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Effectiveness of Guided Imagery Technique on Stress Management among South Indian Coastal Employees Working in a Selected Call Center

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Abstract

Job stress is more strongly associated with health complaints than financial or family problems1 The dynamics of technology and innovation has now developed talented workforce on employees of call centre Industry. Irregular sleeping, working hours, time pressure, high call volume and low job security are the main stressors found among call centre employees for which they need stress management techniques. Hence as a nurse investigator made an attempt to assess the major deal of Job stress management especially guided imagery technique among call centre employees and help to relieve their work stress. A substantial body of research has uniformly found that over all pretest mean score (67.51±10.2) which was 4.38% whereas in the post test the mean score (21.83±3.72) which is 27.28% of the total score with an overall difference of 57.1% reveals that reduction in level of stress. Percentage distribution of call center employees according to their stress level depicts that during pretest majority of them 84% had severe stress, 13% had moderate stress and 3% had mild stress and no one was coping with stress but after implementation of Guided imagery technique during post-test majority of them 76.67% were coping with stress and remaining 23.33% of them had mild stress. A paired 't' test was performed to analyze the difference in stress scores before and after the test and showed that a highly significant difference (t value of 30.51) was found at the 0.001 significance level. Guided Imagery was therefore found to be effective in reducing the stress levels of call center workers of the South Indian coast.

1. Introduction

Stress is the trash of modern life. we all generate it but if you don't dispose of it properly, it will pile up and overtake your life.

-Terri Guillemets (2010)

Stress is defined as a discrepancy between purported environmental demands and apparent individual resources to meet those demands. Work-related stress is a pattern of reactions that occurs when employees are confronted with job requirements that are incompatible with their

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expertise, skills, or abilities to cope[2]. Workplace stress is more firmly linked to health concerns than financial or family issues. According to a global study conducted in the United States of America, 40% of employees reported their job was very or highly stressful, 25% perceive their jobs as the number one stressor in their lives, and three-fourths of employees believe that workers have more job stress than nonworkers[3].

Call centres are operated in 5.19% of the world's countries. The prevalence of job stress is 80%. Every year, Indian call centres recruit 4,75,000 professional people, with a little more than 75% of employees experiencing job stress.[4].

According to a global survey, 30,000 call centre workers in India experience increased stress each year. Tamil Nadu is the 2nd most industrialised state in the country. Chennai is India's second largest software exporter, with over 200,000 call centre employees, 86% of whom are stressed out about their jobs.[5].

Job stress has a greater effect on the output of employees working in India's call centres. 12% of employees believe that job stress reduces their 50% workplace efficiency, and 8% believe that job stress reduces their 75% productivity. According to the findings, the majority of respondents think that various workplace stressors reduce their productivity by 50-75%. As a result, it's now critical for the system to implement strategies for minimizing workplace stress and its effect on efficiency, as well as to improve employee job satisfaction and performance.[6].

The telltale sign of stress is fatigue, that is caused by a lack of sleep and leads to mental depression, as well as problems with the respiratory system, digestive system, and, ultimately, the biological clock. As a result, it is necessary to act in accordance with the biological clock in order for body parts and organs to function properly[7].

The primary impact on mental wellbeing is burnout stress syndrome (BOSS), that's particularly common among individuals who work in call centres. Chronic fatigue, insomnia, and a complete disruption in the body's 24-hour biological rhythm are all symptoms of this syndrome. These are some of the most common causes of illness. Absenteeism[8].

There is a need to uncover the hidden reasons behind stress and spread awareness about its negative consequences. To address this issue, some stress management programs for stress reduction and developing positive thinking among young call centre employees are required.[9].

It is believed that the employees are not practicing any techniques like yoga, meditation, and self management techniques like guided imagery technique, laughter therapy, relaxation techniques. Over the years guided imagery technique has had great success in addressing physical (63%) and psychological conditions (70%) of call center employees and computer workers and used to reduce stress and also to improve attitudes in people with heart disease, AIDS and arthritis in addition to reducing pain. In many instances, even 10 minutes of imagery can be beneficial by reducing stress, blood pressure, and lowering cholesterol and glucose levels in the blood[10].

