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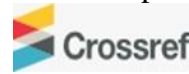
“Impact of Zumba on General Anxiety Disorder – An
Experimental Study among Nurses, UAE”

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Abstract

Purpose: To measure the result of Zumba on General Anxiety Disorder among nurses at multispecialty government hospital.

Materials and Methods: A true experimental design was selected for this study. 70 nurses from multispecialty hospital partook this study. Samples were arbitrarily dispensed to both control and study group. Study group underwent 30 minutes of Zumba, daily for 3 months. Data were gathered via online before and after the Zumba from both study and control group. The instrument used to collect data was General Anxiety Disorder- 7 scale.

Findings: The mean value in the study group test (12.89) was significantly less than the control group (19.6) with the t value of -

15.762 at 5% in the level of significance. It shows there is a momentous drop of general anxiety Disease after doing Zumba. Zumba is certainly one of the best option to treat the General Anxiety Disease (GAD), which enables to increase the mental health as well as the overall wellbeing of the nurses.

Implications to Theory, Practice and Policy: Since Zumba is a mixture of music and fun workout can safely include in the nurse's routine even within the hospital to reduce nurse's GAD.

Keywords: *Zumba, General Anxiety Disorder, Nurses*

JEL Codes: I12, I31

1.0 INTRODUCTION

Anxiety is a communal psychological disorder characterized by consistent, extreme, and impractical apprehension about everything. This apprehension could be multifocal such as health, family, finance and the future¹. Nurses are frontline health providers; their professional framework exposes the risk of getting anxiety. COVID 19 with no definite treatment causes fear on personal health, stress due to risk of contaminating the family members, long working hours, overload in work, no care takers to the children due closure of baby sittings or school, job loss to the spouses due to lock downs are the causes of anxiety to the nurses.

WHO (2019) projected that 4% of global population experienced general anxiety disorder. In 2019, 301 million individuals in the world had a General Anxiety Disorder². Nabeel Al-Yateem et.al., says that 28% of the people are with General Anxiety disorder³. Ślusarska B. et.al., (2022) says 22% of the nurses are suffering with General Anxiety Disorder⁴. Nurses might not comprehend or avoid admitting this anxiety in silence due to fear of losing their jobs or commitment in nursing profession.

Disregarding this issue can make the nurses to compromise the care delivery. Hence, it is an urgent requirement for psychological intervention to aid the nurses to cope with this unexpected psychological event. World Health Organization and American College of Sports Medicine says that exercises aid to lighten any built-up stress or anxiety that wants a vent to escape. Zumba is a mixture of dance and exercise, causes the brain to release serotonin (endorphin), the body's normal mood booster⁵, which prompt positive feelings, thus protect mental health³. In addition, Zumba helps to work out the complete body, aid coordination, burn calories, thwart cardiovascular diseases, lift mood and expand confidence, social and cognitive skills. Zumba allows people of all ages, abilities, and goals to participate and improve their overall health, relieve stress and cope with their anxiety, even helping them to overcome posttraumatic stress disorder and depression.

As per the literatures, Zumba is a non- pharmacological, noninvasive method of promoting psychological health by preventing the psychological illness. However, very minimum studies have done in nursing community to understand or test whether Zumba will help the nurses to reduce their General Anxiety Disorder or not and in UAE, no studies have been conducted yet with Zumba. Understanding these facts made the investigator to do this experimental study with Zumba intervention at our government multispecialty hospital to examine the impact of Zumba on general anxiety disorder among nurses.

2.0 LITERATURE REVIEW

Shaojuan Hu et., (2020) this narrative review stated that COVID-19 pandemic has restricted the corporal and societal activities of the people, which augmented the prevalence of mental health disorder. Anxiety and depression are the common mental ailments conversing serious influence on people's quality of life. Exercise as a management for anxiety and depression. Exercise synaptic transmission, hypothalamic pituitary adrenal (HPA) axis, regulate the production of brain-derived neurotrophic factor, D-β-hydroxybutyrate, GSK3β/β-catenin pathway, neuroinflammation, tryptophan hydroxylase, PGC-1α1-PPAR axis oxidative stress⁶.

