Investigating the Impact of Music Therapy on Depression Among Older Adults in a Geriatric Facility in Kolar District

Soniya Vijay*

Abstract

Background: *Depression in older adults is a major health issue, especially in settings like nursing homes for the elderly. With the increasing interest in non-pharmacological interventions for managing depressive symptoms, music therapy has emerged as a promising approach. This study aims to evaluate the effectiveness of music therapy in reducing depressive symptoms among elderly residents of a selected geriatric home in Kolar district.* ***Methods****: A quasi-experimental design was employed, involving a sample of 60 elderly individuals diagnosed with mild to moderate depression, residing in a geriatric home in Kolar district. Participants were divided at random into two groups: one group participated in music therapy sessions twice per week over a span of eight weeks, while the other group was provided with the usual care. The primary outcome measure was the change in depressive symptoms, assessed using the Geriatric Depression Scale (GDS) before and after the intervention period.* ***Results:*** *The group that received intervention exhibited a significant decrease in GDS scores in comparison to the control group (p < 0.05), suggesting a substantial amelioration in depressive symptoms. Additionally, qualitative feedback from participants suggested an enhancement in overall mood and social interaction within the intervention group.* ***Conclusion****: The results indicate that music therapy proves beneficial in alleviating depressive symptoms among elderly residents in geriatric facilities. This research adds to the increasing evidence backing the efficacy of music therapy as a non-pharmacological method to improve mental well-being in aging cohorts. It is advisable to conduct additional studies to investigate the enduring impacts of music therapy and its potential integration into conventional care protocols in geriatric environments.*

INTRODUCTION
"Youth is like a fresh flower in May
Age is like a rainbow that follows the storms of life each has its own beauty."
- David Polis

*Author for Correspondence
Soniya Vijay
E-mail: anuaries184@gmail.com

Lecturer, Department of Psychiatric Nursing, SMG Vishnu College of Nursing, Kolar, Karnataka, India

Old age is not a pathological condition; rather, it represents a natural phase of the human lifespan, integral to the global demographic shift. This stage is marked by unique developmental challenges, notably encompassing declines in physical and cognitive capabilities, changes in social circles and relationships, as well as shifts in societal roles and influence. Successful aging hinges upon the capacity of older individuals to adapt to the inevitable losses in physical, social, and emotional domains, ultimately attaining fulfillment, stability, and overall life satisfaction. Given the inevitability

of life's fluctuations, older adults require resilience and effective coping mechanisms to navigate through periods of depression and transition. Failure to adjust to the challenges of aging can result in feelings of frustration, isolation, resentment, despondency, and vulnerability, thereby heightening the risk of depression in later life. Current statistics indicate that approximately 8% of individuals aged 12 years and above experience depression, with females exhibiting higher rates across all age groups. Moreover, while males aged 40–59 years demonstrate higher depression rates compared to older males, females aged 40–59 years report the highest prevalence, surpassing even younger females and older women [1–7].

"Music is a moral law. It serves as a soulful expression to the universe, providing wings to thoughts, elevating the imagination, bringing solace to sorrow, joy to the spirit, and vitality to all aspects of existence. Listening to music provides wonderful effect to alleviate depressive symptoms. Music is a significant mood changer. Music can lead as person to a state of harmony. Thus, music has been frequently used as the therapeutic agent and Indian classical ragas are proved to be very effective from the ancient times. If the music be the food of love, play on''…. Hence, the music therapy makes a person especially elderly residing in old age homes and in community setting healthy, physically as well as mentally health [8–14].

Music therapy stands as a branch of allied health and falls under the category of expressive therapies. It involves a methodology where a music therapist employs various aspects of music—its physical, emotional, cognitive, social, aesthetic, and spiritual components—to assist individuals in enhancing their physical and psychological well-being. Music therapist nurse primarily help clients improve their health in several domains, such as cognitive functioning, motor skills, emotional development, social skills, and quality of life, by using music experiences such as free improvisation, singing, and listening to, discussing, and moving to music to achieve treatment goals. It has a wide qualitative and quantitative research literature base and incorporates clinical therapy, psychotherapy, bio-musicology, musical-acoustics, music theory, psychoacoustics, embodied music cognition, aesthetics of music, sensory integration, and comparative musicology. Music therapy comes in two different forms: active and receptive. In active therapy, the therapist and patient actively participate in creating music with instruments, their voice, or other objects. Receptive therapy takes place in a more relaxed setting where the therapist plays or makes music to the patient who is free to draw, listen, or meditate. ''The brain that engages in music is changed by engaging in music''. Neurologic Music Therapy (NMT) trains motor responses (i.e. tapping foot or fingers, head movement, etc.) to better help clients develop motor skills that help ''entrain the timing of muscle activation patterns". A music therapy nurse aids clients in enhancing various aspects of their health, including cognitive abilities, motor functions, emotional growth, social competencies, and overall life quality. This is achieved through musical activities such as improvisation, singing, and engaging with music through listening, discussion, and movement, all aimed at meeting specific therapeutic objectives. The foundation of music therapy is supported by a rich blend of both qualitative and quantitative research across multiple disciplines, including clinical therapy, psychotherapy, bio-musicology, music acoustics, music theory, psychoacoustics, the study of music perception within the body, music aesthetics, the integration of sensory experiences, and the comparative study of music cultures. Music therapy is categorized into two main types: active and receptive. In active therapy, both the therapist and the client engage in creating music using instruments, their voices, or other means. Conversely, receptive therapy occurs in a more tranquil environment, where the therapist plays music for the client, who may engage in activities like drawing, listening, or meditation. The principle underlying music therapy is that ''engagement in music fundamentally transforms the brain''. NMT focuses on using rhythmic cues (for example, tapping a foot or fingers, nodding the head) to facilitate the development of motor skills, thereby ''synchronizing the timing of muscle coordination patterns [15–21]''.

NEED FOR THE STUDY

In 2010, it was projected that 35.6 million individuals globally were experiencing symptoms of depression, with forecasts suggesting this number would nearly double every two decades, reaching

65.7 million by 2030 and 115.4 million by 2050. Depression significantly impacts well-being and can severely disrupt everyday activities. Among the general population of older adults, unipolar depression affects approximately 7%. To assess the severity of depressive symptoms, subjective self-assessment instruments like the Geriatric Depression Scale (GDS) are utilized. Music can change the emotional state of the listener, which may have a beneficial effect on the symptoms of depression. Music listening without a therapist can be easily initiated by any healthcare professional, or even the patient, to create a healing environment. Unlike pharmacotherapy, there is no documented adverse effects from music listening. From 2000 to 2002, depression emerged as the primary contributor to the global burden of disease, ranking third worldwide. Projections indicate it will ascend to the second position by 2020 and claim the top spot by 2030. The link between depressive disorders and suicide is widely acknowledged. During my first year of MSc in Nursing, we obtained authorization to visit an elderly care facility as part of our academic requirements. During our visit, we observed depressive symptoms among the elderly residents. This experience motivated me to select this topic for further study [22–30].

International Level
A German study conducted on a population basis revealed that 14.3% of individuals exhibited depressive symptoms, as diagnosed using the Center for Epidemiologic Studies Depression Scale (with a German cut-off threshold of 23). The likelihood of developing depression is estimated to be 1 in 5 for women and 1 in 10 for men. In the year 2000, individuals aged 65 and above constituted 12.4% of the population, but this demographic is anticipated to increase to 19% by 2030.

American Psychiatric Association Diagnostic and Statistical Manual for Mental Disorders, 2000: Nearly twice as many women 12.4 million (12 %) as men 6.4 million (6.6 %) in U.S. are affected by a depressive disorder each year [31–32].

Indian Level
In India, the elderly population, defined as individuals aged 60 years and above, is rapidly expanding, despite comprising just 7.4% of the total population at the beginning of the new millennium.

Community Level
Among individuals aged over 65, approximately 10% experience symptoms indicative of depression, while 1% are diagnosed with major depressive disorder. Increase in 69% in number of old age homes in four years. Old age homes facilities for organizations working for the welfare of the aged and effective implementation of old age pension, are some of the measures that need to be taken.

OBJECTIVES OF THE STUDY:
1. To ascertain the socio-demographic characteristics of elderly individuals residing in chosen geriatric facilities in Kolar district.
2. To gauge the level of depression in elderly residents prior to the implementation of music therapy at selected geriatric homes in Kolar district.
3. To assess the level of depression in elderly residents following the application of music therapy at selected geriatric homes in Kolar district.
4. To evaluate the efficacy of music therapy as an intervention.
5. To explore the correlation between post-test scores and specific demographic factors.

OPERATIONAL DEFINITIONS:
- *Assess:* Assess refers to the process of documents the music therapy in heals up of depressive features like frustration, bitterness, loneliness, and insecurity among the elderly people.
- *Effectiveness:* Effectiveness refers to the extent to which music therapy has achieved the desired effect in terms of heals up of depressive features like frustration, bitterness, loneliness, and insecurity of the subjects studied.
- *Depressive Symptoms:* Depressive symptoms denote the state that causes physical, psychological,

and psychosocial disturbances and its levels can be detected using GDS.

- *Music Therapy:* Music denotes to the listening music to individual and group in a regular basis for a fixed time and period by using ragas and talas or some carnatics or old melodies where its effects (heals up of depressive symptoms) can be seen in post-testscores after completion.
- *Elderly People:* Are those who come under the age group of 60–80 years of age with depressive symptoms.

ASSUMPTION
- Geriatric will have depressive symptoms.
- Geriatric with depressive symptoms will be healed up by music therapy.
- Music therapy has influence in reducing the level of depressive symptoms among elderly people.

HYPOTHESIS
H_1: Music therapy has proven efficacy in alleviating depressive symptoms in the elderly population.
H_2: There is association between the selected demographic variables and level of depressive scores among elderly people.

DELIMITATIONS
The study is limited to
- The study is limited to elderly people who are residing in old age home.
- Elderly people who can understand Kannada or English and respond verbally.
- The study is limited to data collection period of four weeks.

RESEARCH VARIBLES
- *Independent Variable:* Music therapy
- *Dependent Variable:* Level of depressive symptoms among elderly people

CONCEPTUAL FRAMEWORK
A conceptual framework consists of concepts and a collection of propositions that delineate the relationship among these concepts. It serves multiple interconnected roles in advancing science, primarily by lending significance and generalizability to specific discoveries. Such a framework supports clear communication and enables a structured approach to research, education, administration, and practice within the field of nursing. Employing visual or symbolic depictions of theoretical frameworks can translate complex ideas into formats that are easier to understand or more precise than their original formulations. Systematic representations like these are invaluable during research for clarifying concepts and their connections, aiding researchers in framing the specific problem within an appropriate context and identifying potential areas for investigation. This study is grounded in the general system theory, which outlines a structure of input, process, output, and feedback, as introduced by Ludwig von Bertalanffy in 1968. Under this theory, a system is defined as a collection of elements that interact to achieve a specific goal. An individual, for example, acts as a system by receiving input from the environment, which is then processed to produce an output. All living systems are considered open, characterized by ongoing exchanges of matter, energy, and information. This process is inherently cyclical and continuous, dependent on the constant interaction of its four components (input, process, output, and feedback). Any change in one part triggers changes throughout the system. Feedback, whether internal or from the external environment, furnishes crucial information that allows the system to assess whether it is achieving its objectives (Figure 1).

Input
An input refers to data, substance, or energy that is introduced into the system. In the present system, the elderly people living in the old age home is a system with input from itself and those acquired from outside. The inputs are their background like age, religion, education, professional qualification, occupation, material status, place of stay, and duration of stay in the old age home.

Assessment of depression level among depressive clients with the help of standardized GDS-II.
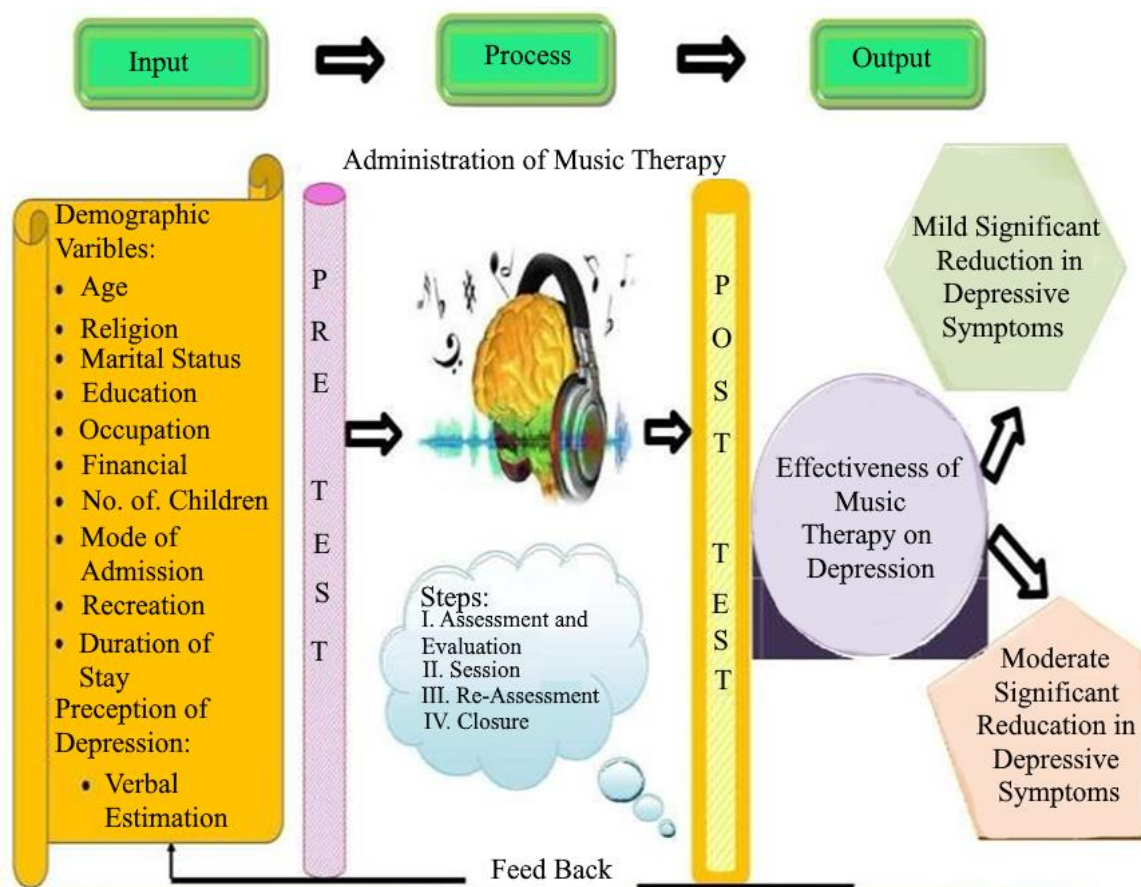

Figure 1. Conceptual frame work based on modified Ludwig von Bertalanffy theory.