The guided imagery technique releases brain chemicals which act as body's natural tranquilizer and lowering the stress. It is very essential that a psychiatric nurse must learn and teach guided imagery technique to the clients and thereby improving the quality of mental health[11].

1.1 As a result, the nurse investigator attempted to assess the major deal of job stress management, particularly guided imagery technique, among call centre employees and assist in relieving their work stress.

1.2 Objectives

I. To assess the Level of stress among employees before and after implementation of guided imagery technique.

II. To assess the effectiveness of guided imagery technique on stress among employees working in a selected call center.

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III. To find out the association between post test stress scores of employees regarding stress management and their selected demographic variables.

2. Materials and Methods

2.1 Study design

A Quasi experimental design with **one group pre and post-test without control group design** using quantitative approach was used for the present study to test the effectiveness of Guided imagery technique. The sample for the present study was the second shift call center employees working at Hinduja global solutions, Chennai and the sample size was approximately 60 call center employees who were working in second shift. The sampling technique adopted by the investigator for this study was multistage sampling technique. The selection of setting was by purposive sampling technique.

2.2 Schematic representation of research methodology
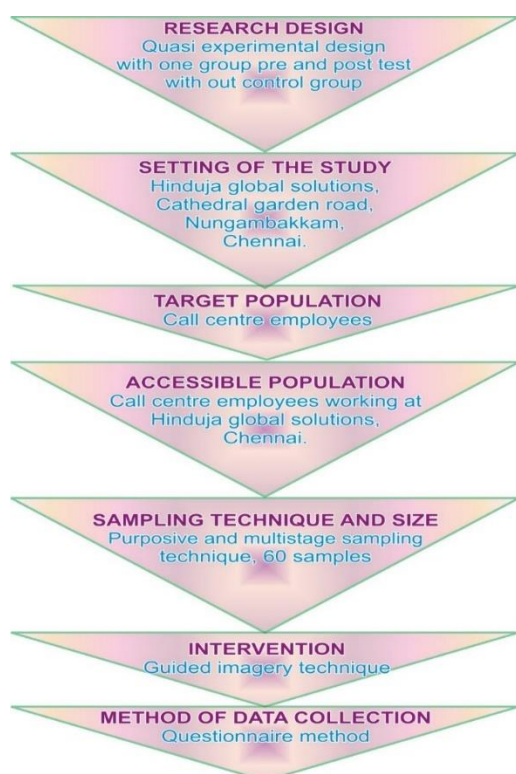
2.3 Selection of sample
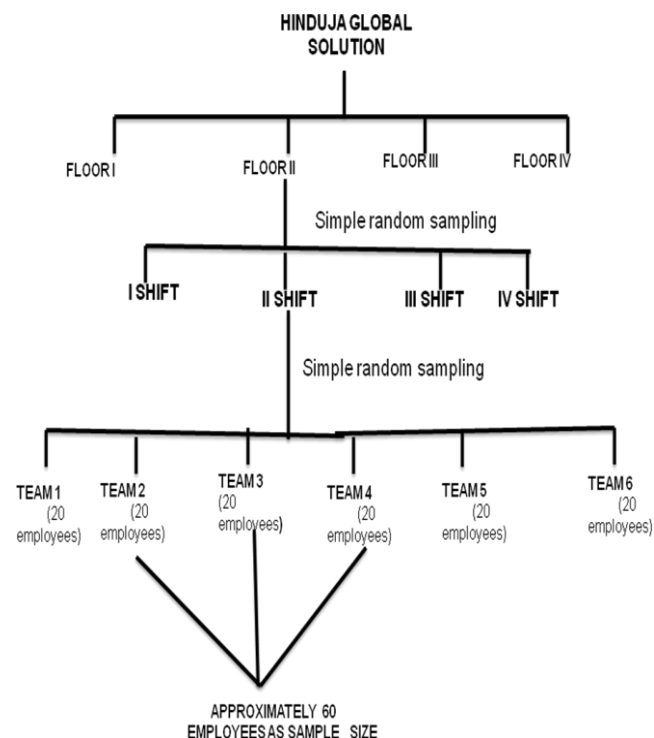
2.4 Criteria For selection of sample

