



Effect of Dance Therapy on Stress Among Geriatrics

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Abstract: Stress is a common occurrence in daily life; sometimes, it will be a reaction or sometimes a stimulus. The aim and objective of the study were to assess the stress level among old age people and the effectiveness of dance therapy in reducing stress. "The research design selected for the study was pre-experimental one group pre-test and post-test research design". A non-probability convenience sampling technique was used to obtain a sample of 60 old age people who satisfied the inclusion criteria. The modified psychological stress assessment scale, a standardized measure for assessing the stress level among old age people, was administered to conduct the pre-test and the post-test. This tool contains 30 items. This is a 4-point scale, and the total score is 90. After assessing the pre-test stress level, dance therapy was provided to each sample for 30 days for 45 minutes per day each morning. After 30 days, stress was measured using the same modified psychological stress assessment scale. The Mean of the pre-test and post-test was (61.05) and (25.85), and the Standard Deviation of the pre-test and post-test was (11.89) and (8.27). The Mean difference was (35.2). This showed that there was a significant difference between pre-test and post-test levels of stress scores among old age people. The calculated chi-square value was significant with age, educational status and duration of stay at nursing homes; other variables were not significant. From the study results, it was concluded that Dance Therapy effectively reduced the stress level among geriatrics.

Key Words: Effect, Dance Therapy, Stress, Geriatrics

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I. INTRODUCTION

Stress is a common physical, mental, and emotional response to situations that disrupt day-to-day existence. Due to social complexity or high personal aspirations, people experience stress in varying degrees extremely frequently in all facets of their lives. In addition, stress affects health by reducing disease resistance and increasing susceptibility to sickness. The elderly population is one of society's weakest groups. They are not only weak physically, but they also lack social standing, self-esteem, and financial means. Elderly persons are more susceptible to illness and impairment, yet they have different physical characteristics when it comes to the mental health of those they accept. Some mental illnesses are more common throughout this stage of life. In India, the overall prevalence of stress and anxiety among adolescents and young adults ranges from 5 to 70 per cent during their lifetimes¹. Anxiety prevalence was found to be 10.6% and 16.6% in men and women worldwide, respectively, with a ratio indicating that prevalence is roughly twice as high in women as it is in males². Among those who had been employed for a longer period, 8.2% of men and 10% of women reported having anxiety symptoms³. Males experienced 13% more stress than females did in the working population. The status of women has changed as a result of growing industrialization and urbanization, which has led to an increase in stress levels. In India, working women reported a prevalence of 37% for stress and 40% for anxiety⁴. The working population is stressed due to quick lifestyle changes and rising competition⁵. Stress levels have increased due to women having to manage stress from their homes and their jobs⁶. The cardiovascular, endocrine and central neurological systems can all suffer negative effects from prolonged stress. Anxiety is most commonly caused by ongoing stress. Frequent panic episodes, phobias including agoraphobia and social phobia, and unpleasant thoughts are all signs of anxiety⁷. The concept of stress is linked to negative affective situations. Additionally, a stressful incident in life might trigger periods of anxiety or depression by precipitating them. This stress response is characterized by continuous arousal and reduced functions. Considered a mental state, anxiety and the idea of a stress response are related⁸. Certain physiological and biochemical changes occur in the body in response to stress. Stress-induced physiological changes include increased respiration, volumetric consumption, and dilation of bronchioles and airways. In addition, due to the simultaneous increase in cardiac output and blood pressure, blood flow will increase to the heart, muscles and skin⁹. Biochemical changes triggered in stressful conditions activate two main pathways, sympathoadrenal medullary axis and Hypothalamus pituitary adrenoaxis. These two factors are activated by Corticotrophin Releasing Hormone, which causes the release of ACTH by the pituitary gland. ACTH stimulates the adrenal medulla in SAM, which releases catecholamines epinephrine and norepinephrine. In the HPA axis, the

