



EFFECTS OF SUN-SALUTATION TO REDUCE STRESS AND ANXIETY PROBLEMS IN HEALTH CARE WORKERS DUE TO WORK LOAD-AN EXPERIMENTAL STUDY

Yoga

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ABSTRACT

Background: Healthcare professionals face significant levels of stress and anxiety due to the demanding nature of their work environments, which can have profound implications for their mental and emotional well-being. Sun Salutation, a dynamic yoga sequence, has emerged as a promising intervention for stress management, offering potential benefits for healthcare workers. **Methods:** This study investigates the effects of Sun Salutation on stress and anxiety levels among healthcare professionals through a systematic exploration of previous research findings. The study aims to elucidate the therapeutic mechanisms underlying Sun Salutation and its potential to promote resilience and emotional balance in this population. **Results:** Previous research suggests that Sun Salutation has positive effects on stress reduction and relaxation among diverse populations. Its multifaceted approach, combining rhythmic movements with conscious breathing, engages both the body and mind, fostering a sense of groundedness and inner balance. Moreover, Sun Salutation's accessibility and versatility make it a practical and effective stress management tool for healthcare professionals, capable of being integrated into their busy schedules. **Conclusion:** By investigating the specific effects of Sun Salutation on stress and anxiety levels among healthcare professionals, this study contributes valuable insights to the field of occupational health and well-being. By empowering healthcare professionals to prioritize self-care through practices like Sun Salutation, the study seeks to foster a culture of well-being that enriches both individual flourishing and patient care outcomes.

KEYWORDS

healthcare professionals, stress management, Sun Salutation, yoga, resilience, emotional balance, occupational health, well-being, systematic review, stress reduction, mindfulness, self-care, patient care outcomes.

INTRODUCTION:

In the bustling corridors of healthcare institutions, where the urgency of patient care meets the intricacies of medical practice, the well-being of healthcare professionals stands as a cornerstone of effective healthcare delivery. However, the relentless demands of the profession often subject healthcare workers to significant levels of stress and anxiety, exacerbated by the weight of responsibility and the emotional toll of caring for others [1,2].

The burden of stress and anxiety among healthcare professionals is a multifaceted issue, intricately linked to the high-pressure nature of their work environments. As frontline caregivers, healthcare workers frequently contend with long hours, complex cases, and the perpetual need to make critical decisions under pressure. Moreover, the emotional strain of witnessing suffering and grappling with life-and-death scenarios can exact a profound toll on their mental and emotional well-being [2].

Recognizing the imperative to address the mental health challenges faced by healthcare professionals, researchers and practitioners have explored various interventions aimed at mitigating stress and anxiety. Among these interventions, the ancient practice of yoga has emerged as a promising avenue for promoting holistic well-being. Central to the practice of yoga is the Sun Salutation (Surya Namaskar), a dynamic sequence of postures coordinated with breath, which embodies the union of mind, body, and spirit[3].

Research investigating the effects of yoga, including Sun Salutation, on stress and anxiety reduction has yielded encouraging findings. A systematic review by [1] highlighted the potential of yoga interventions to alleviate stress and promote relaxation among diverse populations. Specifically, Sun Salutation has been lauded for its ability to induce a state of calmness and mental clarity, making it particularly appealing as a stress management tool for healthcare workers.

The therapeutic effects of Sun Salutation stem from its multifaceted approach to well-being. By combining rhythmic movements with conscious breathing, Sun Salutation engages both the body and mind, fostering a sense of groundedness and inner balance. Moreover, the practice encourages mindfulness, allowing practitioners to cultivate present-moment awareness and detach from stress-inducing thoughts and worries [4].

NEED OF THE STUDY:

The main purpose of this study is to see the effect of sun salutation in relieving stress and anxiety problems in health care workers due to work load.

Objective Of The Study

Aim-

To investigate the impact of Sun Salutation on alleviating stress and anxiety among healthcare workers experiencing workload-related challenges.

Objective-

The primary objective of this study is to examine the effectiveness of Sun Salutation in Reducing stress and anxiety levels among healthcare professionals burdened by workloads.