a) Inclusive criteria

The study was conducted for employees who are willing to participate in the study and are able to read and write English during the data collection period.

b) Exclusive criteria

The study excluding the employees who are all working as a team leader and HR.

2.5 Description of the tool and Scoring

Job stress inventory scale was used as a standardized tool developed by Bonnie Sandman for this study to assess the level of stress among call center employees.

Section A:- Consists of demographic variables such as Age, sex, educational status, marital status, type of family, family income, previous exposure to guided imagery technique.

Section B:- Consists of 20 items of standardized job stress inventory scale.

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Scoring

Each question of section B consist of 5 options such as,

0 – Never, 1 – Occasionally, 2 – Somewhat

often, 3 – Frequently, 4 – Almost always **Scoring interpretation**

2.6 Content validity and Reliability

Content validity of the tool was established in consultation with the guide and experts in the field of psychiatry, clinical psychology, psychiatric nursing and statistics.

Level of stress	Actual Score
Coping with stress	0-25
Mild stress	26-40
Moderate stress	41-55
Sever stress (Burn out)	56-80

Reliability of the tool was tested by implementing the tool on 6 employees who were working in Vinayaka Missions Call Center, Salem. Test retest method was used to find out the reliability of the Guided imagery technique.

2.7 Data Collection Procedure

Ethical consideration

Prior to data collection, the Institutional Human Ethical Committee (IHEC No: VMCN/IRC/2016/08) granted ethical clearance, and the human resource manager of the chosen Call centre granted permission. The study participants provided informed consent..

Period of data collection:- One month

Phase 1: Pretest

Pretest was done on the 1st day of data collection from 60 employees approximately by using standardized Bonnie sandman's job stress inventory scale and level of stress was assessed.

Phase 2: Intervention phase (Implementation of Guided imagery technique)

Immediately after pretest guided imagery technique was administered.

Phase 3: Post test

Post test was administered after 10 days of pretest using same standardized Bonnie sandman's job stress inventory scale and the level of stress was assessed.

2.8 Data Analysis

Descriptive and inferential statistics was used for data analysis. The collected data was organized, tabulated, analysed by descriptive statistics i.e percentage. The inferential statistics was used such as chi-square test and 't' test. The chi-square test was used to determine the relationship between demographic variables and stress levels. The paired t test was used to determine the efficacy of guided imagery among call centre employees.

3.Results and Discussion

Section A

3.1 Distribution of demographic variables of call center employees

Percentage wise distribution of call center employees according to their age which depicts that highest percentage of them (38.4%) belong to the age group of 31-35 years, whereas lowest percentage of them (26.66%) were in the age group of 20-25 years (fig.3.1). This findings was supported by the finding of Zippia 2022 [12] who reported that the highest percentage (50%) of call

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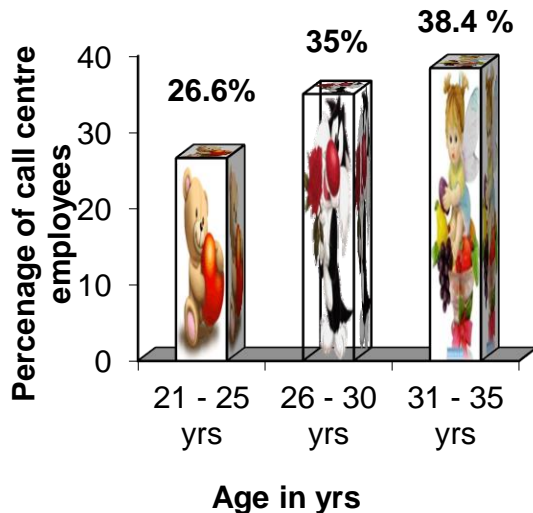center employees were in the age group of 31-35 years.