Adrenocorticotrophic hormone (ACTH) acts on the adrenal cortex, releasing cortisol. Cortisol changes the liver's metabolism by increasing glucose and ATP, which repairs the cells in response to stressful conditions⁹. Many pharmacological and non-pharmacological therapies are available to treat stress and anxiety. Antidepressants, antipsychotics, and anxiolytic medications make up the pharmacological treatment¹⁰, while non-pharmacological therapies include yoga, behavioural, psychoanalytical, and group therapy. Painting, playing, sculpting, dance therapy, and music therapy are a few other examples of art treatments¹¹. A study was conducted to determine the impact of music treatments on stress and anxiety, and the findings showed that these interventions are successful at lowering both of these emotions¹². Music therapies have been shown to reduce stress and anxiety levels, improve psychological well-being, relax physical and mental tension, and control serotonin and dopamine levels¹³. Numerous dance forms, including ballroom, street, jazz, ballet, and Zumba, can help people manage their stress and anxiety. However, aerobic dance has a particularly good effect¹⁴. One form of aerobic exercise is aerobic dance; "aerobics" means "with oxygen"¹⁵. Analysis showed that exercise improved fatigue, stress, and anxiety after 10 minutes, with further benefits after 20 minutes but no further improvements over longer periods¹⁶. According to the American Dance Therapy Association, movement is a form of therapy to assist people in achieving emotional, cognitive, physical, and social integration. This therapy is commonly referred to as dance therapy or DMT. Dance therapy can be utilized for stress reduction, disease prevention, and mood management, which are advantageous for physical and mental health. The physical aspect of DMT also provides improved muscular strength, coordination, mobility, and reduced muscular stress. Regardless of the population, dance/movement therapy can be done with individuals, couples, families, or groups. The researcher also noted that it would be especially helpful for those under more stress, thus she chose elderly stress sufferers for the study. They can communicate their difficulties by being forced to undergo dance therapy. In turn, this lowers their stress levels and keeps their minds relaxed. Therefore, this study aims to gauge the degree of stress among seniors and determine whether dance therapy impacts that level of stress.

2. MATERIALS AND METHODS

Research methodology is a way of explaining how a researcher intends to carry out their research. It's a logical, systematic plan to resolve a research problem. A methodology details a researcher's approach to the research to ensure reliable, valid results that address their aims and objectives. It encompasses what data they will collect and where from, as well as how it's being collected and analyzed. (Indeed Editorial Team, 2022)¹⁷.

