"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON PROGRESSIVE MUSCLE RELAXATION TO PROMOTE SLEEP AMONG SHIFT WORKERS IN A SELECTED IT COMPANY AT BANGALORE"

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ABSTRACT Sleep is a natural periodic state of rest for the mind and body, in which the eyes usually close and consciousness is completely or partially lost, so that there is a decrease in bodily movement and responsiveness to external stimuli. The term shift work refers to any work schedule that falls outside the hours of 7 am to 6 pm. Shift work can include evening, night, and early morning shifts, as well as fixed or rotating schedules. Shift work could have a serious impact on health. The short-term health effects are gastrointestinal symptoms like upset stomach, nausea, diarrhea, constipation, and heartburn, increased risk of injuries and accidents, Insomnia and decreased quality of life. researcher has developed varieties non pharmacological methods such as back massage, relaxation, imaginary, and music audiotape to promote sleep. A commonly used relaxation technique is progressive muscle relaxation which is very functional to improve sleep pattern. This paper aimed to assess the effectiveness of structured teaching programme on progressive muscle relaxation to promote sleep among shift workers in a selected IT companies at Bangalore.

OBJECTIVES:

1. To assess the pretest level of sleep disturbance among shift workers in a selected IT company.

2. To assess the effectiveness of progressive muscle relaxation to promote sleep among shift workers in selected IT company.

3. To find out the association between level of sleep disturbances and selected demographic variable among selected IT company.

METHODOLOGY: A quantitative approach was adopted and a Quasi experimental one group pretest post test design was used for the study to assess the effectiveness of structured teaching programme on progressive muscle relaxation therapy to promote sleep among shift workers in selected IT companies, Bangalore. Sample were selected by using Non Probability convenient sampling technique.

RESULTS: Findings of the study revealed that mean pretest sleep score was 20.07 whereas after post test there was no shift worker with poor sleep. Mean pretest adequate sleep score was 28.5 whereas mean post test adequate sleep score was 43.78. During pretest there were no shift workers in IT company with good sleep whereas post test mean good sleep score was 55.44. Hence muscle relaxation therapy improves overall level of sleep quality among the shift workers of selected IT Company.

CONCLUSION: This study concluded that the structured teaching programme on progressive muscle relaxation is effective to promote sleep among IT shift workers.

KEY WORDS: Effectiveness, Structured teaching programme, progressive muscle relaxation, shift workers.

INTRODUCTION:

Sleep is a natural periodic state of rest for the mind and body, in which the eyes usually close and consciousness is completely or partially lost, so that there is a decrease in bodily movement and responsiveness to external stimuli. During sleep the brain in humans and other mammals undergoes a characteristic cycle of brain-wave activity that includes intervals of dreaming.[1]

The term shift work refers to any work schedule that falls outside the hours of 7 am and 6 pm . Shift work can include evening, night, and early morning shifts, as well as fixed or rotating schedules. According to the US Bureau of Labor Statistics, approximately 16% of wage and salary employees[2] follow shift work schedules. This includes the 6% who work evening shifts and 4% who work night shifts. People who maintain this schedule may end up with something called "shift-work sleep disorder." Two main symptoms are insomnia and excessive daytime sleepiness (EDS).[2]

Experts say that shift work could have a serious impact on our health. The short-term health effects of shift work are clear. Aside from the obvious fatigue, effects include: Gastrointestinal symptoms like upset stomach, nausea, diarrhea, constipation, and heartburn, increased risk of injuries and accidents, Insomnia, Decreased quality of life, General feeling of being unwell. The long-term effects of shift work are harder to measure. But researchers have found compelling connections between shift workers and an increased risk of serious health conditions and diseases.[3]

As sleep disorders are very common problem now a days, researcher has developed varieties non pharmacological methods. A commonly used relaxation technique is progressive muscle relaxation technique which is very functional to improve sleep pattern. This technique was introduced by Dr. Edmund Jacobson in 1920s as a way to help his patients deal with anxiety. Dr. Jacobson felt that relaxing the muscles could relax the mind as well. The technique involves tightening one muscle group while keeping the rest of the body relaxed, and then releasing the tension. Progressive muscle relaxation is a relaxation exercise in which a person systematically tense and then relax all the muscle groups of your body, People who practice progressive muscle relaxation regularly tend to have a better sense of overall well-being, Lower blood pressure, Less muscle tension, Less anxiety, Lower level of fatigue. In addition to these benefits, researchers are finding that this relaxation therapy may help people with insomnia.[4]

METHODOLOGY:

SETTING OF THE STUDY:

The investigator selected a selected IT company, Bangalore.