Figure No. 3.1 : Bar diagram showing percentage wise distribution of call center employees according to their age

Percentage wise distribution of call center employees, according to their sex depicts that highest percentage of them (58%) were male (fig.3.2) and remaining were female (42%). This was supported by the findings of CallMiner2019, who stated that the highest percentage (64.2%) of the call center employees were male[13].
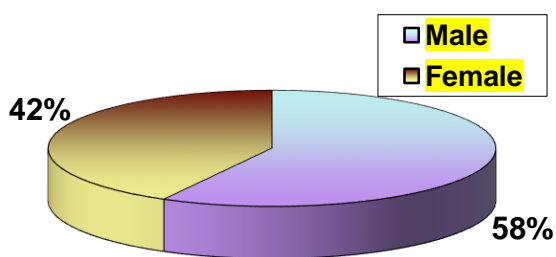

Figure No. 3.2 : Pie diagram showing percentage wise distribution of call center employees

Percentage wise distribution of call center employees according to their educational status depicts that highest percentage of them (45%) were graduate whereas lowest percentage of them (1.62%) studied high school education. This

findings was supported by the study conducted by Statista Research Department, Sep 21, 2022[14], who reported that the highest percentage (60%) of the call center employees were graduates.

Percentage wise distribution of call center employees, according to their marital status depicts that majority (71.3%) were married and 28.7% of them were unmarried. This findings was supported by the findings of (Mathangi Vijayan, June 2018)[15] who stated that most of the (90.4%) call center employees were married.

Percentage wise distribution of call center employees, according to their type of family depicts that highest percentage of them (62%) belongs to joint family and lowest percentage of them (38%) were belong to nuclear family. This finding was supported by the study conducted by Ayesha Khalid(2017)[16] who found that the highest percentage (61.2%) of call center employees were belong to joint family.

Percentage wise distribution of call center employees, according to their family income depicts that highest percentage of them (50%) were getting Rs.10001 – 20000/- per month (fig 3.3).This finding was supported by the findings of (Statista Research Department, Aug 22, 2022)[17] who found that the highest percentage (45.4%) of the call center employees were getting Rs.10001-20000/- per month.
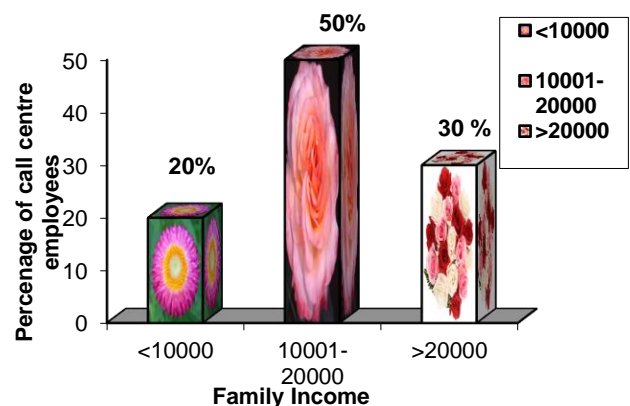

Figure No. 3.3 : Bar diagram showing percentage wise distribution of call center employees

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according to their family income

Section B

Level of stress among call center employees before and after implementation of guided imagery technique.

a) **Level of stress among call center employees before implementation of guided imagery technique.**

Percentage distribution of call center employees according to their stress level depicts that during pretest majority of them 84% had severe stress, 13% had moderate stress and 3% had mild stress and no one was coping with stress (Tab.3.1). These findings are supported by (The American institute of stress,2019)[18] who reported that during pre-test among employees majority (75%) had job stress and 16.7% had burn out and least (8.3%)

were coping with stress. Hence it can be interpreted that the call center employees are in need of Guided imagery technique as a stress management.