Process

Once the system receives the input, it undergoes processing in a manner that benefits the system. Process refers to the administration of musical therapy for four weeks to the elderly people in the old age home to achieve the desired output. Preparation of protocol of music therapy.

Output

The output of a system comprises energy, matter, or information that is expelled from the system following its processing. In this specific research, the output denotes the variation in depression levels following the continuous application of music therapy over a period of four weeks. This variation is evaluated through the comparison of scores obtained before and after the therapy. The output, or the success of the system, emerges from its processing of various inputs, including technical, social, financial, and human resources. In the context of this study, the output is the effectiveness of music therapy (the result of the intervention). The findings indicate the degree of depression, categorized as minimal, mild, moderate, or severe.

Feedback

Feedback is the mechanism through which a system adjusts and obtains information about its output, using this feedback as input to regulate itself. Accordingly, the lower the scores obtained by the subjects in the post-test, the more effective is the administration of musical therapy. As the feedback the elderly will be motivated to hear the music therapy for four weeks.

A visual depiction of the theoretical framework utilized in the current study, derived from the General System theory proposed by Ludwig von Bertalanffy in 1968.

REVIEW OF LITERATURE

Reviewing the literature plays a crucial role in the progression of a research endeavor. The written literature review provides the investigators and readers with a background for understanding what has been already learnt on the subject and illuminates about the significance of the new studies. Literature review refers to the activities involved in identifying and searching for information on a topic and developing a comprehensive picture of the state of knowledge on that topic. This article examines both published and unpublished research studies, as well as non-research literature relevant to the current study. A thorough review of research and non-research literature is being conducted to expand comprehension and acquire deeper insights into the chosen issues for the study. Along with the review of books and journals, an attempt was also made to review literature through internet research and non-research literature were reviewed and organized under the following headings [33–34]:

- *Section A:* Literature related to incidence and prevalence of depressive symptoms among elderly.
- *Section B:* Publications pertaining to the impact of music therapy.
- *Section C:* Literature related to effectiveness of music therapy on depressive symptoms.

Section A: Literature Related to Incidence and Prevalence of Depressive Symptoms among Elderly

A systematic review and meta-analysis on Depressive morbidity and gender in community dwelling Brazilian elderly among elderly average age participants varied between 66.5 and 84 years by selected and extracted the articles from Medline, LILACS, and SCIELO data bases. A total of 17 studies were found. The review indicates that the odds ratio for major depression and clinically significant depressive symptoms (CSDS) were greater among women.

A meta-analysis examining the occurrence of depressive disorders in elderly populations across Asia, Europe, Australia, and America encompassed a total of 48,775 individuals aged 65 years and older residing in various regions globally. The median prevalence rate of depressive disorders among the elderly population worldwide was found to be 10.3%. Within the Indian elderly population, the median prevalence rate of depression was observed to be 1.9%. Risk factors associated with depression in the elderly were identified as belonging to older age groups, being female, experiencing lower socioeconomic status, facing the loss of a spouse, living alone, and having restricted activities of daily living (ADLs). A community study on depression of old age in Taiwan to study the prevalence of depressive disorders among community dwelling elderly and to assess the socio demographic correlates life events. In relation to depression by automated geriatric examination scale. Results showed that psychiatric disorders as 37.7%, with 15.3% depressive neurosis and 5.9% major depression. A high risk of depression is found among income status and widowed in the urban community, and who had physical illness and were depending on others for ADL. A prospective cohort investigation focused on the relationship between depressive symptoms during middle age and the emergence of functional constraints in later life. The study analyzed the enduring impact of depressive symptoms among individuals aged 50–61, employing the 11-item Centers for Epidemiologic Studies Depression Scale (CES-D 11). The findings indicate that depressive symptoms serve as an independent predictor for the onset of enduring restrictions in ADLs and mobility as individuals transition from middle age to later stages of life. A study published in International Journal of Geriatric Psychiatry on Occurrence of depression and its correlates in early onset dementia patients (EOD) and which characteristics were associated with depressive symptoms among 221 patients under the age of 65 by using Montgomery Asberg Depression Scale (MADRS). It was found that high occurrence of depressive symptoms in EOD patients and a history of depression was most important correlate of depression in these patients. A study to assess the depression among aged, in Surat city. A sum of 105 elderly individuals were surveyed, with 35 participants drawn from each of the three selected old age homes. The results were recorded as mean+_ SD and p values, severely depressed are more in old age home 5.7%, the prevalence

of marital as found to be significantly higher in elderly single (74.5%), widowed (18%), the study concluded that there as urgent need to improve the geriatric health services in the country. A research endeavor was undertaken to examine the characteristics and factors contributing to depression among elderly residents in a rural community in South India. The study involved 1000 participants aged 65 years and older from the Kaniyambadi block in Vellore, India. The prevalence of geriatric depression within one month was recorded at 1.7%, with a confidence interval of 95% ranging from 10.64% to 14.67%. The findings revealed that individuals with low income had a 1.78 times increased risk of experiencing geriatric depression, even after adjusting for other influential factors through conditional logistic regression analysis. Additionally, having a greater number of confidants appeared to offer a protective effect, with a 95% confidence interval ranging from 0.6 to 0.6 and an odds ratio of 1.13. The prevalence of depressive symptoms associated factors among elderly hospital inpatients in Brazil. A cross-sectional studies evaluated 189 participants using GDS to assist a dependent regarding ADL. In this study regarding most of the participants were aged between 60 and 95 years with low levels of educational attainment and non-qualified occupation. In a rural Japanese community, the occurrence of depressive symptoms was found to be 56%, yet only 3% of these cases were documented in psychiatric medical records. A cross-sectional study design as used and a questionnaires' survey as a total of 763 elderly persons. The prevalence of depressive symptoms assessed by Zung's Self-Rated Depression Rated Scale of 50 points or more. The highest ratio of 6.01 p<0.01, 95% CI=.86–1.59. The other significance variables are age-80 years, p=0.01. 95% CI= 1.30–5.97, family p=0.0, 95% CI=1.19–6.49, poor mental health p=0.01, CI 95%= 1.31–5.93. a strongest association with depressive symptom as found for poor subjective physical health [35].

The ADAMS sample commenced with a stratified random subsample of 1770 individuals aged 70 years or older, divided into five cognitive strata based on their scores from a cognitive measure obtained during the most recent HRS interview (either in 2000 or 2002). The three highest cognitive strata were further categorized by age (70–79 years vs ≥80 years) and sex to ensure balanced representation across subgroups. Among older women who reported issues with oral health or dentures, there was a correlation with feelings of depression over the preceding four weeks. In total, 74 studies included 487,275 elderly individuals from various regions worldwide at baseline. Among these, six studies from India focused solely on 2499 elderly individuals at baseline to assess the presence of depression. The mean ages of the study participants were provided in 68 articles, ranging from 62 to 71 years. Gender distribution was reported in 68 articles, with men comprising 36%–64% of the participants (median=46%). The duration of the study period varied from 3 to 84 months (median=9). Only 52 studies (70.3%) employed contemporary rating scales for diagnosing depression in the elderly.

A study was conducted to determine the prevalence of depression and its correlation with scores among elderly Hong Kong Chinese adults. Researchers interviewed a random representative sample of 917 community-dwelling Chinese adults aged 60 and over. They utilized the 15-item Chinese version of the GDS, with a cutoff score of more than 8 to identify clinically significant depression in older adults. The investigator found that 11.0 % and 14.5% of older Chinese men and Women, respectively scored above the cut off and the prevalence rate as similar to those found in other countries. The onset and prevalence of depressive symptoms in London. A prospective cohort study with index assessment and patience initially aged more than 65 years were registered. N=1164. Depression as found by a score more than 5 out of 15, on the 15-item GDS. The prevalence of depression was recorded at 8.4%, with depression continuing in 61.5% of individuals who were initially depressed at the start of the study. Comprehensive details on the ADAMS sample design and selection methodology are documented in other sources. Initial assessments for the ADAMS study took place from July 2001 to December 2003, approximately 13.3 months (with a standard deviation of 6.9 months) following the HRS interview. Consequently, at the time of their initial assessment, participants were aged 71 years or older. Depression data were available for 851 of the 856 (99.4%) of the ADAMS participants. shows depression prevalence based on the different depression measures, by demographic characteristics and

cognitive status. A meta-analysis by University of Liverpool found a 3.86% prevalence of depressed elderly in the People's Republic of China, compared to 12% prevalence in western Europe. Prevalence rates of depression exhibited variability across different age groups, with older women generally displaying lower susceptibility to depression compared to younger age groups. For instance, the prevalence of depression was 1.9% among women aged 60–64 years, in contrast to 6% among those aged 20–24 years and 4.4% among those aged 40–44 years. Middle age has been defined as ranging from 45 to 64 years. Within this age bracket, depression prevalence ranged from 9.2% to 24%, likely influenced by variations in age group categorizations and other differences in sample characteristics across studies. The average age of women included in this analysis was 70 years. Prevalence estimates of depression among older women in various studies varied considerably, ranging from as low as 1.77% to as high as 34.7% of the representative samples. A research study was conducted to evaluate the prevalence of geriatric depression among elderly individuals in Selangor. The main screening instrument utilized was a 30-item GDS questionnaire. Out of 316 elderly individuals sampled, 300 were successfully interviewed, resulting in a response rate of 94.9% [36–38]. Findings revealed that 6.3% of the elderly respondents did not exhibit signs of depression. Factors significantly associated with depression among the elderly respondents included gender (p=0.015), ethnicity (p=0.08), chronic illness (p=0.028), and cognitive impairment (p=0.000). The prevalence of depression among the elderly participants in this study was 6.3%. A study on ageing and mental health in developing countries in Goa, India. A vignette of elderly people with depressive symptoms is recognized. Primary care physicians seldom encountered this condition in their clinical practice, whereas community health workers frequently identified individuals with depression. Although depression was prevalent in primary healthcare settings, it was diagnosed infrequently. The research concluded that there is a necessity to enhance awareness about mental health disorders among older adults within the community and among healthcare providers to enhance accessibility to appropriate healthcare services within the community. A study was conducted to investigate the socio-demographic profile and clinical characteristics of individuals aged 60 years and above in Varanasi. Depressive disorders emerged as the most prevalent conditions in psychiatry, accounting for 43% of cases. Among psychiatric illnesses, depression was the most common. Residents of old age homes reported feeling better compared to those living with their children.

Section B: Literature Related to Effectiveness of Music Therapy

A randomized study evaluating the impact of music therapy on stress perception, relaxation, mood, and side effects among patients in a solid organ transplant ward. Healthy Fellow of Music therapy, a report from the Department of Psychology at the University of Sussex methodically elucidates how sounds can literally alter the makeup of the body and mind. According to this review the paper describes it as follows: "music engages sensory processes, attention, and memory-related processes, perception-action mediation, and multisensory integration, activity changes in core areas of emotional processing of musical syntax and musical meaning and social cognition". A randomized controlled experimental study to identify the effect of music therapy on quality of life for solid organ transplant recipients, donors and their care giver by using quality of life inventory method. Research on the impact of music therapy on anxiety levels conducted a comparative analysis on 112 women who were exposed to music during their medical procedures versus 108 women who were not. This particular study, noted for its minimal risk of bias, demonstrated that the act of listening to music while undergoing a colposcopy significantly decreased anxiety levels with a mean difference of -4.80 (95% confidence interval: -7.86 to -1.74). In this research, 38 participants were divided into either experimental groups or placed on a waitlist as part of a control group in a study design that measured outcomes before and after a single session. The investigation, which included a review of 16 Cochrane studies, found that music therapy effectively enhances overall and social functionality in individuals with schizophrenia and/or severe mental illnesses, improves mobility and associated activities in those with Parkinson's disease, and aids in reducing depressive symptoms and enhancing sleep quality.

Music therapy serves as a supplementary therapeutic approach that supports the inherent natural

healing mechanisms. Medicinal Indian vocal music therapy represents the outcome of a decade-long investigation into the impact of Indian music, drawing upon insights from various scientific disciplines. It is not only therapeutic for physical, mental, and emotional disorders but it also elevates the participant to a new spiritual dimension effortless.

