

An Experimental Study to Assess the Effectiveness of Transcendental Meditation on Reduction of Stress among Nurses Working in Selected Hospitals at Kumbakonam Taluk in Tanjavore District

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Abstract: *Introduction:* Stress among nurses is an endemic problem. Stress affecting nurses across the globe has been convincingly documented in the literature for more than 40 years. Nurses' environment includes an enclosed atmosphere, time pressure, excessive noise, or undue quiet sudden swing of from intense to mundane tasks, no second chance, unpleasant sights and sounds and long standing hours. Nurses are trained to deal with these factors but chronic stress takes its toll when there are additional stress factors like home stress, conflict at work, inadequate staffing and poor supervision. *Aim:* an experimental study to assess the effectiveness of transcendental meditation on reduction of stress among nurses working in selected hospitals at Kumbakonam taluk in Tanjavore district. *Materials and methods:* Quantitative approach - True experimental research design (before and after only design) was adopted to conduct the study on 60 nursing professionals who were working in Anbu and Sugam multi specialty hospital was selected by using simple random probability sampling technique by using lottery method. Nurses who were free from physical and mental disorders, who were completed GNM & B. SC (N) Program, who were working in the bedside patient care level and those were willing to participate were included in the study. Nurses who were practicing any stress reduction measures were excluded from the study. *Results:* in the current study findings reveal that with regard to the pre test level of stress in experimental group, among 30 nurses, 2 (6.67%) nurses were under stress is not a problem, 4 (13.33%) nurses were under moderate range of stress, 10 (33.33%) nurses were under stress is a clearly a problem, 14 (46.67%) nurses were under stress is a major problem with regard to the pre test level of stress in control group, among 30 nurses, 2 (6.67%) nurses were under moderate range of stress, 13 (43.33%) nurses were under stress is a clearly a problem, 15 (50%) nurses were under stress is a major problem with regard to the post test level of stress in experimental group, among 30 nurses, 21 (70%) nurses were under stress is not a problem, 9 (30%) nurses were under moderate range of stress. With regard to the post test level of stress in control group, among 30 nurses, 1 (3.33%) nurses were under stress is not a problem, 5 (16.67%) nurses were under moderate range of stress, 15 (50%) nurses were under stress is a clearly a problem, 9 (30%) nurses were under stress is a major problem. *Conclusion:* On the basis of the study findings the investigator has reached a conclusion that application of complementary and alternative interventions like Transcendental Meditation to nurses once a day for about 15 to 20 minutes was very useful in stress reduction.

1. Introduction

Stress is a common feature in all our lives. It is often seen as a negative emotion but stress plays an important role in the survival. It helps to face threats and dangerous situations, makes the individual get motivated and can even make the person perform once better. Stress is a state of physical and psychological strain which imposes demands for adjustments upon the individual. Stress has been categorized as an antecedent or stimulus, as a consequence or response, and as an interaction. It has been studied from many different frameworks. For example, Selye proposed a physiological assessment that supports considering the association between stress and illness. Conversely, Lazarus and Folkman advocated a psychological view in which stress is "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing." Stress is not inherently deleterious, however. Each individual's cognitive appraisal, their perceptions, and interpretations, gives meaning to events and determines whether events are viewed as threatening or positive.

Personality traits also influence the stress equation because what may be overtaxing to one person may be exhilarating to another.

Nursing has been identified as an occupation that has high levels of stress. Job stress brought about hazardous impacts not only on nurses' health but also on their abilities to cope with job demands. It was found that job stress brought about hazardous impacts not only on nurses' health but also on their abilities to cope with job demands. This seriously impairs the provision of quality care and the efficacy of health services delivery. Nursing has been identified by a number of studies as a stressful occupation. Stress has a cost for individuals in terms of health, wellbeing, and job satisfaction, as well as for the organization in terms of absenteeism and turnover, which in turn may impact the quality of patient care. The causes of nurses' stress include staff shortage, increasing responsibility with less time, excessive or redundant paper work, interdisciplinary issues, standing for long hours, problematic patients, no co-operation between nurses, no subordinate support, doctors do not attend to emergencies in time want extra training

other than present, dissatisfied with salary, insecurity of job, troublesome relatives, mandatory overtime, job dissatisfaction, working in different shifts, poor communication and ineffective management.