Percentage distribution of call center employees according to their post test stress level depicts that after implementation of Guided imagery technique majority of the call center employees (76.6%) were coping with stress and remaining 23.4% of them have mild stress. These findings are supported by (J.P. Verma 2020)[19] who reported that during post test among the employees majority (86.7%) were coping with stress and least (13.3%) had mild job stress. Hence it can be interpreted that the Guided imagery technique was effective for all employees.

Hence it can be interpreted that the Guided imagery technique was effective for all call center employees to cope up with their job stress.

Level of stress	Actual score	Percentage distribution of call center employees in pre-test	Percentage distribution of call center employees in post-test
Coping with stress	0-25	0%	76.6%
Mild stress	26-40	3%	23.4%
Moderate stress	41-55	13%	0%
Severe stress	56-80	84%	0%

Table.3.1 Level of stress in pre and post-test among call centre Employees

B) Item wise analysis of pre and post test stress scores of call center employees.

Item wise analysis of post-test stress score shows that highest percentage of employees (61.6%) were answered "occasionally" and "were coping with stress" when compared to pre test stress score (3.4%) for two questions "I feel tired even with

adequate sleep" and "feeling emotionally callous about the problems and needs of others".

Hence the item wise analysis of pre and post test shows that there is a reduction in the stress scores obtained by the call center employees for each item in the job stress inventory because of the effectiveness of the Guided imagery technique (Table No. 3.2).

Questions	Never 0		Occasionally 1		Some What Often 2		Frequently 3		Almost always 4	
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
I feel little enthusiasm for doing my job.	0	20	0	45	16.6	35	48.4	--	35	--
I feel tired even with adequate sleep.	--	16.6	3.4	61.6	15	21.8	33.4	--	48.4	--
I feel frustrated in carrying out my responsibilities at work.	--	16.6	5	55	13.4	26.6	33.4	1.6	48.4	--
I am moody, irritable, or impatient over small inconveniences.	--	26.6	--	53.4	16.6	20	23.4	--	60	--
I want to withdraw from the constant demands on my time and energy.	--	16.6	5	55	10	26.7	30	1.6	55	--
I feel negative, futile, or depressed about my job.	--	23.4	3.4	56.6	16.6	20	30	--	50	--
My decision-making ability seems less than usual.	--	28.4	3.4	38.4	15	33.4	28.4	--	53.4	--
I think that I am not as efficient as I should be.	--	25	5	50	11.6	25	28.4	--	55	--
The quality of my work is less than it should be.	--	16.6	1.6	58.4	13.4	23.4	28.4	1.6	56.6	--
I feel physically, emotionally or spiritually depleted.	--	28.4	1.8	51.7	11.6	20	31.6	--	55	--
My resistance to illness is lowered.	--	31.6	3.4	43.4	18.4	25	26.6	--	51.6	--
My interest in sex is lowered.	--	--	1.6	6.7	6.6	26.7	51.8	60	40	6.7
I am eating more or less, drinking more coffee, tea or sodas, Smoking more cigarettes, or using more alcohol or drugs in order to cope with my job.	--	15	1.6	50	13.4	31.7	26.6	3.4	58.4	--
Feeling emotionally callous about the problems and needs of others.	--	6.6	--	61.6	15	28.4	40	3.4	45	--
My communication with my boss, co-workers, friends, or family seems strained.	--	23.4	1.6	56.7	11.6	18.4	31.6	15	55	--
I am forgetful.	--	33.4	--	43.4	11.6	21.7	40	1.7	48.4	--
I am having difficulty concentrating.	--	33.4	1.6	50	8.4	16.7	36.6	--	53.4	--
I am easily bored.	--	31.7	--	43.4	10	23.4	25	1.7	65	--