- Studies suggest that music interventions can positively influence anxiety, pain, mood, and overall quality of life in cancer patients. Bradt and Dileo have highlighted potential improvements in the quality of life for individuals receiving end-of-life care through music therapy.
- Research indicates that music listening can positively affect heart rate, respiratory rate, and anxiety levels in patients on mechanical ventilation.
- Evidence supports the effectiveness of rhythmic auditory stimulation in enhancing gait among stroke survivors.
- Findings suggest that music listening can improve blood pressure, heart rate, respiratory rate, anxiety, and pain levels in individuals with coronary heart disease.

Movement therapy utilizing music shows potential in enhancing gait and activities related to gait in individuals with Parkinson's disease. The implementation of music-assisted relaxation, which does not require extensive training or materials, is cost-effective and readily accessible, making it an ideal strategy for nurses to employ in enhancing sleep quality through music-assisted relaxation. Music has been found to enhance patient-reported outcomes in specific situations, like reducing anxiety in hospital patients. Chan and colleagues have found that consistent music listening over time can help diminish depressive symptoms among adults [39].

Section C: Literature Related to Effectiveness of Music Therapy on Depressive Symptoms
A research investigation was conducted at NIMHANS Bangalore to evaluate the efficacy of music therapy in alleviating depressive symptoms among the elderly population. A total of 60 samples of elderly people were taken to the research. The results were concluded that p is <0.05, mean scores 17.97< 3.47 in pre intervention to 14.17< 3.85 in post assessment to 1.03<3.50 in follow-up assessment. A clear marker for the value of music therapy as part of the range of interventions available for the treatment of people with depression. Throughout the duration of the study, 123 individuals were assessed for eligibility, with 113 (92%) meeting the criteria for inclusion. However, 31 of these eligible participants (27%) chose not to participate, and one individual (1%) was deemed inappropriate for music therapy after an evaluation by a music therapist. Consequently, 81 individuals (72% of those eligible) were enrolled in the study and allocated to the different groups: 60 (74%) were male, and their ages varied between 18 and 64 years, with an average age of 37. Of these, 33 participants (41%) were assigned to the music therapy group, while 48 (59%) received the standard control treatment. Two studies utilized the GDS-30 scale to measure depressive symptoms. In both studies, the GDS-30 scores were reduced from baseline at Week 4 in the music group. For the control group, both studies reported an increase in depression score from baseline at 4 weeks. There were two studies which utilized CES-D to quantify depressive symptoms. Both studies obtained a non-statistically significant reduction in CES-D score in the music group at the end of the studies. The CES-D score in the control group remained relatively stable. One study utilized the Yesavage depression scale to quantify depressive symptoms in elderly patients undergoing gastrointestinal surgery. The participants in the music group actively played songs with a leading key lighting system, which guided the participants on the keys to press on the keyboard. The intervention was provided by either the surgeons or nurses. The intervention was conducted for ten minutes per session from pre-operation day to one to two days after surgery. Our study has demonstrated that incorporating music therapy into standard care protocols, which typically include medication, psychotherapy, and counseling, can effectively enhance individuals' levels of depression and anxiety. Music therapy possesses unique attributes that enable individuals to express themselves and engage in non-verbal communication, particularly in instances where articulating inner experiences proves challenging. ''We observed that individuals frequently conveyed their inner emotions and pressures through drumming or using mallet instruments to produce tones. Some participants described their musical experiences as therapeutic''. External experts contend that this

research underscores the effectiveness of music therapy as a supplementary approach to conventional therapy, leading to improved outcomes. California conducted a randomized controlled an experimental study on effectiveness of music on depression levels and physiological responses in older adults among 47 elderly people. It reveals that the listening of music can facilitate the non-verbal expression of emotion and allow people's inner feelings to be expressed without being threatened and in the music group; there were statistically significant decreases in depression scores, respiratory rate, heart rate, and blood pressure. It suggests that nurses can utilize music as an effective nursing intervention for older adults experiencing depressive symptoms. Five studies meeting the Cochrane Collaboration's inclusion criteria were published. Due to significant variations in interventions and studied populations, a meta-analysis was deemed inappropriate. However, four out of the five studies individually reported a greater reduction in depression symptoms among participants randomized to music therapy compared to those receiving standard care. The fifth study, which used music therapy as an active control treatment, showed no significant change in mental state when compared with standard care. Dropout rates from music therapy interventions appeared to be minimal across all studies. Therapists may find that utilizing music can aid certain patients in combatting depression, ultimately contributing to the improvement, restoration, and maintenance of their health. Globally, an estimated 121 million individuals suffer from depression, manifesting in disrupted appetite, sleep patterns, overall functioning, and feelings of low self-esteem, worthlessness, and guilt. Depression is also associated with approximately 1 million deaths annually. Researchers from the University of Jyvaskyla enrolled 79 individuals aged 18–50 diagnosed with depression. Thirty-three participants were offered 20 one-on-one music therapy sessions lasting 60 minutes each, in addition to their standard depression treatment, with sessions occurring twice weekly. Trained music therapists helped each participant to improvise music using percussion instruments and drums. The best way to ameliorate one's depressive symptoms musically is to listen to, ''I Know It's over'' by the Smiths. Alas, the widespread availability of down-hearted rock does not appear to have diminished the prevalence of depression. And although listening alone to music that is personally meaningful is what many people imagine music therapy to be, the reality as practiced in the UK and in many other parts of Europe is quite different. In a randomized controlled experiment employing a pretest-post-test, two-group repeated measures design, the impact of soft music on major depression among psychiatric inpatients was examined. Participants chose their preferred music to listen to over a two-week period, with depression levels measured using Zung's Depression Scale at the start and then bi-weekly. The study found that individuals who listened to music showed significantly improved scores on depression and its subcategories compared to those in the control group. These results support the use of soft music as a validated intervention by psychiatric nurses for treating inpatients with depression. Anesthetic involved in health management, refers to the sample study conducted at Rural Medicare in Mehrauli music for relieving pain which showed that most of the patients, generally poor were relieved from pain and discomfort when subjected to music therapy [40].

Professionals from the Arts Therapies department at the Central and Northwest London NHS Foundation Trust, along with their colleagues, conducted a search for randomized controlled trials comparing music therapy to conventional interventions for depression. However, they discovered a lack of high-quality research in this area. Among the studies they found, three concentrated on individuals aged 60 and above, one targeted adults aged 21–65, and one focused on adolescents aged 14–15. President of gerontological research, New Delhi, in article of Music to ears: Therapy to treat relieve stress in aged, she quoted that experts at the seminar based their opinions on scientific facts and sample studies conducted on depressed old age and the study shows that music has been effective in hospices and old age homes. Integrating music therapy alongside antidepressant medication was found to be more beneficial than using antidepressant medication by itself. This study suggest a potential advantage of adjunctive music therapy for late life depression of the existing RCT several points to potential benefits of music therapy for late life depression. Possible mechanisms of action may include the creation of new aesthetic, physical, and relational experiences through active music making in a supportive collaboration between patient and therapist. Music may also provide depressed adults with a more comfortable alternative for expressing emotions, which may be particularly challenging for this

population. Additional investigation is required to distinguish the impacts of various types of music therapy on depression in older adults. Music therapy as first reported as an effective treatment of depressive symptoms by and may be particularly effective in helping depressed older adults express their emotions. Subsequent RCTS suggested that potential benefits for late life depression. One study compared therapist delivered music therapy to independent, home based music therapy exercises from a sample of depressed older adults. The study investigated the impact of reminiscence-based music therapy on depressive signs in older adults with dementia. It involved 20 elderly participants (3 males and 17 females) diagnosed with dementia, living in two distinct residential care homes in Florida, grouped into four small groups. Utilizing a pre-test/post-test design where participants were their own comparison, the research measured depressive symptoms through the Cornell Scale for Depression in Dementia. Statistical analysis revealed significant reductions in depressive symptoms from before to after the therapy sessions, particularly between the initial assessment and the final two follow-ups, demonstrating the therapy's effectiveness. Music therapy was found to be less successful than Cognitive Behavioral Therapy (CBT) in treating depression among elderly adults. The configuration of the two groups differed in both lengths of sessions and number of participants, raising questions regarding the structural integrity, and subsequently the utility of music therapy intervention used. Music therapy may also be effective for older depressed adults taking antidepressant medications [41].

METHODOLOGY

Research methodology is a way to solve problems. This section outlines a systematic approach beginning with the initial problem identification and leading to the final analysis and conclusions. It explores the processes involved in gathering, organizing, and interpreting data. The focus is on the creation, validation, and assessment of tools and methodologies for research. Included in this article are the research framework, environment, demographic, and sampling specifications for choosing participants, as well as the methods and instruments employed for data gathering.

This Article Deals with Brief Description of Different Steps Undertaken for the Study

- Research approach
- Research design
- Research settings
- Variables understudy
- Population
- Sample and sampling technique
- Development of the tool
- Description of the tool
- Content validity
- Reliability
- Pilot study
- Data collection procedure
- Plan for data analysis

Research Approach

The research approach serves as a comprehensive framework outlining the fundamental steps in conducting research. For this study, the chosen research approach is the experimental approach, distinguished by its ability to exert significant control over the research environment. This involves manipulation of certain variables to observe their impact on other variables.

Research Design

The research design encompasses the plan, structure, and strategy employed to address the research inquiries. It serves as the comprehensive blueprint or roadmap chosen by researchers to execute the

study. In this investigation, an experimental design, specifically the pre-test/post-test control group design, was implemented (Figure 2).
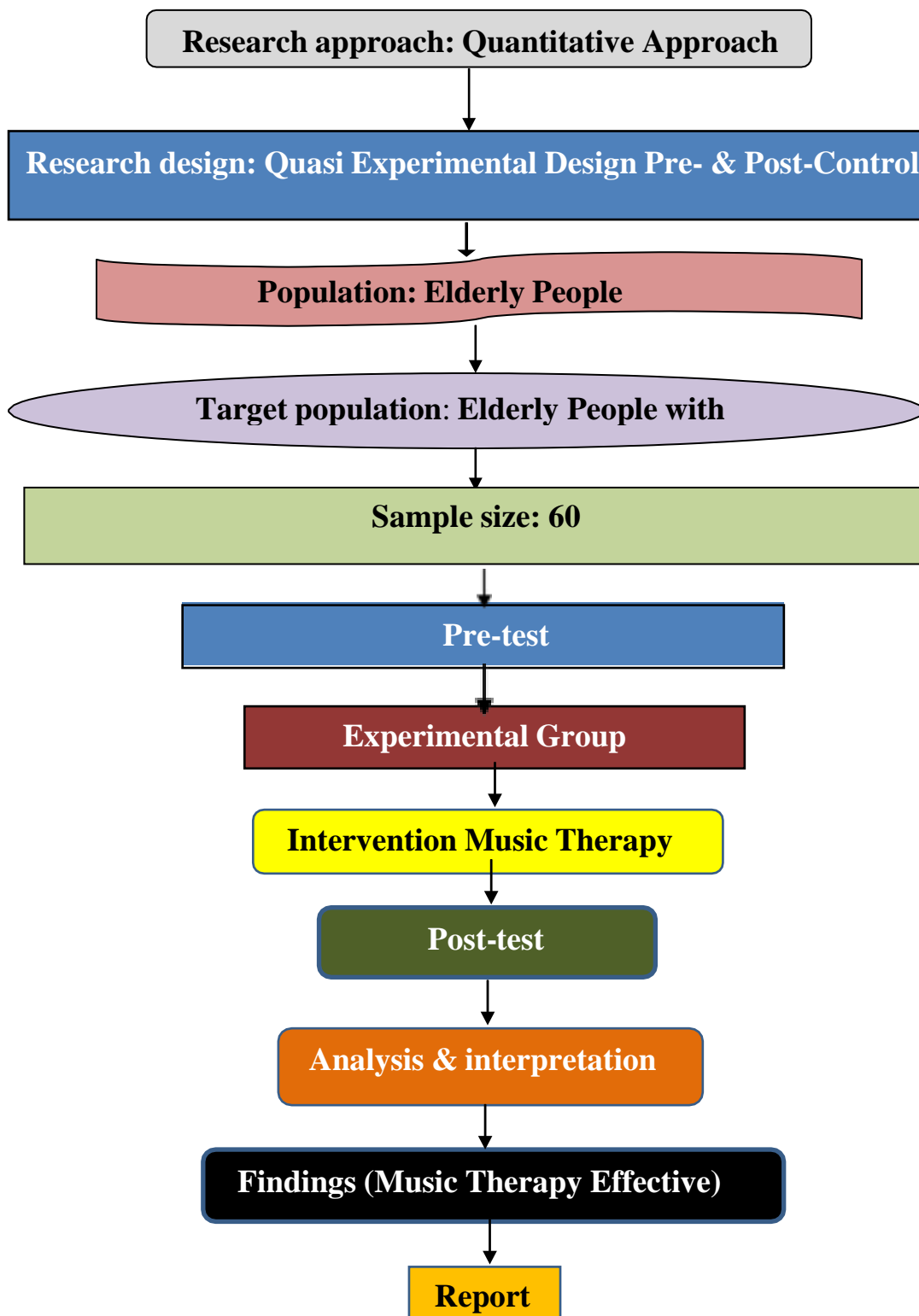

Figure 2. Schematic representation of research design.

