



**Efficacy for Heartfulness based Meditation among Institutionalized Older Adults: A Randomized Pilot Study**

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**Abstract**

**Background:** Non-pharmacological interventions are providing promising evidence in reducing late-life depression and related issues. Particularly, recent studies show evidences that Heartfulness meditation has been helping older adults to improve their late-life problems.

**Objective:** The aim of this study is to examine the effectiveness of Heartfulness meditation in institutionalized older adults who have problems with late-life stress, anxiety and depression. Also, this study aimed to examine the effect of Heartfulness meditation intervention in improving the quality of life of older adults.

**Methods:** This study used a single-group pretest-posttest research design. The Depression, Anxiety, and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995) and WHOQOL-OLD (Power et al., 2005) are used in the initial assessment and also in the main study for both pretest and posttest assessment. A total of 183 institutionalized older adults in Chennai,

Tamilnadu have been screened, out of which 35 older adults are randomly selected for the main study.

**Results:** The results revealed that there are no significant gender and age differences in the DASS-21 subscales including Depression, Anxiety, Stress, and in the subscales of WHOQOL-OLD of life (Sensory Abilities, Autonomy, Past Present and Future, Social participation, Death and Dying, and Intimacy) in the pretest. In education-based group, differences are found in Anxiety ( $t = -2.73$ ,  $p = 0.01$ ) and subscale of social participation ( $t =$

$-2.97$ ,  $p = 0.01$ ), whereas among the rest of the subscales, no significant difference have been found in the pretest scores. While comparing the pretest-posttest DASS-21 scores and WHOQOL-OLD scores, it is found that the Heartfulness Meditation intervention program has significantly reduced the symptoms of Stress, Anxiety and Depression as well as improved the quality of life of the institutionalized older adult.

**Conclusion:** Heartfulness meditation-based intervention has significantly improved the quality of life and reduced late-life depression, anxiety, and stress among institutionalized older adults. These findings provide preliminary support and further study may be warranted to evidence the result gained from this study.

**Keywords:** *Heartfulness Meditation, Older Adult, Stress, Depression, Anxiety, Quality of Life.*

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## Introduction

World health organization (WHO) recently stated that India is the second largest population of the world elderly population, constituted 77 million in 2001, and 96 million by 2011, and the number of geriatric people above 60 years will be rapidly increasing in the upcoming years. Particularly, 76.6 million people above the age of 60 years old, constitute above 7.7% of the total population in India (United Nations, 2020; WHO, 2011, 2020). In addition, the proportion of elderly people in Tamil Nadu state is expected to grow up to 17.1% by 2026 (Agarwal et al., 2020), which is meant that Tamil Nadu raised the position as second of elderly population aged 60 years and above in the country, which is next to Kerala state. This significant increase in the number of elderly people is due to the rapid population growth and the continuous improvement of healthcare facilities. However, older adults are more prone to the risk of biological, neurological, and psychological problems later in life than younger people (Agarwal et al., 2020; Belsky et al., 2015).

Aging is a major risk factor for various chronic diseases in humans. Old age is characterized by a number of complex health problems that tend not to arise until old age and do not fall under any separate categories of diseases. Particularly, the decline in physical health, mental disorders, emotional problems, and social problems are pushing them to seek medical care. Psychologically, mental disorders are detected in more than 15% of people aged 60 years and above, followed by depression, anxiety, and memory impairment, which are very common in older adults (Karim & Venkatachalam, 2021; Sinha et al., 2013). Some prevalence studies stated that about 3.3% of older adults had

mild stress, 86% had moderate stress, and 11% had severe stress (Andreou et al., 2011; Desai et al., 2021; Karim & Venkatachalam, 2021; Thimmapuram et al., 2022). Also, the prevalence rate of depressive disorders is between 4.7 to 16%, which indicates that the prevalence of geriatric depression is higher in India (Pilania et al., 2013, 2017, 2019). Furthermore, it was also found that the risk of late-life anxiety was increased in females than in males, and the lifetime prevalence of anxiety disorders is higher in older adults. The increase of psychological issues among older adults in late life is highly demanded to implement effective interventions to overcome these psychosocial issues and increase their well-being.

