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Impact Of Structured Yoga Therapy On Depression And Anxiety Among Nursing Officers In Government Hospitals Of Raichur, Karnataka

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ABSTRACT

Background: Nursing officers are at elevated risk of mild depression and mild anxiety due to workload and work-related stress. Yoga is a low-cost, non-pharmacologic intervention with evidence for improving mood and anxiety.
Objectives: (1) Assess levels of depression and anxiety among nursing officers attending training at DTC Raichur; (2) Evaluate effectiveness of a structured yoga therapy program on mild depression and mild anxiety; (3) Explore association of selected demographic variables with depression and anxiety; (4) Examine correlation between depression and anxiety.
Methods: Quasi-experimental control-group pretest–posttest design. 300 nursing officers screened and enrolled (Experimental n=150, Control n=150). Experimental group received a structured 4-week yoga therapy module (supervised 4 days + home practice: 3×/week, 30 min/session, total 12 sessions). Control group practiced 15-minute **Shavasana** on same schedule. Outcomes measured with HAM-D (17-item) and HAM-A(14-item) at baseline and after 4 weeks. **Analysis:** Paired and Unpaired t tests, chi-square, Pearson correlation; significance $p<0.05$. Ethical approval obtained from Institutional Ethics Committee (Raichur Institute of Medical Sciences).
Results: Mean depression scores in the experimental group decreased from **6.99** (SD 4.47) to **4.86** (SD 3.68) post-intervention (paired $t=9.34$, $p<0.001$). Control group depression mean decreased from **6.78** to **5.94** (paired $t=6.48$, $p<0.001$). Between-group comparison of posttest depression means favored the experimental group ($t=2.49$, $p=0.016$). Mean anxiety scores in the experimental group decreased from **16.61** (SD 6.61) to **11.73** (SD 6.17) (paired $t=3.36$, $p=0.001$). Control group anxiety decreased modestly from **14.69** to **13.95** (paired $t=5.45$, $p<0.001$). Between-group posttest anxiety difference was significant ($t=2.14$, $p=0.006$). Monthly income was significantly associated with pretest depression (χ^2 $p=0.000$). Small but significant positive correlations between depression and anxiety were observed ($r\approx0.07–0.085$, $p<0.05$). Attrition = 12 (4%); ITT analysis with LOCF used for missing posttest data.
Conclusion: A structured short-term yoga therapy program produced statistically and clinically meaningful reductions in mild depression and mild anxiety among nursing officers compared with relaxation control. Yoga can be recommended as an accessible adjunctive intervention for mental wellbeing among healthcare workers

Keywords: Yoga therapy, HAM-D, HAM-A, nursing officers, mild depression, mild anxiety, Raichur

INTRODUCTION

Nursing officers are frontline healthcare professionals who routinely encounter heavy workloads, long duty hours, and emotionally challenging situations. Continuous exposure to these stressors often results in

psychological strain, which can manifest as **mild depression and mild anxiety**. If left unmanaged, these conditions can affect the personal well-being of nurses, diminish job performance, and compromise patient care quality.

Globally, studies indicate that the prevalence of depression and anxiety among nurses is higher than in the general population, largely due to occupational stressors and role demands (Cocchiara et al., 2019). Indian studies also reveal similar concerns, reporting that workplace stress in nurses contributes to mental health problems and reduced quality of life (Kaur et al., 2021).

Non-pharmacological interventions such as yoga have attracted attention as cost-effective strategies for mental health promotion. Yoga, an ancient Indian discipline, integrates physical postures (asanas), breathing techniques (pranayama), and meditation practices, which together promote mind–body relaxation and self-regulation. Evidence suggests that yoga alleviates symptoms of depression by improving emotional balance and regulating stress hormones (Cramer et al., 2017). In anxiety, yoga is believed to enhance parasympathetic activity and reduce hyperarousal, leading to improved emotional stability (Streeter et al., 2018).

Systematic reviews highlight that yoga-based programs are effective in reducing stress, anxiety, and depression among healthcare providers, including nurses and nursing students (Maharana et al., 2025; Cocchiara et al., 2019). These interventions not only improve mood but also enhance resilience and coping skills. However, while international research is growing, there is limited controlled evidence from Indian settings, especially focusing on nursing officers with **mild depression and mild anxiety**.

To address this gap, the present study was undertaken to assess baseline levels of depression and anxiety among nursing officers attending in-service training at the District Training Centre, Raichur, and to evaluate the effectiveness of a structured yoga therapy module in reducing these symptoms. Associations with socio-demographic variables and the relationship between depression and anxiety were also explored.