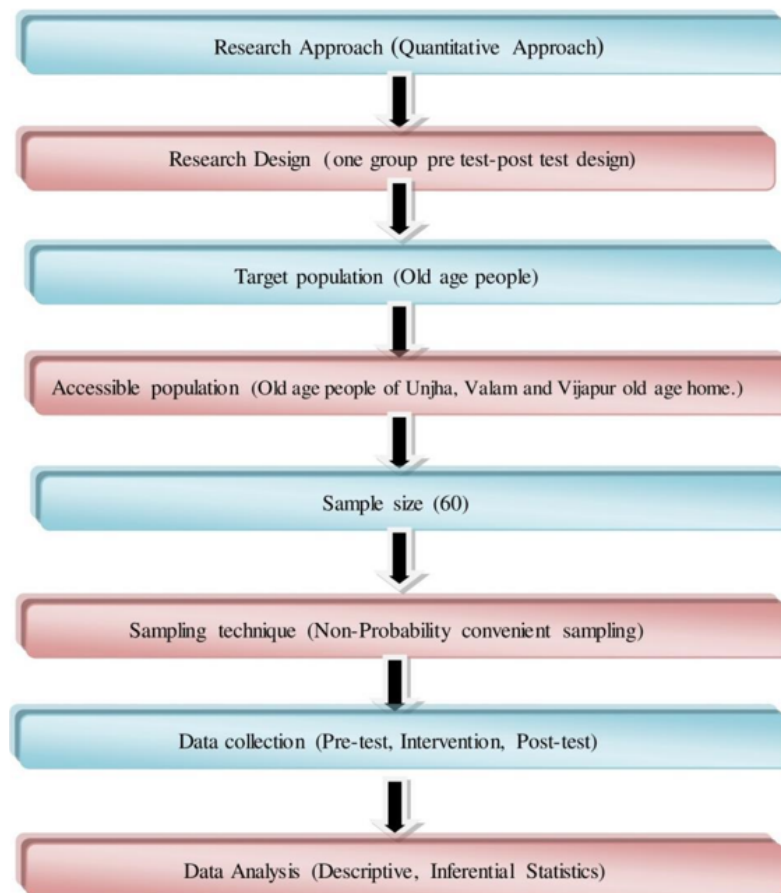


Fig 1: Systematic arrangement of methodology

2.1. Research approach

A quantitative research approach was used to assess the effect of dance therapy on stress among older adults.

2.2 Research design

In this pre-experimental study, one group pre-test and post-test designs were used. One group pre-test and post-test design judge the effect of the treatment by the difference between the pre-test and post-test scores.

2.3 Population

A population is the entire aggregation of cases in which a researcher is interested. (polit and hungler, 2008)¹⁸. In this study, the populations selected for the present study comprised older adults living at selected nursing homes in the Mehsana district.

Target population: "A target population consists of the total number of people or objects which meet the designated set of criteria." For example, in this study, 60 people living at selected nursing homes in the Mehsana district are my accessible population.

Accessible Population: "It is the aggregate of cases that conform to designated criteria and are also accessible as subjects for a study." For example, in this study, 60 people living at selected nursing homes in the Mehsana district are our accessible population.

2.4 Sampling

"Sampling is the process of selecting a portion of the population to represent the entire population so that inference about the population can be made"¹⁹. Therefore, the Non-probability convenience sampling technique selected the participant of the present study.

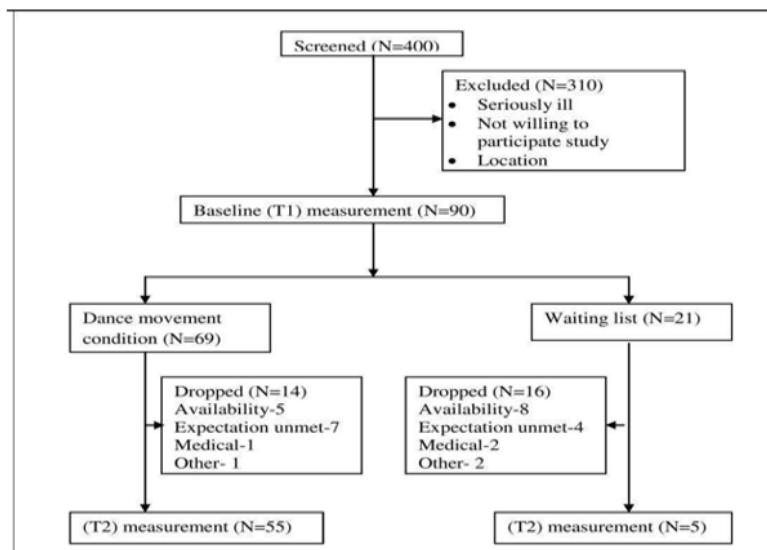


Fig 2: Participant sample flow chart

2.5 Sample size

"Sample as a representative unit of a target population, which is to be worked upon by researchers during their study." The sample consists of 60 older adults who had been identified as having significant stress levels and were selected for the experimental group. Among these are 20 samples from the nursing home Unjha, 20 from the Vijapur and 20 from the Valam.

2.6 Sampling criteria

Table 1: Inclusion and exclusion criteria	
Inclusion criteria	Exclusion criteria
* Old age people who are in the age group of 61-80 years.	*Old age people who are seriously ill during the data collection period.
*Old age people who are available at the time of the study.	*Old age people who are not willing to participate.
*Old age people who read and write Gujarati.	
*Both females and males are taken as samples for the study.	
*Old age people who have moderate and severe stress.	