RESEARCH APPROACH: In view of the nature of the problem selected for the study and the objectives to be accomplished, a quantitative research approach was used for the present study.

*RESEARCH DESIGN:*For the present a pre experimental one group pre-test post-test design is adopted.

*POPULATION:*The population for the present study includes all the shift workers who are working in selected It companies.

*SAMPLE AND SAMPLE SIZE:*The samples for this research study are 60 between 20-50 years who are working in a selected IT company, Bangalore.

SAMPLING TECHNIQUE: In this study Non Probability convenient sampling technique is used for selecting the samples.

CRITERIA FOR SAMPLE SELECTION

1. **Inclusion criteria:**

   The study includes IT workers who are.

   - Willing to participate in the study.

   - Present and available at the time of study.

2. **Exclusion criteria.:**

The study excludes IT workers who are.

   - Not medically fit.

   - Taking medication for sleep.

   - Following other relaxation therapy to improve sleep pattern.

   - Working in selected IT companies as shift worker.

Establishment of content validity:

Content validity of the total tool has been obtained by submitting the tool along with the content to 06 experts to obtain their opinion and suggestions. They recommended for modification in few items. The English version of demographic profile, Self-structured questionnaire, Sleep quality scale was prepared.

Reliability Testing:

Reliability of a measuring instrument is a major criterion for assessing quality and adequacy, and consistency, reliability was computed by using test retest method and was highly reliable. (r=0.99)

<u>**ANALYSIS AND INTERPRETATION:**</u>

The result was computed using descriptive and inferential statistics based on the hypothesis and objectives of the study.

Analysis of data based on the objective of the study.

Objectives of the study:

1. To assess the pretest level of sleep disturbance among shift workers in a selected IT company.

2. To assess the effectiveness of progressive muscle relaxation to promote sleep among shift workers in selected IT company.

3. To find out the association between levels of sleep disturbances and selected demographic variable among selected IT Company.

The data collected is presented under the following headings:

*Section I***:** Findings of demographic variables of respondents.

*Section II***:** Findings of pretest scores of respondents regarding sleep quality.

*Section III***:** Findings of post test scores of respondents regarding sleep quality.

*Section IV***:** Findings related to the effectiveness of structured teaching programme by comparing the pre test and post test scores on sleep quality.

Section V: Findings related to the association between pretest and post test scores of respondents regarding sleep quality with their selected demographic variables.

Section I: Findings of demographic variables of respondents.

Table 1: Frequency and percentage distribution of demographic data on shift workers

Sl no	Variables	Frequency	Percentage (%)
1	**Age**		
	a) 20-30 years	51	85.0
	b) 30-40 years	08	13.3
	c) 40-50 years	01	1.7
2	**Gender**		
	a) Male	34	56.7
	b) Female	26	43.3

3	**Education**		
	a) Undergraduate	41	68.3
	b) Postgraduate	19	31.7
4	**Types of family**		
	a) Nuclear	41	68.3
	b) Joint	18	30.0
	c) Extended	01	1.7
5	**Marital status**		
	a) Married	08	13.3
	b) Unmarried	51	85.0
	c) Divorced	01	1.7
6	**Imcome**		
	a) 15-30k	29	48.3
	b) 30-45k	20	33.3
	c) 45-60k	04	6.7
	d) 60k above	07	11.7
7	**Working hours**		
	a) 8 hours	27	45.0
	b) 10 hours	12	20.0
	c) 12 and above	21	35.0

8	**Practicing any other therapy**		
	a) Yes	04	6.7
	b) No	56	93.3
9	**awareness on progressive relaxation muscle technique**		
	a) Yes	26	43.3
	b) No	34	56.7
10	**Source of Information regarding muscle relaxation therapy**		
	a) Friends	07	26.9
	b) Family	05	19.2
	c) Mass media	03	11.5
	d) others	11	42.3

Section II: Findings of pretest scores of respondents regarding sleep quality

Table 2: Frequency and Percentage distribution of assess the pretest level of sleep disturbance among shift workers in a selected IT company

SL NO	Quality of sleep	Frequency	Percentage
1	Poor	40	66.7
2	Adequate	20	33.3
3	Good	00	00
	Total	60	100.0

Section III: Findings of post test scores of respondents regarding sleep quality

Table:3 Frequency and Percentage distribution of assess the post test level of sleep disturbance among shift workers in a selected IT company

SL NO	Quality of sleep	Frequency	Percentage
1	Poor	00	00
2	Adequate	33	55.0
3	Good	27	45.0
	Total	60	100.0

Section IV: Findings related to the effectiveness of structured teaching programme by comparing the pre test and post test scores on sleep quality.