Pablo A Domene et.al., (2015) to analyze how Zumba improve psychological health on health related quality of life. 10 participants were exposed to one to two hours of Zumba class weekly

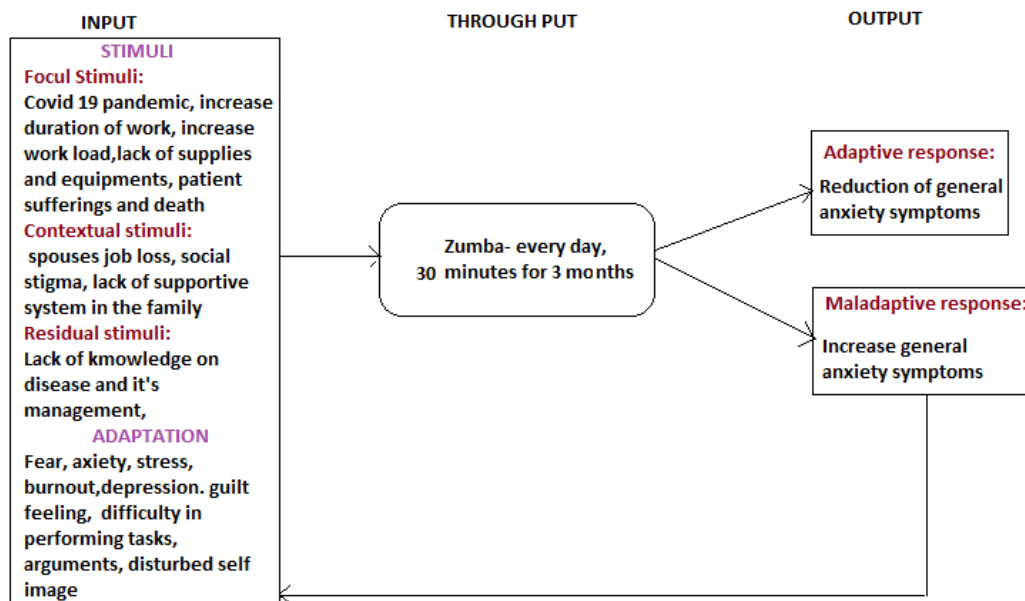
over an 8 week period discreetly increased maximum rate of oxygen consumption, body configuration, and inflammatory biomarkers pertinent to cardiovascular well-being in extra weight and bodily sedentary active women with slight or no earlier knowledge in Latin- themed aerobic dance. The study suggested that Zumba is an effective health promoting bustle for adults⁷.

Nur Liyana Hannah Izham Akmal (2017) Studied the effect of Zumba in stress. Zumba is a form of cardiovascular workout that aids in enlightening mood by secreting stress relieving hormones such as dopamine, norepinephrine. Zumba involves various movements, which stimulates the manufacture of endorphins which suppress the action of stress hormones such as adrenaline and cortisol. 50 participants were involved. After a month of Zumba study indicates that Zumba dance in the individual's stress management⁸. Viana et.al., (2017). It is a systemic review and meta-analysis study. Out of the 1342 studies, 17 qualitative analyses and 10 were meta-analyses included from PubMed, Cochrane databases and Scopus. Studies included were short-term and long-term interventions. The within the group analysis found that exergames resulted in significant improvements on anxiety levels.⁹.

Ben Singh et.al., (2023) in this umbrella review with met analysis, 12 electronic databases Cochrane, CINAHL, MEDLINE, Embase, Emcare ProQuest Nursing and Allied Health Source, ProQuest Health and Medical Complete, PsycINFO, Sport Discus, Scopus, Web of Science and EBSCO host were used from which randomized controlled trail were selected for analysis. A total of 97 reviews (1039 RCT and 128 119 participants) were included. Populations included were people with psychological disorders, healthy adults, and people with numerous chronic diseases. The study summarized as chief benefits were realized in people with HIV, depression, pregnancy, postpartum, healthy people and kidney disease. Advanced force in physical movement was connected with better advances in symptoms¹⁰. The cited study reported that 30 to 1 hour, for the period of 30 days to 60 days of aerobic exercises boost up the secretion of serotonin which helps to reduce the anxiety.