Variables Under the Study

"A variable is a potentially measurable component of an object of event that may fluctuate in quantity

and quality''. Or that may be different in quantity and quality from one individual object or event to another individual object or event of same general class.

Dependent Variable
The dependent variable, in essence, is the focal point of the researcher's interest, aimed at comprehension, explanation, or prediction. In this particular study, the dependent variable pertains to the extent of depressive symptoms observed among elderly individuals.

Independent Variable
The independent variables are the phenomenon in the hypothesis that, in the experimental study to test, the hypothesis, is not manipulated by the investigator. This variable is controlled or altered by the researcher to observe its impact on the dependent variables. The independent variables in this study is application of music therapy.

Attributed Variables
Preexisting characteristic of the entity under investigation, in which the researcher simply observes and measures.

In this study, attributed variables are
- Age
- Education status
- Religion
- Monthly income
- Number of children
- Mode of admission
- Recreational activities and duration of stay

Setting of the Study
It is the physical location and condition in which data collection takes place in a study.

The Investigator selected hospital at KGF are GH Hospital, and which are 12 kms away from KKECS college of nursing, KGF the total Elderly people is selected for the study is 60.

Population
"The entire set of individuals having some common characteristic some time referred to as Universe".

"The target population consists of total membership of a defined set of subjects from whom the study subjects are selected and to whom the data will be generalized''.

The focus group for this research comprises 60 older individuals displaying symptoms of depression, representing the broader group to which the researcher aims to apply the study's findings.

Sample
A Sample of 60 elderly people.

Sample Size
A Sample of 60 elderly people who met the inclusion criterion was selected for this study.

Sampling Technique
Sampling technique is the process of selecting the representative units of a population for research. This method involves choosing participants from a population to gather insights about a specific phenomenon in a manner that accurately reflects the entire population. To select the 60 elderly

individuals for this study, a convenience sampling approach was utilized.

Criteria For Selection of Sample
Inclusion Criteria
• Elderly individuals exhibiting symptoms of depression within the age bracket of 60–70 years.
• Elderly individuals who express willingness to participate during the data collection phase.
• Elderly individuals who consent, both orally and in writing, to be part of the study.
• Elderly people who can able to understand and speak Kannada or English.

Exclusion Criteria
• Elderly people who had previous music therapy intervention.
• Elderly people those who are having congenital disorders like hearing disabilities.
• Elderly people who have medical illness like hemiplegic, chronic kidney disease, etc.

Development of Tool
The selection of the instrument was informed by a thorough review of literature, including textbooks and online resources, and after consultations with experts in nursing, psychiatry, and statistical analysis. Data collection from elderly residents in a nursing home was conducted using a structured questionnaire.

Description of Tool
The tool consisted of Section A and B

Section A: Socio-Demographic Profile
It includes socio-demographic details such as age, religion, marital status, education, occupation, financial support, number of children, mode of admission, recreational activities, and duration of stay.

Section B: Structured Questionnaire
The structured questionnaire regarding assessment of depressive symptoms by using GDS.

The GDS is a self-report assessment tool designed to measure depression symptoms among older individuals, where respondents answer in a binary ''Yes/No'' format. Initially consisting of 30 items, the GDS was developed and validated by Sheikh and Yesavage in 1986. Among the 30 items, 20 are considered positive indicators of depression when affirmed, while the remaining 10 suggest depression when negated. This assessment typically requires 5–7 minutes to complete. The GDS is suitable for use with healthy seniors, those with medical conditions, and individuals with mild to moderate cognitive impairment. Widely applied in various healthcare settings, including community, acute care, and long-term care facilities, it serves as a valuable tool for assessing depressive symptoms in older populations (Table 1).

Table 1. GDS.
Minimum score = 0 Maximum score =1 Questions= 30 Total score=30

0–9	No depression
10–19	Mild depression
20–30	Moderate and severe depression

Content Validity
Data collection tool is an instrument that measures the variables of interest of the study accurately, precisely and sensitively.

Content validity of the instrument was established through input from experts specializing in

psychiatric nursing, psychiatry, psychology, and statistical analysis. These experts, including an associate professor, psychiatrist, and clinical psychologist, were tasked with assessing the relevance, sequence, and sufficiency of the content. Consensus among the experts affirmed the suitability of the tool for conducting the study, leading the investigator to proceed with its use.

Ethical Consideration

The research objectives, intervention strategies, and data collection methods received approval from the Ethics Committee of KKECS College KGF. Participants, who were elderly individuals, were informed about the study's purpose and its necessity. It was emphasized to them that their information and responses would be exclusively utilized for research purposes and maintained in strict confidence. Following these assurances, the investigator adhered to the ethical standards set forth by the Ethics Committee, proceeding with the study upon receiving written consent.

Pilot Study

Pilot study is a trail run for the main study to test the reliability, practicability, and feasibility of the study.

The preliminary goals of the pilot study included acquainting the researcher with the tool's application and identifying any challenges for the primary research. The researcher completed a music therapy training program at the Radical Wisdom School of Culture in Bangalore. Following ethical approval and obtaining permission from Mother Teresa's Old Age Home in KGF, the pilot study was conducted over a week, from January 22 to January 27, 2022. A group of 10 elderly individuals was chosen using a convenience sampling method, and informed consent was secured prior to data collection. Data gathering involved administering a structured questionnaire to the elderly participants before initiating music therapy sessions. Following the completion of these sessions, the participants' depressive symptoms were re-evaluated using the same scale. Individuals who participated in the pilot study were not included in the main research project.

Reliability of the Tool

Following the pilot study, the reliability of the instrument was evaluated through the split-half method, yielding an 'r' value of 0.85. This indicates a strong positive correlation, affirming the instrument's reliability.

Data Collection Procedure

The entire data collection procedure was spread out over a period of four weeks from 16 February 2022 to 17 March 2022. Mother Theresa's home is a refuge for 70 seniors over the age of 60 from various regions of Karnataka, transcending differences in caste, creed, and religion, after being abandoned by their families. Initially the investigator approaches each elderly after getting permission from the Director. The old age home consists of 70 elderly in whom 35 were males and 35 females. Investigator selected 70 elderly people initially. In that, 2 of them were dropped due to chronic illness, 3 of them were unable to attend due to their physical inability and 5 were not willing to participate in the study. The investigator selected 60 elderly people as per the inclusion and exclusion criteria. The elderly people were introduced with the whole program after an introduction and then a written informed consent was obtained from them for willingness to participate in the study. Participants were guaranteed privacy for their information and responses, which would solely be utilized for research objectives. Preliminary casual conversations were initiated with participants to build a comfortable rapport. The study involved dividing the total of 60 senior participants into two groups, each comprising 30 individuals. Every day the participants were gathered around 10 am in the common hall. The pre-test questionnaire was administered to them and they were asked to give appropriate answers for all statements to find out the depressive symptoms level by structured scale before music therapy. First the investigator demonstrated the music therapy steps to first group for 45–50 minutes in the morning and evening session per day up to first 2 weeks.

The data was collected in three stages:

Stage I (Assessment First Week)
Informed written consent was obtained to select the samples to conduct music therapy from the concerned authorities of old age home.

Participants were briefed on the study's aims and methods, and written consent was obtained from them. The researcher built a good relationship with the participants and clarified the interview's objectives to them. An initial assessment (pre-test) was conducted on willing elderly residents of the nursing home, using the GDS to evaluate their depression levels. Individual having audio logical deficits were excluded from the screened group purposive sampling was done to select the sample.

Stage II (Intervention Second and Third Week)
The investigator encouraged the samples to hear music with the help of the audio (Compact Disc) for 30 minutes as two sessions over a period of 4 weeks under the supervision of the investigator.

Step 1. Assessments & Evaluations
During the first two or three sessions with the elderly people. The investigator uses instruments and a basic session design (greeting & closing songs) that is old melodies songs to collect data. He/she will look at seven skill areas - physical, social, behavioral, cognitive, communicative, creative, and musical. After the data has been collected, individual or group goals and objectives are chosen.

Step 2. Sessions
After the goals and objectives are defined, the investigator meets the elderly people on a fixed weekly schedule in an agreed upon location. The duration is from morning 10 am–12 pm and evening 2 pm–4 pm. Therapy sessions are individually designed to reach the goals stated and the investigator uses music, instruments, song writing, improvisation, and movement to support the elderly people in meeting those goals. Elderly people become active and central participants in music making at whatever level they are currently able. After every session, the investigator takes notes to track the progress of the therapy.

Step 3. Re-assessment
Through the process of tracking the elderly people progress, the investigator might re-adjust the goals and objectives either because the first goals have been met or because other more important needs arise. In some cases, where music therapy does not seem to be reaching the desired objectives, the investigator will recommend ending the treatment. However, music therapy can be used as an on-going therapy for elderly people who respond positively and have on-going needs.

Step 4. Closure
The relationship between the investigator and elderly people is a close one. Therefore, in the best interest of the elderly people, proper closure is very important, no matter what the reason for ending the therapy is.

Stage III (Re-assessment second and third week)
An immediate post-test to the study samples is done to evaluate the changes in the level of depressive symptoms who would have undergone music therapy.

With the closure of the music therapy the elderly people are assembled in one room. The investigator thanked everyone for cooperating for the study and also insisted about the importance of hearing music for reducing depressive symptoms.

Intervention protocol
- *Place*: Mother Theresa old age home.

- *Intervention*: Music therapy.
- *Tool*: Geriatric Scale.
- *Duration*: Four weeks.
- *Frequency*: Twice a day.
- *Time*: Morning 10 am–12 pm.
      Evening 2 pm–4 pm.
- *Administered by*: The Investigator.
- *Recipient*: Elderly people residing in homes.
- *Procedure*: Old melodies song was played through compact disc attached with speaker.

Data Entry and Data Analysis
- The demographic variables are presented in frequency distributions along with their corresponding percentages.
- Depression score in given in mean and standard deviation.
- Quantitative depressive symptoms score in pre-test and post-test will be compared using Student's paired t-test.
- Correlation between depression and attitude will be analyzed by using Karl Pearson's Correlation Coefficient.
- Association between demographic variables and depressive symptoms score are analyzed by using Pearson Chi-square test.

RESULTS
The data themselves do not provide us with answer to research questions. In order to be meaningful answer to the research questions, the data must be presented and analyzed in some orderly, so that relationship can be described. The purpose of this analysis is to reduce the data to a manageable and interpretable form so that research problem can be studied and tested. Analysis is described as "categorizing, ordering, manipulating, and summarizing the data to obtain answer to research questions". The purpose of analysis is to reduce the data to an intelligible and interpretable form so that the relation of research can be studied. This section presents the analysis and interpretation of the data collected from. The data collection was done based on the objectives of the study.

Section I: Socio-demographic profile of the elderly people
Section II: Depressive symptoms of the elderly people before music therapy intervention.
Section III: Depressive symptoms of the elderly people after music therapy intervention
Section IV: Effectiveness of the music therapy
Section V: Association between the effectiveness of music therapy with selected demographic variables.

### Section I: Socio-demographic profile of the elderly people
Table 2 and Figure 3 shows the analyses in the demographic data revealed that among 60 elderly people in the old age home the majority of 32 (53.30%) were between 71 and 80 years, 20 (33.4%) were above 80 years, 8 (13.3%) were between 60 and 70 years. Most of the studies related to Geriatric depression involved elderly whose ages were more than 60 years.

Figure 4 shows the study subjects, the elderly people belonged to Hindu were 27 (45%), subject belonged to Christian were 30 (50%), and Muslims 3 (5%). Most of the subjects are from Christian religion.

Figure 5 shows Majority of the study subjects of 23 (38.3%) were married, 19 (31.7%) of them were widowed, 17 (28.3%) were single. only one subject (1.7%) was a divorcee.

Table 2. Distribution of socio-demographic profiles of the elderly people.

S.N.	Demographic variables		Frequency	in %
1.	Age	60–70 years	8	13.3
		71–80 years	32	53.3
		>80 years	20	33.4
2.	Religion	Hindu	27	45.0
		Christian	30	50.0
		Muslim	3	5.0
3.	Marital Status	Married	23	38.3
		Single	17	28.3
		Divorced	1	1.7
		Widowed	19	31.7
4.	Education	No formal education	17	28.3
		Primary	26	43.4
		Higher secondary	15	25.0
		Graduate	2	3.3
5.	Occupation	Governments	1	1.7
		Private	32	53.3
		Business	23	38.3
		Others	4	6.7
6.	Financial Support	Government retired pension	2	3.3
		Old age pension	7	11.7
		Any other	41	68.3
		None of the above	10	16.7
7.	No. of Children	1 or 2	12	20.0
		More than 2	19	31.7
		No children	29	48.3
8.	Mode of Admission	Referred by trust	27	45.0
		Voluntary admission	23	38.3
		From the children	4	6.7
		Others	6	10.0
9.	Recreation	Watching TV	24	40.0
		Listening music	19	31.6
		Reading books	7	11.7
		Talking with others	10	16.7
10.	Duration of Stay	Below one year	12	20.0
		2–3 years	20	33.3
		3–5 years	18	30.0
		>5 years	10	16.7
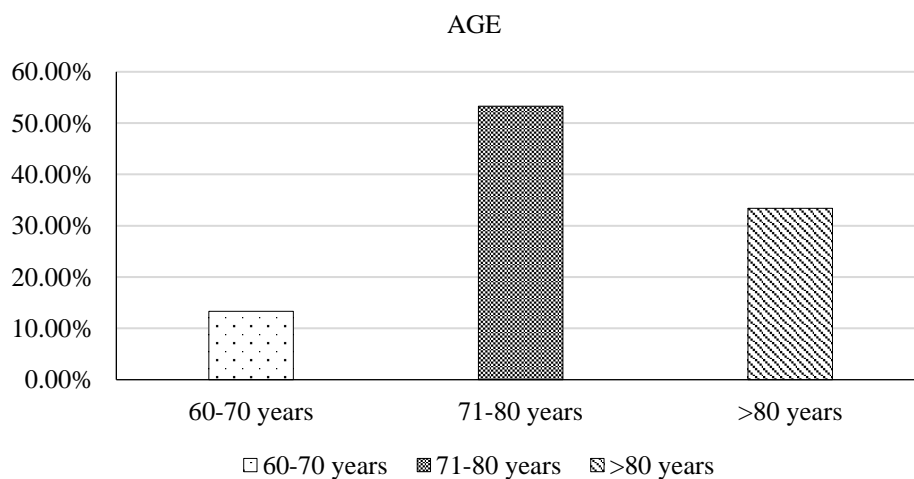
Figure 3. Distribution of age of the elderly people.

