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EFFECT OF MUSIC THERAPY ON MENTAL WELL-BEING OF GERIATRIC ADULTS

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ABSTRACT

Music is a very effective means of boosting mood and reducing stress and anxiety. Music therapy helps in improving wellbeing and mental health. According to the population census, the geriatric population is nearly 149 million in India in 2023, among which one in five suffers from mental health concerns where 75% of them have chronic stress, 50% insomnia symptoms and more than one in ten older adults have major depression. Music therapy is found to be effective in improving mental health and sleep quality among the elderly. The present study aims at evaluating and drawing a comparison between the effect of music therapy on psychological distress and depression among geriatric individuals of West Bengal. 80 geriatric individuals residing in residence and old age home of West Bengal were assessed for the study using the General Health Questionnaire (GHQ) and Geriatric Depression Scale (GDS) to measure psychological distress and depression respectively. The major findings of the study reveal that music therapy has an impact on geriatric population. Music therapy have been found to be effective in reducing psychological distress and depression among the participants.

Keywords: *Geriatric population, psychological distress, depression, music therapy.*

INTRODUCTION

Music in its full potential, is more than just a collection of notes. Music is a dynamic multi-layered matrix of constantly changing tonal interconnections emerging within time, according to music historian Randall McClellan (1988). This dynamic matrix is what creates a deeply calming sensation. Due to its timeless nature, music serves as a catalyst for the advancement and improvement of all living things, including humans.

Classical music is revered in Vedic literature because it has the ability to affect nature itself in its most pure form. There are numerous stories in literature about Raag Deepak's ability to light diyas or Raag Malhar's role as the rain god. In the 16th century, Tansen, the renowned musician, who was considered one of Emperor Akbar's "nine gems" manifested his unique musical ability which had remarkable effects on the listener's mood and surroundings, such as in "Miyaki Malhar," "Darbari Kanada," and "Miyaki Todi". In Europe, by the late 19th and early 20th centuries, music therapy was becoming recognized as a treatment for mental illnesses.

"Swar" is the fundamental musical note or composition in Indian classical music. K.V. Shastri describes "Swar" as a resonant sound produced continuously by shrutis that has the ability to please the listener's mind on its own. When these "swars" are stimulated in a methodical order and tempo, they create distinctive rhythms known as "Raag." Raga is explained as follows by music maestro Shri Pandit Ravi Shankar as a precise, scientific, delicate, and beautiful melodic form with its own unique rising and falling movement. Ragas are composed of either an entire seven-note octave or a sequence of five or six notes in a rising or falling structure known as the Arohana and Avarohana.

There are 10 "Thaats," which are the source of all Raag and that functions as fundamental parent notation, also. Every "Thaat" differs in how its 12 "swaras" are arranged, and they serve as the building blocks from which ragas originate. By altering our mood and emotions, these combinations of different frequencies have the enduring power to help us unwind and experience a sense of oneness with the universe. The notion of "Nava Rasa," or "nine sentiments," which states that each raag has its own preponderance on specific rasa and has the capability of activating or calming a certain feeling or sentiment, is where the power to control and manage emotions and moods in raag originates. The following are these "rasa": 1. Shringara Rasa (Romantic) 2. The Hasya Rasa (humorous) 3. Karuna Rasa (awful) 4. VeeraRas(Heroic) 5. RaudraRas (Anger) 6. BhayanakaRas (Fearful) 7. VibhatsaRas (Disgustful) 8. AdbhutaRas (Wonder) 9. ShantaRas (Calm and serene).

The major 7 "swar" out of twelve notes in Western music are thought to correspond with the major seven chakras. The word "chakra" refers to circulation or movement, and it stresses that the body's chakras are constantly moving and linked to particular organs and nerves and support their optimal functioning. When the chakra's frequencies and tone align, the chakra's rhythm and vibration return to normal, enabling the resolution of both mental and physical issues. When the chakra becomes positive or negative, it has an impact on how thoughts and behaviors are managed, and vice versa. Every chakra, which includes the root, sacral, solar plexus, heart, throat, third eye, and crown chakras, is connected to a particular quality and extends from the base of the spine to the crown of the head. Shanker states that since every chakra pulses rhythmically, music therapy addresses the underlying cause of the ailment. Every one of the numerous compositions and interpretations in the several ragas possesses a unique feeling.

