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Effectiveness of Concentrative Meditation on Anxiety Level Among People in a Selected Rehabilitation Centre in Pune: A Quasi-Experimental Study

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Abstract — Background: Anxiety can affect psychological well-being and daily functioning. Meditation is used as a complementary relaxation practice. Aim: To assess the effectiveness of concentrative meditation on anxiety levels among people in a selected rehabilitation centre in Pune. Methods: A quantitative quasi-experimental study was conducted using a non-equivalent control-group approach. Sixty people aged 18–60 years were selected through non-probability quota sampling. Anxiety was assessed using the Beck Anxiety Scale. Participants received concentrative meditation using a breathing technique for 14 days, and anxiety was assessed following the intervention. Descriptive statistics, a paired t-test and one-way analysis of variance were used. Results: The mean anxiety score decreased from 32.34 (SD=4.49) before the intervention to 21.25 (SD=1.60) after the intervention. The reported t value was 27.23 ($p<0.001$). The reported anxiety-category distribution shifted from predominantly moderate and severe anxiety before the intervention to minimal and mild anxiety after the intervention. Gender, occupation, income, marital status and family type were reported to have statistically significant associations with anxiety scores. Conclusion: The findings indicate a reduction in anxiety scores following a 14-day concentrative meditation programme among people in a selected rehabilitation centre in Pune.

Keywords— anxiety; concentrative meditation; breathing technique; rehabilitation centre; quasi-experimental study.

I. INTRODUCTION

Anxiety is an emotional response commonly characterized by apprehension, worry, fear and uneasiness. Although anxiety may function as an adaptive response to perceived danger, persistent or excessive anxiety can cause distress and interfere with daily functioning.

People living in rehabilitation settings may experience psychological challenges that warrant assessment and supportive interventions.

Meditation is a relaxation practice that directs attention and may promote a calmer state of mind. The present study focused on concentrative meditation, specifically a breathing technique, as an approach to reducing anxiety. The study was guided by Roy's Adaptation Model and examined anxiety levels before and after the intervention.

The purpose of the study was to assess the effectiveness of concentrative meditation on anxiety levels among people in a selected rehabilitation centre in Pune. The objectives were to assess baseline anxiety, determine changes following meditation and examine associations between selected demographic characteristics and anxiety scores.

II. MATERIALS AND METHODS

Study design and setting

A quantitative quasi-experimental, non-equivalent control-group design was used. The study was conducted at Chiatyan Rehabilitation Centre in Pune.

Participants and sampling

The study included 60 people aged 18–60 years, selected through non-probability quota sampling. The inclusion criteria were age 18–60 years and willingness to participate. People unable to read and write English or Marathi were excluded.

Study instrument

Data were collected using a demographic questionnaire and the Beck Anxiety Scale, described as a 21-item standardized scale. The reported internal reliability coefficient was r=0.80, assessed using the split-half method. The average time required to complete the questionnaire was 10–15 minutes.

Intervention procedure

The intervention consisted of concentrative meditation using a breathing technique and was provided over 14 days. Anxiety was reassessed after completion of the intervention using the same scale.

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Ethical considerations
Ethical approval was obtained from the college and rehabilitation-centre ethics committees. Permission was obtained from the relevant authorities, and informed consent was obtained from all participants.

Statistical analysis
Frequencies and percentages were used to summarize demographic characteristics and anxiety categories. Means and standard deviations were used to describe anxiety scores. A paired t-test was used to compare pre-test and post-test scores, and one-way analysis of variance was used to examine associations with demographic variables.

III. RESULTS

Participant characteristics
A total of 60 participants were included. The largest age group was 30–36 years (31; 51%), followed by 24–30 years (22; 36%). Forty participants (66%) were male and 20 (33%) were female. Forty-six participants (76%) were Hindu and 14 (23%) were Christian. Thirty-five participants (58%) had graduate-level education or above, while 25 (41%) had higher-secondary education.

Comparison of pre-test and post-test anxiety scores
The mean anxiety score decreased from 32.34 before the intervention to 21.25 after the intervention, representing a reduction of 11.09 points. The reported t value was 27.23 ($p<0.001$).

Assessment	Mean anxiety score	Standard deviation
Pre-test	32.34	4.49
Post-test	21.25	1.60

Distribution of anxiety categories
Before the intervention, most participants were classified as having moderate anxiety (83%), while 16% were classified as having severe anxiety. Following the intervention, 43% were classified as having minimal anxiety and 56% as having mild anxiety.

Anxiety category	Pre-test n (%)	Post-test n (%)	Score range
Minimal	0 (0%)	13 (43%)	0–7
Mild	0 (0%)	17 (56%)	8–21
Moderate	25 (83%)	0 (0%)	21–42
Severe	5 (16%)	0 (0%)	42–63

Association between demographic variables and anxiety scores
The reported analysis showed statistically significant associations for gender, occupation, income, marital status and family type. Age, religion, educational qualification and language were not statistically significant.

Variable	F value	p value
Age	0.32	0.728
Gender	6.15	0.016
Religion	2.02	0.142
Occupation	14.37	<0.001
Income	3.07	0.017
Marital status	7.86	<0.001
Family type	4.26	0.019
Qualification	0.11	0.737
Language	1.34	0.268

IV. DISCUSSION

The study findings show a reduction in mean anxiety score following a 14-day programme of concentrative meditation using a breathing technique. The pre-test mean score was 32.34, compared with a post-test mean score of 21.25. The anxiety-category distribution also shifted from predominantly moderate or severe anxiety before the intervention to minimal or mild anxiety after the intervention.

These findings suggest that concentrative meditation may be a useful supportive relaxation approach for people in rehabilitation settings. The reported associations between anxiety scores and gender, occupation, income, marital status and family type indicate that demographic and social characteristics may be relevant when considering anxiety in this population.

Limitations
The study was conducted in a selected rehabilitation-centre setting and used non-probability quota sampling. The findings are therefore most appropriately considered in relation to the study population and setting.

V. CONCLUSION

The study found lower anxiety scores following 14 days of concentrative meditation among people in a selected rehabilitation centre in Pune. Concentrative meditation using a breathing technique may be considered as a supportive approach to anxiety management in rehabilitation settings.

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Further studies involving larger samples and clearly defined comparison groups are recommended.

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Conflict of interest
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