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A Study to Evaluate the Effectiveness of Guided Imagery Technique on Stress among Hypertensive Patients in Selected Rural Areas of Kodaikanal Taluk, Tamilnadu

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Abstract: ***Stress has long been listed as a potential and important cause of hypertension among other potential risk factors such as low potassium consumption, low physical activity and sleep abnormalities. Acute stress can induce transient elevation of blood pressure, but it is still unclear whether this effect results in sustained elevation of blood pressure and hypertension. This study examined the effect of guided imagery visualization on stress of individuals with hypertensive patients. A pre and post test group design was selected for this study. The randomized control trial (RCT) in which subjects were randomly assigned to one of two groups thirty samples in each groups: the study group received the intervention of guided imagery that is being tested, and the other group control received a usual treatment care. The two groups were pre tested then followed up at 7th week and 12th week to see if there are any differences between them in outcome. Simple lottery method was used to select the primary health centers for randomization. Subjects underwent 20 to 25 minutes of Guided imagery audio relaxation was given daily for 7 weeks. Experts validated the tool of DVD and CD of Guided imagery relaxation and reliability of Standardized tool of perceived stress scale was .83.Descriptive and inferential statistics were used for analysis. Results: Pre test mean and standard deviation of control group was 31.3 and 54.566 and in study group was 22.8 and 4.2215. In post test it's observed that mean and standard deviation of study group stress level was found to be reduced distinctly on 21 days itself, followed by greater reduction in 3months mean and standard deviation of 7.133 and 3.5109. Whereas in control group stress level changes were not noted it's found to be same level. The t value of pretest in both the groups was noticed as non significant (t=0.8508) The effectiveness of Guided imagery was manifestly noted in 21 days with the t value of 2.1216 which was significant at p<0.05 level. Similarly strikingly noted in 3 months with t value of t 17.2047 which was significant at p<0.05. In pretest 68% of them were noted in very high level stress in control group and the same level found to be continued in 21 days and 3months. While in study group pretest stress level instituted as 65% in high group. Subjects who underwent guided imagery relaxation found in greater reduction of stress level on 21 days, 92 % recognized in low stress level. When comparing before and after measures in 3 months 40% of them attained very low level stress and 57 % reached to low level and none of them observed in high and very high level stress level. Conclusion: Randomized control trial was given the major strength of this study & findings bring out the conclusion that there was a significant reduction in stress level after guided imagery in study group among hypertensive patient after 3 months. Guided imagery is safe, practice sessions strength optimistically influence mood and reduce cortisol level, hormonal regulation can have health implications for hypertensive patients***

Keywords: Effectiveness, Guided imagery, Stress, RCT, Perceived Stress Scale, Rural Hypertensive Patients

1. Introduction

Hypertension is widely considered to be one of the most important risk factors of cardiovascular diseases (angina, arrhythmia, etc.). It is the second leading disease that causes mortality in the world. Hypertension is the condition when there is an increase in the force of blood on the walls of vessels. It can be extremely serious and often referred to as the" silent killer ", because there are no symptoms in the early stages of disease. One in three adults worldwide

An estimated 1.13 billion people worldwide have hypertension, most (two-thirds) living in low- and middle-income countries. In 2015, 1 in 4 men and 1 in 5 women had hypertension. Fewer than 1 in 5 people with hypertension have the problem under control. Hypertension is a major cause of premature death worldwide. One of the global targets for noncommunicable diseases is to reduce the prevalence of hypertension by 25% by 2025[1]

Fourth National Family Health Survey evaluated hypertension in a large population based sample ($n = 799$, 228) and reported hypertension in 13.8% men vs. 8.8% women (overall 11.3%) aged 15–49 and 15–54 respectively. More representative data (age > 18 years, $n = 1$, 320, 555) in Fourth District Level Household Survey reported hypertension in 25.3% with greater prevalence in men (27.4%) than women (20.0%). This translates into 207 million persons (men 112 million, women 95 million) with hypertension in India[2]

Stress is a normal part of life. Excessive stress in life may face serious health problems. That's because body's "fight or flight reaction" its natural alarm system is constantly on. when we encounter perceived stress threats hypothalamus, a tiny region at the base of brain, sets of the alarm system in our body. A positive attitude and self esteem are good defenses against stress, because they help to view stress as a challenge rather than a problem. But too much stress can lead to emotional, psychological and even physical problems including heart diseases, high BP, chest pain or irregular heartbeats. It could be because chronic stress hormones like adrenaline and cortisol.

So relaxation is an active process involving techniques that calm our body and mind. There are number of methods used to relax, guided imagery relaxation is a proven form of focused relaxation that helps create harmony between the mind and body. In healing repetitive use of positive visualization allows access to the mind and body connection.

This lets the mind and body work together to foster the healing process of the body on a physical level.

Guided imagery is a right brain function will access functions such as emotion, intuition, empathy, laughter, sensitive to music and openness to spirituality. A low cost guided imagery program can be a valuable complement to medical treatment of hypertension by contributing to more effective management of blood pressure, better adherence to therapy, decreased need of doctor's visit and higher quality of life. Even ten minutes of imagery can reduce blood pressure, lower cholesterol levels, glucose levels and heighten short term immune cell activity and quality of life and sense of discomfort may be improved guided imagery techniques through imagery training tapes. [3]

2. Objectives

To determine the effectiveness of guided imagery on stress among hypertensive patients of selected rural areas in experimental group.