In fact, occupational stress has been cited as a significant health problem. Work stress in nursing was first assessed by Menzies who identified four sources of anxiety among nurses: Patient care, decision making, taking responsibility, and change. The nurse's role has long been regarded as stress - filled based on the physical labor, human suffering, work hours, staffing, and interpersonal relationships that are central to the work nurses do. Since the mid - 1980s, nurses' work stress has been escalating due to the increasing use of technology, continuing rises in health care costs, and turbulence within the work environment.

Symptoms of stress include physical symptoms, cognitive symptoms and emotional symptoms. The physical symptoms are muscle tension, colds or other illness. high blood pressure, rapid breathing or pounding of the heart, indigestion, ulcers, difficulty in sleeping, fatigue, headaches, back or neck problems, increased smoking, being more prone to accidents. The cognitive symptoms are forgetfulness, unwanted or repetitive thoughts, difficulty in concentration, fear of failure and self criticism. The emotional symptoms are irritability, depression, anger, fear of anxiety, feeling over whelmed and mood swings.

Smith et al (2018) studied about occupational stress in random community sample. A total of 7069 respondents were participated and 32 page postal stress questionnaire was used to assess the stress and the results revealed that 25% to 30% reported mild stress, 40 to 45% moderate stress, 15to20% extremely stressed and only 10% not stressed at work. Meditation has been practiced for thousands of years by many people. However, the transcendental meditation has been practiced since 1958. It was introduced by Maharishi Mahesh yogi. This is a meditation technique that is performed twice daily for 15 - 20 min in each session sitting with the eyes closed, as with normal meditation and it gives more relaxation to the mind.

2. Need for the Study

Psychological working condition (2017) survey indicated that around 13.6% of all working individuals thought their job was very or extremely stressful. United Kingdom Health and safety Executive Board Found that 20% of workers find their work stressful and over millions of peoples report work related stress every year. In the latest CIPD survey, nearly 40% institutions and organizations reported an increment of stress related problems in the last few years. During 2004 - 2005 a total of 12.8 million working days were spoiled due to stress. Approximately, 9.6 billion pounds are wasted every year due to stress. United Nations reported that each organization approximately, 30% workers suffer from back pain, 28% of them complaining stress, 20% of them feel fatigued and 13% of workers suffer from headaches. Statistical data showed that nearly 5.2 millions of peoples are affected with post traumatic stress disorder due to work related stress. Statistical institute of Canada calculated that around \$ 12 million worth of work time spoils every year

due to stress. Statistical data shows that, due to job stress 4 million peoples are affected with anxiety disorder, 3.3 million peoples are affected with obsessive compulsive disorder, 2.4 million peoples are affected with panic disorder, 5.2 million peoples are affected with post traumatic stress disorder 5.3 peoples are affected with social anxiety disorder and 6.3 million peoples are affected with specific phobia disorders.

The National Institute for Occupational Safety and Health reports that 40% of nurses reported their job was very or extremely stressful, 25% view their jobs as the number of one stressor in their lives, 29% of nurses felt a quite bit or extremely stressed at work and 26% of workers said they were often or very often burned out or stressed by their work.

Robert Colbert (2018) conducted study related to At - risk adolescents reduce stress, anxiety, and hyperactivity through Transcendental Meditation. This newly completed study found that 106 at - risk adolescents in three high schools reduced their levels of stress, anxiety, hyperactivity, and emotional problems when practicing the Transcendental Meditation technique for four months at school, as compared with controls. Transcendental meditation has been show to produce marked improvement in corporate health and performance. Employees practicing transcendental meditation over a six year period to 80% of the total work force. While days lost through illness or injury decreased by 50% and absenteeism declined by 89%.

Transcendental meditation is a systematic technique for managing stress, anxiety and achieving a deep state of relaxation. It was developed in India by Maharishi Mahesh yogi in the year 1955. He discovered that 15 to 20 minutes of transcendental meditation reduce and give more benefits; it is the simplest and easiest form of meditation. Once the investigator was worked in hospital, the investigator felt much level of stress and went to meditation classes; it gave more comfort and relaxation to the investigator. So the investigator initiates that practicing Transcendental meditation would help the people to reduce stress level in order to keep their emotional balance and get satisfaction in their life. Thus these factors induce the investigator to carry out this therapy among nurses.

3. Objectives

- To assess and compare the pretest and post test level of stress of experimental group
- To assess and compare the pretest and post test level of stress of control group
- To compare the pretest level of stress between the experimental and control group
- To compare the posttest level of stress between the experimental and control group
- To associate the pre test level of stress with selected demographic variables of experimental and control group.
- To associate the post test level of stress with selected demographic variables of experimental and control group.