Other western music genres, in addition to Indian ragas, are also quite effective at having therapeutic benefits. Studies have demonstrated the benefits of music therapy on intellectual, linguistic, and communicative development. It helps those who are grieving during a crisis, reduces tension and motivation, improves memory, and sparks the creativity of those who are listening. According to Tang et al. (1994), music therapy greatly reduced clients' negative symptoms and improved their capacity for conversation. Additionally, it raised their degree of curiosity in the outside world and decreased their sense of social isolation.

Worldwide people are living longer and most can expect to live into or beyond their sixties. According to WHO, by 2050, the population of people aged 60 years and more will be 2.1 billion, and those aged 80 years or more are expected to reach 426 million.

Aging is the effect of piled-up cellular damage over time which results in physical and mental deterioration and an increase in the risk of disease and mortality. The elderly are hence considered a vulnerable group of the population. Besides these changes, aging is often related to the adjustment of other life transitions such as retirement, gradual loss of capacities, decrease in functionality and productivity, shifting of residence, and passing away of closed ones. Old age is commonly marked by the development of numerous complex health conditions like frailty, hearing loss, vision-related problems, osteoarthritis, cardiovascular diseases, diabetes, hypertension, depression, delirium, and dementia. Moreover, they are seen to suffer from multiple health conditions at the same time. These stressors can lead to loneliness, isolation, or psychological distress among them.

Globally, the most prevalent mental and neurological disorders in the geriatric population are dementia affects 5% and depression affects 7%; anxiety disorders affect 3.8%, substance use affects 1% and 0.25% of deaths are from self-harm. Despite the huge presence of such conditions, mental health issues among older adults are under-detected, and the stigma associated with these conditions makes them hesitant to look for help and the problems remain neglected.

Changes in society and the mindset of the new generation naturally seem to differ from the older adults leaving them to find no significant social role either in the community or within the family. Often, they are socially withdrawn and some of them get confined to a nursing home or an institution, where their main social relations are only with other residents, most of whom are equally isolated aged people. Aging is a social problem as the problems of the elderly have deep effects on the structural, functional, and economical

frameworks of society.

Psychological distress describes the unpleasant feelings or emotions that you may have when you feel overwhelmed. These emotions and feelings can get in the way of daily living and affect how one reacts to the people around them. Psychological distress occurs when individuals face stressors that they are incapable to cope with. These stressors include major life mishaps, traumatic experiences, health-related issues, and daily stressors like family stress, relationship stress, work-related stress, loud noise, stuck in a traffic jam, time management, and other hassles of life. This psychological distress leads to an increase in heart rate and blood pressure with the release of stress hormones into the blood. This may result in inflammatory reactions in the body and thickening of the blood which in turn increases the risk of developing blood clots. Thus, people with higher levels of psychological distress are more prone to heart disease or other chronic illnesses.

Psychological distress has always been considered a vital element in the psychosocial functioning of older adults as psychological distress is found to be associated with lowering functional ability and self-esteem among them. Additionally, lack of enough social support, lack/loss of a life partner, and lower socioeconomic status are evident in increasing psychological distress. Furthermore, various studies have proved that women are more prone to psychological distress than men.

Depression is one of the globally leading widespread mental health illnesses. Around 280 million people in the world are found to have depression which is different from general mood fluctuations which are momentary emotional responses to the stressors of daily life. When these emotional states occur recurrently and with severe or moderate intensity, depression becomes a serious health condition. It causes the individual concerned to suffer greatly with a decrease in overall functioning and productivity both in his or her personal and professional life. Depression when worst can even lead to suicide. More than 0.7 million people die every year due to suicide which is one of the major causes of death among young adults.

