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An Empirical Study On Exploring The Impact Of Music Therapy On Depression And Anxiety In Elderly Patients

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Abstract

In **Chapter 1**, the research introduces the increasing prevalence of depression and anxiety among the elderly population and positions "**music therapy"** as a promising 'non-pharmacological intervention'. The chapter outlines the research aims, objectives, and hypotheses, focusing on assessing music therapy's impact on mental health outcomes, particularly depression and anxiety. **Chapter 2** presents a literature review, highlighting prior studies that demonstrate music therapy's potential to improve emotional well-being in elderly patients. It also identifies a gap in the quantitative research on 'music therapy's frequency and duration, particularly its role in reducing depression and anxiety. **Chapter 3** details the research methodology, employing a quantitative approach through a structured Likert scale questionnaire distributed to 60 elderly patients. The data analysis, informed by a 'positivist philosophy' and a 'cross-sectional survey strategy', was conducted using statistical methods, including an independent 'sample t-test'. In **Chapter 4**, the data analysis confirms that 'music therapy' significantly reduces 'depression and anxiety' levels in elderly patients. The analysis supports both Emotional Regulation and Exposure and Habituation theories, emphasising music's role in emotional regulation and the cumulative benefits of repeated therapy sessions. **Chapter 5** presents the results, showing significant improvements in mental health and emotional stability. **Chapter 6** concludes that 'music therapy' is an effective treatment for elderly patients, and recommends increasing its accessibility, integrating it with other therapies, and conducting further research on long-term benefits.

Keywords: *Music Therapy, Depression, Anxiety, Elderly Patients, Mental Health*

Chapter 1: Introduction

1.1 Research Background

Depression and anxiety are some of the most common disorders to affect the elderly in today's society, especially in the developed world. According to WHO, it is estimated that approximately 14% of adults who are above the age of 60 years have a mental disorder, though the most prevalent one is depression (WHO, 2023). "**Music therapy**", which involves the controlled use of music to meet the 'emotional', 'cognitive', and 'social needs' of the clients, has been recommended as an efficient form of off-label treatment for depression and anxiety, especially among elderly patients. A thorough look at clinical studies revealed that hands-on music therapy had an impact on self-reported depression and anxiety levels in older patients. In some instances, scores improved by up to 60% after therapy sessions (Aalbers et al. 2017).

In a 'cross-sectional study' carried out in 2022 by Yu et al., elderly patients who were done with music therapy for 8 weeks indicated a lower depression scale on the Geriatric Depression Scale by 40%. In their research on how music therapy affects older people, Saepul and colleagues (2018) found something interesting. They had elderly patients listen to music for 11 days in a row. After this, these patients took the HARS test to measure their anxiety. The results showed their scores were 35% lower than before. The positive outcomes are said to result from the emotional and psychological aspects of music, which act on the brain's reward systems, reduce cortisol levels, and induce relaxation.