Hypothesis

Research Hypotheses:

RH₁: there is a significant difference between pre and post test level of stress among nurses in experimental group at p<0.05 level

RH₂: there is a significant difference between pre and post test level of stress among nurses in control group at p<0.05 level

RH₃: there is a significant difference between pre test level of stress among nurses between experimental group and control group at p<0.05 level

RH₄: there is a significant difference between post test level of stress among nurses between experimental group and control group at p<0.05 level

RH₅: there is a significant association in the pretest and post test level of stress with their selected demographic variables of experimental group and control group at p<0.05 level

4. Materials and Methods

Quantitative approach - True experimental research design (before and after only design) was adopted to conduct the study on 60 nursing professionals who were working in Anbu and Sugam multi specialty hospital was selected by using simple random probability sampling technique by using lottery method. Nurses who were free from physical and mental disorders, who were completed GNM & B. SC (N) Program, who were working in the bedside patient care level and those were willing to participate were included in the study. Nurses who were practicing any stress reduction measures were excluded from the study.

Description of the Tool

The tool has 2 parts. Part I deals with socio demographic variables such as age, gender religion, marital status, educational qualification, experience, income and ward Part II consists of professional life stress questionnaire consists of 24 questions, the scoring key is 15= stress is not a problem, 16 - 30 – moderate range of stress, 31 - 45 - stress is clearly a problem, 46 - 60 - stress is a major problem.

Data Collection Procedure:

After obtaining formal permission from ethical committee, the data was collected from nursing professionals working at Anbu and Sugam multi specialty hospital. The nature and purpose of the study was explained. Informed consent was obtained from the sample and confidentiality of shared information was assured. Pre test was conducted by using professional life stress questionnaire it took 30 minutes to collect the data from each nurses. The transcendental meditation to the experimental group was given for 15 min for both morning and evening shift nurses for 28 days on 29th day post test was conducted by using same questionnaire for both experimental and control group.

Data Analysis:

The data was analyzed by using descriptive statistics (mean and standard deviation) and inferential statistics (paired t – test, unpaired t test, chi square)

5. Results

Table 1: Frequency and percentage distribution of Pretest level of stress among nurses in experimental and control group of nurses (n=30+30)

S. NO	Group	Level of stress							
		Stress is not a problem		Moderate range of stress		Stress is clearly a problem		Stress is a major problem	
		Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
1	Experimental group	2	6.67	4	13.33	10	33.33	14	46.67
2	Control group	-	-	2	6.67	13	43.33	15	50

Table 1 reveals that with regard to the pre test level of stress in experimental group, among 30 nurses, 2 (6.67%) nurses were came under stress is not a problem, 4 (13.33%) nurses came under moderate range of stress, 10 (33.33%) nurses came under stress is a clearly a problem , 14 (46.67%) nurses came under stress is a major problem with regard to the pre test level of stress in control group, among 30 nurses, 2 (6.67%) nurses were came under moderate range of stress, 13 (43.33%) nurses came under stress is a clearly a problem , 15 (50%) nurses came under stress is a major problem

Table 2: Comparison of Pretest level of stress between experimental and control group of nurses (n=30+30)

S. NO	Group	pretest		t test value
		Mean	SD	
1	Experimental group	3.2	0.90	1.28
2	Control group	3.43	0.62	NS

Table 2 reveals that comparison of Pretest level of stress between experimental and control group. in experimental group the mean value was 3.2 and standard deviation value was 0.9 where as in control group, the mean value was 3.43 and standard deviation value was 0.62. the calculated ‘t’ value 1.28 was not significant at p<0.05 level.

Table 3: Frequency and percentage distribution of Post test level of stress among nurses in experimental and control group of nurses (n=30+30)

S. NO	Group	Level of stress							
		Stress is not a problem		Moderate range of stress		Stress is clearly a problem		Stress is a major problem	
		Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
1	Experimental group	21	70	9	30	-	-	-	-
2	Control group	1	3.33	5	16.67	15	50	9	30

Table 3 reveals that with regard to the post test level of stress in experimental group, among 30 nurses, 21 (70%) nurses were came under stress is not a problem, 9 (30%) nurses came under moderate range of stress.