Clinical depression is common among the geriatric population. It is found that the prevalence rate of depression is about 21.9% in the Indian geriatric population (Pilania et al., 2013). Depression, majorly in older adults is found to be present along with and due to the effect of multiple other disabilities and medical illnesses and lasts longer. Depression among the elderly is found to be associated with a higher risk of cardiac diseases and other fatal illnesses besides reducing their capability to restore to their former healthy condition. As depression is also found to raise the possibility of death post heart attack in older adults, it's important to assure the individual concerned is evaluated and treated, even if there is a mild level of depression present. Everyone has a need to connect socially in order to thrive and survive. But with age, older adults frequently discover they are alone. Studies reveal that social isolation, loneliness, and quality of life are interconnected with higher rates of depressive illness. "Geriatric depression" is a very common word today for emotional and mental disorders affecting the elderly including persistent feelings of sadness, hopelessness, worthlessness, guilt, melancholy, and "blue" moods. In the majority of cases, older adults are subject to subsyndromal depression, which can take the shape of major depression if left untreated. Older persons also experience inadequate sleep frequently, which can have negative effects on their quality of life, their ability to think clearly, and their physical and mental health.

The safety and potency of anti-depressant treatment among older adults are found in various studies. Around 60–80% of patients are found to respond to these medicines if prescribed as per the guidelines, although it takes almost 8–12 weeks for the effect to be fully seen. Pharmacological treatment and psychotherapy are two forms of effective interventions for most individuals suffering from depression.

Different types of antidepressants are available for treating depression like Selective Serotonin Reuptake Inhibitors (SSRIs**),** Serotonin-Norepinephrine Reuptake Inhibitors **(**SNRIs), and Monoamine Oxidase Inhibitors (MAOIs) among which SSRIs are considered the safest as they cause much fewer side effects than the other types of antidepressants. If the medication is stopped abruptly or many doses get missed out, it can lead to withdrawal-like symptoms, and sudden worsening of the depressive condition.

On the other hand, psychotherapy helps the patients in modifying or removing existing symptoms and promoting personality growth through counseling. The types of psychotherapy that are effective in treating depression are cognitive behavioral therapy (CBT), problem-solving therapy (PST), and interpersonal therapy (IPT). CBT challenges pessimistic or self-critical thoughts, emphasizing rewarding activities and decreasing behavior that reinforces depression. While, through the identification of specific strategies for resolving each smaller component of larger difficulties, PST teaches patients how to confront current life

issues. However, to address interpersonal issues, role shifts, and unresolved sorrow, IPT incorporates components of psychodynamic-oriented and cognitive therapies. IPT combined with medication is most effective in symptom reduction, preventing recurrence, and as a maintenance treatment. Therapy should be continued for at least 6 months, while patients at risk for relapse frequently require therapy for up to 2 years or indefinitely.

Another form of therapeutic intervention is alternative therapies. These treatments are health-related treatments that don't fall under the purview of standard medical practice. They seek to improve well-being, facilitate relaxation, and support mental health. Physical, emotional, or spiritual health is the main focus of alternative therapies. These therapies put a strong emphasis on stress relief and relaxation and are used for soothing anxiety by helping one feel more at ease and in control of their emotions. Music therapy is one of the most effective alternative therapies to heal people and there has been an increase in interest in the use of music in various healthcare settings over the past few decades, particularly in hospital and palliative care settings.

Merit (1990) asserts that music has the ability to increase energy levels in addition to influencing the body's neurons. This evaluation of energy always takes place according to the body's needs. According to Tang et al. (1994), music therapy is comparatively more cost-effective and has no negative effects. The 72 parent ragas known as "MelakartaRaag" are said to govern the 72,000 nerves (nadis) in human body, in accordance to the ancient Indian scripture SwarShastra. Furthermore, it is said that a raga will have total influence over its matching nerve if it is sung or performed in accordance with its precise minute requirements, such as lakshanas, prakriti (nature), pahar (timing), tempo, and purity suitably.

In their research, Viswanathan et al. (2015) showed that music-based chakra meditation can significantly alleviate the symptoms of premenstrual syndrome, a condition that affects a large number of women in their reproductive years and is a major source of stress that has a negative impact on their ability to function normally.