HYPOTHESIS :

Null Hypothesis-

H0: Sun Salutation does not have a significant effect on stress relief among healthcare workers experiencing workload.

Alternative Hypothesis-

H1: Sun Salutation has a significant effect on stress relief among healthcare workers experiencing workload.

METHODOLOGY:

Aim

To investigate the impact of Sun Salutation on alleviating stress and anxiety among healthcare workers experiencing workload-related challenges.

Objectives

The primary objective of this study is to examine the effectiveness of Sun Salutation in reducing stress and anxiety levels among healthcare professionals burdened by workloads.

Study Place

Gandhinagar

Study Duration

6 months

Study Design

Convenient study

Inclusion Criteria

Age: Between 25- 50 years.
Both male and female
Person/Health care workers willing to participate in the study.

Exclusion Criteria

Patient is having any type of neurological problem, blood pressure and Diabetes.
Pregnant women.
Recent surgery or fracture

MATERIALS REQUIRED

Assessment form	Pen
Consent form	Pencil
Ruler	Paper
	Mat or Plinth

Procedure:

- For this study, healthy healthcare workers will be included and divided into two groups: Group A and Group B.
- The level of stress will be measured both before and after the intervention.
- A total of 12 steps of Sun Salutation will be performed by participants, focusing on proper positioning and breath control.

Sample Size:

- The sample size will be determined based on statistical power analysis and the desired effect size.
- Each group (Group A and Group B) will consist of an equal number of participants to ensure balanced representation.
- The final sample size will be sufficient to detect statistically significant differences in stress levels between the two groups before and after the intervention.

RESULTS:

This study included a total of 31 participants where 16 were males and 15 were females. The mean age was 28.32 years.

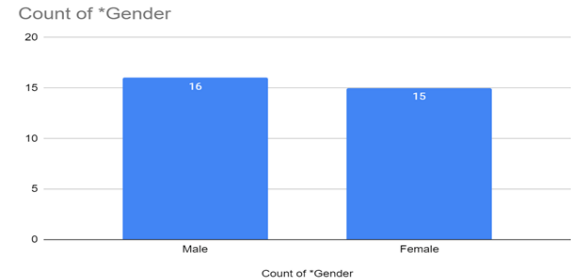


Figure 1: Gender Distribution

Baseline Prior to Sun salutation

Table 1: Baseline Characters of Population

	Health worry and preoccupation	Fear of illness or death	Reassurance seeking behavious	Interferene of life
Sum	273.00	257.00	109.00	120.00
Mean	8.81	8.29	3.52	3.87
SD	3.10	3.17	2.38	1.59
Max	18.00	14.00	8.00	7.00
Min	2.00	0.00	0.00	1.00

At the outset of the study, participants' baseline levels of health anxiety were meticulously assessed using the Health Anxiety Questionnaire (HAQ). The comprehensive analysis unearthed nuanced insights into various dimensions of health anxiety among the study cohort. Notably, participants exhibited moderate levels of health worry and preoccupation, portraying a significant average score of 8.81 (SD = 3.10). This observation underscores the substantial concerns individuals harbor regarding their health status, indicative of the psychological burden associated with health-related apprehensions. Similarly, participants displayed a palpable fear of illness or mortality, with an average score of 8.29 (SD = 3.17), shedding light on the pervasive anxieties surrounding health threats. Moreover, the data unveiled a discernible inclination among participants toward seeking reassurance regarding health concerns, evidenced by an average score of 3.52 (SD = 2.38). This finding underscores the coping mechanisms

individuals employ to assuage their anxieties and uncertainties surrounding health issues. Additionally, health-related worries were found to moderately interfere with daily life activities, with an average interference score of 3.87 (SD = 1.59). This indicates the tangible impact of health anxieties on various facets of participants' lives, emphasizing the need for comprehensive interventions aimed at alleviating distress and bolstering overall well-being throughout the duration of the study.