2.7 Variable of study

Variables are concepts at different levels of abstraction that are concisely defined to promote their measurements or manipulation within the study.

• Independent variable

"It is a stimulus or activity manipulated or varied by the researcher to create the effect on the dependent variable." For example, dance therapy is the independent variable.

• Dependent variable

"The response behaviour or outcome that is predicted or explained in research; changes in the dependent variable are presumed to be caused by the independent variable" In this study. The dependent variable is stress among old age people.

• Demographic variables

The Demographic variables in my study are age, sex, marital status, religion, education, source of income, previous occupation, method of joining the nursing home, duration of stay at a nursing home and medical illness.

2.8 Description of the tool

The tool which is used in this study consists of two parts,

- Section-A
- Section-B

Section A: A structured questionnaire was used to collect the demographic data. It consists of age, sex, marital status, source of income, religion, previous occupation, educational status, duration of stay at the nursing home, method of joining the nursing home and medical illness.

Section B: Kenyon (2005) adopted a stress assessment scale to develop the level of stress. The Modified Psychological Stress Assessment Scale is used to assess the level of stress. The tool consists of 30 items that assess psychological, social and physical stress-related problems. The scores were obtained by reversing responses (eg:0=3,1=2, 2=1 & 3=0) to the seven positively stated items (8,11,12,14,16,19 &22) and summing across all scale items. The Modified Psychological Stress Assessment Scale scores ranged from 0 to 90. Each item was answered on a four-point scale. Items were scored as,
 0 = Never
 1 = Sometimes
 2 = Often
 3 = Always.

Scoring and Interpretation

Table 2: Scoring and Interpretation		
Level of stress	Score	Percentage
Mild stress	0-30	0 – 33%
Moderate stress	31-60	34 – 67%
Severe stress	61-90	68– 100%

Table 2 illustrates that scores 0-30 are mild stress, 31-60 are moderate stress, and 61-90 are severe stress.

2.9 Data collection method

The investigator introduced themselves and informed the participants about the nature of the study to ensure better cooperation during the data collection. Written informed consent was obtained from them for their willingness to participate in the study. They were assured that their response and details would be kept confidential and used only for research purposes. Before the tool was administered, informal discussions were made with the participant to establish rapport so they would be relaxed. The pre-test and post-test were conducted using the modified psychological stress assessment scale, a standardized tool for determining the stress level among seniors. This tool has 30 items. The total score on this 4-point scale is 90. After determining the pre-test stress level, each sample received dance therapy for 30 days, lasting 45 minutes each morning. A modified psychological stress assessment scale measured stress after 30

days. The data were examined using the Mean, standard deviation, t-test, and chi-square test.

3. DATA ANALYSIS

Polite and Hungler (2018) described the analysis as "a process of organizing and synthesizing data in such a way that research question can be answered and hypothesis tested)²⁰. Interpretation refers to making sense of the results and examining the implication of the finding within a broader context. This chapter analyses and interprets data collected from nursing homes to determine the effectiveness of Dance therapy on stress among old age people. Modified psychological stress assessment scale used to assess the level of stress among old age people. The researcher used descriptive and inferential statistics (Manual) to calculate the analysis from the data.

4. RESULTS

Table 3: Frequency and percentage distribution of pre-test and post-test level of stress scores among old age people				
Level of stress	Pre-test		Post-test	
	F	%	F	%
Mild stress(0-30)	00	0%	49	81.66%
Moderate stress (31-60)	28	46.66%	11	18.33%
Severe stress (61-90)	32	53.33%	00	0%

Table 3 shows that before the administration of dance therapy, the pre-test (53.33%) of the samples had severe stress and (46.66%) had moderate stress. However, in the post-test, there was a marked improvement in the sample's stress level, with (18.33%) moderate stress and (81.66%) mild stress.