An individual's attention, emotion, cognition, behavior, and communication can all be affected by music, which can also promote relaxation and enjoyment. Koelsch et al. (2009) suggest that music therapy may be used to treat disorders linked to dysfunctions and imbalances within these systems; however, given the effects of emotion on the autonomic nervous system, endocrine system, and immune system as well as the power that music has to evoke and modulate emotions. Music therapy can be useful for Parkinson’s, asthma episodes in both children and adults and reducing pain in hospitalized patients.

Due to music's powerful emotional connection, music therapy is extremely effective in curing depression. Brainwaves can be stimulated by music with a beat to synchronize with the beat; faster beats result in sharper attention and more alert thinking, while slower tempos encourage mental calmness, encourages a pleasant frame of mind, thus, music therapy is effective in treating depression. The elderly who listened to calming music experienced a greater improvement in the quality of their sleep than those who listened to rhythm-based music (Chen et.al. 2021).

There are primarily two types of music therapy: receptive and active. In receptive music therapy, a patient listens to music that can be utilized to promote relaxation, act as a motivator, and serve as a link between cognitive tasks, emotional work, personal growth, and self-reflection. The patient and music therapist collaborate to create improvised music during active music therapy. Receptive music therapy is used in this study as it is more practical and convenient.

Every lifestyle can involve music which may instantly make people happy and bring back pleasant memories. Clinically, Musical Therapy's aim with elders is to preserve or enhance their social, cognitive, and physical well-being. Music therapy among geriatrics improves memory and focus, calms agitation in dementia patients, decreases depression and stress, enhances communication skills and social interaction, and increases movement and exercise.

A study conducted by Mathew et.al. (2017) aimed to evaluate the effect of music therapy in the elderly, on depression and loneliness. Statistically, significant improvement was found in both the scores of loneliness

and depression in the group which received music therapy. Again, in the study by Lakshmi and Sharma (2018), it was found that music therapy helped to amplify the subjective experiences of self-satisfaction, pleasure, and social interaction through music therapy among the geriatric population, especially females.

Murabayashi et.al. (2019) studied the effects of music therapy on feeble elderly in psychophysiological health. The individuals participated in group sessions of 45–50 min conducted for 12 weeks and their psychophysiological health was assessed in which the scores revealed the significant improvements in them post-intervention. The findings of the study revealed that music therapy aided in the betterment of physical function, depressive mood, and quality of life in elderly individuals. Neha et.al. (2020) aimed to investigate how music therapy impacts the level of stress among elderly people in selected old age homes at Meerut. The findings of the study revealed that the level of stress decreased in the participants who received music therapy. Suryawanshi (2020) conducted a study to determine the effect of music therapy on stress among senior citizens. The findings of the study revealed that, after the therapeutic intervention of music, music therapy helped in decreasing the level of stress among the elderly.
The results of the study conducted by Varughese et al. (2021) on how music therapy affected the elderly's quality of sleep, revealed that listening to music significantly improved their sleep quality and its various sub-components, including better-perceived sleep quality, greater sleep efficiency, longer sleep duration, longer sleep duration, shorter sleep latency, and less dysfunction during the daytime.
Mittal et. al. (2021) in her study discussed the relationship between the 12 "swaras" and the 7 main "chakras" of the human body, as well as how they manifest. Body "chakras" and "swaras" are synchronized, and this considerably promotes well-being. This study examines how the therapeutic application of ragas has a high likelihood of producing good expression in the corresponding chakras, so improving both bodily and mental well-being. Exposure to various Ragas in any form—hearing, singing, or playing an instrument—affects our mind, body, and emotions as needed, leading to a more balanced and healed state.
Ojea et al. (2022) conducted a study to assess the effect of a music therapy program among elderly participants to improve social interaction, and creativity and avoid depressive symptoms. The results revealed music therapy as an effective therapeutic choice that is evident in improving the health and quality of life in the elderly and also promoting the betterment of chronic illnesses like depression.
In this present study, music therapy has been conducted on a geriatric sample for depression, psychological distress, and sleep quality. Therapy was based on raga Bhairavi, raga Yaman Kalyan, raga Malkauns, and raga Hamsadhvani. Ragas significantly influence mental health. Raga listening has been shown to be quite helpful for controlling heart rate and blood pressure. In the Indian setting, ragas were discovered to be quite potent. Ragas can open all of the body's chakras, therefore listening to them on a regular basis is quite beneficial. Moreover, it improves the quality of life. These traditional ragas are chosen that are very useful in treating mental health issues, especially depression.