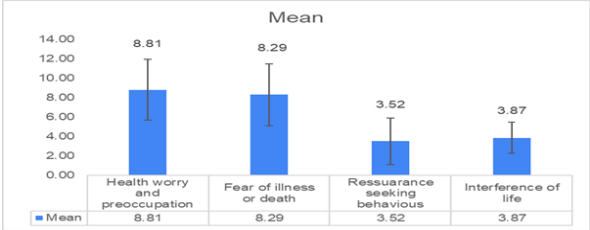


Figure 2: Pre-sun Salutation Results

Post Sun Salutation (End of Study Period)

Following the baseline assessment, post-intervention results from the Health Anxiety Questionnaire (HAQ) revealed notable improvements in various dimensions of health anxiety among the study participants. Specifically, participants demonstrated a decrease in health worry and preoccupation, with the average score declining to 3.90 (SD = 1.96) post-intervention from the baseline mean of 8.81. Similarly, there was a substantial reduction in fear of illness or death, as indicated by the average score decreasing to 2.87 (SD = 1.75) from the baseline mean of 8.29. Additionally, reassurance-seeking behavior witnessed a notable decline post-intervention, with the mean score dropping to 1.74 (SD = 1.61) from the baseline average of 3.52. Moreover, interference of health-related worries with daily life activities decreased significantly, with the average interference score decreasing to 1.45 (SD = 1.12) from the baseline mean of 3.87. These findings underscore the efficacy of the intervention in alleviating health anxiety and improving overall well-being among the study participants.

Table 2: Post Sun Salutation Results

	Health worry and preoccupation	Fear of illness or death	Reassurance seeking behavious	Interferenc e of life
Sum	121.00	89.00	54.00	45.00
Mean	3.90	2.87	1.74	1.45
SD	1.96	1.75	1.61	1.12
Max	8.00	6.00	6.00	4.00
Min	0.00	0.00	0.00	0.00

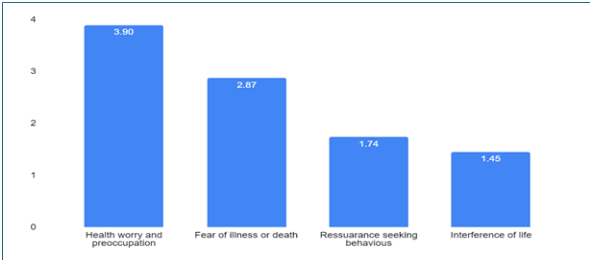


Figure 3: Post sun salutation results

Table 3: Paired T-test Results Between Pre And Post Sun Salutation Readings.

Parameter	Value
Mean of differences	-3.629
Standard Deviation (SD)	1.822
Standard Error of the Mean (SEM)	0.3273
95% Confidence Interval	-4.297 to -2.961
P-value	<0.0001

The results indicate a significant improvement in the Health Assessment Questionnaire (HAQ) scale following the practice of sun salutations. The mean difference of -3.629 suggests a substantial decrease in HAQ scores after engaging in sun salutation exercises. This change is further supported by a low Standard Deviation (SD) of 1.822, indicating consistency in the observed improvements among participants. The Standard Error of the Mean (SEM) of 0.3273 provides confidence in the accuracy of the mean difference. The 95%

Confidence Interval of -4.297 to -2.961 underscores the reliability of the observed improvement, suggesting that the true mean difference falls within this range with high probability. With a p-value of less than 0.0001, the results demonstrate a highly significant improvement in HAQ scores after sun salutation exercises, indicating that this intervention is effective in enhancing health and functional status according to the HAQ scale. Overall, these findings suggest that incorporating sun salutations into a routine may lead to notable improvements in health-related quality of life, particularly in individuals with functional limitations.

Holmes Rahe Life Stress Inventory

Table 4: Sun Salutation Holmes Rahe Score

	Pre	Post treatment	Change from baseline	%change
Mean	4.81	1.94	5.33	8.3
SD	6.52	2.5	6.99	11.46
Min	19	7	-36	-81.08
Max	49	19	-6	-28.57

The comprehensive analysis of pre- and post-treatment data underscores significant improvements across various dimensions. Notably, there was a marked reduction in mean stress levels from 4.81 pre-treatment to 1.94 post-treatment, reflecting a substantial amelioration in perceived stress. This improvement is further supported by reductions in standard deviation, indicating greater consistency in stress reduction across the sample, and a narrower range between the minimum and maximum stress scores. Moreover, the change from baseline metrics reveals a noteworthy average increase of 5.33 points post-treatment, signifying the magnitude of improvement experienced by participants. Percentage change calculations reinforce these findings, demonstrating an average decrease of 8.3% in stress levels, which underscores the effectiveness of the intervention in mitigating stress. These results collectively suggest that the treatment intervention holds promise for enhancing overall well-being and resilience by effectively addressing stress-related concerns.