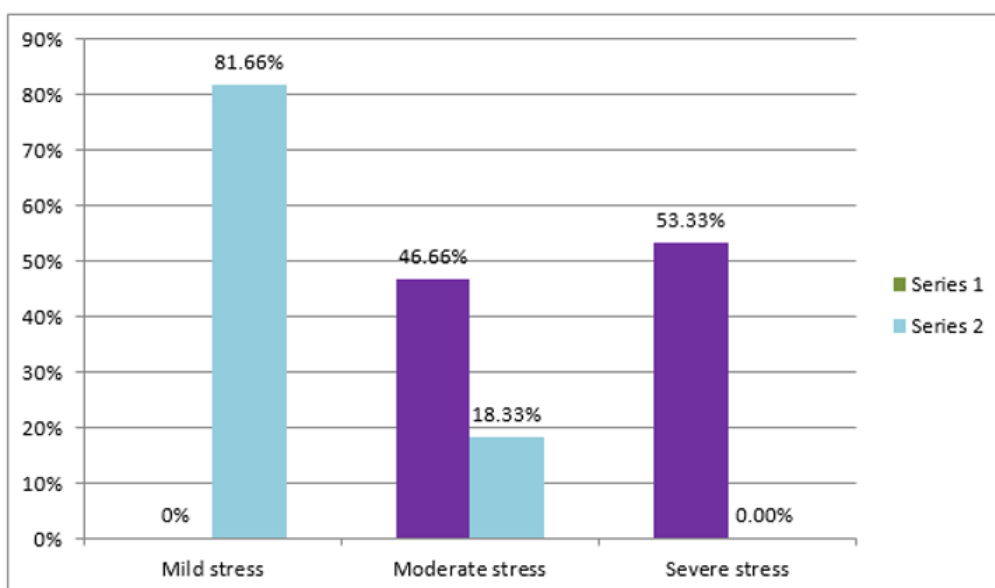


Fig 3: Pre-test and Post-test level of stress score among old age people

Table 4: Mean, S.D., Mean difference and 't' value of pre-test and post-test level of stress scores of the effectiveness of Dance therapy.

Parameter	Mean	Standard deviation	Mean difference	't' value	Table 't' value	Level of Significance 0.05
Pre-test	61.05	11.89	35.2	25.29	1.67	S
Post-test	25.85	8.27				

Table 4 shows that the Mean of the pre-test and post-test was (61.05) and (25.85) and the Standard Deviation of the pre-test and post-test was (11.89) and (8.27). The Mean difference was (35.2). The calculated 't' value (25.29) was greater than the table value (1.67) at a 0.05 level of significance. This showed

that there was a significant difference between pre-test and post-test levels of stress scores among old age people. Thus it was evident that dance therapy was effective in reducing the level of stress among old age people.