METHODOLOGY

Title: Effect of music therapy on mental well-being of geriatric adults

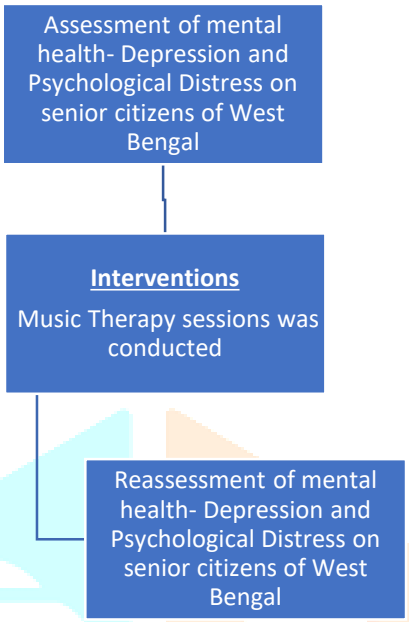
Aim:

1. To assess the impact of music therapy on psychological distress and depression in the elderly.

Hypotheses

1. There is no significant impact of Music Therapy on psychological distress among the geriatric population.
2. There is no significant impact of Music Therapy on depression among the geriatric population.

Study Design:



Sample:

- Data was collected from 80 elderly individuals of West Bengal.
- Random Sampling technique was used to select sample from the population.
- Age range: 60-85 years

Procedure

Data was collected from 80 geriatric individuals residing in residence and old age home of West Bengal. After collection of data, 8 music therapy sessions in a span of 4 months (each session conducted after a gap of 15 days) were conducted with the subjects. A re-evaluation was conducted on the same individuals (N=80) by the end of all sessions. After data collection the results were statistically measured by using SPSS software v.16.0.

Statistical Analysis:

The data thus obtained is then statistically analyzed with the help of SPSS 16 (Statistical Package for Social Science, version 16) (Levesque, 2006)

Paired sample t Test was used to determine if there is a difference in psychological distress and depression of geriatric population between the period before and after the intervention.

Tools

The following tools were used to assess the aforementioned variables.

1. General Health Questionnaire-12- The GHQ-12 (Goldberg and Smith, 2008) is a simplified version of the original GHQ-28. Cronbach's alpha 0.9 revealed adequate internal consistency when conducted on a population of Indian older adults. The correlation of the scale with the Subjective Well-Being Inventory was 0.58 indicating sufficient external validity (Vlanchantoni et al., 2018).
2. Geriatric Depression Scale-This self-rated scale by Sheikh and Yesavage (1986) measures elderly depression. A Cronbach's alpha of 0.80 and 0.83 suggests high internal consistency and strong test-retest reliability respectively (Nyunt et al., 2009) establishing the test to be reliable and valid.

RESULTS

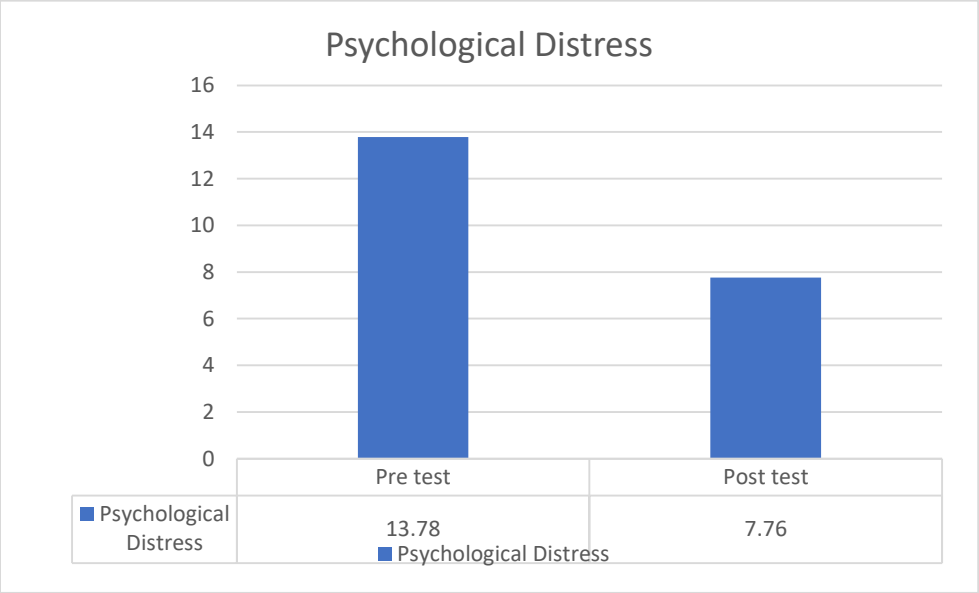
TABLE 1- Mean and S.D. of Psychological Distress.

