

INTERNATIONAL JOURNAL OF PHYSICAL EDUCATION AND APPLIED EXERCISE SCIENCE**Effect of a Single Bout of Aerobics on Anxiety of Primary Resource Teachers of Kerala****Dr. Augustine George* and Dr. Deepak Raj****

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Abstract:

*This study aimed to assess the effectiveness of a single bout of aerobic exercise in reducing anxiety among primary resource teachers. **Settings and Design:** We conducted the study at a state-level training program for Kerala state primary resource teachers group at Munnar, Kerala. The researchers used an experimental design for the analysis. **Materials and Methods:** 80 primary resource teachers of Kerala State (F=40 & M=40) aged between 21 and 56 were purposefully selected for this study. The teachers were divided into two groups, the experimental group (n=41) and the control group (n=40); both groups were tested on anxiety using the Beck Anxiety Inventory. The experimental group was made to do an aerobics session synchronised with music for 30 minutes immediately after the pre-test. The control group was allowed to do their normal routine. Post-tests were conducted to determine if there was any significant difference in the experimental group. **Results:** Researchers found that a significant difference at 0.01 level is present in the experimental group, and the group was able to decrease their anxiety score ($p < 0.01$), whereas the control group didn't show any difference in anxiety ($p = 0.540$). **Conclusion:** This implies that a single bout of aerobics could be a promising intervention for controlling anxiety.*

Keywords:

Anxiety, Aerobics, Primary resource teachers

INTRODUCTION

Primary teachers handle the most challenging and vulnerable age groups. Their workload is, therefore, quite different from other teachers. It is feared that the primary teacher faces high stress and anxiety, which will adversely affect their quality of teaching.

A study conducted with 263 primary and middle school teachers in the Shinagawa area of Tokyo found that in-person education during the COVID-19 pandemic has caused teachers to experience anxiety regarding infection and education. Though primary children are considered safe, they could spread the virus. Although vaccines are starting to be implemented in various countries, the virus is unlikely to be eliminated. There are high chances of different strains of viruses resurfacing. There are threats from various other pathogens too. Moreover, to continuously provide children with a fulfilling education, it is necessary to understand the psychological anxiety experienced by teachers holding classes for students during the COVID-19 pandemic and the factors thereof^[1].

Another study on 88611 teachers from three cities of Henan Province, China, between February 4, 2020, and February 12, 2020, found that anxiety is prevalent and that women teachers have more anxiety than men^[2].

Teachers have to educate many students every day. In such situations, teachers can be exposed to various psychological anxieties. Psychological stress, such as anxiety factors, lead teachers to reduced quality of instruction and diminished ability to engage effectively and teach^[3].

A meta-analysis study conducted in China, Brazil, the United States of America, India, and Spain found that teachers' prevalence of stress, depression, and anxiety was high during the pandemic. They stressed measures for the care of teachers' mental health, especially when returning to face-to-face classes^[4].

One hundred seventy-four senior high school teachers in the Cape Coast Metropolis perceived their classroom environment as unsafe during instructional delivery amidst COVID-19. They reported modest to extreme levels of anxiety. Further, teachers with a high level of COVID-19 anxiety were found to utilize active coping strategies to manage stressful situations. They sought the help of school counseling psychologists, school welfare officers, and school health coordinators for social-emotional learning, resilience strategies, etc ^[5].

Primary resource teachers are selected based on their competence level and leadership quality. They are responsible for taking classes related to innovations in education and training for other primary teachers in various parts of Kerala. It is hypothesized that even resource teachers are victims of anxiety. It is further hypothesized that aerobics will reduce anxiety level. It is believed that if resource teacher's anxiety is controlled they will educate other teachers of the state to control their anxiety. Teacher's anxiety level needs to be controlled to impart quality teaching. In this study, an effort is made to assess the anxiety level of resource teachers and to test an intervention program of aerobics for reducing anxiety levels.