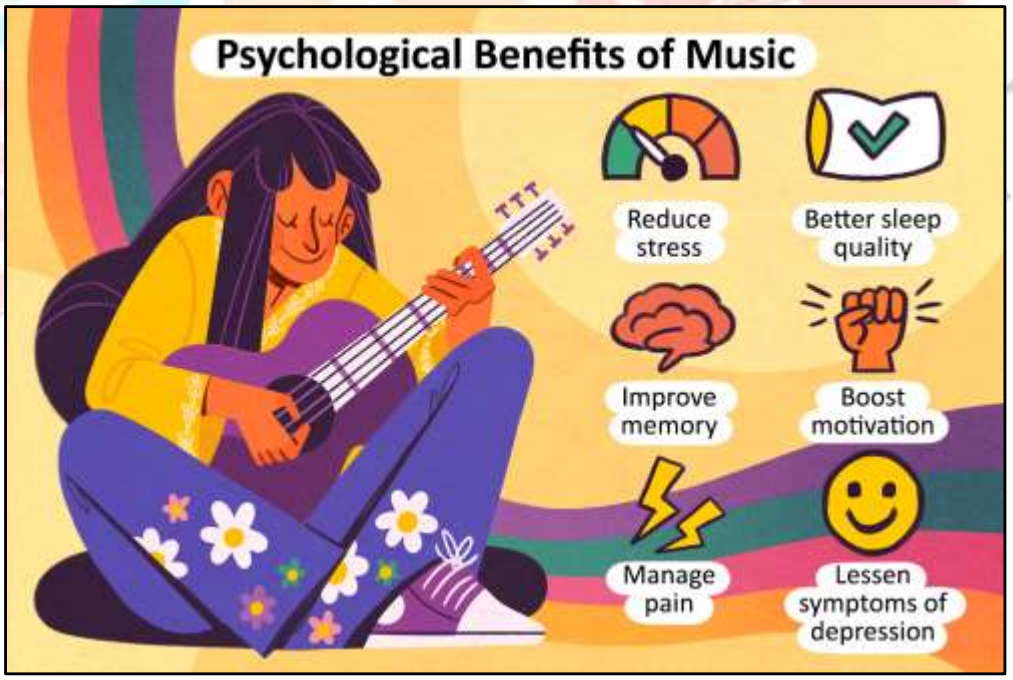

Figure 1: Psychological Benefit of Music

(Source: Cherry, 2024)

With the ageing population and the growing concerns regarding cost-effective treatments for '**mental health'** conditions, it is crucial to consider the possibility of using music therapy. Due to increasing age-related sickness and other complications across the globe, identifying the ways that such therapies can help to reduce mental health issues is very important for the quality of life among the elderly (Kim and Ko, 2018).

1.2 Research Rationale

Depression and anxiety are common complaints among the elderly, which results in poor quality of life for the elderly population. Pharmacological treatments for these conditions have always presented side effects and are not ideal for most patients especially those with chronic diseases or those who are cognitively impaired. This calls for approaches such as '**music therapy'**, which has been evidenced to have positive effects on the symptoms of depression and anxiety.

Music therapy is very relevant in delivering care because it addresses the emotional, cognitive, and social experiences of the patient (Moss, 2019). In some studies, it has been observed that the effectiveness of music therapy is excessive, but there is a lack of empirical evidence detailing how and to what extent music therapy works in clinical settings involving older persons and their depression and anxiety. This research intends to fill that void by developing empirical evidence that has the potential to enhance comprehension of music therapy on the mental health condition of elderly patients.

Thus, by analysing the outcomes of this study addressing the impact of music therapy on depression and anxiety, it will be possible to contribute to further therapeutic practices and support clinicians and carers to provide relevant and high-quality treatment for elderly patients to improve their quality of life.

1.3 Research Aims and Objective

Aims

The research aims to investigate the quantitative effects of music therapy on reducing depression and anxiety levels in elderly patients.

Research Objectives:

1. To assess the impact of music therapy on depression levels in elderly patients.
2. To evaluate the effect of music therapy on anxiety levels in elderly patients.
3. To examine the relationship between the frequency of music therapy sessions and mental health improvements.
4. To explore patient satisfaction and emotional well-being as outcomes of music therapy.

1.4 Research Question

- How does music therapy affect depression levels in elderly patients?
- What is the impact of music therapy on anxiety levels in elderly patients?
- Is there a correlation between the frequency of music therapy sessions and improvements in mental health?
- How satisfied are elderly patients with music therapy, and how does it influence their emotional well-being?

1.5 Research Gap

While several studies have highlighted the potential of music therapy in managing mental health conditions, there remains a limited focus on its quantitative effects, particularly in elderly patients suffering from depression and anxiety. Most existing research emphasizes qualitative insights, leaving a gap in measurable data that can substantiate the efficacy of music therapy. Furthermore, studies rarely explore the specific relationship

between the frequency of music therapy sessions and mental health improvements. This research addresses these gaps by providing primary quantitative data on the effectiveness of music therapy in reducing depression and anxiety levels in elderly populations.

1.6 Research Hypotheses

Alternative Hypotheses (H1): Music therapy significantly reduces both depression and anxiety levels in elderly patients.

Null Hypotheses (H0): Music therapy has no significant effect on reducing depression or anxiety levels in elderly patients.

1.7 Chapter Summary

This chapter has introduced the readers to the research topic in detail while emphasizing the connection between music therapy and the depression and anxiety of elderly patients. It has stated the research background, pointing to the increasing interest in seeking complementary therapies to take care of mental disorders in elderly patients. The chapter then presented the research aim of assessing the extent to which music therapy impacts mental health and four research objectives and questions to accompany them.

