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A True Experimental Study to Assess the Effectiveness of Mindfulness Meditation Technique on Stress Reduction among ANC Mothers in Selected Hospitals

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Abstract: ***Aim of the study: The study aims to find the effectiveness ofmindfulness meditation technique on stress reduction among ANC mothers in selected hospitals. Objectives of study: 1.To assess the pretest level of stress among ANC mothers in selected hospital.2.To determine the effectiveness of mindfulness meditation technique by compering pretest and posttest level of stress among the experimental group.3.To determine the effectiveness of mindfulness meditation technique by comparing the posttest level of stress among excremental and control group.4.To find out the association between pretest level of stress and selected demographic variable. Method: True experimental research design and A quantitative research approach was carried out on 60 ANC mothers selected by simple random sampling technique to test effectiveness of mindfulness meditation technique. The data was collected by using structured questionnaire consists of 10 items. Results: The presents study evaluates and found that in experimental group,. In pretest 7 (23.33 %) of having low Stress, 7 (23.33 %) of having Moderate stress, 16 (53.33 %) of having High perceived stress. In Post-test 19 (63.33%) of having low Stress, 10 (33.33 %) of having Moderate stress, 1 (3.33 %) of having High perceived stress. in control group. In pretest 5 (16.67 %) of having low Stress, 12 (40.00 %) of having Moderate stress , 13 (43.33 %) of having High perceived stress. In Post-test 4 (13.33%) of having low Stress, 13 (43.33 %) of having Moderate stress, 13 (43.33 %) of having High perceived stress. Interpretation and conclusion: Analysis data shows that highly significance difference found between the pre -test and post- test knowledge scores at the level of (P<0.05).mindfulness meditation technique is proved to be effective in reduction of the stress of among ANC mothers in selected hospitals.***

1. Introduction

“Health is not the condition of matter, but of mind”

Health is commonly defined as an organism's ability to efficiently respond to challenges (stressors) and effectively restore and sustain a "state of balance," known as homeostasis. A comprehensive approach to maintaining good health includes increasing self-responsibility for wellness, healthy lifestyle choices, health-promoting diet and a positive mental attitude. For centuries, humans have been aspiring to achieve healthy mind and body all at the same time [1].

For maintaining a healthy body, one should follow a healthy nutrition and diet. one should eat food that are healthy, high in important nutrients, and free from chemicals to provide the body with quality fuel to function properly. One should keep mind sharp and sound by mental stimulation and exercise. The mind and body are intimately connected, and the relationship of the mind to the body in meditation is very interesting. The mind creates a situation in which we see the body as peaceful and beautiful. By creating peaceful feelings in the body, the mind is absorbed in those feelings. Although the body is the object to be healed, it also becomes the means of healing the mind which is the ultimate goal of meditation [2].

2. Need for the Study

Stress is a multidimensional phenomenon which is focused on dynamic relationship between the individual and the environment. It is also defined as a stressor, individual's response to the stimuli and interaction between the individual and the environment. It should be noted that some degree of stress can be effective on increasing and improving individuals ‘performance. Evidences indicate that most of the human successes are created in stressful conditions; but high rate of stress would followed by numerous consequences, including mental and physical illnesses, sleep disorders, restlessness, irritability, forgetfulness, abnormal fatigue, reduced individual's resistance and recurrent infections, headaches, poor concentration, memory impairment and reduce in problem solving ability. [21] Reducing perinatal distress is a vital public health goal. [22] Maternal anxiety, depression and stress (during and after pregnancy) have short and long term consequences for women’s health, affect mother-child interactions, and increase the risk of a range of ongoing emotional, behavioral and cognitive problems in children [23]. Importantly, it is not only diagnosable mental illness in mothers which is associated with poorer outcomes for children, but also a range of objective stressors and subjective stresses (including symptoms at sub-clinical levels) [24].