Although various pharmacological interventions are available to older adults for treating psychological issues, many studies have pointed out that non-pharmacological interventions are better and have fewer adverse effects on implementing with older adults and are encouraged to implement, than other treatments (Karim & Venkatachalam, 2022; Rodakowski et al., 2019; Suzuki et al., 2014; Teixeira et al., 2012). Especially, recent studies states that Heartfulness meditational program is a promising intervention for reducing various issues including stress, depression, anxiety, burnout, and improving happiness, emotional well-being, life satisfaction, quality of life, self-efficacy of the older adults (Amarnath et al., 2017; Desai et al., 2021; Gurram et al., 2021; Kaniamuthan & Cheang, 2021; Subramanian et al., 2022; Thimmapuram et al., 2020, 2021).

Heartfulness meditation is a way of rectifying negative emotions and feelings as an inner experience. It teaches the participants to go deep into their hearts and stay in a natural state of love, peace, and calm. When Heartfulness meditation is practiced regularly, it helps individuals to stay in tune with their hearts and develop their ability to keep balance in their emotions at all times. It is more difficult to process a person's thoughts and feelings at an early stage of their meditation exercises. However, once they get familiar with the inner world and learn to release frustration, stress, and anger, they will begin to discover many benefits from the Heartfulness meditation. Usually, it has four simple steps, such as Relaxation, Meditation, Recharging, and Connection (Agrawal et al., 2023; Kamaraj et al., 2020; Kaniamuthan & Cheang, 2021; Krishna et al., 2022; Westeinde & Patel, 2022). The present study utilized all four steps of Heartfulness meditation with older adults who facing psychological issues such as stress, anxiety, depression, as well as issues in their quality of late life.

### **Objectives**

The study's purpose is to evaluate the effects of Heartfulness meditation intervention on stress, depression, anxiety and quality of life among institutionalized older adults.

### **Hypotheses**

The following hypotheses are tested by the researcher in this study.

Hypothesis 1: There is no significant demographic differences (gender, educational qualification, and age) associated with improving stress, anxiety, depression and quality of life among elderly based on the post-test scores of DASS-21 and WHOQOL-OLD scales.

Hypothesis 2: The mean post-test scores of elderly people with stress, anxiety, depression will be significantly lower and quality of life scores will be significantly improved than their pre-test scores on DASS-21 & WHOQOL-OLD subscales.

## Methods and Materials

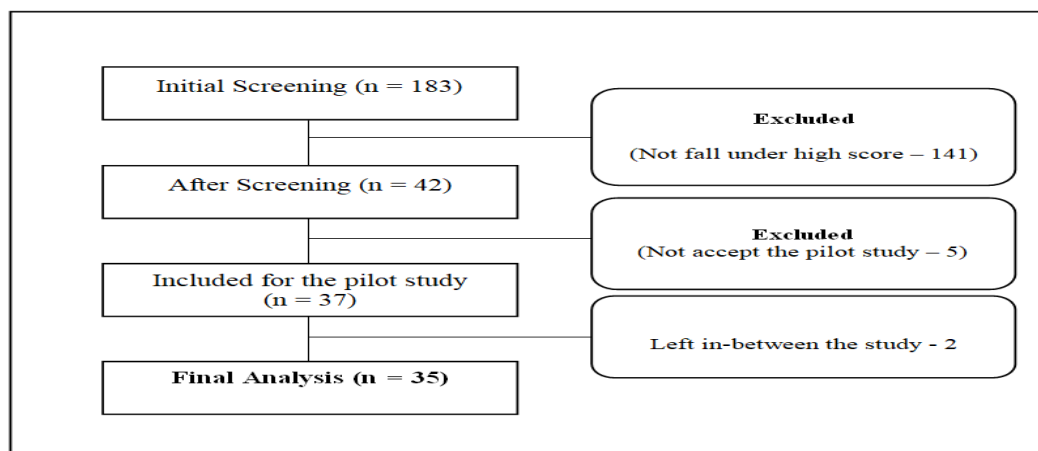
### Research Design

This study has utilized a single group pretest and posttest design and the participants have been screened and selected randomly from various institutionalized old age homes in Chennai, Tamil Nadu.