Theoretical Model

Roy adaptation theory model was used in this study



Aim

To assess the impact of Zumba on general anxiety disorder among nurses at government multispecialty hospital.

Objectives

1. To assess the change before and after treatment of Zumba on General Anxiety Disorder among study group.
2. To assess the change before and after treatment of Zumba on General Anxiety Disorder among control group.
3. To determine the difference in the effectiveness of Zumba on General Anxiety Disorder among nurses between the study and control groups before doing Zumba.
4. To determine the difference in the effectiveness of Zumba on General Anxiety Disorder among nurses between the study and control groups after doing Zumba.

3.0 MATERIALS AND METHODS

Study design: A True experimental design

Approach: Quantitative research approach

Study setting: Multispecialty Government hospital, Dubai

Population

Target population – All nurses who were working at Multispecialty Government hospital, Dubai.

Accessible population – All nurses whoever willing to participate

Sample Size Calculation

Sample size has been calculated by Open Epi sample size for randomized clinical trail. With odds ratio of 10, confidential interval 95% and the power of the study 80%, the calculated sample size for this study was 70 by Kelsey et.al, 2nd edition, Table 12- 15 & Fleiss, formulas 3.18 and 3.19

Sample Selection

The survey was developed in the Microsoft office 365, where the consent was inserted in the top of the survey tool. The link was generated and it was emailed to all nurses in the hospital. The nurses willing to partake were answered upon consent. The form was downloaded and the participants were arbitrarily dispensed to the control and study groups.

Criteria for Sample Selection

Inclusion Criteria

- Permanent, full time nurses working at multispecialty Government hospital
- The nurses willing to participate

Exclusion Criteria

- Temporary full-time nurses
- The nurses not willing to participate
- The nurses on leave during the period of study

Tool

The tool castoff for data collection has 2 parts.

Part 1: Demographic data

Part -2: General Anxiety Disorder- 7 scale.

Intervention

Zumba was taught to the study group members and made the samples to continue it for 3 months, daily 30 minutes

Pilot Study

Piloting done and found that it was possible to carry out Zumba without harmful effects

Data Collection

The questionnaire was developed with consent in the Microsoft office 365 and the link was generated and send to all nurses in the multispecialty government hospital. The nurses willing to participate were answered after the consent. From that list, the participants were randomly assigned to the control and study groups. The information was gathered from March to July 2023. Study participants were reassessed by using General Anxiety Disorder- 7 scale via micro soft office 365.

Data Analysis

To analyze the data descriptive and inferential statistics were used.

Part 1: Frequency and percentage distribution were used to analyze demographic data

Part 2: Mean, mean difference (MD), standard deviation (SD) and correlation coefficient (r) were used to analyze Zumba on General Anxiety Disorder

Ethical Consideration

Approval was received from nursing department, institutional review board and Dubai scientific research committee prior to the data collection and also consent was received from all subject's prior for their participation. Confidentiality was maintained throughout.

4.0 FINDINGS

Table 1: The Distribution of Age Groups among Zumba Participants

Age Groups	Study Group		Control Group	
	N	%	N	%
21-30	7	20.00%	5	14.30%
31-40	26	74.30%	22	62.90%
41-50	2	5.70%	7	20.00%
51-60	0	0.00%	1	2.90%
Total	35	100.00%	35	100.00%

The Table 1 shows, out of 70 participants selected for the study, the maximum nurses in the study group and control group were in 31 to 40 years of age group. That is 26 (74.30%) from study group and 22 (62.90%) were from control group.

