

Effectiveness of yoga and pranayama on depressive symptoms among elderly residing in selected old age home

Abstract

Yoga and pranayama is the traditional Indian practice which was usually to maintain and restore the health and peace. This study investigated the combined effect of yoga and pranayama in reducing depressive symptoms of the elderly residing in old age home. The study assessed the pre and post-test depressive symptoms, compared the mean scores and also associated the influence of demographic variables. One group pre-test post-test design 50 elderly with depressive symptoms were included from selected old age home. Geriatric Depression scale long version was used to assess the depressive symptoms of the elderly before and after intervention. Elderly were given supervised yoga and pranayama for the period of 16 weeks. Post assessment was done and the data was analysed and result was drawn. The finding of the study showed that yoga and pranayama was effective in reducing depressive symptoms of the elderly and the demographic variable did not have any influence on the depressive symptoms of the elderly.

Keywords: depressive symptom, elderly, depression scale, old age home, pranayama, yoga, research design

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Introduction

Human creature is goddess. Health is considered as a “state of complete physical, mental and social wellbeing not merely the absence of disease or infirmity”.¹ A sound mind in a sound body has been recognized as a social ideal for many centuries.

Old age is the part of the life in later stage after young adult and middle age. No one has defined that at what age the old age begins because it varies based on the context. World Health Organization said 50 years and above is the old age it is not only based on the age, it also considers the existing role and responsibilities, previous role or unable to contribute to the society.

WHO estimated that between 2000 and 2050 elderly population over the age 60 years is expected to be doubled. In the year 2050, it is expected that more than one in five people will be 60 years and above.² With the increasing age people prone to get lot of physical and psychological issues. Many study findings reported that elderly people experiencing a lot of stress and strain. Severe long standing stress leads to depression and ultimately which in turn affect the quality of life. Severe stress and depression sometimes leads to suicidal ideas and or attempted or succeeded suicide.

WHO,³ depressions are estimated to affect 350 million people worldwide⁴

WHO mental health of older adults December 2017 stated that Over 20% of adults aged 60 and above suffer from a mental or neurological disorder. The most common mental and neurological disorders in this age group are dementia and depression, which affect approximately 5% and 7% of the world's older population, respectively.

Sandeep et al.⁵ in their review reported that the prevalence of depression among senior citizen belongs to India varying between 8.9% and 62.16% in the community setting. Clinically based study prevalence rate was between 42.4% and 72%. In a study Tamilselvi

et al.⁶ estimated that the prevalence of geriatric depression among elderly in old age homes at Kancheepuram, Tamil Nadu was 66.66%.⁶ Data sheet of some study findings showed that approximately 85% of the elderly people experiencing depression but they were not given any help. Help need not be in the form of only money, materials and medicines it may be in the form exercise, counselling, massage, music, laughter and yoga extra.

Older adults suffer with mental and emotional disorder is called geriatric depression.⁷ Yoga therapy may be the effective medicine for depression and it can be practiced in the residential setting without cost concern. Yoga therapy is not only treatment for depression, it can be used for many physical and psychological disorders and also maintain and improve the general health.

Recent 10-15 years there has been a growing concern over yoga on many of the psychological and physical disorders. There are many trials on depression with yoga and pranayama in western countries and in India, and they have proved good result of yoga for depressive symptoms.

Statement of the problem

A study to assess the effectiveness of yoga and pranayama on depressive symptoms among elderly residing in selected old age home.

Objectives

1. To assess the pre and post-test level of depressive symptoms among elderly.
2. To compare the pre and post-test depressive symptoms score among elderly.
3. To associate the depressive symptoms score of elderly with their selected demographic variable.

Assumption

1. Old age people living away from the family commonly may have depressive symptoms.
2. Yoga therapy may reduce the depressive symptoms.

Materials and methods

Research approach and design

Quasi- experimental one group pre-test post-test design⁸ was used in this study.

Variables

Independent variable- yoga and pranayama

Dependent variable- depressive symptoms

Setting

Old age home under Duraisamy social Education Association, Vilvarayanallur, Kancheepuram district, Tamil Nadu-India.

Population

Target population- All the elderly aged above 55 years with depressive symptoms living in old age home at Tamil Nadu.

Accessible population- All the elderly aged above 55 years with depressive symptoms living in old age home at Kancheepuram districts-Tamilnadu.

Sample

Elderly who fulfilled the sampling criteria and who ever scored above 9 in the Geriatric Depression scale.

Sample size

Sample of 50 elderly who fulfilled the sampling criteria were included as sample.

Criteria for sample selection

Inclusion criteria

1. Elderly who can speak and understand Tamil
2. Elderly who are willing to participate in the study
3. Both male and female elderly over the age of 55 years

Exclusion criteria

Elderly who were-

1. Debilitated
2. Suffering from Co morbid musculoskeletal disorder
3. Already on treatment of depression
4. Deaf and Dumb
5. Already on yoga therapy.

Sampling technique

Simple random sampling where lottery method was used to select the samples.