I feel a sense of dissatisfaction, of something wrong or missing.	--	31.7	2	46.7	7	21.7	35	--	56	--
When I ask myself why I get up and go to work, the only answer that occurs is "my paycheck."	--	25	--	51.7	5	23.4	25	--	70	--

Table No. 3.2 : Item wise analysis of pre and post test stress scores of call center employees.

a) **Comparison of overall distribution of mean, SD and mean percentage of pre test and post test scores.**

The overall pretest mean score (67.51 ± 10.2) was 84.38% whereas in the post test the mean score (21.83 ± 3.72) which is 27.28% lower than the pretest showing difference of 57.1% reveals that reduction in level of stress. Hence it can be interpreted that the Guided imagery technique was effective on reducing stress among call center employees. (Table No 3.3). These findings are supported by (Sunjoo RN 15 March 2019)[20] who reported that majority (80%) of call center employees have job stress.

Table No. 3.3: Comparison of overall distribution of mean, SD and mean percentage of pretest and post test scores.

Max. Score	Pre test scores			Post test scores			Difference in mean %
	Mean	SD	Mean %	Mean	SD	Mean %	
80	67.51	10.2	84.38	21.83	3.72	27.28	57.1

d) **Line graph comparison of pre test and post test stress scores of the call center employees.**

Line graph (Fig.4.9) showing the comparison of pre and post test stress scores reveals that the lowest score of pre test was between 35 and 40 scored by 3% of call center employees and the highest pretest score was between 75 and 80 scored by 18% of employees. However, during post test the lowest score was between 10 and 15 obtained by 5% of the employee and the highest post test score was between 30 and 35. Further during pre test highest percentage (47%) of the employees scored between 70-75 whereas during post test highest percentage (40%) of the call center employees scored between 20-25.

The median plotted on the graph shows that during pretest mean and median score were 67.52 and 71 respectively which were around 42% of the maximum score .How ever during the post test mean and median values were 22.12 and 22 respectively which was around 38% of the maximum score showing a difference of around 4% of reduction in post test. Thus it reveals the effectiveness of Guided imagery technique on stress management among call center employees.
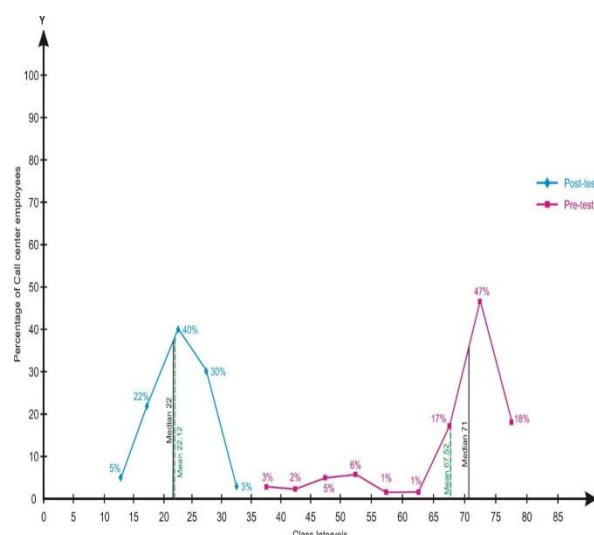

Fig. No. 4.9 : Line diagram showing comparison of pre and post test stress scores of call center employees with guided imagery techniques.

b) **Effectiveness of Guided imagery in reducing the level of stress among Call centre Employees**

Paired 't' test was done to analyze the difference between pre-test and post test stress scores which shows that highly significant difference was found (t-value 30.51) at 0.001 level of significance. Hence, it is found that guided imagery is effective in reducing the stress levels of call center employees.

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Section C

Effectiveness of guided imagery technique according to the comparison of mean, SD and mean percentage of pre and post test stress score of call center employees regard to their demographic variables.