Moreover, the chapter discussed the current gaps in the literature, mainly the necessity of quantitative research and the weak investigation of the relationships between therapy frequency and mental health. Based on the research questions, research hypotheses were developed to determine the significance of music therapy treatment on depression and anxiety levels.

Altogether, this chapter lays the theoretical groundwork for the empirical part of the study by presenting its aims and objectives, research questions, and hypotheses. It is for this reason that the present study intends to fill the gaps created by the above-noted studies by providing meaningful data that can inform future therapeutic practices and hence increase the understanding of the effectiveness of music therapy in enhancing the mental health of elderly patients.

Chapter 2: Literature Review

2.1 General Overview

Music therapy has emerged as an effective ‘non-pharmacological’ intervention for improving mental health and emotional well-being, particularly in elderly populations. Studies demonstrate its potential in alleviating anxiety, depression, and cognitive decline, especially in patients with dementia. Compared to other non-pharmacological treatments like yoga and muscle relaxation, music therapy shows superior results in clinical settings such as coronary angiography. Additionally, the frequency and duration of music therapy sessions, often supported by technology, are critical in sustaining long-term emotional benefits. Though it works well, it is still needed to study more about how long therapy should last and how to mix in other treatments.

2.2 Reviews through Literature

2.2.1 The Therapeutic Effects of Music on Mental Health in Elderly Populations

Nowadays, many people believe that music therapy, especially in therapeutic settings like prenatal care or coronary angiography, could be a beneficial non-pharmacological way to alleviate symptoms of anxiety and

despair. It is worth noting that numerous studies have shown that music therapy can help alleviate anxiety that patients may experience during medical procedures. For instance, in contrast to **muscle relaxation**, music therapy may alleviate anxiety symptoms for coronary angiography patients, according to research by Mozaffari et al. (2020). Music therapy is not only easy to deliver and non-invasive; it is an extremely appealing alternative to pharmacological interventions, particularly for stress and anxiety, especially in the lead-up to medical procedures. But while improvements abound, whether music acts as a veritable remedy for reducing anxiety hinges on the conditions being treated and the medical context in which it is applied. However, while improvements abound, whether music acts as a veritable remedy for reducing anxiety depends on the conditions being treated and the medical context in which it is applied.

Zhu et al. (2021) have shown that relaxation techniques like yoga or Tai Chi, in addition to music therapy, have excellent results in coping with mental health conditions. A recent systematic review has also compared music therapy to yoga, massage, and exercise in the treatment of prenatal depression (Fann et al. 2021). Music therapy was the most effective of them all and led to higher mental health scores. But integrated yoga, which entails meditation, breathing, and mindfulness as a broader approach to wellness, also ranked high in effectiveness. They are attractive interventions because they can be delivered at low cost and with good access, easily incorporated into self-care procedures for patients. Interventions are appealing due to their cost-effectiveness, accessibility, and ease of integration into patients' self-care routines. Given the distinctiveness of music therapy, highlighting the specific advantages due to combined approaches (eg, yoga benefiting mind and body) indicates a requirement for comparative study on long-term impacts.

Given these contexts, studies also indicate that the decision-making between these therapies would be context-dependent in other applications, as well as in Liao et al. (2019). Results from a study by Sun et al. (2019) showed there were significant differences between improving quality of life in elderly patients with mild and moderate depressive disorders through Tai Chi music, these ones related to physical, social and psychological domains. Significant results indicate a potential role for culture-specific therapies (e.g., Tai Chi) combined with music in the management of depression in older patients. Significant results indicate that culture-specific therapies (e.g., Tai Chi) combined with music may play a role in the management of depression in older patients. So, although music therapy remains one of the available successful standalone treatments for depression and anxiety, combination therapies such as Tai Chi or integrated yoga offer further advantages when looking at mental health holistically—meaning they are also possible remedies for treating mental health in certain situations.