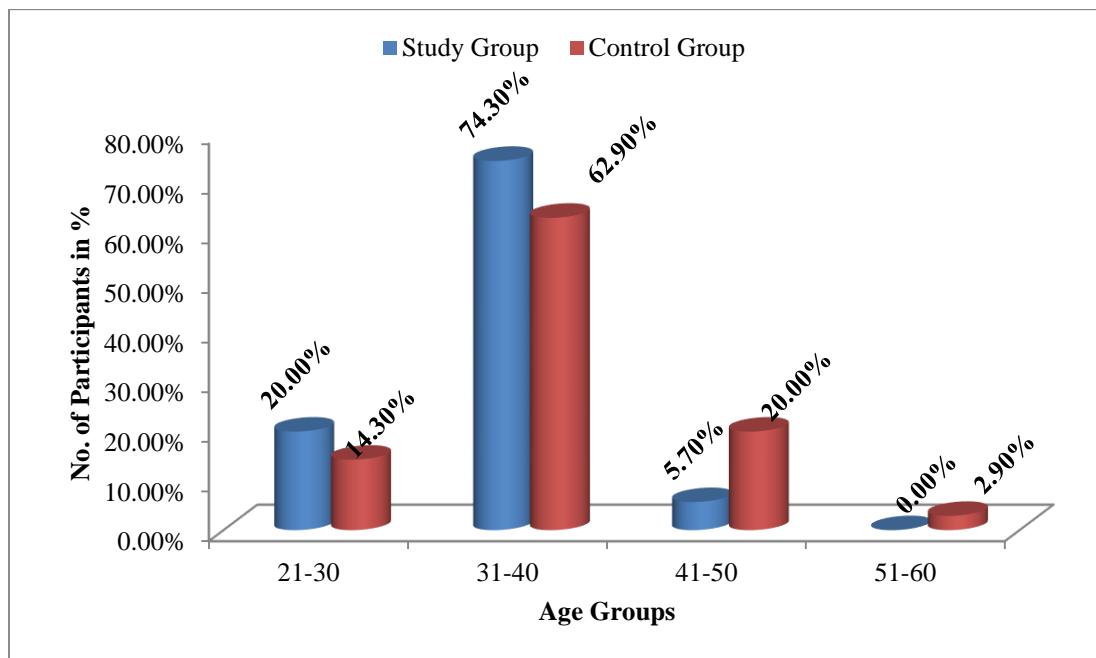


Figure 1: The Diagram Representing the Zumba Participant's Age Groups

Table 2: The Distribution of Gender among Zumba Participants

Gender	Study Group		Control Group	
	N	%	N	%
Male	2	5.70%	9	25.70%
Female	33	94.30%	26	74.30%
Total	35	100.00%	35	100.00%

The Table 2 shows, out of 70 participants, the maximum participants 33(94.3%) from the study group and 26 participants (74.3%) were from the control group were females.