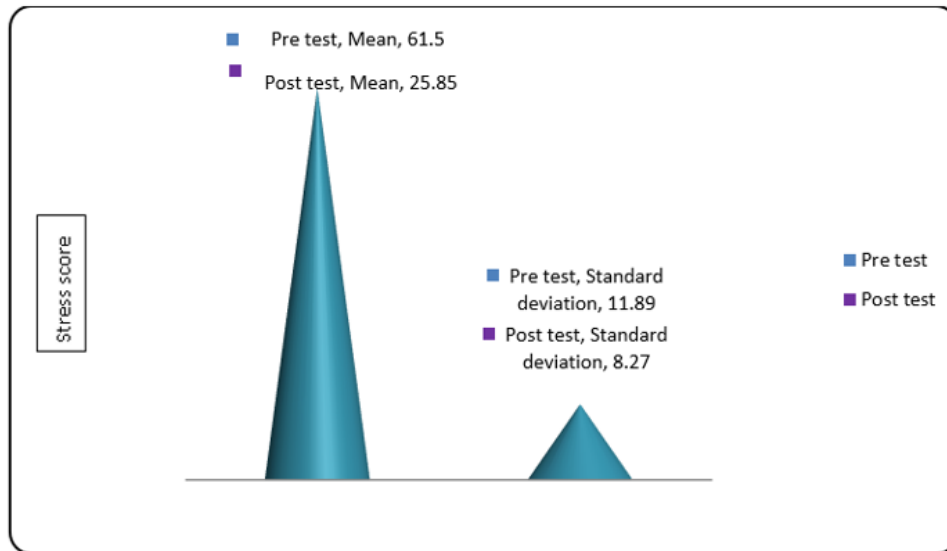


Fig 4: Effectiveness of dance therapy on reducing the level of stress among old age people.

Table 5: Association of the post-test level of stress scores among old age people with their selected demographic variables.

Variables	Category	Frequency	Post-test level of stress				Table value	Chi-Square test	Sign Find >0.05 %
			Mild (0-30)		Moderate (31-60)				
			N	%	N	%			
Age	61- 65	19	17	89.47%	2	10.5%	7.82	10.58	S
	66-70	23	20	86.9%	3	13.04%			
	71-75	12	10	83.33%	2	16.66%			
	76-80	6	2	33.33%	4	66.66%			
Sex	Male	24	18	75%	6	25%	3.84	1.18	NS
	Female	36	31	86.11%	5	13.8%			
Marital Status	Unmarried	9	7	77.7%	2	22.22%	7.82	0.51	NS
	Married	33	28	84.8%	5	17.8%			
	Widowed	13	10	76.9%	3	23.07%			
	Divorced	5	4	80%	1	20%			
Religion	Hindu	52	44	84.6%	8	15.38%	5.99	3.09	NS
	Christian	4	3	75%	1	25%			
	Muslim	4	2	50%	2	50%			
	Other	0	0	0%	0	0%			
Education	Uneducated	13	8	61.53%	5	38.46%	9.49	10.30	S
	Primary education	11	7	63.63%	4	36.36%			
	Secondary education	14	13	92.85%	1	7.14%			
	Higher Secondary education	16	15	93.75%	1	6.25%			
	Graduates	6	6	100%	0	0%			
Previous occupation	Government	9	6	66.66%	3	33.33%	7.82	3.62	NS
	Semi government	16	12	75%	4	25%			

	Private	25	23	92%	2	8%			
	Other	10	8	80%	2	20%			
Source of income	Pensioner	12	8	66.66%	4	33.33%	5.99	3.99	NS
	Support from children	32	29	90.6%	3	9.37%			
	Dependent on the nursing home	16	12	75%	4	25%			
	Others	0	0	0%	0	0%			
Method of joining a nursing home	Voluntary	18	15	83.33%	3	16.6%	5.99	3.68	NS
	Brought by children/other	23	21	91.3%	2	8.69%			
	Others	19	13	68.42%	6	31.57%			
Duration of stay at nursing home	Less than 1 year	12	7	58.33%	5	41.66%	5.99	8.37	S
	1 to 3 year	15	11	73.33%	4	26.66%			
	More than 3 year	33	31	93.9%	2	6.06%			
Medical illness	Diabetes	26	22	84.6%	4	15.38%	9.49	3.40	NS
	Hypertension	18	15	83.33%	3	16.66%			
	Asthma	2	1	50%	1	50%			
	Any other specify	9	8	88.9%	1	11.11%			
	Nil	5	3	60%	2	40%			

S- Significant NS- Non Significant

Table 5 According to the chi-square analysis, there was a correlation between age, educational attainment, and the length of residence in a nursing home and the post-test level of stress scores. The study concluded that there was a strong correlation between the post-test stress levels among seniors and the chosen demographic factors. Table 3 reveals that (53.33%) of the entire sample had severe stress, and (46.66%) had moderate stress before the delivery of dance therapy. There was a noticeable change in the sample's stress level in the post-test, with moderate stress levels (18.33%) and light stress levels (81.66%).