2.2.2 Comparative Analysis of Music Therapy and Other Non-Pharmacological Treatments for Depression and Anxiety

Music continues to demonstrate its worth as a drug-free method to assuage despair and unease for those receiving medical care. Repeated studies have validated that music therapy succeeds at helping individuals feel more at ease when confronting procedures. For instance, Mozaffari et al. (2020) looked at coronary angiography patients and found that music therapy lowered anxiety more than muscle relaxation. Music therapy is simple to use and

doesn't involve invasive methods, making it a beneficial choice instead of drugs to manage stress and anxiety before medical procedures. Yet even with these positive results, how much music therapy reduces anxiety often changes based on the patient's condition and the medical situation.

Music therapy works well, but other drug-free approaches like relaxation, yoga, and Tai Chi also show favourable results for mental health issues. Zhu et al. (2021) looked at studies comparing music therapy with yoga, massage, and exercise to treat depression during pregnancy. Music therapy came out on top, giving big improvements in mental health. Yoga, which mixes meditation, breathing, and mindfulness, also helped quite a bit. People like these methods because they're cheap, easy to access, and let patients take care of themselves. While music therapy stands out, the specific positive points of mixed approaches, like yoga's all-around benefits for mind and body, show we need more studies on long-term effects.

When considering the wider use of these therapies, research suggests selecting the appropriate therapy based on the specific situation. In 2019, Liao and colleagues conducted a study on Tai Chi with music. They found it boosted the '**quality of life**' for older folks with '**mild**' to '**moderate**' depression. The improvements showed up in physical, social, and mental areas. This highlights how therapies tied to specific cultures, like Tai Chi, can help manage depression in older people when combined with music. So, while music therapy often works best on its own to treat depression and anxiety, other options like Tai Chi or yoga offer more all-around benefits. This makes them beneficial choices to manage mental health in certain cases.

2.2.3 The Role of Frequency and Duration of Music Therapy in Enhancing Emotional Well-being

The frequency and length of music therapy sessions are pivotal aspects in boosting emotional wellness, specifically within the circumstances of healthcare interventions. As per Dingle et al. (2021), '**music activities'** positively influence emotional well-being by advancing **social bonds**, **self-expression**, and **emotional regulation**. In their scoping review, the authors highlighted that while music therapy providing psychological improvements is particularly important for self-identified non-musicians, the frequency and duration of music-related interventions significantly impact these effects. Results suggest that longer and more frequent consultations may lead to improved mental health outcomes by providing members with multiple opportunities to participate in the therapeutic process, allowing them greater emotional expression and positive self-reflection. Based on this, the authors suggested that long-term emotional health consequences of music therapy may occur, especially in vulnerable populations.

Also key in mental health concerning music therapy is the role of modern technology in increasing its reach and availability. Agres et al. (2021) have observed the growing importance of digital tools in healthcare settings by recognising that music technology enables personalised and continuous music therapy interventions. These tools streamline the regularity of the music therapy sessions, eliminating the need for a scheduled session. This indicates that the more individuals interconnect, the better the healing properties. On top of regular technology-era music therapy delivery, it can reduce stress and anxiety, as well as depression and personal pain we know through the elderly population and clinical population. But for these emotional benefits to be fully

encouraged, they said ongoing music participation through social and technological innovations should take place in the long term.

A meta-analysis by Lu et al. (2021) also found that the duration of the music therapy sessions is integral to managing anxiety using music therapy. Prolonged sessions (usually lasting 30 or more minutes) significantly reduced anxiety much more than shorter meetings, the research found. These findings also lend credence to the notion that regular music therapy sessions must be applied instead of a single one-off for emotional well-being. It is consistent with the idea that, in emotional health promotion by music therapy interventions, not only frequency but also duration of time in the context of its continuity after a certain level are both important to gain long-term relief from anxiety and stress, as evidenced by these current findings. They continued to show larger incremental effects on emotional well-being over time because regular and more extended sessions build a stronger cumulative effect where the emotional well-being boost increases slowly through continuous exposure to therapeutic music interventions.

2.3 Literature Gap

Topic	Key Findings	Literature Gap
The Therapeutic Effects of Music on Mental Health in Elderly Populations	Music therapy, especially active interventions like group singing, reduces 'anxiety, and depression', and improves emotional well-being in elderly patients.	Limited research on the comparative impact of 'active vs. passive music therapy' and its 'long-term effects' on cognitive function.
Comparative Analysis of Music Therapy and Other Non-Pharmacological Treatments	Music therapy is more effective than muscle relaxation, yoga, and Tai Chi in reducing anxiety and depression in clinical contexts like coronary angiography.	Need for studies comparing the combined effects of music therapy and other interventions (e.g., yoga, Tai Chi) over the long term.
The Role of Frequency and Duration of Music Therapy in Enhancing Emotional Well-being	Longer and more frequent music therapy sessions, particularly when supported by technology, provide cumulative benefits in emotional well-being and anxiety reduction.	Lack of research on the ideal session length and frequency across different populations, especially using technology interventions.