During post test the lowest mean score (21.38±3.72) which was 27% was obtained by the employees in the age group of 26-30 years, where the difference in the mean percentage was 55.6%. However, the highest mean score (23.75±3.94) which was 30% with a difference in mean percentage of 54.2% was obtained by the employees in the age group of 20-25 years. Hence it can be interpreted that Guided imagery technique was more or less similarly effective for all call center employees irrespective of their age (Table No 3.4). This is consistent to the study findings of (Richa Kirsten 2020)[21] who reported that Guided imagery technique had equal effectiveness in all individual any one from the age group of 10 years to 80 years can able to follow this technique.

During post test the lowest mean score (21.64±5.19) which was 27% was obtained by the female employees, where the difference in the mean percentage was 58.45%. Further the highest (22.45±3.22) which was 28% with the mean percentage of 55.6% was obtained by male employees. Hence it can be interpreted that Guided imagery technique was more or less similarly effective for all call center employees irrespective of their sex. (Table No 3.4) The present finding is consistent with the study of Samantha berge (2020)[22] who stated that implementation of Guided imagery technique was easy to learn and practice, with good results in all individuals with good health or with a disease.

During post test the lowest mean score (21.96±4.31) which was 27.45% was obtained by the graduate employees, where the difference in the mean percentage was 57.77%. Further the highest

with the mean percentage of (22.46±4.10) which was 53.57% was obtained by higher secondary employees. Hence it can be interpreted that Guided imagery technique was average effective for all call center employees irrespective of their educational status (Table No 3.4). The present finding is consistent with the study of (Pamela 2018)[23] who stated that implementation of mindfulness-based stress reduction methods that is Guided imagery technique is effective treatment for reducing stress and anxiety in all call center employees.

During post test the lowest mean score (22±3.79) which was 27.5% was obtained by the unmarried employees, where the difference in the mean percentage was 56.3%. Further the highest with the mean percentage of (22.16±4.30) which was 27.7% was obtained by married employees. Hence it can be interpreted that Guided imagery technique was more or less similarly effective for all call center employees irrespective of their marital status (Table No. 3.4).

During post test the lowest mean score (21.51±4.45) which was 26.88% was obtained by the employees from joint family, where the difference in the mean percentage was 55.47%. Further the highest mean score (23.08±3.43) which was 28.85% was obtained by employees from nuclear family. Hence it can be interpreted that Guided imagery technique was more or less similarly effective for all call center employees irrespective of their type of family (Table No. 3.4).

During post test the lowest mean score (21.5±4.7) which was 26.8% was obtained by the employees earning >20000, where the difference in the mean percentage was 58.3%. Further the highest with the mean percentage of (23.75±4.09) which was 29.6% was obtained by employees earning < 10000. Hence it can be interpreted that Guided imagery technique was similarly effective for all call center employees irrespective of their family income (Table No. 3.4).

Table No. 3.4 : Comparison of mean, SD and mean percentage of pre and post test stress score of call center employees with regard to their selected demographic variables