MATERIALS AND METHODS

Eighty primary resource teachers of Kerala state aged between 21 and 56 undergoing a residential workshop organized by District Institute of Education Research and Training (DIET) Thodupuzha, Idukki district were taken as samples for the study. The study was conducted at Shikshak Sadan, Munnar, Idukki District, Kerala. Ethical clearance and consent were obtained. The primary outcome measure for the study was the effect of aerobics in reducing anxiety among resource teachers. The secondary outcome measure of the study was the gender difference in the effect of anxiety reduction after a single session of aerobic workout. The primary and secondary outcome measures were analysed using Beck Anxiety Inventory scale immediately after giving the intervention program. Before the study purpose of the study was explained to the participants, and their consent was taken through a Google form. Researchers divided the teachers into two groups using random assignment: the experimental group (n=41, F=21, M=20) and the control group (n=39, F=19, M=20); pre-test and post-test were administered using the *Beck Anxiety Inventory (BAI)* to assess anxiety. The purpose of the study and consent of the organiser and participants were obtained before collecting the data. The data was collected using Google Forms. The inventory contains 21 self-reported items measuring somatic and cognitive anxiety symptoms with responses on a Likert scale of 0 to 3. Scores can range from 0-63.

Minimal anxiety levels have scores from 0-7, mild anxiety has the range from 8-15, Moderate anxiety from 16-25, and severe anxiety is classified with scores 26-63 ^[6].

Both groups were administered a pre-test by the researchers. The experimental group was given training on aerobics synchronised with music for 30 minutes immediately after the pre-test. The training consisted of 5 minutes of general warm-up, 20 minutes of aerobic dance, and 5 minutes of warm-down. The control group was not made to do any activity and was left alone. Training on aerobics was given by the trained researcher himself. Post-test was conducted again on both groups using the Beck Anxiety Inventory. Both groups' pre-test and post-test scores were statistically analysed, and researchers obtained the results. Trial design was implemented as planned, and nothing was altered.

RESULTS

The collected data from quantitative research are presented, analysed, reported, and evaluated systematically. The descriptive statistics were used to get a general idea about the participants. ANOVA test was employed to determine the significant differences between experimental and control groups' post-test anxiety scores.