		N	MEAN	SD	t	Df	Level of Significance
GHQ	PRE	80	13.78	5.24	11.334	79	0.001
	POST	80	7.76	2.96			

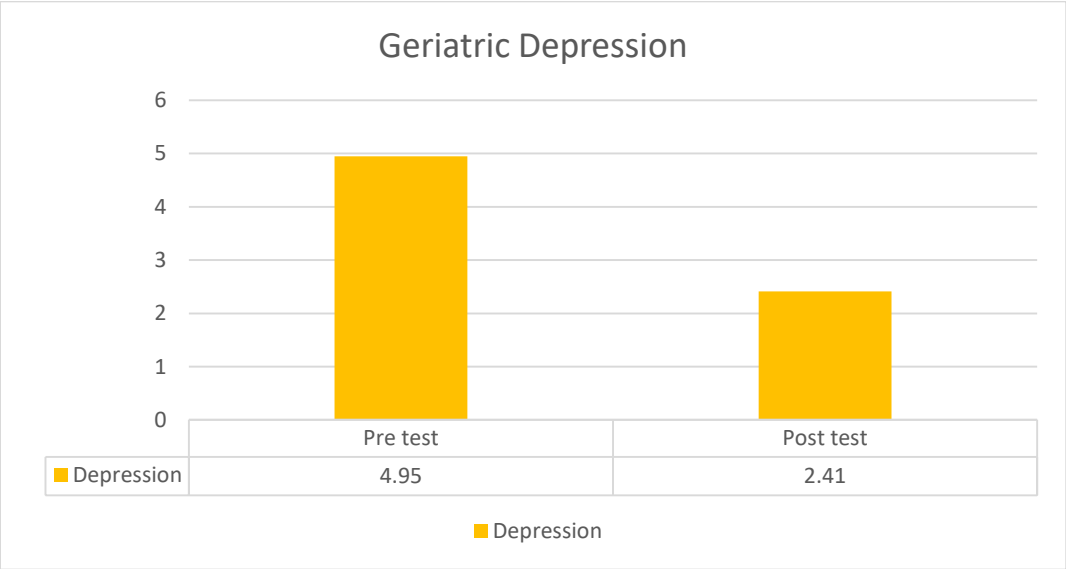
TABLE 2- Mean and S.D. of Geriatric Depression.

		N	MEAN	SD	t	Df	Level of Significance
GDS	PRE	80	4.95	2.82	9.407	79	0.001
	POST	80	2.41	1.68			

GRAPH 1: Graphical representation of the mean of Psychological Distress



GRAPH 2: Graphical representation of the mean of Geriatric Depression



The above tables and graphs show scores on psychological distress and depression for the present group of samples. The mean and standard deviation scores of psychological distresses, prior to intervention are 13.78 and 5.24 respectively, and for post-intervention are 7.76 and 2.96 respectively and the t-value is 11.334; the mean, and standard deviation scores of depressions, prior to intervention are 4.95 and 2.82 respectively, and for that post-intervention are 2.41 and 1.68 respectively and the t-value is 9.407. In summary, the results can be inferred as-

1. There is a significant impact of Music Therapy on psychological distress among the geriatric population.
2. There is a significant impact of Music Therapy on depression among the geriatric population.