3. Review of Literature

Short VL,et.al (2017 Jun; 21).conducted a study reducing stress among mothers in drug treatment: a description of a mindfulness Based Parenting Intervention. Parenting women with substance use disorder could potentially benefit from interventions designed to decrease stress and improve overall psychosocial health. In this study we assessed whether a mindfulness based parenting (MBP) intervention could be successful in decreasing general and parenting

stress in a population of women who are in treatment for substance use disorder and who have infants or young children. Methods MBP participants (N = 59) attended a two-hour session once a week for 12 weeks. Within-group differences on stress outcome measures administered prior to the beginning of the MBP intervention and following the intervention period were investigated using mixed-effects linear regression models accounting for correlations arising from the repeated-measures. Scales assessed for pre-post change included the Perceived Stress Scale-10 (PSS) and the Parenting Stress Index-Short Form (PSI). Results General stress, as measured by the PSS, decreased significantly from baseline to post-intervention. Women with the highest baseline general stress level experienced the greatest change in total stress score. A significant change also occurred across the Parental Distress PSI subscale. Conclusions Findings from this innovative interventional study suggest that the addition of MBP within treatment programs for parenting women with substance use disorder is an effective strategy for reducing stress within this at risk population.71

Assumption

1) The ANC Mothers have some knowledge regarding the mindfulness meditation technique.
2) The ANC Mothers may not be followed the mindfulness meditation technique in their day to day life.
3) Initiating them to follow mindfulness meditation technique it will help to relieve from stress.

Limitation

1) The study was confined to a specific geographical area, which imposes limits to any larger generalization.
2) The study sample was comparatively small and restricted.
3) Long term effects of mindfulness meditation technique were not observed.

Hypothesis

H1: There is significant difference between the pretest and posttest level of stress in experiment group.
H2: There is significant difference between posttest level of stress among experimental group and control group.
H3: There is significant association between pretest level of stress with selected demographic variables.

4. Methodology

- **Research approach:** An evaluative approach was used for this study
- **Research design:** Quantitative, true experimental research design
- **Variables under study:** (1) Independent variable: In this study, independent variable is meditation technique. (2) Dependent variable: dependent variable is stress reduction among ANC mothers.
- **Setting:** The study was conducted in ANC mothers residing in selected hospitals.
- **Population:** In this study, the population includes ANC mothers.
- **Target population**: ANC mothers residing in selected hospitals.
- **Accessible population** ANC mothers present at the time of data collection.
- **Sample and sampling technique**
- **Sample:**In the present study sample ANC mothers residing in selected hospitals.
- **Sample size**: The sample size for the present study is 60 ANC mothers who fulfill the set inclusion criteria.
- **Sampling technique:** A probability simple random sampling technique.

Inclusion criteria

- The ANC mothers who can read and write the Marathi or English.
- The ANC mothers who are present at the time of data collection.

Exclusion criteria

- The study excludes ANC mothers who are not cooperate
- The ANC mothers who are physically and mentally ill.

Tool Preparation

Tool used for the research study was structured questionnaire, the perceived stress scale. The tool was prepared after Extensive review of literature Opinion and suggestions were taken from expert, Development of a blueprint of the questionnaire. Construction of demographic Performa and questionnaire on stress commonly seen in ANC mothers.

Development of tool:

The research instrument consists of two parts:
Part I-Demographic data: It consist of 7 items related to demographic variables such as age group, Education, Occupation, Religion, Duration of hospitalization, Family Income and Gravida.

Part II– Structured knowledge questionnaires: - It consists of 10 items. For each question choose from the following alternatives:

- 0 – Never
- 1 - Almost Never
- 2 – Sometimes
- 3 - Fairly Often
- 4 - Very Often.

Preparation of self instructional module (SIM):- The title of the module was “Stroke Information Booklet” The self instructional module was consists of the following contents definition , incidence, types, causes & risk factors, sign & symptoms, diagnosis, prevention & management of stroke

Validation of the tool: To ensure the content validity the instrument was given 11 experts from the field of mental health (psychiatric) nursing, the consultant psychiatrist, clinical psychologist with mindfulness meditation experts and one from statistical department.. The experts were requested to give their opinions and suggestions regarding the relevance, adequacy and appropriateness of the tool. Their suggestions were taken into consideration in the preparation of the tool **Reliability:** In order to establish reliability of the tool, Reliability of tool was determined by Karl Pierson’s correlation coefficient of the tool was found to be 0.81 (n=6).