5. DISCUSSION

The study aimed to evaluate dance therapy's efficacy in lowering stress in elderly individuals. The results of the study demonstrate that dance therapy is effective in reducing stress in seniors. Moreover, this strategy works well in nursing homes for the elderly to reduce stress. In the present study mean of the pre-test and post-test was (61.05) and (25.85) and the Standard Deviation of the pre-test and post-test was (11.89) and (8.27). The Mean difference was (35.2). This showed that there was a significant difference between pre-test and post-test levels of stress scores among old age people. The calculated chi-square value was significant with age, educational status and duration of stay at nursing homes; other variables were not significant. From the study results, it was concluded that Dance Therapy effectively reduced the stress level among geriatrics. In a similar study conducted by Manali B (2020) in Maharashtra, 41 women between the age group 25 to 40 years were randomly selected to receive aerobic dance therapy. The program was conducted for four weeks, scheduled three days a week, with a session of 10-20 minutes each day. The present study sample also did dance therapy for 45 minutes per day for 30 days. she concluded that aerobic dance therapy effectively reduced stress and anxiety in working women²¹. Dauda Salihu (2021) conducted a study to examine the effect of dancing interventions on depression symptoms. He concluded that dancing intervention for at least 150 min per week was found to have reduced depression symptoms²². The present study shows that dancing intervention for 315 min per week significantly reduces stress. One of the studies was conducted by Nikita Hazarika (2015) for 60 participants, and her statement provides scope for

future studies to be conducted to find the impact of dance on specific domains of mental health in general, which could provide healthy growth among corporate professionals²³. In addition, the current study also proved that dance therapy has a significant effect in reducing stress. Another study by Nguyen (2014), Northampton, suggests that dance may improve quality of life by reducing mental illness symptoms and increasing physical health and cognitive abilities, possibly through mind-body integration²⁴. The present study also supports his statement. Amy Chiu (2020) California discussed the importance of alternative therapy for stress. She introduced alternative therapy in the hospital and found Dance Movement therapy (DMT) is an effective alternative therapy that uses movement to change patients' emotions based on their choices of movement²⁵. The present study shows that alternative therapy is significant in reducing stress other than allopathy medicine. Duberg A, et.al., investigate whether dance intervention influenced self-rated health for adolescent girls with internalizing problems, resulting in 91% of the girls rating the dance intervention as a positive experience. It can improve self-rated health for adolescent girls with internalizing problems²⁶. DeMesa-Simpson and Dinesha evaluated the relationship between dance/movement classes and disruptive behaviour. The findings revealed that dance classes could reduce stress and develop self-control and self-regulation and exhibit less disruptive behavior²⁷. Based on the results of our study, we concluded that dance therapy effectively reduced stress among geriatrics.

6. CONCLUSION

The study's findings concluded that older adults living in nursing homes experience high-stress levels. To lower their stress level, they need various measures. The study's findings show a substantial relationship between demographic factors including age, education, and the length of stay in a nursing home. In contrast, other factors are not significantly related to stress. The 't' value was 25.29, greater than the table value at [p 0.05], indicating that older adults stress levels decreased due to dance therapy. It is an effective strategy to lower older adults' stress levels. Nurses can make this dance therapy an effective measure to enhance the coping strategies of older adults. The nurse administrator coordinates her activity with the curative aspects of care among old age people by

participating, practising, and supervising the dance therapy. The nurse educator can train and encourage the student nurses to utilize dance therapy as an alternative complementary therapy to reduce stress among old age people.

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8. AUTHORS CONTRIBUTION STATEMENT

Nima P. Patel conceptualized, designed and gathers data. N Siva Subramanian analyzed these data and inputs were given B. Mahalakshmi. Prakash. D discussed the methodology and results and contributed to the final manuscript.

9. CONFLICT OF INTEREST

Conflict of interest declared none.