Age	No	Pre test scores			Post test scores			Differ-ence in mean %
		Mean	SD	Mean %	Mean	SD	Mean %	
20-25 yrs	16	67.37	7.15	84.2	23.75	3.94	30	54.2
26-30 yrs	21	66.09	11.5	82.6	21.38	3.72	27	55.6
31-35 yrs	23	68.91	10.9	86.13	21.65	4.47	27	59.1
Overall	**60**	**67.51**	**10.2**	**84.38**	**21.83**	**3.72**	**27.28**	**57.1**
Gender								
Male	35	66.88	10.89	83.6	22.45	3.22	28	55.6
Female	25	68.4	9.30	85.5	21.64	5.19	27	58.45
Overall	**60**	**67.51**	**10.2**	**84.38**	**21.83**	**3.72**	**27.28**	**57.1**
Educational status								
High school	1	66.3	--	--	22.08	--	--	--
Higher secondary	15	65.26	10.15	81.57	22.46	4.10	28	53.57
Graduate	27	68.18	9.076	85.22	21.96	4.31	27.45	57.77
Post graduate	17	67.94	12.24	85	22.41	3.93	37.35	47.65
Overall	**60**	**67.51**	**10.2**	**84.38**	**21.83**	**3.72**	**27.28**	**57.1**
Marital status								
Married	43	67.69	10.82	84.6	22.16	4.30	27.7	56.9
Unmarried	17	67.05	8.72	83.8	22	3.79	27.5	56.3
Overall	**60**	**67.51**	**10.2**	**84.38**	**21.83**	**3.72**	**27.28**	**57.1**
Type of family								
Nuclear	23	70.13	9.32	87.66	23.08	3.43	28.85	58.81
Joint	37	65.89	10.51	82.36	21.51	4.45	26.88	55.47
Overall	**60**	**67.51**	**10.2**	**84.38**	**21.83**	**3.72**	**27.28**	**57.1**
Family income								
< 10000	12	70.08	3.96	87.6	23.75	4.09	29.6	58
10001 – 20000	30	66.06	10.6	82.5	21.83	3.72	27.28	55.22
> 20000	18	68.22	12.18	85.2	21.5	4.74	26.8	58.3
Overall	**60**	**67.51**	**10.2**	**84.38**	**21.83**	**3.72**	**27.28**	**57.1**

Chi-square value was calculated to find out the association between the post test stress scores and the demographic variables of the call center employees which reveals that there was no significant association between stress scores of the employees in the post test and their demographic variables such as age, sex, educational status, marital status, type of family, family income.

Implications

Nursing practice

The stress level assessment will assist the occupational health nurse in teaching and providing Guided imagery techniques to their employees.

The current study will enable psychiatric nurses to protect patients from the effects of stress by

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using imagination, relaxation techniques, and breathing exercises.

Nurses may additionally employ the Guided imagery technique as a complementary therapy to prevent stress and related complications.

Nursing education

➢ To avert academic stress, student nurses can gain knowledge and practise this Guided imagery technique.
➢ During their clinical work, student nurses can provide guided imagery technique sessions to patients in the clinical area.
➢ Nursing educators must encourage students to participate in Guided imagery techniques and try educating them on the significance and health benefits of these techniques..

Nursing Administration

➢ Administrators must encourage the public to participate the academy of Guided imagery and to gain from it.
➢ ☐Administrators can establish their own Guided imagery academy to teach the technique to the general public.
➢ Administrators at the nearby, state, and federal levels can take the necessary steps to publish articles in journals that explain the significance and advantages of the Guided imagery technique.

Nursing research

➢ More research studies can be conducted among various population to demonstrates the effects of Guided imagery technique.

➢ **Recommendations**

➢ A similar study can be carried out as a true experimental study.
➢ To determine the long-term effects of guided imagery on stress, a longitudinal study can be conducted.
➢ A similar study could be conducted to demonstrate the effect of Guided imagery technique on pain relief.

➢ A similar study could be conducted among employees who are not paid properly..

4. Limitations

This study has few limitations. Firstly, some distractions may affect the effectiveness of guided imagery technique and secondly the voice of the examiner may affect the effectiveness of guided imagery technique. Even though there are numerous techniques of stress reduction[24, 25]we planned this study on guided imagery only.

6. Conclusion

Working in a call centre, particularly in coastal areas, is not easy. In fact, more than half of call centre employees are exhausted on a daily basis. Call centre agents who are overworked struggle to provide excellent customer service. And when they avoid burnout, it becomes costly. The average cost of replacing an employee is six to nine months' pay4. Work-related stress is a pattern of reactions that occurs when employees are confronted with job tasks that are incompatible with their expertise, skills, or abilities to cope Work stress is more firmly associated with health complaints than financial or family problems. According to the current study, the Guided imagery technique was effective for all call centre employees.

As a result, nurses can use this complementary therapy of guided imagery technique as a primary preventative measure for stress and related complications.

It is suggested to conduct the same kind of studies among employees with different job profile in non coastal centres

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