Table 1: Literature Gap

Chapter 3: Research Methodology

This chapter explores the methods used to investigate the effectiveness of music therapy in reducing depression and anxiety in elderly patients. However, for these emotional benefits to be fully encouraged, they said ongoing music participation through social and technological innovations should take place in the long term.

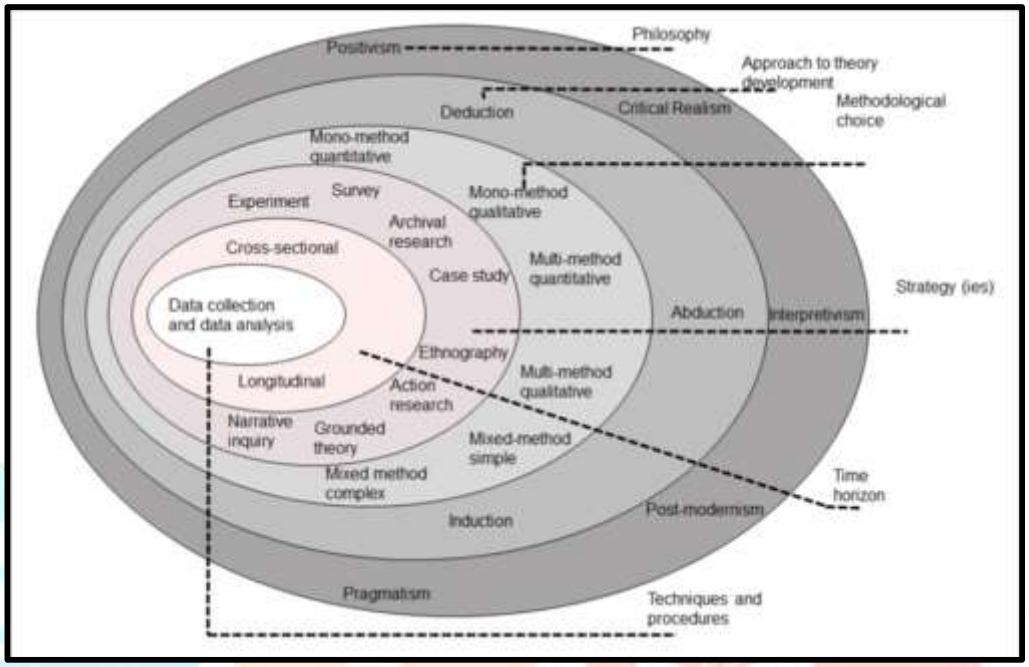

Figure 2: Research Onion Model

(Source: Saunders et al., 2019)

3.1 Research Philosophy

The study follows a **positivist** epistemology emphasising objective measurement of variables, fitting as it seeks to determine correlations between music therapy and mental wellness in seniors. This philosophy stems from positivism, asserting knowledge stems from concrete data gathered through quantitative methods, systematic sampling, and measurement. Hence, the aim is to quantify music therapy's impact through actual numbers and figures from a large population, as the research intends quantitative results. Elderly participants experienced both group and individual music therapy sessions twice weekly for eight weeks. Surveys before and after the intervention period evaluated changes in depression and anxiety severity levels. Statistical analysis of the collected responses examined relationships between music therapy exposure and mental health improvements.

3.2 Research Approach

Since this study's methodology comprises putting theories to the test, it is known as **deductive** reasoning (Park et al., 2020). This study can benefit from the deductive method since it aims to examine hypotheses, such as whether music therapy reduces anxiety and sadness in older patients. Following this strategy, the researcher can compare the proposed hypotheses to the available evidence using statistical methods like a t-test.