### Participants

In this study, a total of 183 participants with ages ranging between 60 and above years were screened for implementing the Heartfulness meditation intervention. Out of them, 35 older adults (Male = 12, Female = 23) were selected to implement heartfulness meditation intervention. The inclusion criteria were (a) the older adults should be institutionalized in old age home in Chennai and (b) the participants age should be 60 years and above. The exclusion criteria were (a) not under the treatment for severe psychiatric disorders, (b) older adults who bed ridden, and (c) severe impairment in vision or hearing. None of the participants are involved in any other ongoing research activity. The CONSORT flow chart below shows the complete sample selection process of this study

**Figure 1. A CONSORT flow chart demonstrating the screening and final selection of the study participants.**



## **Heartfulness meditation**

The participants are given induction sessions of heartfulness meditation (3 sessions on alternate days). After the induction sessions, the individuals practiced heartfulness meditation once in a day for 4 weeks. The assessment on stress, anxiety, depression and quality of life are done at the baseline and at the end of 4 weeks using DASS-21 scale and WHOQOL-OLD instruments.

### ***Instruments / Tools used for the study***

The short form of Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995; Singh et al., 2013; Verma & Mishra, 2020), consists of a set of three self-report scales designed to measure the negative emotional states of depression, anxiety, and stress. It was constructed not merely as another set of scales to measure conventionally defined emotional states, but to further the process of defining, understanding, and measuring the global and clinically significant emotional states usually described as depression, anxiety and stress. Each subscale is divided into 5 categories based on the scores obtained on each subdomain, such as normal, mild, moderate, severe, and very severe. DASS has high internal consistency reliability ranges from 0.82 to 0.97 (Basha & Kaya, 2016; Oei et al., 2013; Osman et al., 2012; Singh et al., 2013).

Another scale used to measure the quality of life of recruited participants was assessed using the World Health Organization Quality of Life-OLD (WHOQoL-OLD; Power et al., 2005). It is a self-assessment tool to measure the individual's perceptions in the context of their culture and value systems and their personal goals, standards, and concerns. It consists of 24 items that are divided into six domains: (i) Sensory Abilities (SAB) with 4 items-explaining about senses affecting daily life and daily life activity; (ii) Autonomy (AUT) with 4 items focusing on positive and negative feelings and freedom of decisions; (iii) Past Present and Future Activities (PPF) with 4 items-addressing recognition, personal relationships and social; (iv) Social Participation (SOP) with four items detecting level of activity, social support, participation in community activity, and social participation; (v) Death and Dying (DAD) with four items explaining death anxiety, afraid of death, and fear of pain; and (vi) Intimacy (INT) with four items comprising that sense of feeling, and personal perception about life. Each item is rated on a 5-point Likert scale scored from 1 to 5 on a response scale (1-Not at all, 2-Little, 3-Moderate, 4-Very much, 5-Extreme). The total score ranges from 24 to 120 on a response scale. The overall value of the person reliability was 0.73 with Cronbach's alpha of 0.75, and the value of the item reliability was 0.97 (Gondodiputro et al., 2021; González-Celis & Gómez-Benito, 2013; Peel et al., 2007; Power et al., 2005; Van Biljon et al., 2015). All participants were asked to provide their demographic information such as age, gender, and education.

***Ethical consideration***

This study is a part of doctoral thesis of the principal investigator and it is commenced after obtaining approval from the Institutional Ethical Committee of Meenakshi Academy of Higher Education and Research, Chennai, (Ref: 88/MAHER PhD/IEC-2021)

***Data analysis***

Statistical analysis was done using the Jamovi software version in Windows (The Jamovi Project, 2021). The data were checked for normal distribution and homogeneity of variance by applying the Shapiro-Wilk test. Paired t-test was performed between group analyses for each psychological assessment. This was followed by posthoc analysis with Turkey adjustment for multiple comparisons. Statistical significance was considered at  $p < 0.05$ .

**Results*****Participant's demographic characteristics***

Table I shows the characteristics of study participants. Out of 35 participants, 12 are male (34.29%) and 23 are female (65.71%). More than half of the participants have studied less than 10<sup>th</sup> grade (71.42%). 13 participants each are in the age group of 66-70 years & 71 and above (37.14%). Further, only 9 participants are in the 60-65 years old age group (25.71%).