Religion

□ Hindu   ▨ Christan   ⊠ Muslim
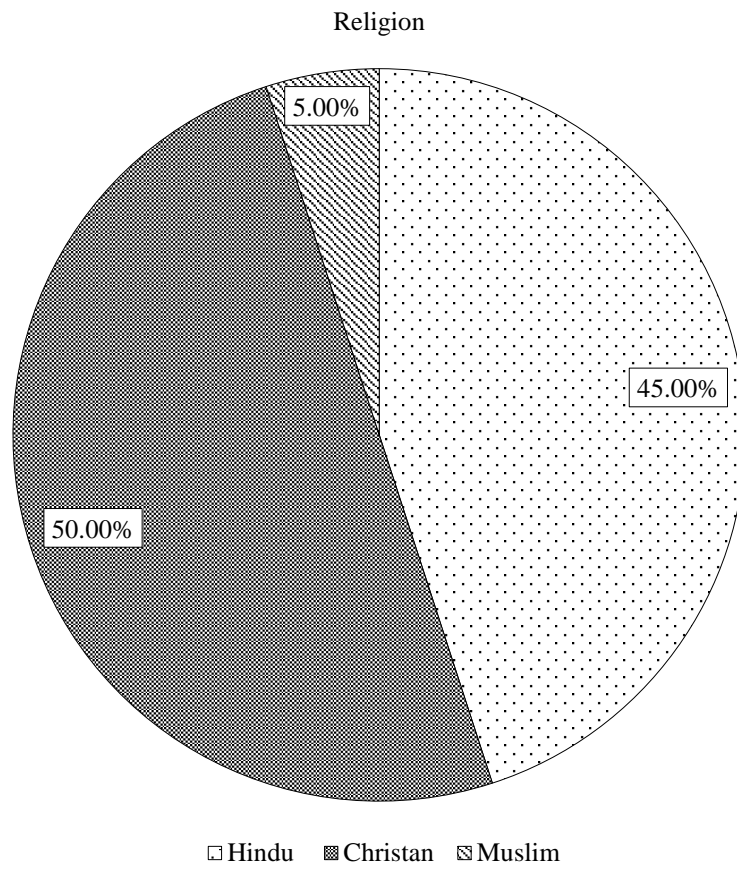
Figure 4. Distribution of religion of the elderly people.

Marital Status

□ Married   ▨ Single   ⊠ Divorced   ▥ Widow
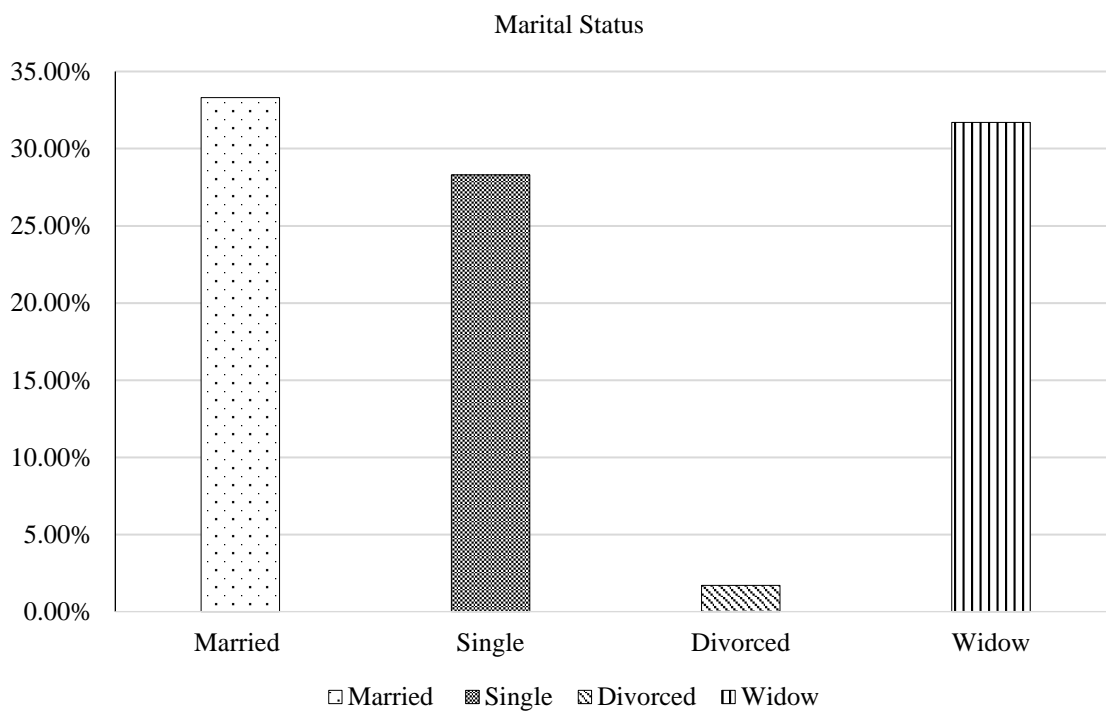
Figure 5. Distribution of marital status of the elderly people.
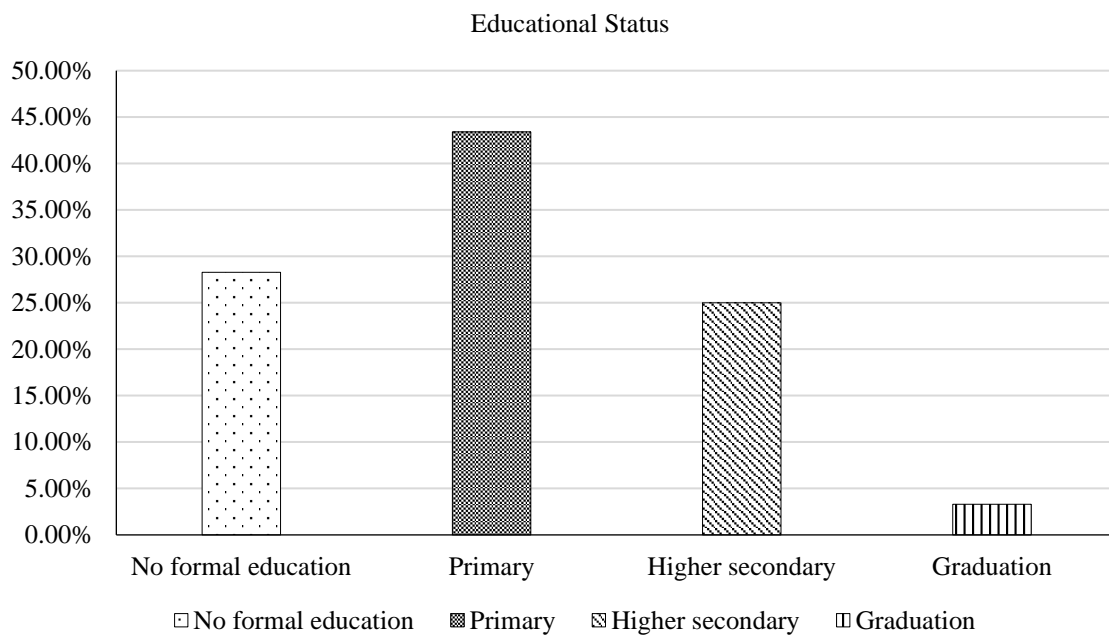
Educational Status

Figure 6. Distribution of educational status of the elderly people.

Figure 6 With regards to their education qualification 26 (43.4%) of the study subjects had studied up to primary school, 15 (25%) up to secondary school, 17 (28.3%) were no formal education, 2 (3.3%) complete the graduation.
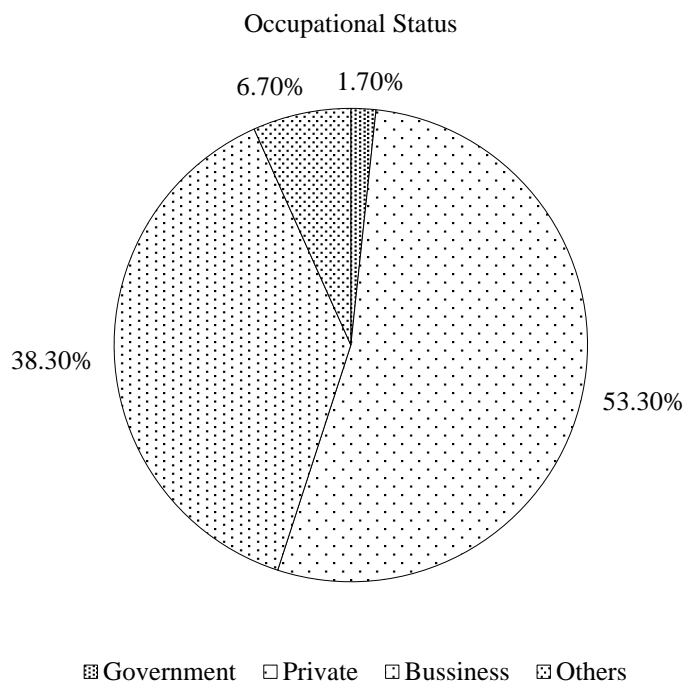

Figure 7. Distribution of occupational status of the elderly people.

Figure 7 shows the study subjects, the elderly people of 32 (53.3%) had skilled private jobs such as clerical works, receptionist etc., 23 (38.3%) had performed business, 4 (6.7%) engaged in other jobs, only 1 (1.7%) had perform government jobs none of them working at present.
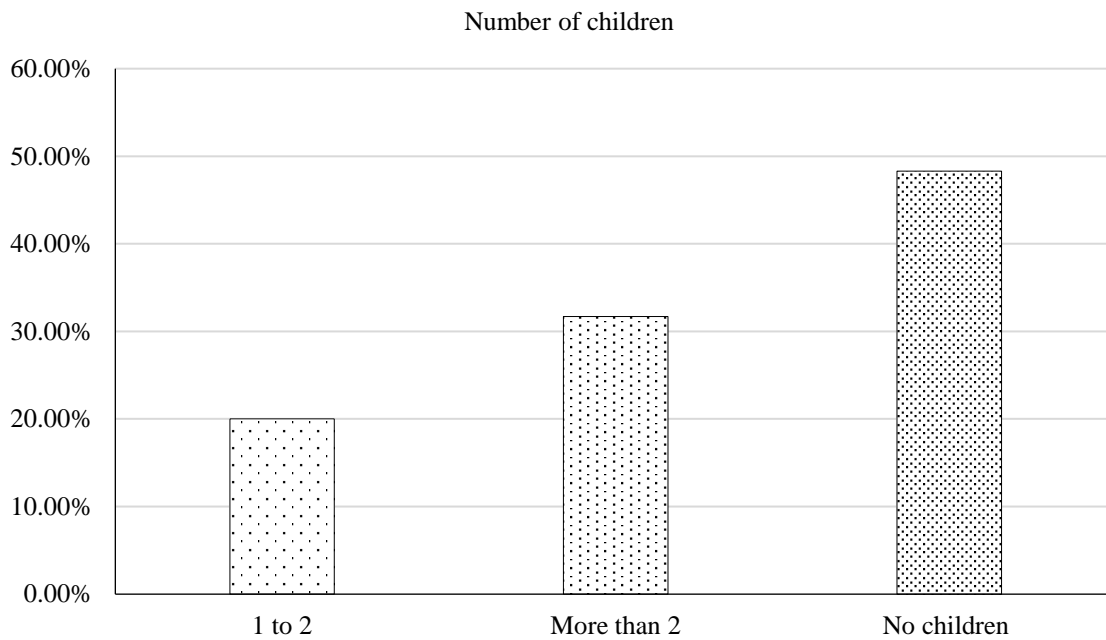
Figure 8. Distribution of no. of children of the Elderly People.