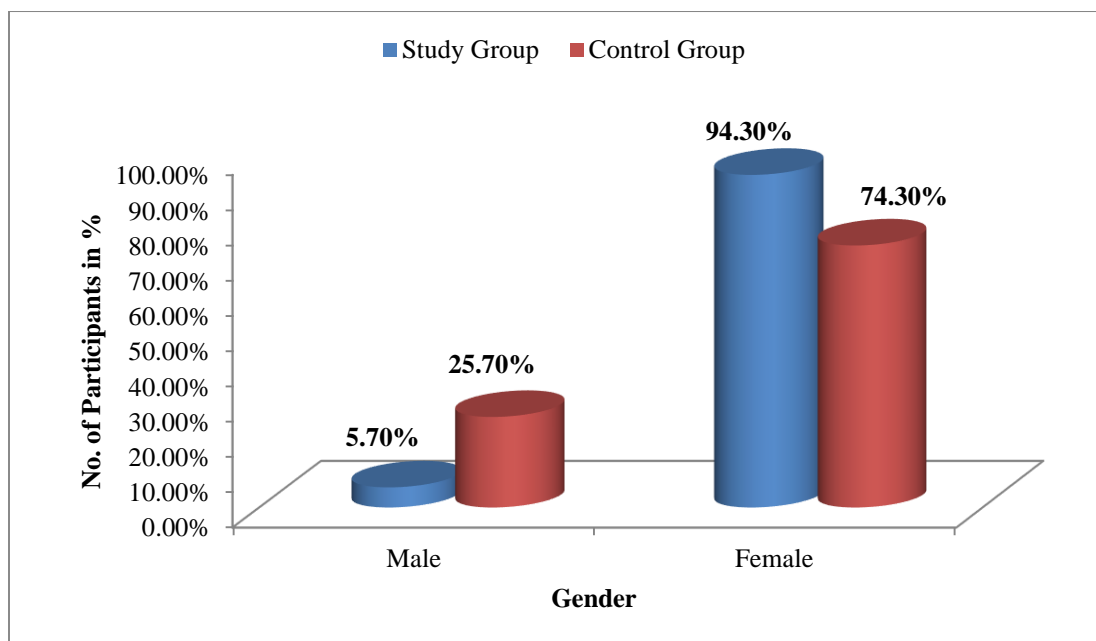


Figure 2: The Diagram Representation of Gender among Zumba Participants

Table 3: The Distribution of Zumba Participants Based on Religions

Religions	Study Group		Control Group	
	N	%	N	%
Muslim	2	5.70%	4	11.40%
Christian	23	65.70%	24	68.60%
Hindus	10	28.60%	7	20.00%
Total	35	100.00%	35	100.00%

The Table 3 shows, out of 70 participants, the maximum 23 participants (65.70%) and 24 participants (68.6%) were belongs to Christians.

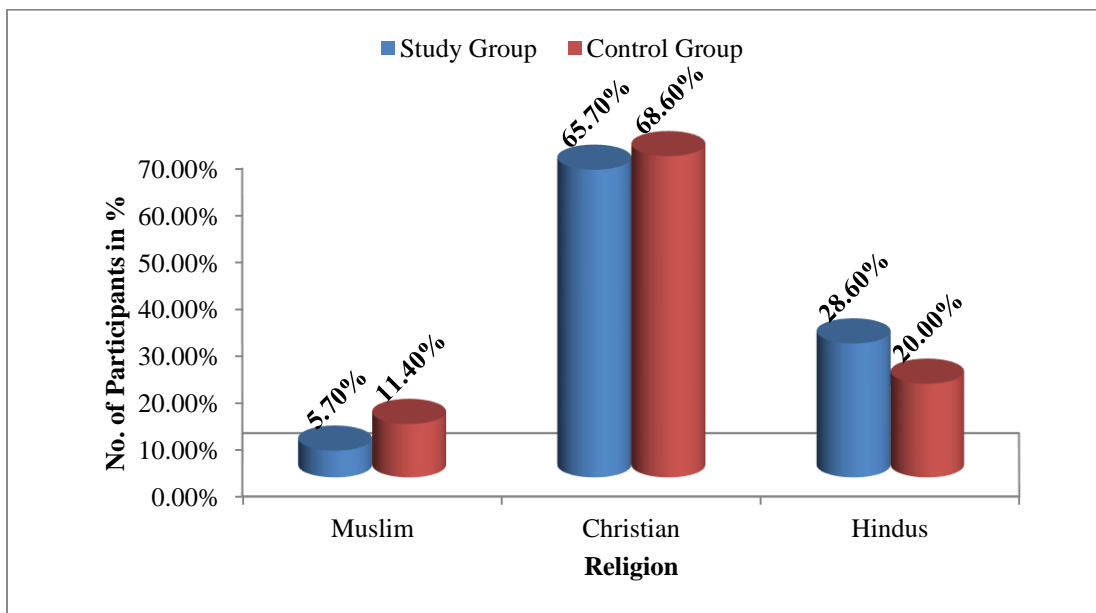


Figure 3: The Diagram Representation of Zumba Participants in Religion Wise

Objective: To determine the difference between before and after treatment of Zumba on GENERAL ANXIETY DISORDER among nurses in the study group.

Null Hypothesis (H₀): There is no significant difference in the General Anxiety Disorder before and after Zumba in the study group.

Alternative Hypothesis (H₁): There is a significant difference in the General Anxiety Disorder (GAD) before and after Zumba in the study group.

Table 4: Comparison of General Anxiety Disorder before and after Zumba in the Study Group

GAD in the study group of Zumba	Mean	N	SD	r	MD	t	df	p
Before	16.43	35	3.003	0.21	3.543	6.4	34	0.000*
After	12.89	35	2.083					

*statistically significant (p<0.05)

Since the p-value 0.000 is fewer than 0.05 and the mean score is significantly higher (3.543 points) with the t value of 6.4 and the degree of freedom 34 at 5% significance after the Zumba. So, we rejecting H₀ and accepting the difference in General Anxiety Disorder in the study group of nurses. The correlation (r = 0.21) is positive