**Table I: Participants demographic characteristics**

	<i>n</i>	%
<b>Gender</b>		
Male	12	34.29
Female	23	65.71
<b>Education based group</b>		
Less than 10 <sup>th</sup> grade	25	71.42
10 <sup>th</sup> and Above	10	28.57
<b>Age-based category</b>		
60-65 Years old	9	25.71
66-70 Years old	13	37.14
71 and Above	13	37.14

The descriptive characteristics of DASS and WHOQOL-OLD was shown in Table II. This table clearly showed that the sample is normally distributed in both pretest and posttest of DASS and WHOQOL-OLD scores and hence parametric tests were executed for the main pilot study. The mean pre-test scores of depression was 15.90 (SD=2.69), followed by anxiety was 16.46 (SD=2.45), Stress was 15.86 (SD=1.95), and followed by Sensory ability (SAB) was 12.51 (SD=1.38), Autonomy (AUT) was 9.77 (SD=1.97), Past Present and Future (PPF) was 6.26 (SD=2.27), Social participation (SOP) was 9.60 (SD=2.51), Death and Dying (DAD) was 14.29 (SD=1.82), and Intimacy (INT) was 9.03 (SD=1.83), respectively. Similarly, the mean score of post-test of depression was 13.60 (SD=3.08), followed by anxiety (14.23; SD=2.76), stress (14.34; SD=2.10), followed by the subdomains of WHOQOL-OLD as Sensory ability (SAB) was 11.06 (SD=1.70), Autonomy (AUT) was 10.51 (SD=2.23), Past Present and Future (PPF) was 7.37 (SD=2.38), Social participation (SOP) was 10.43 (SD=1.85), Death and Dying (DAD) was 13.29 (SD=1.76), and Intimacy (INT) was 12.03 (SD=2.68).

**Table II: Descriptive characteristics of DASS and WHOQOL-OLD**

	n	Pre-test				Post-test			
		X	SD	[X]	k	X	SD	[X]	k
<b>DASS</b>									
Depression		15.74	2.69	-0.17	-0.27	13.60	3.08	-0.01	-0.20
Anxiety		16.46	2.45	-0.49	-0.17	14.23	2.76	0.05	-0.71
Stress		15.86	1.95	-0.10	-0.23	14.34	2.10	0.44	-0.01
<b>WHOQOL-OLD</b>									
SAB	35	12.51	1.38	0.46	-1.00	11.06	1.70	0.94	0.99
AUT		09.77	1.97	0.33	-0.55	10.51	2.23	0.28	-0.08
PPF		06.26	2.27	0.81	0.20	07.37	2.38	0.82	0.62
SOP		09.60	2.51	0.70	0.06	10.43	1.85	0.20	2.00
DAD		14.29	1.82	-0.05	-0.13	13.29	1.76	0.53	-0.34
INT		09.03	1.83	0.27	-0.92	12.03	2.68	0.16	-0.20

**Note:** n-number of participants; X-Mean; SD-Standard deviation; [X]-Skewness; k-Kurtosis

While comparing demographic characteristics between the gender-based groups and all the subscales in both DASS-21 and WHOQOL-OLD, it is found that there is no significant difference based on gender. Also, other demographic based independent groups such as age-based categories show no significant difference in pre-test. Based on education group (Less than 10<sup>th</sup> Grade, 10<sup>th</sup> and above), except anxiety ( $t = -2.73$ ,  $p = 0.01$ ) and social participation (SOP:  $t = -2.97$ ;  $p = 0.01$ ), there is no significance difference found in all the other psychological variables in pre-test DASS-21 and WHOQOL-OLD score.