Figure 8 shows 29(48.3%) had no children, 19(31.7%) have more than 2 children, 12(20%) were having 1 to 2 children.
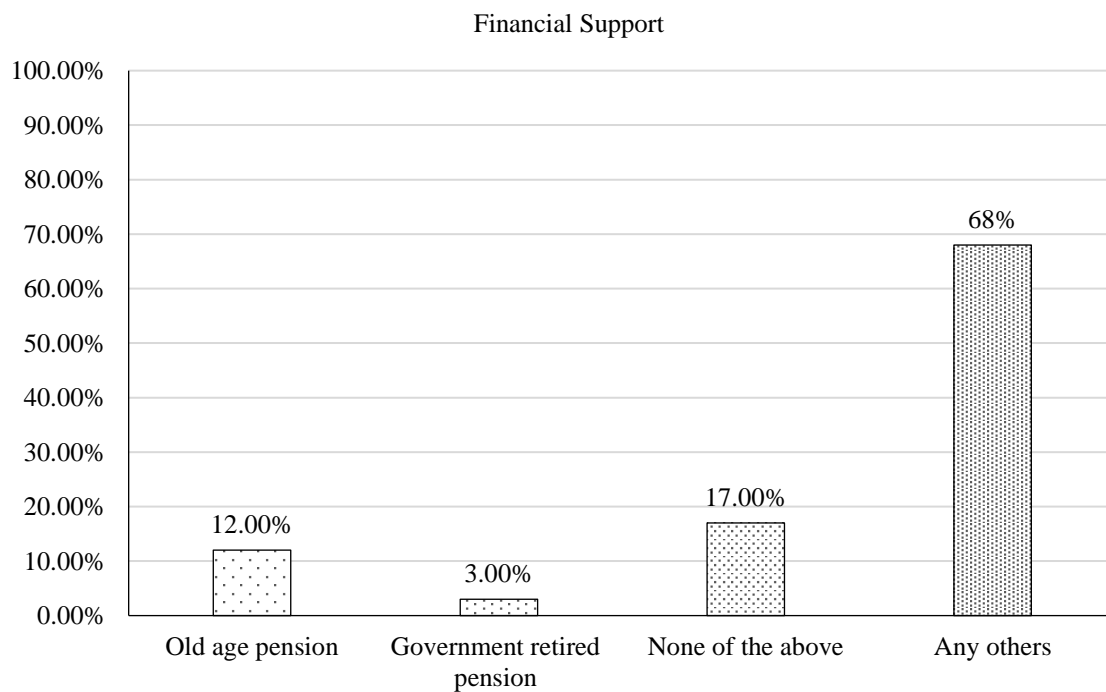

Figure 9. Distribution of financial support of the elderly people.

Figure 9 shows the study subjects 41 (68.3%) get income from any other resources, 10 (16.7%) receive no income, 7 (11.7%) of them receiving old age pension and only 2 (3.3%) are receiving Government pension. This may be adding some more shrinkage in social network which leads to depressive symptoms.
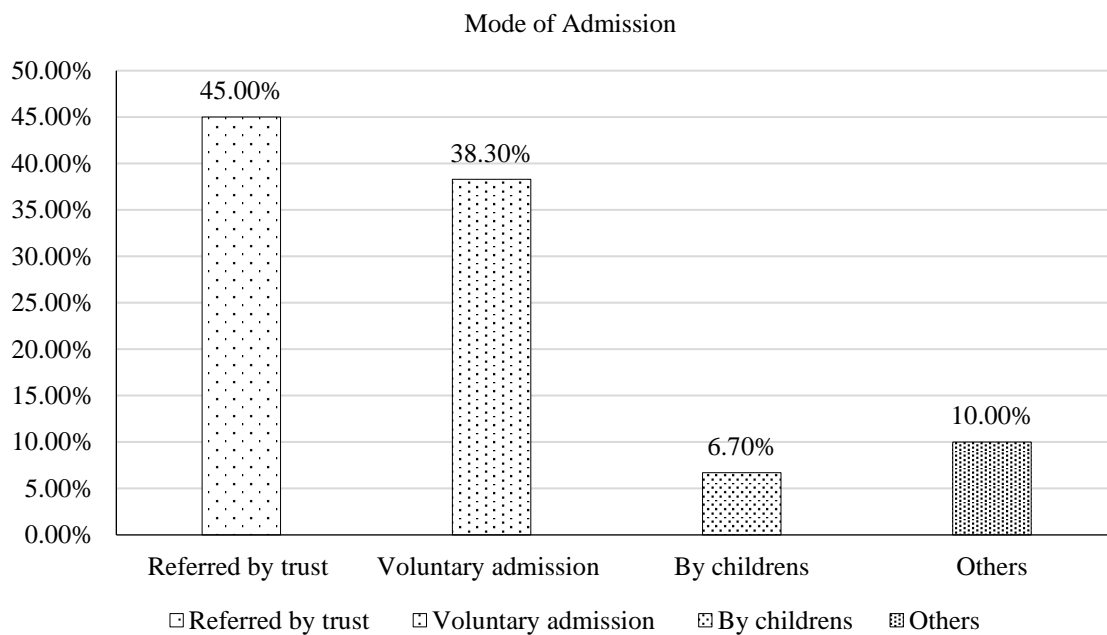
Mode of Admission

Figure 10. Distribution of mode of operation of the elderly people.

Figure 10 shows the study subjects 27 (45%) were referred from trusty, 23 (38.3%) were voluntarily admitted, 6 (10%) were referred from others, 6.7% are admitted by their children.

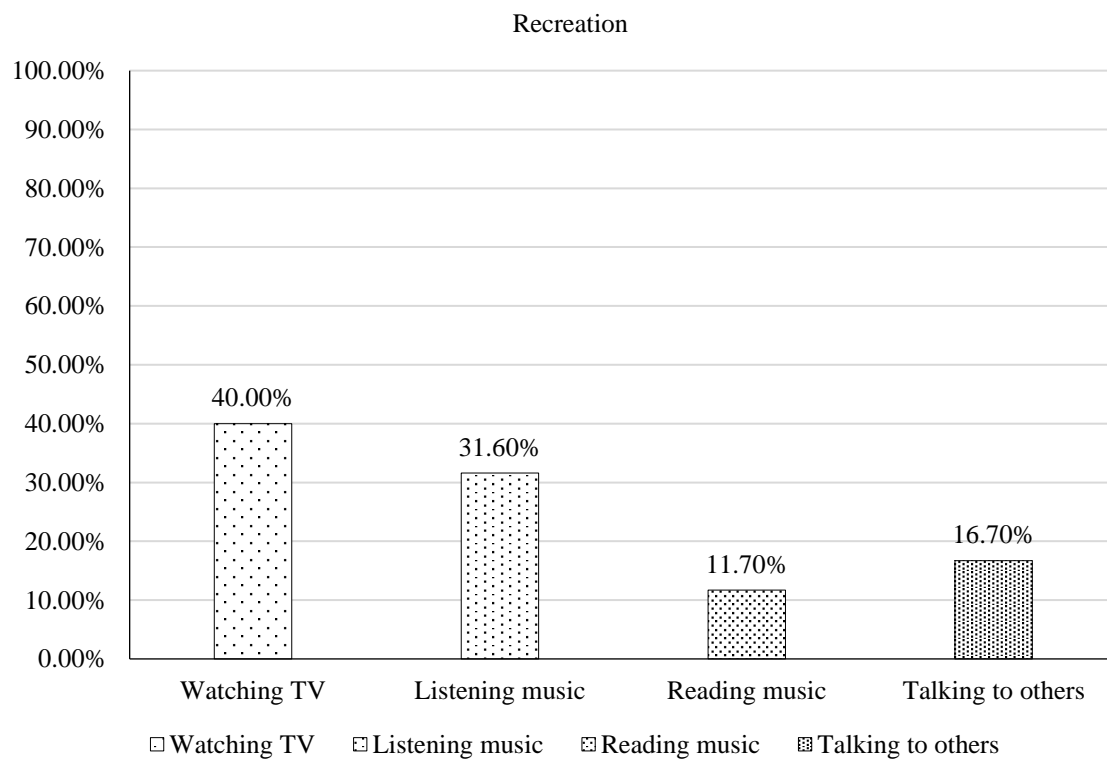Recreation

Figure 11. Distribution of recreation of the elderly people.

Figure 11 shows the study subjects, 24 (40%) were watching TV, 19 (31.6%) use to listen music, 10 (16.7%) will talk with others, 7 (11.7%) of them will read books.
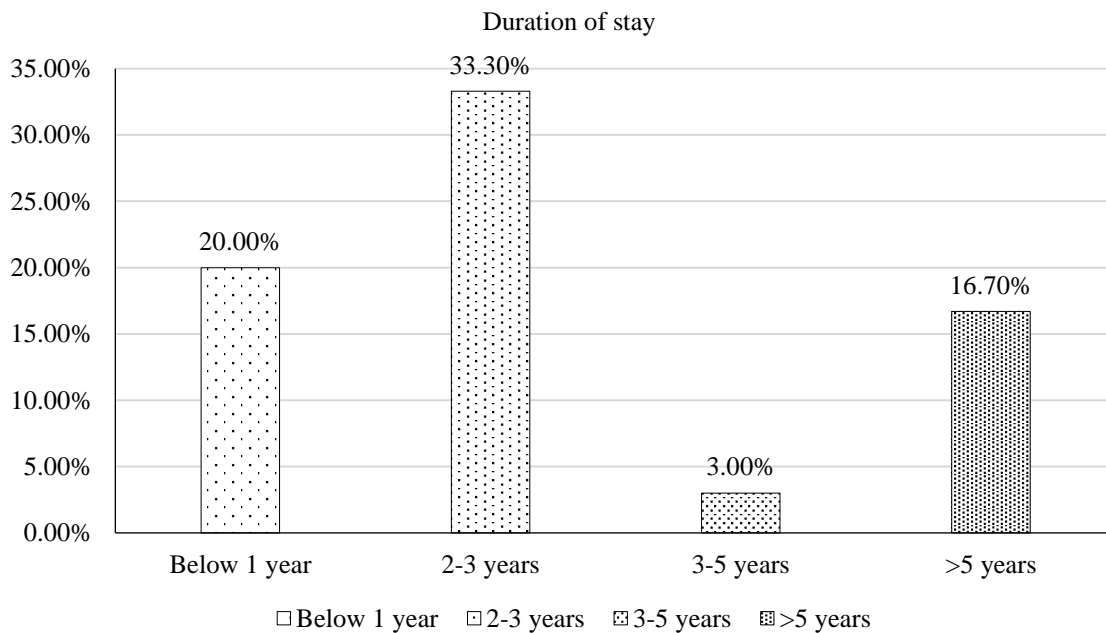
Figure 12. Distribution of duration of stay of the elderly people.

Figure 12 shows the study subjects 20 (33.3%) were staying for 2–3 years, 12 (20%) were staying less than 1 year, 18 (30%) were staying 3–5 years, 10 (16.7%) were staying more than 5 years.

Section II: Depressive symptoms of the elderly people before music therapy intervention
Table 3 Shows pre-test level of depressive symptoms score among elderly people. None of them have no depression score, 73.3% of them have mild depression score, and 26.7% of them have severe depression score.

Table 3. Pre-test level of depressive symptom score.

Level	Frequency	in %
No depression	0	0.0
Mild depression	44	73.3
Moderate and severe depression	16	26.7
Total	**60**	**100**

Section III: Depressive symptoms of the elderly people after music therapy intervention
Table 4 shows post-test level of depressive symptoms score among elderly people. 46.7% of them have no depression score, 53.3% of them have mild depression score, and none of them have severe depression score.

Table 4. Post-test level of depressive symptom score

Level	Frequency	in %
No depression	28	46.7
Mild depression	32	53.3
Moderate and severe depression	0	0.0
Total	**60**	**100**

Section IV: Effectiveness of the music therapy
Table 5 shows Assess the pre-test and post-test level of score.

Before Administration of music therapy, none of them have no depression score, 73.3% of them have mild depression score, and 26.7% of them have severe depression score.

Table 5. Comparison of pre-test and post-test level of depressive symptoms score.

Level	Pre-test		Post-test		Chi-squaretest
	Frequency	in %	Frequency	in %	
No depression	0	0.0	28	46.7	**2=45.89**
Mild depression	44	73.3	32	53.3	**P=0.001***DF=2**
Moderate and severedepression	16	26.7	0	0.0	
Total	**60**	**100**	**60**	**100**	

*Significant at P≤0.05. ** highly significant at P≤0.01. *** very high significant at P≤0.001.*

After Administration of Music therapy, 46.7% of them have no depression score, 53.3% of them have mild depression score, and none of them have severe depression score. Chi-square test was used to calculate the statistical significance.

Table 6. Comparison of pre-test and post-test score

	Frequency	Mean ± SD	Mean Difference	Student's paired t-test
Pre-test	60	16.72±3.88	8.42	**t=20.62 P=0.001***
Post-test	60	8.30±2.16		

*Significant at P≤0.05. **highly significant at P≤0.01. ***very high significant atP≤0.001.*

Table 6 shows the comparison of depressive symptoms score between pre-test and post-test. In pre-test, elderly people have 16.72 score where as in post-test they have 8.30 score, so the difference is 8.42. This difference between pre-test and post-test is large and it is statistically significant. Differences between pre-test and post-test score is analyzed using paired t-test (Figure 13).