With regard to the post test level of stress in control group, among 30 nurses, 1 (3.33%) nurses were came under stress is not a problem 5 (16.67%) nurses were came under moderate range of stress, 15 (50%) nurses came under stress is a clearly a problem , 9 (30%) nurses came under stress is a major problem.

Table 4: Comparison of Posttest level of stress between experimental and control group of nurses (n=30+30)

S. NO	Group	Post test		't' test value
		Mean	SD	
1	Experimental group	1.3	0.45	9.68***
2	Control group	3.2	0.48	

Table 4 reveals that comparison of Post test level of stress between experimental and control group in experimental group the mean value was 1.3 and standard deviation value was 0.45 where as in control group, the mean value was 3.2 and standard deviation value was 0.48. The calculated 't' value 9.68 was statically significant at p<0.05 level.

Table 5: Comparison of Pre and post level of stress within experimental and control group of nurses (n=30+30)

S. No	Group	Pretest value		Post test value		t test value
		Mean	SD	Mean	SD	
1	Experimental group	3.2	0.9	1.3	0.45	22.59***S
2	Control group	3.42	0.62	3.2	0.48	2.55* S

table 5 reveals that in experimental group marked decrease in mean value from 3.2 in pretest level to 1.3 in posttest level and standard deviation from 0.9 in pretest level to 0.45 in posttest level, the "t" value 22.59, which was highly significant at p<0.01 level. this indicates the stress level was decreased in experimental group.

In control group it showed decrease in mean value from 3.42 in pretest level to 3.2 in posttest level and standard deviation from 0.62 in pretest level to 0.48 in posttest level, the "t" value 2.55, which was highly significant at p<0.05 level. This indicates the stress level was decreased in control group.

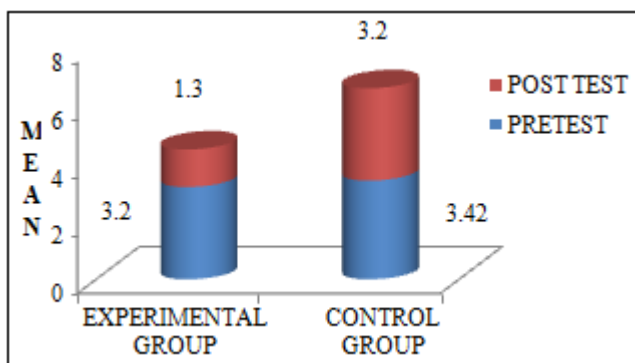


Figure 1: Comparison of pre and post test Mean level of stress between experimental and control group

Association of pre test level of stress with selected demographic variables of experimental group

There was a significant association found between pretest level of stress with demographic variables of Age and no significant association found between pretest level of stress with demographic variables of sex, religion and marital status, education, experience, income and place of work

Association of pre test level of stress with selected demographic variables of control group

There was no significant association found between pretest level of stress with demographic variables of age, sex, religion and marital status, education, experience, income and place of work

Association of post test level of stress with selected demographic variables of experimental group

There was a significant association found between pretest level of stress with demographic variables of education and no significant association found between posttest level of stress with demographic variables of age, sex, religion and marital status, experience, income and place of work

Association of post test level of stress with selected demographic variables of control group

There was no significant association found between post test level of stress with demographic variables of age, sex, religion and marital status, education, experience, income and place of work

6. Recommendations for Further Research

Working during an infectious disease outbreak increases the stress of healthcare providers, especially Registered nurses on the frontline taking care of infected patients. Stress and workload during an outbreak lead to the unwanted consequences of burnout. Registered nurses working during an outbreak require close attention and an assessment of their level of stress. Coping measures and supportive interventions are also warranted for this group of Registered nurses. Further longitudinal prospective studies using a large population and different time series are recommended to validate the results of this study and to provide a more thorough understanding of this issue. Moreover, it is recommended that interviews be conducted with nurses on the factors that impact their level of stress, during such times. These studies will facilitate the development of supportive intervention measures to improve the psychological impact on Registered nurses during an outbreak, which will increase patient safety and ensure the high quality of care.

7. Conclusion

The study is concluded that transcendental meditation is effective on reducing the level of stress among nurses It can be practiced easily, less time consuming and cost effective.

8. Limitations

The study is limited to

- 1) A sample size of 60 with 30 in experimental and 30 in control group.
- 2) Confined to the nurses working in Anbu and Sugam multispecialty hospitals at kurnbakonam taluk in Tanjavore district
- 3) Nurses available during the period of data collection.

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