Table: 4 Comparison of level of sleep disturbance among shift workers in a selected IT company

SL NO	Quality of sleep	Pre-test		Post-test	
		Frequency	%	Frequency	%
1	Poor	40	66.7	00	00
2	Adequate	20	33.3	33	55.0
3	Good	00	00	27	45.0
	Total	60	100.0	60	100.0

Table: 5 Paired t test for comparing level of sleep disturbance among shift workers in a selected IT company

Sleep quality	Mean	N	Std. Deviation	Std. Error	t-value	Df	Sig. (2-tailed)
Pretest	22.88	60	5.4	0.70	-26.15	59	<0.0001(S)
Posttest	49.03	60	7.61	0.98			

Section V: Findings related to the association between pretest and post test scores of respondents regarding sleep quality with their selected demographic variables.

Table: 6 Association between level of sleep disturbances and selected demographic variable among selected IT Company

SL No.	Pre-test knowledge		Chi-square	Df	p-value	Result
	≤M	>M				
Age						
20-30 years	22	29	9.905	2	0.007	S
30-40 years	8	0				
40-50 years	1	0				
Sex						
Male	20	14	1.609	1	0.205	

Female	11	15				NS
Education						
Undergraduate	22	19	0.206	1	0.650	NS
Postgraduate	9	10				
Type of family						
Nuclear family	22	19				NS
Joint family	9	9	1.154	2	0.562	
Extended family	0	1				
Marital status						
Married	6	2				NS
Unmarried	25	26	2.95	2	0.228	
Divorced	0	1				
Income						
15-30k	12	17				NS
30-45k	13	7	2.74	3	0.433	
45-60k	2	2				
60 above	4	3				
Working hours						

8 hours	27	0	47.17	2	< 0.0001	S
10hours	3	9				
12 and above	1	20				
Practicing Other therapy						
Yes	3	1	0.93	1	0.334	NS
No	28	28				
Awareness						
Yes	14	12	0.087	1	0.768	NS
No	17	17				
Source of information						
friends	4	3	4.03	3	0.258	NS
family	3	2				
mass media	3	0				
others	4	7				

DISCUSSION

The major findings of the study and discussion

- **Distribution of background variables (socio-demographic variables) of the study subjects.**

- Majority 51(85.0%) of the workers were between the age groups 20-30 years of age group, 8(13.3%) of the workers were between the age groups 30-40 years of age,1(1.7%) each of the workers were between 40-50 years of age

- Majority 34(56.7%) of the selected workers were males and remaining 26(43.3%) of the selected workers were females.

- Majority 41(68.3%) of the selected workers were graduates and remaining 26(43.3%) of the selected workers postgraduate.

- Majority 41(68.3%) of the selected workers were belongs to the nuclear family, 18(30.0%) of the workers were belongs to the joint family and remaining 1(1.7%) of the workers were belongs to the extended family.

- Majority 51(85.0%) of the selected workers were unmarried followed by 8(13.3%) of the married and remaining 1(1.7%) of the selected worker was divorced.

- Majority 29(48.3%) of the selected workers had family income between 15-30k, 20(33.3%) of the workers had family income between 30-45k, 7(11.7%) of the workers had family income 60k above, and only 4(6.7%) of the workers had family income between 45-60k

- Majority 27(45.0%) of the selected workers working 10 hours/day followed by 21(35.0%) of the selected workers were working 12hours & above/day and remaining 12(8.3%) of the selected workers were working 10 hours /day.

- Majority 56(93.3%) of the selected workers do not practice any other therapy for sleep disturbance and only 4(6.7%) workers were practicing some other therapy

- Majority 34(56.7%) of the selected workers do not have awareness regarding muscle relaxation therapy and remaining 26(43.3%) had awareness regarding muscle relaxation therapy

- Majority 26(43.3%) were aware about muscle relaxation therapy. Off these majority 11(42.3%) aware about it through others, 7(269%) through Friends, 5(19.2%) through family and only 3(11.5%) through mass media

OBJECTIVE 1 TO ASSESS THE PRETEST LEVEL OF SLEEP DISTURBANCE AMONG SHIFT WORKERS IN SELECTED IT COMPANY.