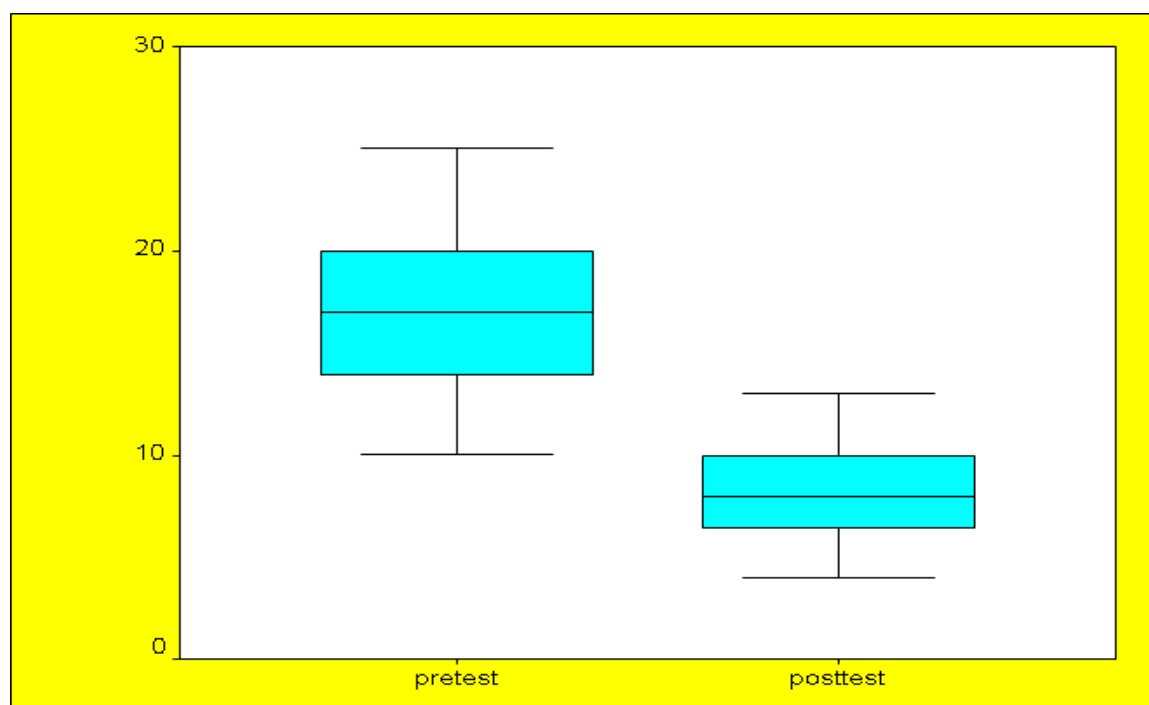**Figure 13.** Comparison pre- and post-test level of depressive symptoms score.

Table 7. Effectiveness of music therapy.

	Max score	Mean score	Mean Difference in Depressive symptoms score with 95% Confidence interval	Percentage of Depressive symptoms reduction score with 95% Confidence interval
Pre-test	0	16.72	8.42(7.60 – 9.23)	28.1 (25.3 –30.8)
Post-test	30	8.30		

Table 7 shows the effectiveness of music therapy. After music therapy, post-test depressive score had reduced to 28.1%. Differences between pre-test and post-test score was analyzed using percentage with 95% CI and mean difference with 95% CI.

Section V: Association between the effectiveness of music therapy with selected demographic variables

Table 8 shows the association between the levels of depressive symptom reduction scores with the socio-demographic variables. Demographic variables such as age, education, financial support, and duration of stay shows statistical significance when correlated with level of depressive symptom reduction score. Statistical significance was calculated using chi-square test. The other variables such as religion, marital status, occupation, number of children, mode of admission, recreation have no statistical significance when correlated with level of depressive symptom reduction score (Figure 14–17).

Table 8. Association between level of depressive symptoms reduction score and elderly people demographic variables.

S.N.	Demographic Variables		Level Depressive symptoms reduction score				Total	Chi-square test
			Below average (≤8.42)		Above average (>8.42)			
			Frequency	In %	Frequency	in %		
1.	Age	60–70 years	2	25.0	6	75.0	8	χ^2=8.12
		71–80 years	13	40.6	19	59.4		P=0.02*
		>80 years	15	75.0	5	25.0	20	DF=2
2.	Religion	Hindu	10	37.0	17	63.0	27	χ^2=4.28
		Christian	19	63.3	11	36.7		P=0.11
		Muslim	1	33.3	2	66.7	3	DF=2
3.	Marital status	Married	13	56.5	10	43.5	23	χ^2=1.92
		Single	9	52.9	8	47.1	17	P=0.58
		Divorced	0	0.0	1	100.0	1	DF=3
		Widowed	8	42.1	11	57.9	19	
4.	Education	No formal education	12	70.5	5	29.5	17	χ^2=11.89
		Primary	15	57.7	11	42.3	26	P=0.01 **
		Higher secondary	3	20.0	12	80.0	15	DF=3
		Graduate	0	0.0	2	100.0	2	
5.	Occupation	Government	1	100.0	0	0.0	1	χ^2=6.13
		Private	20	62.5	12	37.5	32	P=0.10
		Business	8	34.8	15	65.2	23	DF=3
		Others	1	25.0	3	75.0	4	
6.	Financial Support	Government retired pension	0	00.0	2	100.0	2	χ^2=7.91
		Old age pension	2	28.6	5	71.4	7	P=0.05*
		Any other	20	48.8	21	51.2	41	DF=3
		None of the above	8	80.0	2	20.0	10	
7.	No. of Children	1 or 2	6	50.0	6	50.0	12	χ^2=4.26
		More than 2	6	31.6	13	68.4		P=0.11
		No children	18	62.1	11	37.9	29	DF=2
8.	Mode of admission	Referred by trust	13	48.1	14	51.9	27	χ^2=0.74
		Voluntary admission	11	47.8	12	52.2	23	P=0.84
		From the children	2	50.0	2	50.0	4	DF=3
		Others	4	66.7	2	33.3	6	
9.	Recreation	Watching TV	9	37.5	15	62.5	24	χ^2=4.62
		Listening music	13	68.4	6	31.6	19	P=0.20
		Reading books	4	57.1	3	42.9	7	DF=3
		Talking with others	4	40.0	6	60.0	10	
10.	Duration of stay	Below one year	5	41.7	7	58.3		χ^2=8.02
		2–3 years	6	30.0	14	70.0	20	P=0.05*
		3–5 years	11	61.1	7	38.9	18	DF=3
		>5 years	8	80.0	2	20.0	10	

* Significant at P≤0.05. ** highly significant at P≤0.01. *** very high significant at P≤0.001.
Depressive symptom reduction score = pre-test-post-test

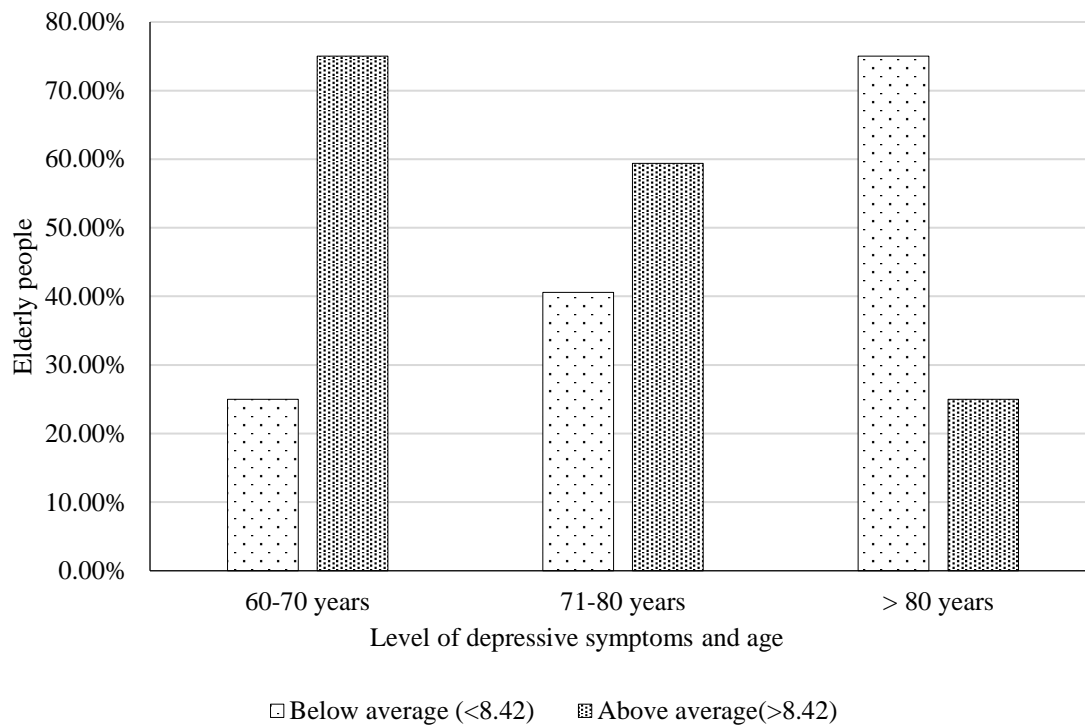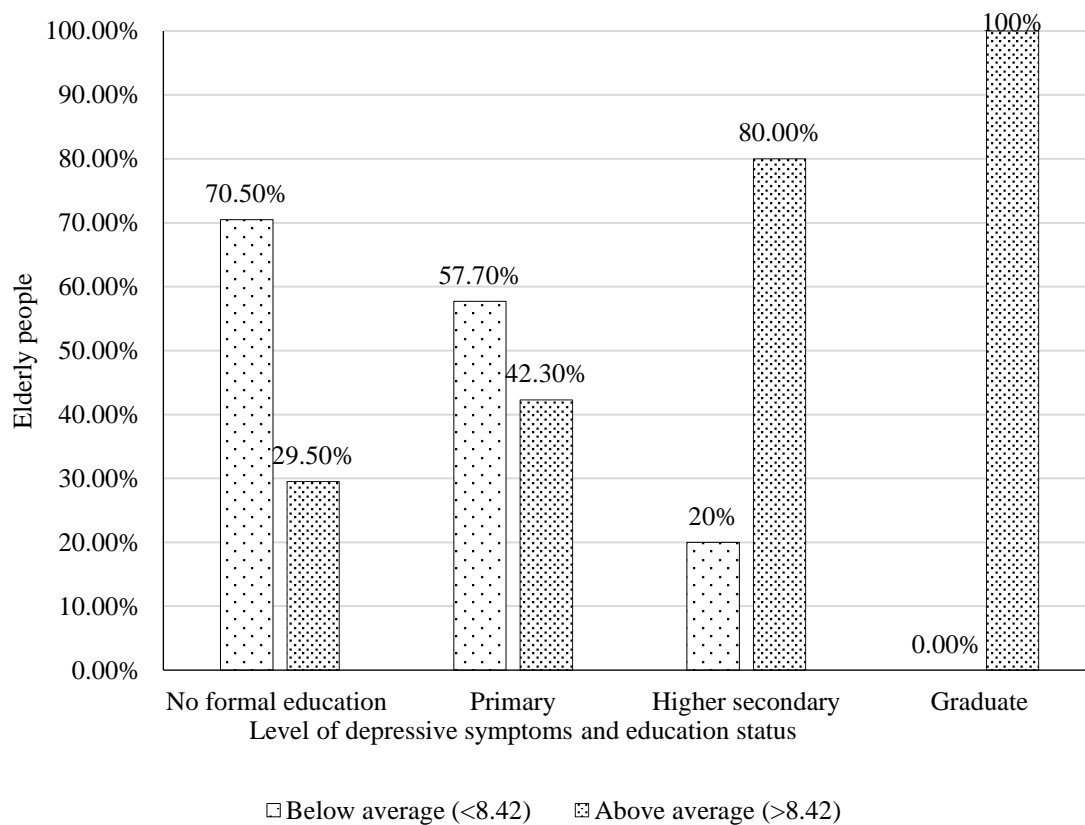**Figure 14.** Association between level of depressive symptoms reduction score with the age of the elderly people.

☐ Below average (<8.42)   ▦ Above average (>8.42)

Figure 15. Association between level of depressive symptoms reduction score and educational status.

Below average (<8.42)   Above average (>8.42)

Figure 16. Association between level of depressive symptoms reduction score and financial support.

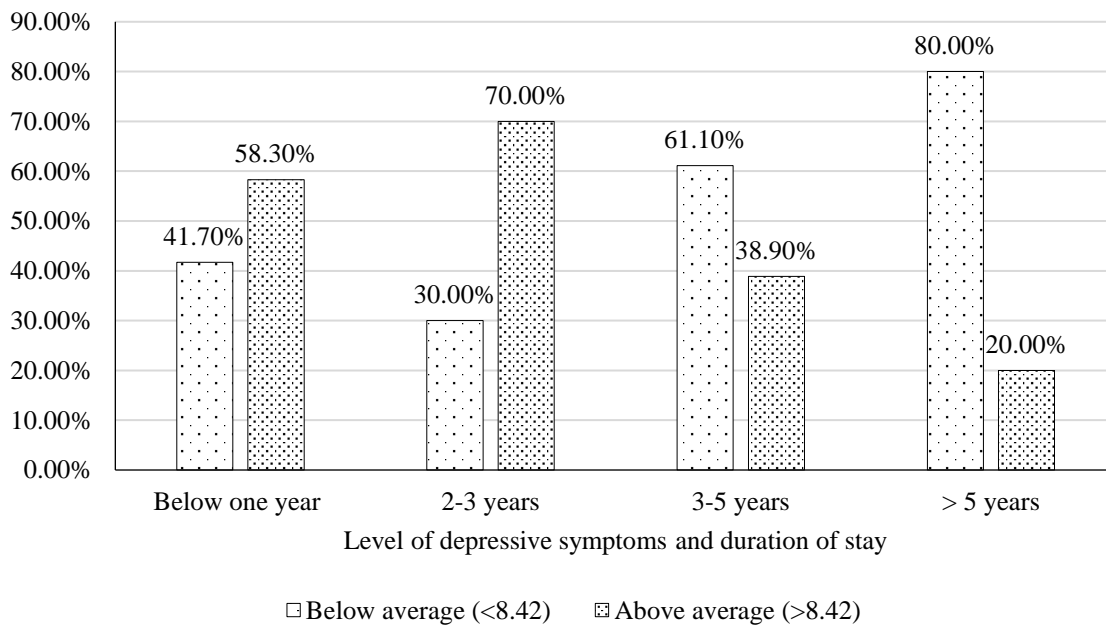Below average (<8.42)   Above average (>8.42)

Figure 17. Association between level of depressive symptoms reduction score and duration of stay in old age home.