DISCUSSION

The present study was developed to see impact of music therapy on geriatric population. The results reveal there is an impact of music therapy on psychological distress and depression among geriatric population. The Table 1 indicates that the present sample shows significant level of psychological distress with the mean of 13.78 prior the intervention whereas the level of psychological distress is found to be reduced after music therapy sessions as the mean reduced to 7.76. The paired sample t-test also reveals a significant difference in the level of psychological distress before and after the period of intervention ($p<0.001$). Thus, null hypothesis is rejected as there is a significant impact of music therapy on psychological distress.

From Table -2 it can be said that for the present sample the level of depression is minimal with the mean of 4.95 however music therapy is found to reduce the level of depression from mild to normal among the present sample with a mean of 2.41. The paired sample t-test also reveals a significant difference in the level of depression among the present sample ($p<0.001$). Thus, null hypothesis is also rejected. It is found from the present study that music therapy is very effective in reducing psychological distress and depression among geriatric population.

During the period of interventions, it is also observed that music helps us to establish a rapport with the sample. Even the individuals who were agitated in the 1st session are found to be interested as the sessions followed. Music is also found to be very effective in the emotional catharsis of the geriatric population.

The pre intervention interview reveals that the quality of sleep among the geriatric sample was also affected. Post intervention interview reveals that music therapy has been found to be a powerful stimulant or sedative in promoting the best possible levels of activation or sleep. Arousing rhythms and powerful beats are frequently used to create an energizing atmosphere. Slow, repeated beats have a calming quality that might help set the mood and trigger the brain's sleep response. Studies show that rehabilitation among geriatrics is aided by music therapy, by lessening the perceptions of tranquilizers and hypnotics used (Varughese, 2021).

Music therapy has been found to bring about positive changes in psychological distress and depression, but according to the ‘t’ value it has been found to impact and reduce psychological distress more than

depression. One of the most significant modifiers of relaxation is the rhythm of the music where 60–80 beats per minute, has been connected to stress reduction. Studies have also shown that lyrical music is more stimulating and may boost the positive effects of music treatments on stress reduction due to the potential relaxing effects. Live music was found to be the most effective at reducing stress when studies compared people's reactions to it to those who listened to pre-recorded music (Ramalingam, 2022).

The auric field that surrounds the physical body has seven primary chakras- *Sahasrara, Ajna, Vishusdhi, Anahatha, Manipurak, Swadhishtana, and Mooladhara.* Each chakra is connected to an endocrine gland which governs a particular organ. Each chakra is associated with each *swara*. The vibration of the associated chakra is felt when each note is sung while focusing on the *shruthi*. The 72 significant bodily nerves are governed by the 72 parent ragas, according to 'Swara Sastra'. If one sings with devotion, adhering to the norms, and pitch purity, the ragas have a beneficial effect on the specific nerve in the body.

Music is spread out and interwoven into the very core of the human system, not just one specific location in the brain. An individual, who had a stroke, couldn't form a four-word phrase but could tunefully sing a familiar song of choice. When words and music are combined, the active portions of the brain are engaged to trigger a response. Thus, the findings reveal that music therapy for the elderly is very beneficial as an alternative therapy not only for depression and psychological distress but also for their overall well-being.

The present sample also report reduce in the level of stress, anxiety and irritability in the post intervention interview. According to the sample music therapy also help them in anger management and help them to embrace aging in a positive way.

In addition to this the present study also reveals that the level of psychological distress is significantly high for the individuals residing old age home than individuals from different residence of West Bengal.

CONCLUSION:

Thus, from the present study it can be concluded that music therapy is found to be very effective in reducing psychological distress and depression among the geriatric population.

LIMITATION:

- Inability to includes all senior citizen of West Bengal.
- Inability to includes other psychological dimensions.

FUTURE SCOPE:

- An attempt to study problems related to aging can be done from current perspectives and changing trends in society.
- Comparative studies between various socio-cultural old age homes can be conducted by including more individuals from different socio-economic status.

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