Fig. 1 Flow chart diagram of research design

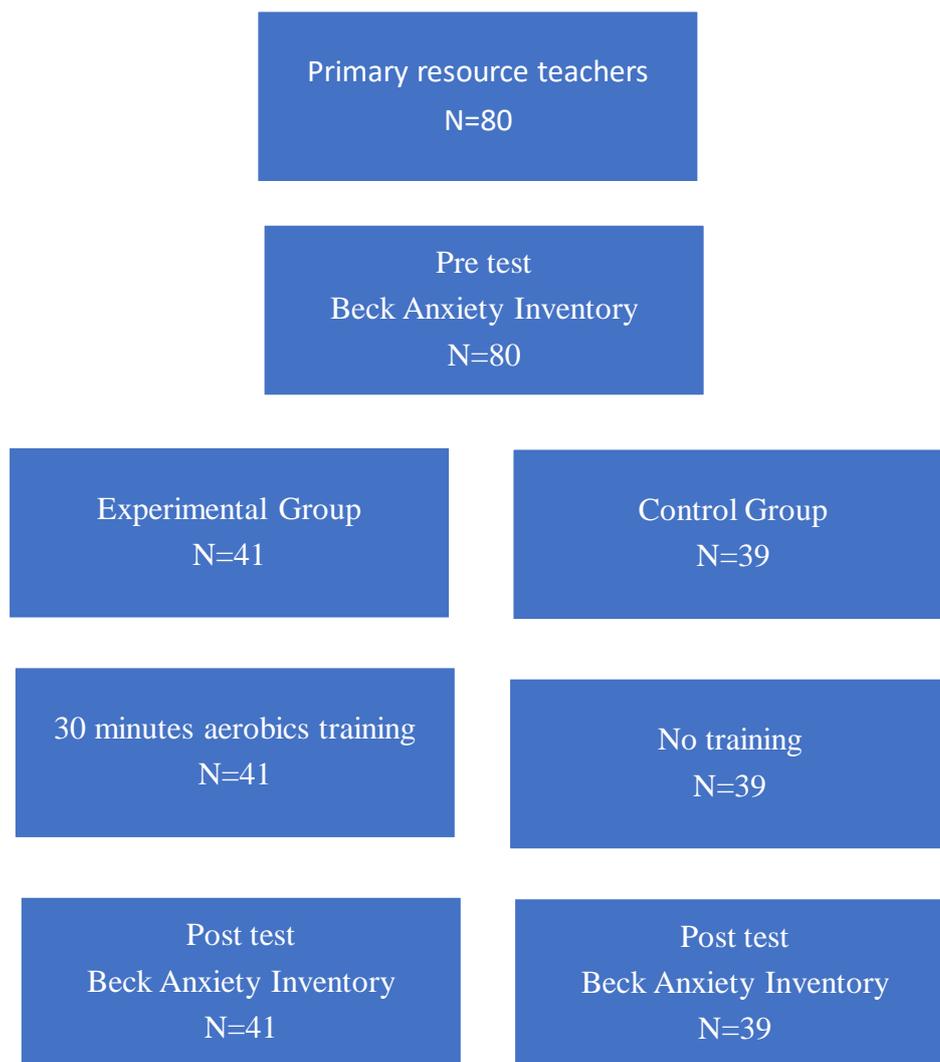


Table 1

Anxiety levels of primary resource teachers of Kerala state (n=80)

Anxiety levels	No. female teachers	No. male teachers	Total
Minimal anxiety levels (0-7)	0	0	0
Mild anxiety (8-15)	0	0	0
Moderate anxiety (16-25)	2 (5%)	5 (12.5%)	7 (8.75%)
Severe anxiety (26-63)	38 (95%)	35 (87.5%)	73 (91.25%)

The anxiety level of primary resource teachers as measured through the Beck Anxiety Scale (BAI) before the intervention program is presented in Table 1. This implies that 91.25 % of primary resource teachers have severe anxiety. Moreover, 95 % of female and 87.5 % of male teachers suffer from severe anxiety.

Table -2**Descriptive Statistics (n=80)**

Dependent Variable	Post (Anxiety Score)		
Group	Mean	Std. Deviation	N
Experimental	29.07	7.223	41
Control	41.10	7.394	39
Total	34.94	9.451	80

Table - 3

Tests of Between-Subjects Effects

Dependent Variable	Post (Anxiety score)					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre-Anxiety Score	2859.804	1	2859.804	168.796	0.000	0.687
Treatment	1403.248	1	1403.248	82.825	0.000	0.518
Error	1304.566	77	16.942			
Total	104707.000	80				
Corrected Total	7056.688	79				

a. R Squared = .815 (Adjusted R Squared = .810), Computed using alpha = .05

Table 3 shows that Partial Eta Squared is 0.687, indicating a 68.7 % variance in score after the treatment. According to Cohen's D, researchers identify that large effect size is present as per the partial Eta square score.

Fig - 2

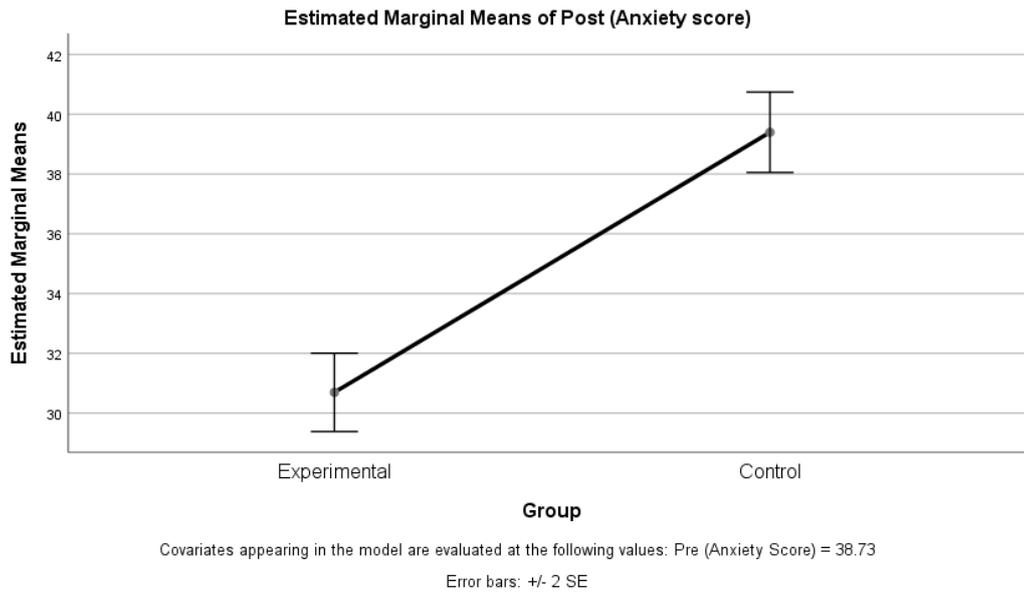


Table - 4

Descriptive Statistics

Dependent Variable	Post (Anxiety Score)		
Gender	Mean	Std. Deviation	N
Male	34.03	8.917	40
Female	35.85	9.986	40
Total	34.94	9.451	80