Data collection instrument

Geriatric Depression Scale, long version was used to collect the data

Development and description of tool

Section A: demographic variables

The demographic variables include Age, gender, religion, education, occupation, income, marital status, duration of stay in the home, residing status, residence, number of children, co morbidity, family history of psychiatric illness and type of family.

Section B: geriatric depression scale, long version was used to assess the depressive symptoms of the elderly. The scale contains total of 30 items with yes or no response. The items in the scale contain both positive and negative worded questions. Each item scored 0-1 point based on the response.

Scores;

00 to 09–Normal or no depression, 10 to 19- Mild Depressive, 20 to 30 Severe Depressive

Description of intervention

Anuloma viloma pranayama in the ratio of 1:2:1 ratio, that meant 2 seconds of inspiration, 4 seconds of inspiratory hold and 2 seconds of exhalation. It was practiced 5 minutes two times a day. Following the pranayama 45 steps of asana was practiced for 15 minutes and two times a day for total of 16 weeks.

45 steps of asana include:

Sitting asana-23

Standing asana-03

Forward bending asana -14

Backward bending asana -04

Lying posture -01

Validity and reliability

The tool is standardized and public so that did not require further validity and the reliability score is 0.84. The content of the yoga was validated by various experts in the field of psychiatric medicine, clinical psychology, psychiatric nursing, geriatric medicine and yoga trainer, also the personal changes that experienced by the investigator with routine yoga practice. Reliability of the yoga therapy was estimated by using inter-rater method the reliability score was 0.72.

Data collection procedure

After explaining about the nature, purpose, procedure of the study, investigator and participant's role, risk and benefits of the study, formal written permission was obtained from the head of the home. Rapport was established with the subjects by introducing the investigator and gets introduced by the study participants. Nature of the study, purpose, procedure, investigator and participant's role was explained. Benefit, risk, alternative of the study, information of investigator's availability and contact address were given. Informed consent was obtained, confidentiality also assured. The subjects were requested to respond freely and frankly, privacy also provided. Geriatric Depression scale long version was used to assess the level

of depressive symptoms among elderly. The items in the tool was translated in their own language and read loudly and clearly and their responses were noted. Each subject took around 25 to 35 minutes to complete the items in the tool. They were given yoga training for the period of 10 days followed by supervised yoga for the period of 16 weeks, each session lasted around 20 minutes and two times a day. Yoga was given in the schedule of 5 minutes of pranayama followed by 15 minutes of 45 steps asana. Each step practiced at the duration of 15 seconds with 5 seconds relaxation. Post-test was done after 16 weeks of yoga intervention. The data was analysed and results were drawn.

Data analysis and interpretation

Data was analysed by using both descriptive and inferential statistics.

Descriptive statistics like number and percentage were used to analyse the demographic variables and numbers of subjects have depressive symptoms. Mean and standard deviation were used to assess the level of depressive symptoms. Inferential statistics like paired t test was used to find the effectiveness of yoga therapy and also chi-square was used to associate the level of depressive symptoms with the selected demographic variables of the elderly.

Table 1 shows that most of the elderly 34% aged between 66 and 70 years, almost 62% were female, 68% of elderly belongs to Hindu religion and 62% were uneducated. Among the elderly 66% did not have any occupation, 68% had monthly income of between 0 and 1000 per month, and 44 % were widows. Most of 68% of the elderly belongs to rural area, 48% did not have offspring and 50 % had some form of co-morbid illnesses. Almost 50 % of the elderly were staying 1 to 2 years' duration in the home, 86% had no history of psychiatric illnesses and 62% elderly from joint family system.

Table 1 Demographic variables of the elderly.

S.no	Frequency and percentage distribution of elderly	n=50	
	Variables	Mild depression	
1	Age in Years	n	%
	a. 56-60	1	2
	b. 61-65	10	20
	c. 66-70	17	34
	d. 71-75	12	24
e. >75	10	20	
2	Gender		
	a. Male	19	38
	b. Female	31	62
3	Religion		
	a. Hindu	34	68
	b. Christian	10	20
	c. Muslim	4	8

Table Continued

4	d. Others	2	4
	Education		
	a. Uneducated	31	62
	b. Up high school	15	30
	c. Higher secondary	3	6
	d. graduates	1	2
5	Previous Occupation		
	a. Unemployed	33	66
	b. Daily Labor	7	14
	c. Private employee	4	8
	d. Government employee	4	8
	e. Self employed	2	4
6	Monthly income (in Rupees)		
	a. 00-1000	34	68
	b. 1001-5000	13	26
	c. 5001 /- to 10000/-	2	4
	d. 10001/- to 15,000/-	1	02.0 0
	e. 15001/- to 20,000/-	0	0
	f. >20000/-	0	0
7	Marital Status		
	a. Unmarried	7	14
	b. Married	9	18
	c. Widow	22	44
	d. Widower	10	20
	e. Separated / divorced	2	4
8	Area of residence		
	a. Rural	34	68
	b. Urban	11	22
	c. Semi urban	5	10
9	Number of children		
	a. No child		
	b. 1-2 c, 3-4 d,>4		
	Residing status		
	a. Single		
	b. Husband and wife		
	Co morbidity		
	a. Yes		
	b. No		
	Duration of stay in the old age home (year)		

Table Continued

S.no	Frequency and percentage distribution of elderly		n=50
	Variables	Mild depression	
a. <1			
b. 1-2			
c. 3-4			
d > 4			
Family history of psychiatric illness			
a. Yes			
b. No			
c. Not known			
Type of family from			
a. Nuclear Family			
b. Joint Family			
c. extended family			
Group		No	%
		24	48
		11	22
		7	14
		8	16
		25	50
		25	50
		25	50
		10	20
		25	50
		12	24
		3	6
		1	2
		43	86
		6	12
		11	22
		31	62
		8	16

Table 2 shows that prior to the intervention all the elderly were having mild depressive symptoms and none of them had severe depressive symptoms.