**Table III: Comparison of pre-test and post-test scores of DASS and WHOQOL-OLD**

Pre-test	Post-test	t	df	p
Depression	Depression	9.22	34.0	< .01
Anxiety	Anxiety	9.45	34.0	< .01
Stress	Stress	6.70	34.0	< .01
SAB	SAB	6.35	34.0	< .01
AUT	AUT	-2.33	34.0	< .02
PPF	PPF	-6.27	34.0	< .01
SOP	SOP	-1.50	34.0	0.14
DAD	DAD	2.87	34.0	< .01
INT	INT	-5.17	34.0	< .01

Table III shows that paired t-test analysis of pretest and posttest scores of DASS-21 and WHOQOL-OLD, has been done to know the effect of Heartfulness meditation intervention program. This program was designed to give to the older adults for the period of 4 weeks. Through the analysis, it is found that this Heartfulness Meditation Intervention Program significantly reduces the depressive symptoms ( $t = 9.22$ ,  $p < 0.01$ ) of older adults who lives in old age home, particularly other subscales such as anxiety ( $t = 9.45$ ,  $p < 0.01$ ), and stress ( $t = 6.70$ ,  $p < 0.01$ ), also reduced. While comparing the mean scores of pretest and posttest, stress, depression and anxiety mean scores have gradually reduced in post-test. Except Social participation (SOP;  $t = -1.50$ ,  $p = 0.14$ ), a subdomain of WHOQOL-OLD, all the remaining subscales are improved and significant difference is found between pretest and post-test sub domains, SAB ( $t = 6.35$ ,  $p < 0.01$ ), AUT ( $t = -2.33$ ,  $p < 0.02$ ), PPF ( $t = -6.27$ ,  $p < 0.01$ ), DAD ( $t = 2.87$ ,  $p < 0.01$ ), and INT ( $t = -5.17$ ,  $p < 0.01$ ) of WHOQOL-OLD.

## Discussion



The purpose of this pilot study is to identify the efficacy of the Heartfulness meditation intervention among older adults who are having depression, stress, and anxiety in their late life. Also, the researcher examines how this meditational intervention helps to improve the quality of life among the elderly participants. The DASS-21 scores are significantly reduced at post-intervention which indicates that Heartfulness meditation has direct impact on reducing late-life depression, stress, and anxiety. The subdomains of WHOQOL-OLD particularly SAB, AUT, PPF, DAD, and INT, are improved and significant changes have been noticed in their daily life. However, no such effect is observed in social participation(SOP). Directing on the older adults, who have participated in Heartfulness meditation, are more likely to have reduced stress levels, feel happy to mingle with others, and reduced feelings of loneliness. Additionally, the results are similar to other supporting studies conducted to reduce depression (Agrawal et al., 2023; Yadav et al., 2021).

Among older adults with loneliness, lack of autonomy, and sleep problems, heartfulness intervention leads to greater improvements in reducing depressive feelings which specifically affect the perception of late life. The findings of this study are consistent with other studies reporting meditation practices for loneliness, depressive feelings, and quality of sleep which have demonstrated favourable outcomes (Agrawal et al., 2023; Arunachalam & Chandran, 2021; Arya et al., 2018; Desai et al., 2021; Gurram et al., 2021; Thimmapuram et al., 2017, 2020). This study is in line with the existing literature supporting the benefits of Heartfulness practice which shows the benefit of Heartfulness relaxation, mental cleaning exercises, and meditation in reducing stress, depression, anxiety, and improves the quality of life.

However, this study has certain limitations such as significant variables (Burnout, emotional wellbeing, etc.) are not included in the present study. Furthermore, cardiovascular parameters, complete blood count, serum cortisol, inflammatory parameters, oxidative stress parameters, and antioxidant parameters, Body Mass Index (BMI), Heart rate, respiratory rate, and systolic blood pressure, are not considered to include them in the outcome measures of the present study. Such parameters should be considered in further studies. Also, no control group in the present study has been included to check the cross-comparison of the experimental and control group. Furthermore, studies such as longitudinal, randomized controlled trial with the control group, might be warranted to enhance the efficacy of Heartfulness meditation.

## **Conclusion**

The Heartfulness meditation-based intervention confirms its effectiveness in reducing late-life depressive symptoms among older adults. It also provides strong evidence in reducing the stress, depression and anxiety among institutionalized older adults. The results of this pilot study suggested promising effects in the study variables such as depression, stress, anxiety, sensory ability, autonomy, social participation,

perception of death and dying, and intimacy, related issues with elderly people. This intervention is feasible and further study might be needed to confirm the study's findings.

### **Conflict of Interest**

Competing interest declared none.

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