OBJECTIVES

1. Assess level of depression among nursing officers attending training at DTC Raichur.
2. Assess level of anxiety disorder among nursing officers attending training at DTC Raichur.
3. Evaluate effectiveness of yoga therapy on mild depression and mild anxiety.
4. Find association between selected demographic variables and levels of anxiety and depression.
5. Examine correlation between level of depression and anxiety.

METHODOLOGY OF STUDY

Study design & setting

Quasi-experimental pretest–posttest control group design at District Training Centre, Raichur, Karnataka. Data collection occurred from September 2023 to February 2024.

Participants & sampling

Accessible population: nursing officers attending in-service training at DTC during the study period (~1,000/6month). Purposive screening using HAM-D and HAM-A identified eligible participants with mild depression and/or mild anxiety; consenting participants were randomized into experimental or control groups using computer-generated random numbers. Final enrolled sample = 300 (Experimental n=150; Control n=150). Anticipated attrition 10%; observed 4% dropout(12 dropouts: 7 experimental, 5 control). Intention-to-treat (ITT) analysis performed; LOCF used for missing posttest data.

Inclusion criteria

- Nursing officers working in government hospitals and attending training at DTC Raichur during data collection.
- Screened positive for mild depression and/or mild anxiety on HAM-D / HAM-A.
- Willing to participate and available for duration of study; provided written informed consent.

Exclusion criteria

- Moderate to severe depression/anxiety.
- On psychiatric medication.
- Medical contraindications to physical activity or yoga.
- Unwilling to participate.

Intervention

Experimental group: Structured yoga module (asanas, pranayama, meditation) based on a validated module by Dr. Hemant Bhargav and adapted with permission; delivered by researcher trained in WPA–NIMHANS online course. Phase 1: supervised training (4 consecutive days at DTC) to ensure correct technique. Phase 2: home practice weeks 2–5, 3 sessions/week, 30 minutes/session (total 12 sessions). Participants received printed and audio-visual materials; adherence tracked via daily logbooks and weekly telephonic follow-ups.

Control group: Practiced **Shavasana** for 15 minutes per session, 3×/week for 4 weeks; brief supervised orientation and handouts provided. Compliance similarly monitored.

Measures

- **HAM-D** (17 items): Depression severity (0–7 normal, 8–20 mild, 20–23 moderate, ≥24 severe).
- **HAM-A** (14 items): Anxiety severity (0–17 normal, 18–24 mild, ≥25 severe).
- Socio-demographic proforma.

Ethical considerations

Approval from Institutional Ethics Committee (Raichur Institute of Medical Sciences). Administrative permissions obtained from DTC. Participants provided written informed consent; confidentiality maintained.

Statistical analysis

SPSS (version to be indicated) used. Descriptive statistics (frequency, percentage, mean, SD). Paired t tests for within-group pre vs post comparisons; unpaired t tests for between-group posttest comparisons. Chi-square for associations with categorical variables. Pearson correlation for depression–anxiety relationship. Significance set at $p<0.05$; 95% CIs reported where applicable.

Data analysis

Data were entered into SPSS (or mention the software used) and analyzed using descriptive statistics — frequencies and percentages — to describe demographic variables and levels of EI. The Chi-square test was employed to evaluate associations between categorized EI levels (high, average, low) and demographic variables. A p-value < 0.05 was considered statistically significant

RESULTS

Socio-demographic Characteristics

A total of 300 nursing officers participated in the study (150 experimental, 150 control). The majority were female (91.33% in control; 90.67% in experimental). In the control group, most participants were

above 31 years (63.33%), while in the experimental group, the largest proportion were aged 26–30 years (54.67%). Most were married, held a General Nursing and Midwifery (GNM) diploma, and resided in rural areas. Detailed distributions are provided in **Table 1**.

Table 1: Frequency and percentage distribution of subjects according to socio –demographic variables n = 300

Sl. No	Demographic variables	Control group		Experimental group	
		Frequency f	Percentage %	Frequency f	Percentage %
1.	**Age in years**				
	20-25 Yrs	8	5.33	5	3.33
	26-30 Yrs	47	31.33	82	54.67
	>31 Yrs	95	63.33	63	42
2.	**Gender:**				
	Male	13	8.67	14	9.33
	Female	137	91.33	136	90.67
3.	**Religion**				
	Hindu	137	91.33	131	87.33
	Muslim	11	7.33	15	10
	Christian	2	1.33	4	2.67
	Others (specify)	0	0	0	0
4.	**Marital status:**				
	Married	135	90	133	17
	Unmarried	14	9.33	88.67	11.33
	Divorced/ Separated	01	0.67		
5.	**Area of Residence**				
	Urban	17	11.33	32	21.33
	Rural	133	88.67	118	78.67
6.	**Professional qualification:**				
	Diploma (GNM)	121	80.67	121	80.67
	Degree (B.Sc. N)	26	17.33	29	19.33
	P G (M.Sc. N)	3	2.0	0	0