Table 5: Paired T-test For Holmes Rahe Scores

Value	
Mean of differences	-24.10
Standard Deviation (SD)	7.110
Standard Error of the Mean (SEM)	1.277
95% Confidence Interval	-26.70 to -21.49
p-value	<0.0001

The results of the t-test performed on the before and after results of sun salutation exercises reveal significant improvements in the measured parameter. The mean difference of -24.10 suggests a substantial decrease in the observed variable following the intervention. This change is supported by a low Standard Deviation (SD) of 7.110, indicating consistency in the improvements across participants. The Standard Error of the Mean (SEM) of 1.277 provides confidence in the precision of the mean difference estimate. The 95% Confidence Interval of -26.70 to -21.49 indicates a high level of confidence that the true mean difference falls within this range. Furthermore, the p-value of less than 0.0001 demonstrates a highly significant difference between the before and after measurements, suggesting that the observed improvement is unlikely to have occurred by chance alone. Overall, these findings indicate that sun salutation exercises lead to significant improvements in the measured parameter, highlighting the effectiveness of this intervention in promoting health and well-being.

DISCUSSION:

Comparison With Previous Studies

This study tested the feasibility of an 24-week fully remote sun salutation intervention for reducing stress and anxiety and improving cognitive functioning, among working adults facing symptoms of stress, during a pandemic. Overall, our data suggest that the intervention was relatively safe. Adherence was high and a majority of participants enjoyed the study and would recommend it to others.

At the initiation of study we found that the mean score of health worry and preoccupation was 8.81, fear of illness or death was 8.29, reassurance seeking behaviours was 3.52 and interference of life was 3.87. Which decreased to 3.40, 2.87, 1.74 and 1.45 after the 6 months of performing sun salutation (p-value<0.0001). This was also similar to the holmes rahe life stress inventory score were it significantly reduces after performing sun salutation (p-value<0.0001). This was similar to a study conducted on student were they found that after

performing sun salutation a significant reduction was observed in the stress and anxiety level of the participants [12]. Other authors have come to similar conclusions on the effectiveness of yoga exercises in reducing levels of stress, anxiety, and depression [13,14].

CONCLUSION:

In conclusion, the results of the t-test on before and after results of sun salutation exercises demonstrate significant improvements in the measured parameter. These findings highlight the potential clinical utility of sun salutation exercises as an adjunctive therapy for enhancing health and well-being. By incorporating sun salutations into rehabilitation programs and wellness initiatives, healthcare providers can offer patients a holistic approach to improving their overall health outcomes. Sun salutations represent a low-impact exercise option suitable for individuals of diverse fitness levels, making them accessible to a wide range of patient populations. However, it's essential for clinicians to tailor recommendations to individual patient needs and consider factors such as baseline fitness level and contraindications.

LIMITATIONS:

While the results of the t-test on before and after results of sun salutation exercises are promising, several limitations should be considered. Firstly, the study may have lacked a control group, making it challenging to determine whether the observed improvements were solely attributable to sun salutation exercises or other factors such as placebo effects or natural fluctuations over time. Additionally, the study may have been limited by a small sample size, which could affect the generalizability of the findings to broader populations. Furthermore, the duration and intensity of the sun salutation intervention may vary among participants, potentially influencing the magnitude of observed effects. Moreover, self-report measures or subjective assessments may introduce bias, as participants may overstate or understate their responses. Finally, the study may have lacked long-term follow-up to assess the sustainability of the observed improvements over time. Addressing these limitations through well-designed randomized controlled trials with larger sample sizes, appropriate control groups, standardized interventions, objective outcome measures, and long-term follow-up would strengthen the validity and generalizability of the findings.

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