DISCUSSION

The current research investigates the efficacy of music therapy in alleviating depressive symptoms among elderly residents in chosen geriatric facilities within Kolar district. Employing an experimental design with pre-test-post-test control groups, the study utilized convenient sampling to select a sample size of 60 participants. Data collection was conducted through structured interviews. The subsequent analysis and presentation of findings are outlined in this chapter. The study aims to assess the impact of music therapy on depressive symptoms among elderly individuals residing in selected geriatric homes. The discussion of the results is structured according to specific sections.

Objective: I
To Identify the Socio-demographic Variables of the Elderly People in Selected Geriatric Home at KGF.

- *Age*: Analyses in the demographic data revealed that among 60 elderly people in the old age home the majority of 32 (53.30%) were between 71 and 80 years, 20 (33.4%) were above 80 years, 8 (13.3%) were between 60 and 70 years. Most of the studies related to Geriatric depression involved elderly whose ages were more than 60 years.

- *Religion*: Among the study subjects, the elderly people belonged to Hindu were 27 (45%), subject belonged to Christian were 30 (50%), and Muslims 3 (5%). Most of the subjects are from Christian religion.

- *Marital Status*: Majority of the study subjects of 23 (38.3%) were married, 19 (31.7%) of them were widowed, 17 (28.3%) were single. Only one subject (1.7%) was a divorcee.
  In a South Indian community study conducted in Vellore, it was reported that the married persons were 48.1%, widowed were 51.4%, and 0.5% were unmarried. The disparity in the value of may be due to the comparatively small sample size of the present study but it is clear that loss of the spouse could make the elderly lonely at home and they might choose to reside at an old age home. In their study on physical and psychiatric morbidity in urban Geriatric population have stated that being widowed single or separated status is an independent risk factor for developing depression in elderly.

- *Education*: With regards to their education qualification 26 (43.4%) of the study subjects had studied up to primary school, 15 (25%) up to secondary school, 17 (28.3%) were no formal education, 2 (3.3%) complete the graduation.

- *Occupation*: Among the study subjects, the elderly people of 32 (53.3%) had skilled private jobs such as clerical works, receptionist etc., 23 (38.3%) had performed business, 4 (6.7%) engaged in other jobs, only 1 (1.7%) had perform government jobs none of them working at present.

- *Financial Support*: Among the study subjects 41 (68.3%) get income from any other resources, 10 (16.7%) receive no income, 7 (11.7%) of them receiving old age pension and only 2 (3.3%) are receiving government pension. This may be adding some more shrinkage in social network which leads to depressive symptoms.

- *Number of Children*: 29 (48.3%) had no children, 19 (31.7%) have more than 2 children, 12 (20%) were having 1–2 children.

- *Mode of Admission*: Among the study subjects 27 (45%) were referred from trusty, 23 (38.3%) were voluntarily admitted, 6 (10%) were referred from others, 6.7% are admitted by their children.

- *Recreation*: Among the study subjects 24 (40%) were watching TV, 19 (31.6%) use to listen music, 10 (16.7%) will talk with others, 7 (11.7%) of them will read books.

- *Duration of Study*: Among the study subjects 20 (33.3%) were staying for 2–3 years, 12 (20%) were staying less than 1 year, 18 (30%) were staying 3–5 years, 10 (16.7%) were staying more than 5 years.

The study consistent with this study which was conducted, the mean age and standard deviation of the study group was 69.60 ±5.6 years; the ages of 83% (n=249) of the subjects were between 65 and 74 years. 54.7% (n=164) were males, 32.7% (n=98) were widows, 43.7% (n=131) were illiterate, 81.3 % (n=244) had a health assurance and 65.3% (n=196) had a history of chronic diseases. About 39.7% (n=119) have been living with their children and 63.3% (n=190) stated that they were satisfying from their family environment. The mean monthly income of the elderly people was 245.1±82.6 million Turkish Liras (making approximately 150 (±50) U.S. dollars). The prevalence of depression symptoms was found to be 58.3 % (n=175) in the total study population. The prevalence of depression was found to be 45.1% (n=79) in male subjects and 54.9% (n=96) in female subjects. In the prevalence of depression in the elderly population, some parameters a such as gender ($x2=$ 15.372, $p<0.001$), education ($x2=32.869$, $p<0.001$) monthly income ($t=5.179$, $p <0 .000$), marital status ($x2=7.317$, $p<0.01$), the presence of chronic disease, ($x2= .8.242$, $p<0.01$), satisfaction from the family environment ($x2= 13.093$, $p<0.001$), and living arrangements ($x2=14.014$, $p<0.01$) have statistically significant effect

on depression prevalence. Nevertheless, different age groups (x2= 1.745, p>0.05) and social assurance status (x2=0.161, p>0.05) did not have any significant effect on the prevalence. Depression rates were notably elevated among participants lacking formal education (57.1%), those who were married (61.1%), individuals with chronic illnesses (72.0%), those cohabiting with children (48.6%), and those dissatisfied with their family environment (54.9%). However, the presence of various age groups did not yield a statistically significant variance in depression prevalence [42–46].

Objective: II
To Assess the Level of Depressive Symptoms among the Elderly People before the Music Therapy.
The study result of depressive symptoms percentage before music therapy and the overall depression score is 100%. The elderly people had no depression is none. In general, 73.3% of the elderly people had mild to moderate level of depression, 26.7% had severe depression. With mean and standard deviation as 16 (72±3.88).

The study consistent within a study which is conducted by totally 60 elderly were participated in the study. It was observed that majority of subjects resided for 3–5 years at the old-age home. Majority of the samples had normal and mild level of depression. The study shows the distribution of level of depression among elderly at. It depicts that, out of the 40 subjects the pre-test scores are 26 (65%) had mild depression, and 14 (35%) had moderate depression. The mean pre-test values of depression score are (12.4250) and standard deviation (3.5911).

Objective: III
To Evaluate the Level of Depressive Symptoms among the Elderly People after the Music Therapy.
The study result of depressive symptoms percentage after music therapy and the overall depression score is 100%. The elderly people had no depression is 28 (46.7%). In general, 32 (53.3%) of the elderly people had mild to moderate level of depression, none of them had severe depression.

The study is similar with a study which is conducted by after the introduction of music therapy 22 (55%) had normal depression, 13 (32.5%) had mild depression, and 5 (12.5%) had moderate depression, respectively. Post-test measurement of mean as (7.3375) and standard deviation (2.3172). Depression score which proved that there was significant reduction in the level of depression among elderly due to music therapy. The obtained ''t'' value 7.5287 was highly statistically significant (0.0001) at p< 0.001 level. This study confirmed that music therapy effectively lowers depression levels in the elderly, highlighting its significance as depression contributes to numerous health conditions worldwide, particularly among older adults. Therefore, it is suggested that Music therapy can be done in all types of groups in long-term basis as well for reducing depression [47–48].

Objective: IV
To Determine the Effectiveness of Music Therapy Intervention.
The study found a significant reduction in depressive symptoms among elderly individuals following music therapy, as evidenced by a substantial decrease in pre-test scores (16.72 ± 3.88) to post-test scores (8.30 ± 2.16), with a statistically significant difference (P ≤ 0.001) in paired testing. This underscores the effectiveness of music therapy in alleviating depression among the elderly, confirming the statistical hypotheses. The study's outcomes align with previous research, which underscores the valuable role of music therapy in treating depression. During the study period, 123 individuals were screened, of whom 113 (92%) were eligible for participation. Among eligible participants, 31 (27%) declined participation, and 1 (1%) was deemed unsuitable for music therapy by a trained therapist. Of the remaining 81 eligible patients, 60 (74%) were male, with ages ranging from 18 to 64 years (mean age of 37). Out of these participants, 33 (41%) were assigned to the music therapy group, while 48 (59%) received control treatment.

Objective: V

To Find the Association of Post-test Score with Selected Demographic Variables.

There is a statistically significant correlation observed between the reduction in depressive symptom scores among elderly individuals and certain demographic factors such as age (70–80 years), education level, pensioner status, and duration of stay. This association was determined through statistical analysis using the chi-square test. Hence, the statistical hypotheses have been proved.

The study is similar with a study which is conducted by were depicted that 17.7% of the study subject had no formal education, 56.3% had primary education, and 9% completed secondary education this may be due to the fact that researcher had restricted the study population to the senior citizen staying in the particular old age home where most inmates were educated. The present study had shown the prevalence of mild depression among the elderly was 37.8% and that of severe depression was 21%. The prevalence of depression had a significant association with education, occupation, income, spouse status, smoking, and history of chronic illness [49–50].

IMPLICATION OF THE STUDY

The outcomes of this study have significant relevance across various domains, including clinical nursing practice, nursing management, educational programs in nursing, and the field of nursing research.

Nursing Practice

- Depression is the most common mood disorder older adults. Depression may arise from low self-esteem and may be related to live situations.
- The nurse working in the practice settings can help to identify the depression in elderly which is an under diagnosed problem for many adults.
- Clinical experience suggests that older patients often focus more on the somatic symptoms than on the cognitive aspects.
- Complementary and alternative therapies are harmonious with many values of nursing.
- Music therapy helps to improve the quality of life among older adults and it can be adopter in the routine ward activity.
- Nurses can proactively work for the establishment of effective community support programs for abused elders.
- Application of music therapy as an alternative therapy to impact health has been repeatedly demonstrated to be clinically appropriate for many medical surgical psychiatric and general populations.
- Music therapy may be easily integrated into bed side nursing, as well as to as wide range of possible clinical settings that include waiting room, home care, critical care unit, psychiatric settings etc.

Nursing Administration

- Nursing administrators should take initiative in organizing mass educational programs in the hospital and community to emphasis the problems faced by elderly, how to effectively intervene in such matters.
- Nurse administrators should motivate the staff and also the relatives to participate in various program related to gerontology and should inculcate right attitude in them towards care of elderly.
- More over the mental health team can collaborate with the nearby old age homes in implementing counseling services and also diagnosing the otherwise and diagnose depression of the elderly and also making referral services to the nearby mental health centers.

Nursing Education

- Geriatric and gero-psychiatric is an emerging field. There is a need for increased professional awareness of the problems like geriatric depression and its warning science.

- Nurse and nursing students at all levels and in various academic program should be thought regarding the various problems in geriatric home and how to intervene.
- From beginning of their studies nursing students should be made to inculcate the right attitude towards the old age and they should the made to deal with their issues with great compassion.
- Nurses in all areas need to be aware of the reporting loss in the state where they are practicing and watch for the science of abuse are neglect.
- Today, the education has become a depression fully because of the grades and ranks in the examination.
- In nursing depression can be because of factors such as staying away from home, high expenses of the study, parental expectation, and high competitiveness, associated hectic clinical and class schedule a very high demand to achieve high marks in crucial examinations.
- Methods of alternative and complementary therapies can be included in the curriculum for the increasing knowledge of the student in this area since tension and turmoil are increasing the day by day.
- This in turn will help to have a positive attitude towards these techniques.

Nursing Research
- From the nursing research point of view, the study throws light on the increased prevalence of depression among elderly people of geriatric home which seek attention in the need for specific mental health care needs of elderly.
- The research to date as shown that studies conducted in the areas of depression among elderly are very few and also various intervention strategies in relieving the depression are very less and is in need for the exploration.
- The outcome studies of various psycho therapeutic therapies for elderly are also needed.
- Usages of music in clinical practice is relatively unexplored area as for as India is concern.
- Emphasis should be laid on research in the area of non-pharmacological measures of managing depression, promoting sleep improving psychological, physical, and social well-being among elderly.
- Numerous additional research investigations could be conducted to evaluate the effectiveness of cost-effective therapy in diverse conditions and environments.
- The researcher can explore similar therapies which reduce depression, increase relaxation, self-confidence, and self-worth of the client.

Limitations
- The study will be limited to elderly people who are residing in old age home.
- Elderly people who can understand Tamil or English and respond verbally.
- The study will limit to data collection period of four weeks.

Recommendation for further studies:
- Considering the results of this study, they can serve as a foundation for upcoming research endeavors. Replicating this study with a larger sample size in various contexts could be beneficial.
- Investigations into the impact of alternative complementary therapies on depression could also be valuable.
- Further, a long-term study could explore the sustained effects of music therapy on depressive symptoms.

CONCLUSION
Education in evidence-based care empowers nurses to enhance their capacity to apply theoretical knowledge in practical scenarios. Depression is a significant factor contributing to various psychological challenges in our lives. It arises when individuals struggle to cope with life circumstances, challenges, and objectives. Each person reacts differently to depressive symptoms; what

may be manageable for one person could be deeply distressing for another. This research underscores the essential role of nurses in addressing depressive symptoms. With music therapy, there was a notable 32.6% reduction in depressive symptoms among the elderly participants. This reduction underscores the efficacy of music therapy. Therefore, nurses should educate the elderly on the causes of depressive symptoms in old age and the benefits of music therapy.

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