Feasibility of the study: The investigator conducted a Pilot study.

Pilot study: The pilot study was conducted from 6th Nov. 2017 to 17th Nov.2017on ANC mothers from selected hospitals, to assess the feasibility of the study and to decide the plan for analysis.

Data collection procedure: Prior permission will be taken from the selected hospitals. Informed consent will be taken from study participants and data will be kept confidential. The period of data collection was from 29th November to 30th of December 2017. The data was collected by the investigator. Pre-test was conducted on ANC mothers who fulfill the inclusion criteria soon after the pre-test mindfulness meditation technique was administered. Evaluation was done by conducting post-test after 10 days of administration of mindfulness meditation technique by using the same structured questionnaires.

Plan for data analysis: 1) Organize data in master data sheet 2) Demographic variables will be analyzed by using frequency and percentage. 3) Effectiveness of mindfulness meditation techniques will be analyzed by using paired and unpaired 't' test. 4) Chi square test will be used to find out the association between pre-test level of stress score and selected demographic variables.

Scoring mode: You can determine your PSS score by following these directions:

First, reverse your scores for questions 4, 5, 7, & 8. On these 4 questions, change the scores like this: 0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0

Now add up your scores for each item to get a total. My total score is _____.
Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress:- 1) Scores ranging from 0-13 would be considered low stress. 2) Scores ranging from 14-26 would be considered moderate stress. 3) Scores ranging from 27-40 would be considered high perceived stress

5. Results

Organization of the data: The collected data is tabulated, analyzed, organized and presented under the following sections:

Section I

Frequency and percentage distribution of demographic variables among the ANC mothers in experimental and control group

Table 1.1: Frequency and percentage distribution of demographic variables among the ANC mothers in experimental and control group

Sr .No.	Variable	Groups	Experimental		Control	
			Frequency	Percentage	Frequency	Percentage
1	Age	20-25	14	70.00	11	55.00
		26-30	14	70.00	14	70.00
		31-35	2	10.00	5	25.00
		more than 35	0	0.00	0	0.00
2	Education	Illiterate	4	20.00	4	20.00
		Primary	17	85.00	18	90.00
		Secondary	9	45.00	8	40.00
		Graduate	0	0.00	0	0.00
		Post Graduate	0	0.00	0	0.00
3	Occupation	Government	0	0.00	0	0.00
		private	6	30.00	8	40.00
		Businessman	0	0.00	0	0.00
		Worker	0	0.00	0	0.00
		Housewife	24	120.00	22	110.00
4	Religion	Hindu	28	140.00	25	125.00
		Muslim	1	5.00	5	25.00
		Christian	1	5.00	0	0.00
		Other	0	0.00	0	0.00
5	Duration of Hospitalization	1-5 days	28	140.00	26	130.00
		6-10 days	2	10.00	4	20.00
		11-15 days	0	0.00	0	0.00
		above 15 days	0	0.00	0	0.00
6	Family Income	5000- 10000	24	120.00	25	125.00
		10001-15000	6	30.00	5	25.00
		15001-20000	0	0.00	0	0.00
		20001 & above	0	0.00	0	0.00
7	Gravida	G1	25	125.00	25	125.00
		G2	5	25.00	5	25.00
		G3	0	0.00	0	0.00
		G4 & above	0	0.00	0	0.00

Section II:
A: Assessment of pre and post level of stress in experimental group

Table 2.1: The pre and post level of stress in experimental group N=30

Stress	Groups		Pre Test		Post Test	
			Frequency	Percentage	Frequency	Percentage
	low	0-13	7	23.33	19	63.33
	Moderate	14-26	7	23.33	10	33.33
	High perceived	27-40	16	53.33	1	3.33