- From table no 2 It was clear that majority 40(66.7%) shift workers in a selected IT company had poor sleep and 20(33.3%) of the shift workers in a selected IT company had adequate sleep. There were no shift workers in a selected IT company having good sleep.

    These study findings were supported by a descriptive study was conducted to evaluate Prevalence and consequences of sleep disorders in a shift worker population. Data were collected from 817 staff members of a psychiatric hospital in France. In addition to a series of questions to evaluate sleep and mental disorders, the evaluation included a standard questionnaire assessing work conditions, work schedule and their consequences. Three work schedules were assessed: (1) fixed daytime schedule (*n*=442), (2) rotating daytime shifts (*n*=323) and (3) shift or nighttime work (*n*=52). Results have shown that Participants working on rotating daytime shifts reported more frequently than the fixed daytime schedule workers to have difficulty initiating sleep (20.1% vs. 12.0%). The sleep duration of shift or nighttime workers was shorter than that of the two other groups. In conclusion, working on a rotating daytime shift causes significant sleep disturbances.

OBJECTIVE 2 TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TO PROMOTE SLEEP AMONG SHIFT WORKERS IN SELECTED IT COMPANY.

- It showed that level of sleep improved among shift workers in a selected IT company after the muscle relaxation therapy. After muscle relaxation therapy, shift workers of a selected IT company had either adequate sleep or good sleep and there were no shift workers with poor sleep

- From table no 5 it showed that sleep quality among the shift workers was improved with t-value = -26.15 with p-value less than 0.0001with higher mean posttest sleep score of 49.03 in comparison with mean pretest sleep score of 22.8. That mean pretest sleep score was 22.8 and mean post test score was 49.0 and the difference in sleep score was 26.1 with percentage improvement in sleep was 53.2%. **Hence muscle relaxation therapy among the shift workers of selected IT Company was effective in improving their sleep quality**

- It was clear that mean pretest sleep score was 20.07 whereas after posttest there were no shift worker with poor sleep. Mean pretest adequate sleep score was 28.5 whereas mean posttest adequate sleep score was 43.78. During pretest there were no shift workers in IT company with good sleep whereas posttest mean good sleep score was 55.44. **Hence muscle relaxation therapy improves overall level of sleep quality among the shift workers of selected IT Company.**

These study findings were supported by an explorative study was conducted on 51 students to investigate the effect of progressive muscle relaxation on anxiety and sleep quality of COVID-19 in China. The experimental group used progressive muscle relaxation (PMR) technology for 30 min per day for 5 consecutive days. During this period, the control group received only routine care and treatment. Before and after the intervention, the Spielberger State-Trait Anxiety Scale (STAI) and Sleep State Self-Rating Scale (SRSS) were used to measure and record patient anxiety and sleep quality. The result shown that the average anxiety score (STAI) before intervention was not statistically significant (P = 0.730), and the average anxiety score after intervention was statistically significant (P < 0.001). The average sleep quality score (SRSS) of the two groups before intervention was not statistically significant (P = 0.838), and it was statistically significant after intervention (P < 0.001).

OBJECTIVE 3 TO FIND OUT THE ASSOCIATION BETWEEN LEVEL OF SLEEP DISTURBANCES AND SELECTED DEMOGRAPHIC VARIABLE AMONG SHIFT WORKERS IN A SELECTED IT COMPANY.

- From table no 6 it was clear that there was no association between levels of sleep disturbances and selected demographic variable among selected IT Company such sex, education, types of family, marital status, practicing other therapy, awareness and source of information but it was highly associated with age and working hours with chi-square p-value 0.007 and < 0.0001 respectably.

CONCLUSION

The present study was undertaken to assess the effectiveness of progressive muscle relaxation therapy to promote sleep among shift workers in a IT company at Bangalore.The following conclusion was drawn based on the findings of the study. 66.7% of the shift workers in a selected IT company had poor sleep which can be improved just by using progressive muscle relaxation therapy. It was concluded that sleep disturbance was high among shift workers in a selected IT company and it can be improved by progressive muscle relaxation therapy.It was concluded that some of the socio demographic variables such as age and working hours were highly associated with sleep level of the shift workers selected IT Company.

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