7	**Monthly income in Rupees:**				
	<1 lac	1	0.67	1	0.67
	1 lac to 3 lac	76	50.67	101	67.33
	3lac to 5 lac	70	46.67	16	30.67
	>5 lac	3	2.00	2	1.33

Table 1 presents the frequency and percentage distribution of nursing officers according to socio-demographic variables for both control and experimental groups, with a total sample size of 300 participants.

Levels of Depression

In the control group, pre-test assessment showed 52% normal and 48% mild depression. After the intervention (Shavasana), 64% were normal and 36% mild. No severe depression cases were observed.

In the experimental group, 51.33% were normal and 48.67% mild at baseline. After yoga therapy, 75.33% were normal and 24.67% mild, showing a greater improvement compared to controls.

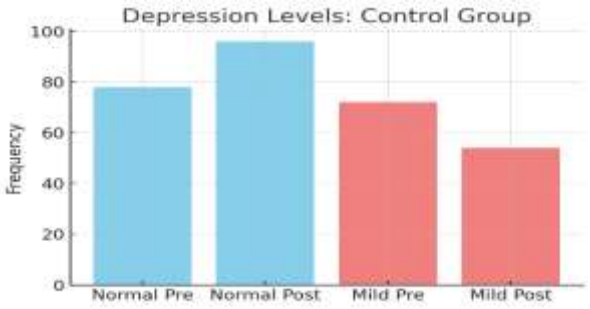
- **Mean depression scores** decreased significantly in both groups (Control: 6.78→5.94, t=6.48, p<0.001; Experimental: 6.99→4.86, t=9.34, p<0.001).
- Between-group post-test comparison revealed significantly lower depression scores in the experimental group (4.86 vs 5.94; t=2.49, p=0.016).

Table 2 & 3 present the frequency distribution of depression levels. **Figure 1** and **Figure 2** depict pre- and post-test comparisons for both groups.

Table 2. Frequency and percentage distribution of pretest and posttest level of depression among nursing officers in control group.

n = 150

Level of Depression	**Pre-Test**		**Post Test**	
	f	**%**	**f**	**%**
Normal	78	52	96	64
Mild depression	72	48	54	36
Severe depression	0	0	0	0



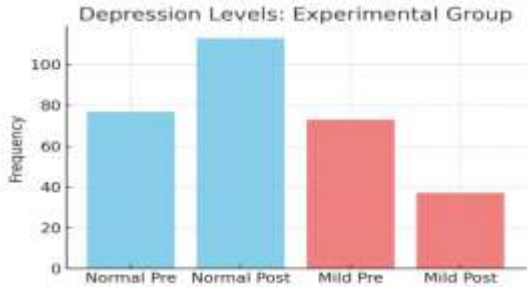


Figure 1 and **Figure 2** depict pre- and post-test comparisons for both groups.

Levels of Anxiety

In the control group, 42% of participants were normal and 58% mild anxiety at baseline. Post-test proportions shifted modestly to 49.37% normal and 44.37% mild.

In the experimental group, 26.7% were normal and 73.3% mild at baseline. After yoga therapy, 76% were normal and 24% mild.

- **Mean anxiety scores** reduced significantly in both groups (Control: 14.69→13.95, t=5.45, p<0.001; Experimental: 16.61→11.73, t=3.36, p=0.001).
- Post-test comparison favored the experimental group (11.73 vs 13.95; t=2.14, p=0.006).

Table 4 & 5 summarize anxiety levels, while **Figure 3** and **Figure 4** display graphical trends.

