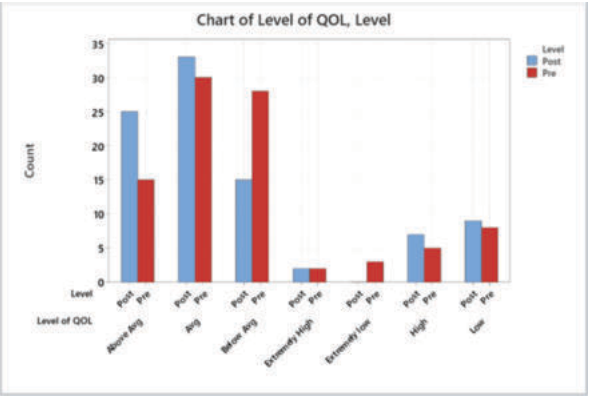

Figure (3): Bar Chart of Pre and Post QOL Data Distribution

The improvement in QOL after 12 weeks of yoga may be attributed to yoga's combined physical, psychological, and spiritual benefits. Yoga keeps the mind calm and helps people handle stress in a peaceful way. It also helps reduce side-effects of stress, improves emotional well-being, and lowers feelings of depression. Yoga is a complete mind-body practice because it includes physical postures, steady breathing, and mental focus. Breathing practices such as Nadisodhana, Bhramari, Ujjayi, and Sheetali have good effects on the body. They also help reduce emotional problems like anger, worry, anxiety, and impatience.

Our study showed that yoga improves health and reduces stress. This agrees with the findings of Riley & Park et al.[13], who reported that yoga reduces stress and improves health through different biological and psychological processes, such as changes in the brain and stress-related markers like cortisol, C-reactive protein, and interleukin-6. These changes increase mindfulness, self-awareness, calmness, and spiritual well-being. [14,15]

CONCLUSION

The median Quality of Life (QOL) scores before and after yoga training were 72 and 94, respectively. Results from the Wilcoxon signed-rank test confirmed that 12 weeks of yoga training led to a significant improvement in QOL. The analysis further indicated that post-intervention QOL improved across all categories, from extremely low to above-average QOL, while the number of participants with extremely high QOL remained unchanged before and after training.

The enhancement in QOL following 12 weeks of yoga can be attributed to yoga's combined benefits for the body, mind, and spirit. Yoga promotes mental calmness, enhances the ability to cope with stress in a balanced manner, reduces stress-related symptoms, improves emotional well-being, and decreases depressive feelings. As a comprehensive mind–body discipline incorporating physical postures, controlled breathing, and focused attention, yoga supports holistic health. Therefore, incorporating yoga into daily life is recommended as an effective approach to achieving a healthier, happier, and more peaceful lifestyle.

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