3. Hypothesis

There will be a significant difference in pre and post test stress among hypertensive patients of selected rural areas in experimental and control group.

4. Materials and Methods

The evaluative research approach was adopted for this study. A pre and post test group design was selected for this study. The randomized control trial (RCT) in which subjects was randomly assigned to one of two groups thirty samples in each groups: the study group received the intervention of guided imagery that is being tested, and the other group control received a usual treatment care. The two groups were pre tested then followed up at 7th week and 12th week to see if there are any differences between them in outcome. Simple lottery method was used from primary health centers for randomization. Subjects underwent guided imagery visualizations preliminary training program of 1 week through DVD followed by GI audio relaxation. Individual attention had been given to subjects to clarify their doubts. Thereafter 20 to 25 minutes of Guided imagery audio relaxation was given daily for 7 weeks. Study conducted at villages of pannaikadu and Mangalmgombu, Kodaikanal, Tamilnadu. Experts validated the tool of DVD and CD of Guided imagery relaxation and reliability of standardized tool of perceived stress scale reliability was .89. Descriptive and inferential statistics were used for analysis.

Ethical clearance: Ethical clearance was taken from Institutional Ethical Committee Board of Jayaraj Annapackium Christian college of Nursing, Madurai and from Government officer of Pannaikadu government hospital, Written consent of each subject was obtained before the study. Confidentiality was maintained throughout the study.

5. Results and Discussion

Table 1: Comparison of Mean and Standard deviation of stress in control group and study group

Pretest		Post Test- 21 days		Post test - 3 Months	
Control Group	Study Group	Control Group	Study Group	Control Group	Study Group
Mean & SD	Mean & SD	Mean & SD	Mean & SD	Mean & SD	Mean & SD
31.3 54.556	22.8 4.2215	31.3 54.566	10.166 0.7915	22 3.1741	7.133 3.5109

Study findings of the stress mean and standard deviations in between the group are summarized in table1. Pre test mean and standard deviation of control group was 31.3 and 54.566 and in study group was 22.8 and 4.2215. In post test it's observed that mean and standard deviation of study group stress level was found to be reduced distinctly on 21 days itself, followed by greater reduction in 3months, mean and standard deviation was 7.133 and 3.5109. Whereas in control group stress level changes were not noted it's found to be same level.

Table 2: Comparison of T value in stress in control group and study group

Pre test – t value	Post test – t value		
	21days	3 months	Overall
t = 0.8508 $p>0.05^{NS}$	t = 2.1216 $p<0.05^{*}$	t = 17.2047 p< 0.05*	t =15.6286 p<0.05*

*P value < 0.05 significant, $P >0.05^{Ns}$ Non Significant

Study findings of the stress t value in between the group are summarized in table2. The t value of pretest in both the groups was noticed as non significant (t=0.8508) The effectiveness of Guided imagery was manifestly noted in 21 days with the t value of 2.1216 which was significant at p<0.05 level. Similarly strikingly noted in 3 months with t value of t 17.2047 which was significant at p<0.05..

Table 3: Comparison of Grading of Stress in Control Group and Study Group

Aspect	Grading	Control group (n= 30)						Study group (n= 30)					
		Pre test		21 days		3months		Pretest		Post test			
										21 days		3months	
		f	%	f	%	f	%	f	%	f	%	f	%
Upto 7	Very low	0	0	0	0	0	0	0	0	0	0	16	40
8-11	Low	0	0	0	0	0	0	0	0	27	92	13	57
12-15	Average	0	0	0	0	0	0	0	0	3	8	1	3
16-20	High level	13	32	13	32	13	32	16	65	0	0	0	0
21 & >	Very high	17	68	17	68	17	68	14	35	0	0	0	0

Table 3 concluded the grading of stress in control group with study group. In pretest 68% of them were noted in very high level stress in control group and the same level found to be continued in 21 days and 3months. While in study group

pretest stress level rated as 65% in high level stress. Subjects who underwent guided imagery relaxation found in greater reduction of stress level on 21 days, 92 % recognized in low stress level. When comparing before and after measures in 3 months 40% of them attained very low level stress and 57 % reached to low level and none of them observed in high and very high level stress level.

None of the demographic variables such as sex, education, family history, medications, life style, dietary pattern and bad habits were associated with stress level in study except age and duration of illness in both the groups.

Study findings correspond to a study on prospective, longitudinal study of 69 women used a RCT design with two groups conducted over 4 weeks for hypertensive pregnancy women. Guided imagery relaxation CDs influenced the study outcomes. 75% reported enjoyment and ease of use indicated they would use it for future hypertension in pregnancy and for stress[4].

Randomized control trial was given the major strength of this study & findings bring out the conclusion that there was a significant reduction in stress level after guided imagery in study group among hypertensive patient after 3 months.

6. Conclusion

The study clearly establishes a significant reduction of stress level in study group. A spike in blood pressure is a direct result of stress. Constant stress can cause hypertension by releasing a surge of hormones in preparation for a fight or flight response. Guided imagery relaxation audiotapes is a safe and improve healing, So its proved to be a suitable intervention for hypertensive patients in reducing stress levels.

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