Table 4. Frequency and percentage distribution of pretest and posttest level of anxiety among nursing officers in control group.

n = 150

Level of Depression	Pre-Test		Post Test	
	f	%	F	%
Normal	63	42	79	49.37
Mild anxiety	87	58	71	44.37
Severe anxiety	0	0	0	0

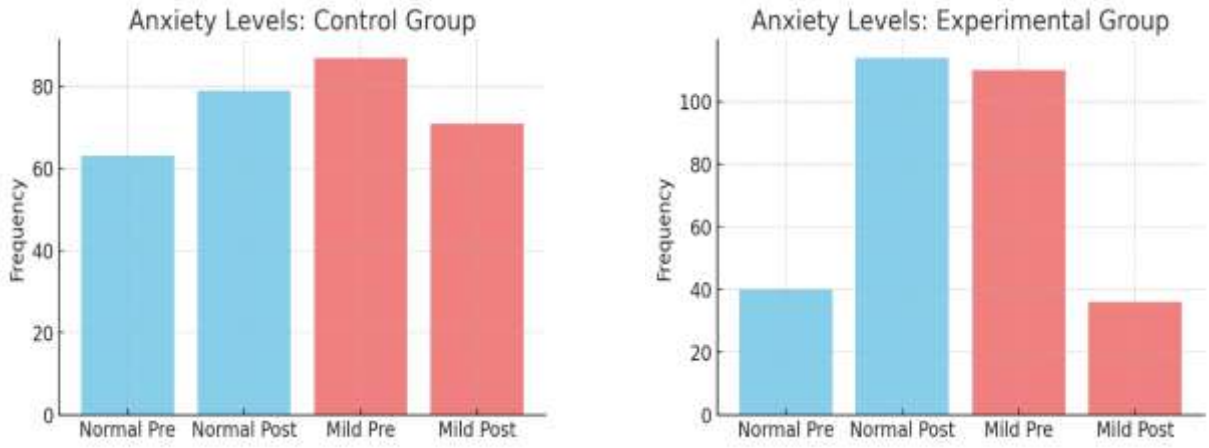


Figure 3 and **Figure 4** display graphical trends.

Association with Demographic Variables

Chi-square analysis revealed that monthly income was significantly associated with pre-test depression (p<0.001). Other socio-demographic variables such as age, gender, marital status, residence, education, and religion showed no significant association with depression or anxiety. (Tables 5).

Table 5. Association between pretest levels of depression with selected demographic variables in control group.

n=300

No	Demographic variables	Level of Depression			$\chi 2$ value	df	P Value	Inference
		Normal	Mild	Severe				
1.	**Age in years**							
	20-25 Yrs	0	12	0	4.57	2	0.10	NS
	26-30 Yrs	0	130	0				
	>31 Yrs	5	153	0				
2.	**Gender:**							
	Male	0	28	0	0.52	1	0.46	NS
	Female	5	267	0				
3.	**Religion**							
	Hindu	4	265	0	8.71	2	0.14	NS
	Muslim	0	25	0				
	Christian	1	5	0				
4.	**Marital status:**							
	Married	5	263	0	0.60	2	0.73	NS
	Unmarried	0	31	0				
	Divorced/ Separated	0	1	0				
5.	**Area of Residence**							
	Urban	1	48	0	0.50	1	0.82	NS
	Rural	4	247	0				
6	**Professional qualification:**							
	Diploma (GNM)	3	239	0	1.62	2	0.44	
	Degree (B.Sc. N)	2	53	0				
	P G (M.Sc. N)	0	3	0				
7	**Monthly income in Rupees:**							
	<1 lac	0	0	0	300	3	0.00	S
	1 lac to 3 lac	5	2	0				
	3lac to 5 lac	0	180	0				
	>5 lac	0	113	0				

Note:
"NS" indicates that there is no significant association.

"S" indicates a significant association.

Correlation Between Depression and Anxiety

Pearson's correlation indicated a small but statistically significant positive correlation between depression and anxiety in both groups (Control: r=0.069, p<0.05; Experimental: r=0.085, p<0.05). This suggests that higher depression scores were weakly associated with higher anxiety scores **(Tables 6).**

20. Correlation between the level of depression and anxiety among the nursing officers in both the experimental and control groups

N=300

Variables	**level of depression**	**Anxiety**
level of depression	1	0.069*
Anxiety	0.069*	1