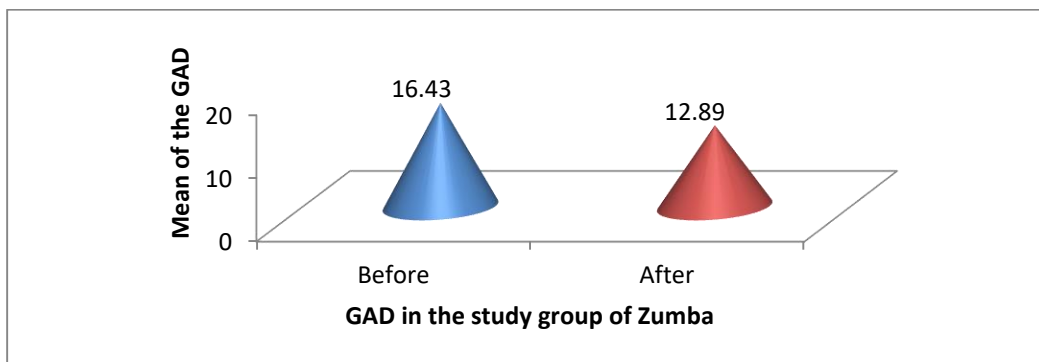


Figure 4: The Diagram of Comparison of General Anxiety Disorder before and after Zumba in the Study Group

Objective: To determine the difference between before and after treatment of Zumba on General Anxiety Disorder among nurses in the control group.

Null Hypothesis (H₀): There is no significant difference in the General Anxiety Disorder before and after Zumba in the control group.

Alternative Hypothesis (H₁): There is a significant difference in the General Anxiety Disorder before and after Zumba in the control group.

Table 5: Comparison of General Anxiety Disorder before and after Zumba in the Control Group

GAD in the control group of Zumba	Mean	N	SD	r	MD	t	df	p
Before	16.03	35	2.695	0.203	-3.571	-7.603	34	0.000*
After	19.6	35	1.418					

*statistically significant ($p < 0.05$)

Since the p-value 0.000 is fewer than 0.05 and the mean score is significantly less (- 3.571 points) with the t value of - 7.603 and the degree of freedom 34 at 5% significance after the Zumba. So, we rejecting H₀ and accepting the difference in General Anxiety Disorder in the control group of nurses. The correlation ($r = 0.203$) is positive.

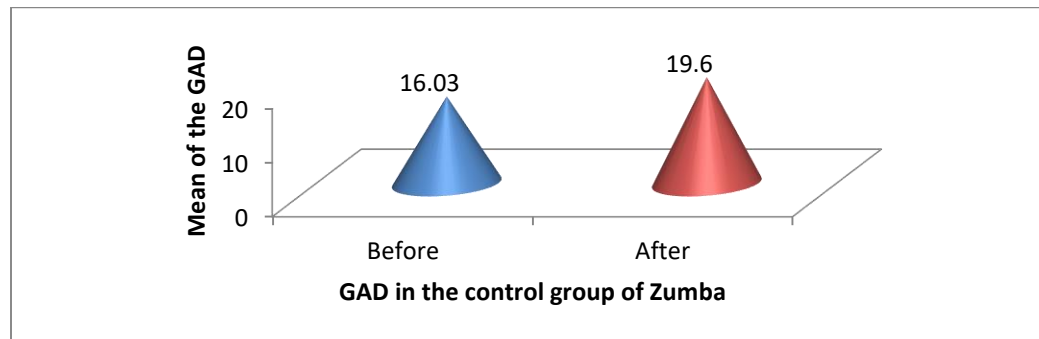


Figure 5: The Diagram of Comparison of General Anxiety Disorder before and after Zumba in the Control Group

Objective: To determine the difference in the effectiveness of Zumba on General Anxiety Disorder among nurses between the study and control groups before doing Zumba.

Null Hypothesis (H0): There is no significant difference in the General Anxiety Disorder in study and control group before doing Zumba.

Alternative Hypothesis (H1) There is a significant difference in the General Anxiety Disorder in study and control group before doing Zumba.