3.3 Research Strategy

Due to its efficiency in gathering data from many respondents quickly, a survey was chosen as the research approach for this paper. A **questionnaire** is the most common tool for obtaining quantitative information when a dataset must be channelled into a standardised or pre-specified form for statistical analysis (Oliva 2019). The survey's goal is to use **a Likert scale questionnaire** to collect data about what people think about the impact of music therapy on their mental health. Through an online **Google form**, the questionnaires will be made quickly available to the target sample of elderly patients.

3.4 Research Method

This research is quantitatively designed as the following research question connects to the goal of synthesizing quantifiable results (Mohajan, 2020). As it is quantitative in nature, it uses numbers to compute its answers. The clustered data in this research will include Likert scale point questionnaires where respondents' degree of depression, anxiety, as well as status of well-being are assessed. For instance, the respondents will rank their 6 experiences with music therapy on a scale of strongly agree to strongly disagree in gradations as follows: "1 **very strongly disagree**,"2 "**disagree**," 3 "**neutral**", 4 "**agree**", both 5 "**strongly disagree**". The data that will be gathered from 60 respondents will then be subjected to statistical tests to evaluate the impact of music therapy.

3.5 Time Horizon

The study adopts a 'cross-sectional time horizon' whereby information will be collected at a particular period. This is fitting for this study, as the primary concerns are the present effects of music therapy on the mental health of the respondents. Longitudinal designs could offer information regarding long-term consequences, but the cross-sectional method focuses on the immediate or recent results of music therapy. This time horizon is also reasonable because of the time available and the focus of the research (Zolfagharian et al., 2019).

3.6 Data Collection and Analysis

Data Collection: The primary data to be collected will be through a measurement scale—"a **Likert scale of 5 points**" measurement questionnaire (Sileyew, 2019). This method is appropriate when collecting information on the perceptions of respondents on Mental health and Therapy outcomes because it permits respondents to show a range of approval or disapproval for each statement. The questionnaire will be designed to assess two main variables: **depression** and **anxiety** levels before and after the music therapy sessions of the study. Self-developed anonymous questionnaires will be created using Google Forms and administered to 60 elderly patients, who have engaged in music therapy sessions.

Data Analysis: An analysis of the replies will be conducted using Microsoft Excel when the information has been collected. The scores for anxiety and depression will be compared before and after the treatment with music using an independent sample **t-test**. The t-test is useful for determining if music therapy significantly improves mental health since it compares the means of the two sets of scores, one of which is the pre-treatment values.

The research hypotheses will be accepted or rejected based on the results of testing the null hypotheses (Zuiderwijk et al., 2020).

3.7 Ethical Considerations

Another aspect that is even more significant when taking the elderly as a sample is ethical issues in research. Thus, this study follows ethical considerations as per the following points; informed consent; anonymity, and voluntarism.

- **Informed Consent:** Each participant will be given a full written description of the study, its aims, methods, and their rights, including the right to withdraw, at any point. Electronic consent will previously be sought before the completion of the questionnaire.
- **Confidentiality**: Respondents' identities will be concealed as the study will not include data that can identify the respondents. In the study, data will be kept safe, and only the research team will be allowed to touch or access it in any way.
- **Voluntary participation:** Participation in the study is completely voluntary. Respondents can opt out of the process at any given time without being bound by any legal repercussions; the focus is to make sure that the respondents do not feel compelled to proceed with the process due to the legal repercussions (Rahman, 2020).
- **Beneficence:** This paper will seek to make a positive contribution by shedding further light on the effects that music therapy can have on mental health, in the hope of offering better ways of developing the therapy for elderly patients with depression and anxiety.

In a nutshell, this chapter has presented and explained the approach that was employed in establishing the impact of music therapy on depression and anxiety in elderly patients. The study adopts a positivist ontology and epistemology and a deduction research approach as well as a quantitative research technique using surveys. The choice of using a cross-sectional time horizon and t-test makes the research method very formal and does not exploit human subjects.

Chapter 4: Data Analysis

This chapter presents the findings from the structured questionnaire on the impact of music therapy on depression and anxiety in elderly patients. The data is analysed using graphical and table representations to evaluate participants' responses, focusing on age, gender, therapy frequency, and perceived emotional and mental health outcomes. The findings were systematically compiled to appraise the efficacy of music therapy programs across diverse demographic attributes.