*** = Significant at p< 0.05**

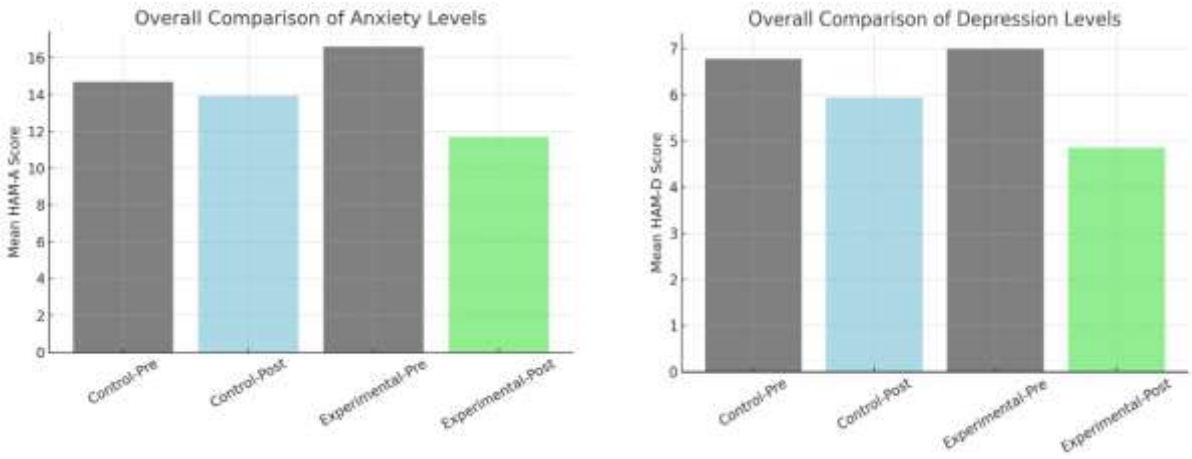


Figure 5 and **Figure 6** depict pre- and post-test comparisons for both groups

SUMMARY OF FINDINGS

- Both yoga therapy and relaxation (Shavasana) reduced mild depression and anxiety.
- Improvements were significantly greater in the yoga therapy group.
- Monthly income influenced depression levels, while other demographic variables had no significant effect.
- Depression and anxiety showed a weak but significant positive correlation.

CONCLUSION

The present study evaluated the effectiveness of yoga therapy on mild depression and anxiety among nursing officers working in government hospitals at the District Training Centre, Raichur. The findings demonstrated that although both yoga therapy and Shavasana led to improvements in mental health

outcomes, yoga therapy was significantly more effective in reducing depression and anxiety scores. Nursing officers in the experimental group showed greater improvements in their post-test HAM-D and HAM-A scores compared to the control group, highlighting the therapeutic benefits of yoga-based interventions.

Socio-demographic analysis revealed that monthly income was significantly associated with depression, while other variables such as age, gender, marital status, education, and residence were not significantly related to mental health outcomes. Furthermore, a weak but significant positive correlation between depression and anxiety was observed, suggesting interdependence between the two conditions.

Overall, the study provides evidence that structured yoga therapy is a safe, feasible, and effective complementary approach for improving psychological well-being among nursing professionals. Integrating yoga-based practices into workplace wellness and stress management programs may enhance resilience, reduce burnout, and improve overall mental health in healthcare workers.

DISCUSSION

Principal findings: The structured yoga therapy program yielded statistically significant reductions in both mild depression and mild anxiety compared with a relaxation control. The experimental group demonstrated larger mean reductions in HAM-D and HAM-A scores than controls, and between-group posttest comparisons favored yoga.

Interpretation: The combination of asanas, pranayama, and meditation—delivered with initial supervised training and supported home practice—likely improved mood regulation, autonomic balance and stress coping leading to symptom reduction. Control group improvements (small but significant) may reflect placebo/attention effects and the relaxing influence of Shavasana.

Clinical significance: Although baseline mean scores were in the mild range, the observed reductions (especially in anxiety: mean drop ≈4.9 points in experimental group) are clinically relevant for workforce wellbeing. Short, scalable yoga interventions may be practical adjunctive strategies in workplace mental health programs.

Associations: Monthly income's association with depression suggests socio-economic factors contribute to mental health variability and should be considered in future interventions and policy planning.

Correlation: The weak but significant depression–anxiety correlation aligns with known comorbidity but suggests modest co-variance in this sample.

STRENGTHS:

- Large sample (n=300) with randomized allocation to groups.
- Use of standardized clinician-rated scales (HAM-D, HAM-A).
- Real-world sample of working nursing officers in training setting.
- ITT analysis with low attrition (4%).

LIMITATIONS:

- Quasi-experimental design (no blinded outcome assessor indicated) — potential measurement bias.
- Short follow-up (posttest at 4 weeks); durability of effect unknown.
- Self-reported adherence logs may over-estimate practice.
- Lack of active control matching supervised instruction time (both groups had orientation but experimental group had richer training), which may introduce attention bias.
- No biochemical or objective stress measures included.

IMPLICATIONS & FUTURE RESEARCH: Future randomized controlled trials with blinded assessors, longer follow-up, objective stress markers (e.g., cortisol), and multi-site recruitment could strengthen causal inference and generalizability. Exploring dose-response (frequency/duration) and integration into employee wellness programs is recommended.

CONFLICT OF INTEREST

The author declares no conflict of interest.

FUNDING

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