Table 6: Comparison of General Anxiety Disorder with Study and Control Group, before Doing Zumba

GAD before Zumba	N	Mean	SD	MD	t	df	p
Study Group	35	16.43	3.003	0.4	0.586	68	0.559
Control Group	35	16.03	2.695				

*statistically significant ($p < 0.05$)

Since the p-value 0.559 is higher than 0.05 and the mean score is significantly less (.40 points) with the t value of 0.586 and the degree of freedom 68 at 5% significance after the Zumba. So, we accepting H0, that there is no difference in General Anxiety Disorder among control and study group of nurses.

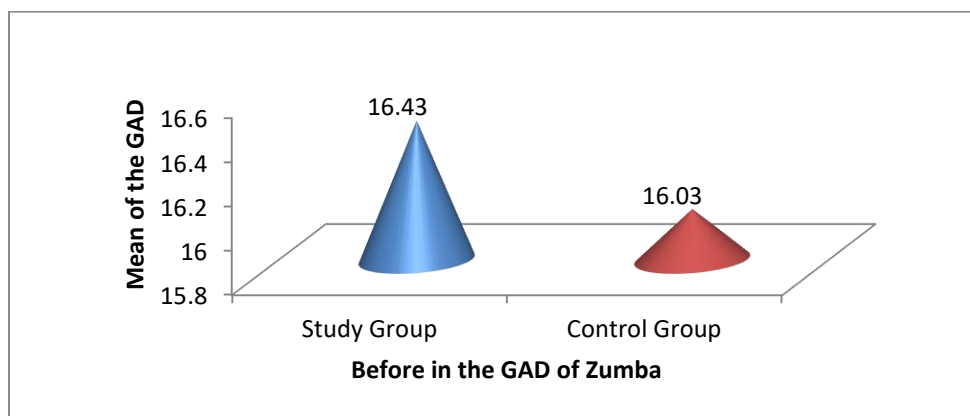


Figure 6: The Diagram of Comparison of General Anxiety Disorder before and after Zumba among Nurses in Control and Study Group

Objective: To determine the difference in the effectiveness of Zumba on General Anxiety Disorder among nurses between the study and control groups after doing Zumba.

Null Hypothesis (H0): There is no significant difference in the General Anxiety Disorder in study and control group after doing Zumba.

Alternative Hypothesis (H1): There is a significant difference in the General Anxiety Disorder in study and control group after doing Zumba.

Table 7: Comparison of General Anxiety Disorder with Study and Control Group after Doing Zumba

GAD after Zumba	N	Mean	SD	MD	t	df	p
Study Group	35	12.89	2.083	-6.714	-15.762	68	0.000*
Control Group	35	19.6	1.418				

*statistically significant ($p < 0.05$)

The mean test score in study group (12.89) was significantly less than the control group (19.6) ($t = -15.762$, $df = 68$ at a level of 5% significance). Since the calculated p-value 0.000 is less than 0.05, rejected null hypothesis and conclude that there is a difference in general anxiety disorder of nurses between study and control groups after doing Zumba.

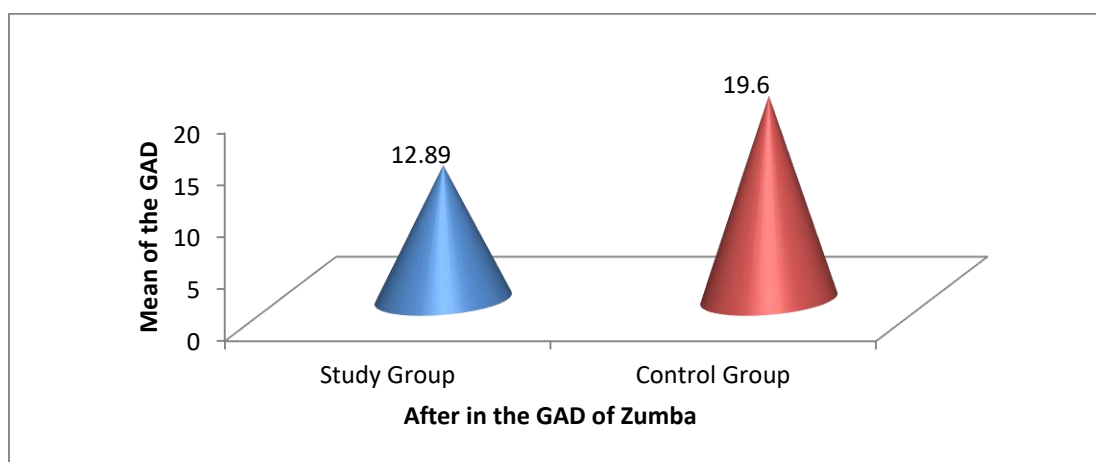


Figure 7: The Diagram of Comparison of General Anxiety Disorder with Study and Control Group after Doing Zumba