Table 3 shows that after 16 weeks of yoga intervention 52 % of the elderly became free from depressive symptoms and remaining 48% of the elderly still experiences depressive symptoms.

Table 4 compares the pre and post test depressive symptoms mean score of the elderly. At the pretest it was 13.24 and after 16

weeks of yoga intervention the mean score was 9.76, and the mean different was 3.48. The calculated paired “t” value was 3.56 and the table value was 1.72 since the calculated value was greater than table value, it predicts that the yoga intervention was effective in reducing depressive symptoms of the elderly.

Table 2 Pre test level of depressive symptoms among elderly

S No	Depression Level	Experimental Group n=50	Mean and standard deviation
1	Normal	00(00%)	
2	Mild depression	50(100%)	13.24 (2.152)
3	Severe depression	00(00)	

Table 3 Post test level of depressive symptoms among elderly

S No	Depression Level	Experimental Group n=50	Mean and standard deviation
1	Normal	26(52%)	9.76 (2.11)
2	Mild depression	24(48%)	
3	Severe depression	00(00)	

Table 4 Comparison of pre and post-test mean depressive symptoms score of the elderly

Domain	Pre-test mean	Post-test mean	Mean different	Paired t value (calculated)	Table value
Depressive symptoms	13.24 (2.152)	09.76 (2.11)	-3.48	3.56***	1.724

Association of depressive symptoms score among elderly with their selected demographic variable.

Association of depressive symptoms was done with the elderly demographic variables of Age, gender, religion, education, occupation, income, marital status, duration of stay in the home, residing status, residence, number of children, co morbidity, family history of psychiatric illness and type of family by using chi-square. There was no association found between the depressive symptoms score and demographic variables of the elderly.

Discussion

The first objective of the study was to assess the pre and post test level of depressive symptoms among elderly. At the pre test all the elderly were having mild depressive symptoms and after 16 weeks of treatment 52 percentage of the elderly became free from depressive symptoms it means that they had scores less than 10 in Geriatric Depression scale. The finding was strengthened by the study conducted by Mencacci et al., (2015). In their interventional study evaluated the effectiveness of Sudarshan kriya yoga on anxiety and depression among clients of GAD. Six months of Sudarshan kriya yoga significantly reduced both anxiety and depression score.¹⁰

The second objective was to compare the pre and post-test depressive symptoms score among elderly. At the pre-test the mean

depressive symptoms score was 13.24 and after 16 weeks of yoga intervention was 9.76 and the mean different was -3.48. The mean different score of 3.48 shows that there is significant difference between pre and post-test depressive symptoms. The calculated paired “t” value was 3.56 and the table value was 1.72 since the calculated value was greater than table value, it predicts that the intervention was effective in reducing depressive symptoms of the elderly. The finding of the study is strengthened by the study conducted by Yagli & Ulger.¹¹ An interventional study on effectiveness of yoga therapy on reduction of depression among elderly cancer breast clients explored that yoga therapy was effective measure in reducing depression.³

Third objective was to associate the depressive symptoms score of elderly with their selected demographic variable. Elderly demographic variables of Age, gender, religion, education, occupation, income, marital status, duration of stay in the home, residing status, residence, number of children, co morbidity, and family history of psychiatric illness did not have any association with the depressive symptoms. The study finding was supported by the study under taken by Anne S Mather.¹² The study evaluated the effect of exercise for depressive symptoms among the elderly. The study reported that exercise was effective in reducing depressive symptoms of the elderly. Elderly demographic variable did not have significant influence in the depressive symptoms.

Conclusion

This study evaluated the effectiveness of coupled effect of pranayama and yoga in reducing depressive symptoms of the elderly those residing in old age home. 50 elderly who had depressive symptoms were given 16 weeks of supervised pranayama and yoga. The result of the study showed that more than 50% of the elderly became normal after the intervention, even other elderly the depressive symptoms score significantly reduced. Finding concluded that the yoga therapy along with pranayama was the effective measure in reducing depressive symptoms of the elderly. Though yoga had positive outcome on depression and other physical conditions it has its own side effect like pain, strain and fracture. When outweigh with side effect the overall outcome was positive side with safe practice.

Recommendations

1. The similar study can be replicated in different settings.
2. Alternative interventions can be tried to reduce depression.
3. Yoga with different doses can be tried to fight for depression.

4. Conventional antidepressant alone versus yoga alone can be tried.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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