B: Assessment of pre and post level of stress in Control Group

Table 2.2: The pre and post level of stress in Control Group N=30

Stress	Groups		Pre Test		Post Test	
			Frequency	Percentage	Frequency	Percentage
	low	0-13	5	16.67	4	13.33
	Moderate	14-26	12	40.00	13	43.33
	High perceived	27-40	13	43.33	13	43.33

Section III

A: Comparison of mean scores between pretest and posttest among experimental

Table 3.1: Effectiveness of Mindfulness Meditation Technique

Experimental Group					
Group	Frequency	Mean	S.D.	t value	P value
Pre- Test	30	24.63	9.32	7.46	0.000
Post- Test	30	14.8	6.84		

B: Comparison of post test score between control and experimental group

Table 2.2: Comparison of post test score between control and experimental group.

Stress	Groups		Experimental		Control	
			Frequency	Percentage	Frequency	Percentage
	low	0-13	19	63.33	4	13.33
	Moderate	14-26	10	33.33	13	43.33
	High perceived	27-40	1	3.33	13	43.33

Table 2.3: Comparison of Stress Mean And S.D. in Experimental group versus Control group.

Group	Frequency	Mean	S.D.	t value	P value
Exp.	30	14.8	6.84	4.09	0.000
Control	30	23.03	8.66		

Section IV

Table 2.4: Association between Level of Stress and Selected Demographic Variables (Experimental and Control Group).

Sr.No.	Variable	Groups	Stress			chi-square	d.f.	p value	significance
			low	Moderate	High				
1	Age	20-25	6	5	14	3.92	4	0.41	Not Significant
		26-30	5	10	13				
		31-35	1	4	2				
		more than 35	0	0	0				
2	Education	Illiterate	0	2	6	12.41	4	0.015	Significant
		Primary	4	13	18				
		Secondary	8	4	5				
		Graduate	0	0	0				
		Post Graduate	0	0	0				
3	Occupation	Government	0	0	0	0.22	2	0.89	Not Significant
		private	3	5	6				
		Businessman	0	0	0				
		Worker	0	0	0				
		Housewife	9	14	23				
4	Religion	Hindu	10	17	26	4.08	4	0.40	Not Significant
		Muslim	1	2	3				
		Christian	1	0	0				
		Other	0	0	0				
5	Duration of Hospitalization	1-5 days	10	15	29	6.39	2	0.04	Significant
		6-10 days	2	4	0				
		11-15 days	0	0	0				

		above 15 days	0	0	0				
6	Family Income	5000- 10000	9	15	25	0.84	2	0.65	Not Significant
		10001-15000	3	4	4				
		15001-20000	0	0	0				
		20001 & above	0	0	0				
7	Gravida	G1	11	12	27	8.16	2	0.017	Significant
		G2	1	7	2				
		G3	0	0	0				
		G4 & above	0	0	0				

H1: There is significant difference between the pretest and posttest level of stress in experiment group

The pre test and post test stress means score were 24.63and 14.8 respectively. The standard deviation for pre test and post test were 9.32 and 3.178 respectively. The mean difference was 9.83. The calculated't' value 7.46 is greater than table value (2.0) at degree of freedom 0.05 level. This indicates that Mindfulness meditation technique was effective. Hence H1 accepted.

H2: There is significant difference between posttest level of stress among experimental group and control group.

The experimental group and control group stress means score were 14.8 and 23.03 respectively. The standard deviation for experimental group and control group were 6.84 and 8.66respectively. The mean difference was 8.5. The calculated 't' value 4.09 is greater than table value (2.0) at degree of freedom 0.05 level. This indicates that There is significant difference between posttest level of stress among experimental group and control group was effective. Hence H2 accepted.

H3: There is significant association between pretest level of stress with selected demographic variables.