Discussion

The mean test score of General Anxiety Disorder in study group (12.89) was significantly less than the control group (19.6) ($t = -15.762$, $df = 68$ at a level of 5% significance). The study finding is supported by an articles Honey Reyes (2023)¹¹, Jenifer K Sharma (2020)¹², Beto Perez (2019)¹³ Zumba dismisses anxiety in numerous ways. The bodily movement of dancing demonstrates augmented endorphins- a feel-good hormone. These substances help decrease pain, advances mood, and encourage well-being. It also upsurges the secretion of serotonin, a substance in the brain that adjusts appetite, sleep and mood. Furthermore, Zumba serve as distraction treatment to divert away the stressors.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Zumba is an effective instrument for handling General Anxiety Disorder due to its mixture of bodily activity, societal engagement, and an enjoyable and active atmosphere.

Nursing Implications

Zumba is a mixture of music and fun exercise,

- Nurse administrators very well include it in the nurse's routine by providing a place within the hospitals and ensure that the nurses are doing Zumba regularly in order to protect the nurses from General Anxiety Disorders
- Nurse educators can include in the nursing department orientation, so that the uses will continue it in their practice as a routine.
- Can be included in the nursing students syllabus itself
- Nurse researchers can conduct more studies with nurses with large samples

REFERENCES

1. Munir S, Takov V, Coletti VA. Generalized Anxiety Disorder (Nursing). 2022 Oct 17. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. PMID: 33760455.
2. GBD Results Tool. In: Global Health Data Exchange [website]. Seattle: Institute for Health Metrics and Evaluation; 2019 (<https://vizhub.healthdata.org/gbd-results?params=gbd-api-2019-permalink/716f37e05d94046d6a06c1194a8eb0c9>, accessed 5 September 2023)
3. Nabeel Al-Yateem, Wegdan Bani Issa, Rachel C Rossiter et al. Anxiety related disorders in adolescents in the United Arab Emirates: a population based cross-sectional study, 28 May 2020, PREPRINT (Version 2) available at Research Square [<https://doi.org/10.21203/rs.2.17690/v2>]
4. Ślusarska B, Nowicki GJ, Niedorys-Karczmarczyk B, Chrzan-Rodak A. Prevalence of Depression and Anxiety in Nurses during the First Eleven Months of the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2022 Jan 20;19(3):1154. doi: 10.3390/ijerph19031154. PMID: 35162183; PMCID: PMC8834441.
5. <https://www.zumba.com/en-US/benefits-of-zumba#:~:text=Zumba%20can%20benefit%20many,needs%20an%20outlet%20to%20escape.>
6. <https://www.piedmont.org/living-real-change/7-health-benefits-of-zumba#:~:text=Zumba%20targets%20lots%20of%20different,Helps%20you%20de%2Dstress.>
7. Hu S, Tucker L, Wu C, Yang L. Beneficial Effects of Exercise on Depression and Anxiety During the Covid-19 Pandemic: A Narrative Review. *Front Psychiatry*. 2020 Nov 4;11:587557. doi: 10.3389/fpsyt.2020.587557. PMID: 33329133; PMCID: PMC7671962.
8. <https://www.journalcra.com/article/effects-zumba-dance-management-stress-survey>
9. <https://doi.org/10.1089/g4h.2017.008>
10. <https://bjsm.bmj.com/content/57/18/1203>
11. <https://medium.com/@hmr5477/the-scientific-proofs-of-what-zumba-dance-can-do-to-you-3cd9ee74c462>
12. <https://www.deccanherald.com/lifestyle/bust-the-stress-with-zumba-880544.html>
13. <https://bwellbeingworld.com/articles/author/5072>

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