Table - 5

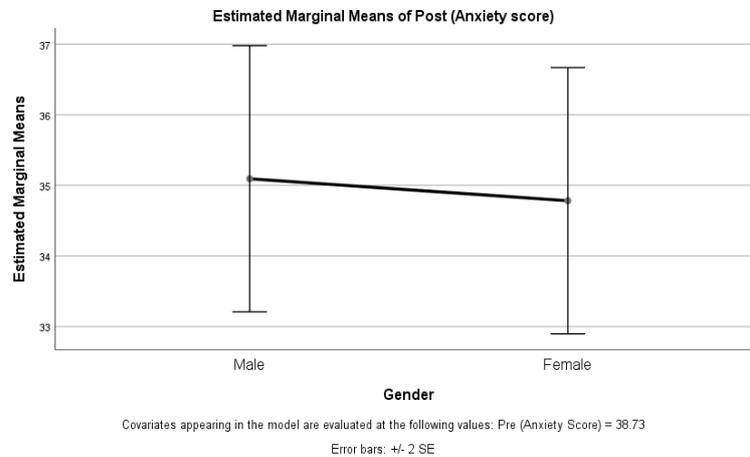
Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre-Anxiety Score	4284.155	1	4284.155	121.910	0.000	0.613
Gender	1.894	1	1.894	0.054	0.817	0.001
Error	2705.920	77	35.142			
Total	104707.000	80				
Corrected Total	7056.688	79				

a. R Squared = .617 (Adjusted R Squared = .607), Computed using alpha = .05

Table 5 shows that Partial Eta Squared is 0.613, indicating a 61.3 % variance in score after the treatment. Cohen's D effect size according to partial Eta square shows it is large.

Fig - 3



DISCUSSION

Primary resource teachers are responsible for training other primary teachers in Kerala state. Our study found that 95 % of female teachers and 87.5 % of male teachers suffer from severe anxiety, making a total of 91.25 % of primary resource teachers have severe anxiety. The administrators must manage this as resource teachers have to lead other primary teachers.

A study involving 44/69 primary and secondary teachers from schools in the UK found that an eight-week mindfulness course significantly reduced stress and anxiety. Stress (Perceived Stress Scale), anxiety, and depression (Hospital Anxiety and Depression Scale) were evaluated in both groups at baseline (n=44), end of intervention (n=32), and 3-month follow-up (n=19) [7].

People have different likes and interests, and aerobics attracts attention with its grace and music-oriented approach. Our study has also found that a single bout of aerobic exercise helps to reduce anxiety and, therefore, could serve those who want a more physically active approach to combat anxiety. We further found that women teachers have better anxiety scores after the intervention program than men, which implies that women have responded better to the training aerobics than men. However, our study has only 80 participants, and a single session of aerobics training was given. These two aspects are considered limitations of our study.

In a systematic review and meta-analysis to determine the effect of aerobic exercise in treating clinical anxiety in general practice an analysis done on 15 studies on 675 patients found that exercise programmes are a viable treatment option for the treatment of anxiety. Aylett, E., Small, N., & Bower, P. (2018) found high-intensity exercise regimens more effective than low-intensity regimens [8].

Local public health professionals, such as doctors and nurses, must provide teachers with knowledge, attitudes, and practices regarding infectious diseases to eliminate teachers' infection and educational anxiety [1]. Our society has a massive belief system about doctors and nurses. Information coming from them is perceived to be accurate and has greater acceptance. Therefore, health professionals have a moral responsibility to spread the knowledge regarding exercise to teachers and the general public.

CONCLUSION

The experimental group has shown a significant change in anxiety score as compared to the control group. Women teachers have also shown better scores on anxiety when compared with men. This information can help teachers to take the help of the physical education department and start aerobics sessions in schools to manage anxiety.

Further studies with more extended training and a larger group are required to assess the long-term effect of aerobics on anxiety and as well as to generalise the outcome.

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