Chi-square value was calculated to find out the association, In Experimental group and control group, the result shows that the calculated value is greater than (at 0.05 level) tabulated value for variables; age group, Education Duration of Hospitalization, Gravida and level of stress have significant association with pretest score. Therefore H3 was accepted

6. Summary

1) The majority of ANC mothers in the control group, i.e. 14 (46.67 %) belongs to age group of 26-30 years.
2) In experimental group majority of ANC mothers i.e. 14 (46.67 %) of ANC mothers were with the age group of 20-25 years and 26-30 years
3) ANC mothers according to educational status. Experimental group shows 4 (13.33 %) are has no formal education, 17 (56.67 %) has primary education, 9 (30.00 %) has secondary education, 0 (0%) has Graduate and Post-Graduate 0 (0%).
4) ANC mothers according to educational status in control group shows 4 (13.33 %) are has no formal education, 18 (60.00 %) has primary education, 8 (26.67 %) has secondary education, 0 (0%) has Graduate and Post-Graduate 0 (0%).
5) Experimental group shows 6 (20.00 %) are has private , 24 (80.00 %) has Housewife, 0 (0%) has households and 0 (0%) has Government, Businessman, Worker.
6) ANC mothers according to occupational status in control group shows 8 (26.67 %) are has service, 22 (73.33 %) has Housewife, 0 (0%) has households and 0 (0%) has Government, Businessman, Worker.
7) Hindu is about 28 (93.33 %), Muslims is about 1 (3.33 %), Christians is about 1 (3.33 %), others 0 (0 %).
8) In an control group - Hindu is about 25 (83.33 %), Muslims is about 5 (16.67 %), Christians is about 0 (0 %) and Others are also 0 (0%).
9) ANC mothers according to duration of hospitalization. Experimental group shows 28 (93.33 %) has 1-5 days duration of hospitalization, 2 (6.67 %) has 6-10 days duration of hospitalization and 0 (0 %) are 11-15 days and above 15 days duration of hospitalization
10) Control group shows 26 (86.67 %) has 1-5 days duration of hospitalization, 4 (13.33 %) has 6-10 days duration of hospitalization and 0 (0 %) are 11-15 days and above 15 days duration of hospitalization
11) ANC mothers according to monthly family income. Experimental group shows 24 (80.00%) are has 5000-10000 Family Income, 6 (20.00%) has 10001-15000 Family Income, 0 (0 %) has 15001-20000 Family Income and 20001 & above Family Income.
12) ANC mothers according to monthly family income in control group shows 25 (83.33 %) are has 5000- 10000 Family Income, 5 (16.67 %) has 10001-15000 Family Income, 0 (0 %) has 15001-20000 Family Income and 20001 & above Family Income.
13) ANC mothers according to Gravida in experimental group shows 25 (83.33 %) are has G1 Gravida , 5 (16.67 %) has G2 Gravida , 0 (0 %) has G3 and G4 Gravida.
14) On the other side the Frequency distribution of ANC mothers according to Gravida in control group shows 25 (83.33 %) are has G1 Gravida , 5 (16.67 %) has G2 Gravida , 0 (0 %) has G3 and G4 Gravida.

7. Conclusion

The post test mean stress score (14.8 +6.84) was less than the pre test stress score (24.63 +9.32). The study findings concluded that the mindfulness meditation technique is effective for ANC mothers for stress reduction,

The following conclusions were drawn from the findings of the present study:

Their chapter shows that mindfulness meditation technique is a simple non-pharmacological intervention which should be carried out independently in the field of nursing. The overall experience of conducting this study was enriching hence it gives an opportunity to the investigator to acquire new information as well as learning experience. The

experience of the investigator during the study and the findings helped the investigator to give suggestions and the recommendations for further studies..

8. Recommendations

On the basis of the findings of the study, the following recommendations have been made for the further study:

1) Replication of the same study on large samples may help to draw conclusions that
2) are more definite and generalize to a larger population.
3) A study could be conducted to evaluate the effectiveness of Mindfulness Meditation Technique with other non-pharmacological measures of stress.
4) A descriptive study could be conducted to assess the knowledge and attitude ofnurses towards complementary therapies or stress.

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