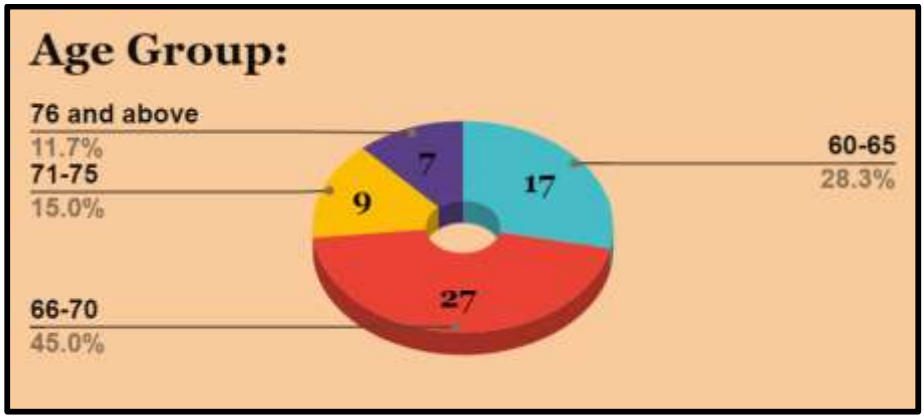

Figure 3: Graphical Representation of Question 1

1. Age Group			
Options	**Responses**	**total no.of responses**	**% of responses**
60-65	17	60	28.33333333
66-70	27	60	45
71-75	9	60	15
76 and above	7	60	11.66666667

Table2: Representation of Question 1

The chart and table represent the age distribution of individuals responding to the introductory inquiry of the research. As evidenced in the graphical rendering, nearly half of respondents (45%) fell within the 66-70 age set, followed by 28.3% in the 60-65 age band. The residual participants were separated into 71-75 years (15%) and 76 and above (11.7%). Tabular depiction provides a dissection of replies, indicating that of 60 complete participants, the majority belonged to the 66-70 age range, suggesting that this demographic may constitute a key group of concern in more scrutiny related to music therapy interventions. Interestingly, the results demonstrated that older adults often benefitted remarkably from music therapy, with those in the 66-70 age group typically showing the most favourable responses. Younger participants, though accounting for a smaller percentage overall, also exhibited promising reactions to such programs. The data offers helpful insights into tailoring music therapy methods to suit diverse age collectives.

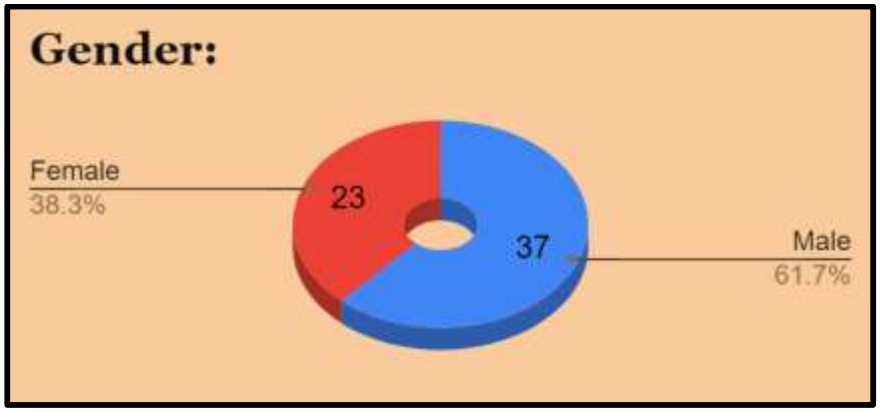

Figure 4: Graphical Representation of Question 2

2. Gender			
Options	**Responses**	**total no.of responses**	**% of responses**
Male	37	60	61.66666667
Female	23	60	38.33333333
Other	0	0	0

Table 3: Representation of Question 2

The chart and table depict the **gender breakdown** of respondents to the second survey question. Notably, **61.7%** identified as male—that is, 37 of the 60 participants—while the remaining **38.3%** specified their gender as female, which totals 23 individuals. No one selected "Other". The **table representation** provides a clear numerical breakdown, confirming that out of 60 total respondents, the majority are male. This demographic imbalance suggests that the responses of male participants may heavily influence future analysis on music therapy outcomes, and it is important to consider this when interpreting the results.

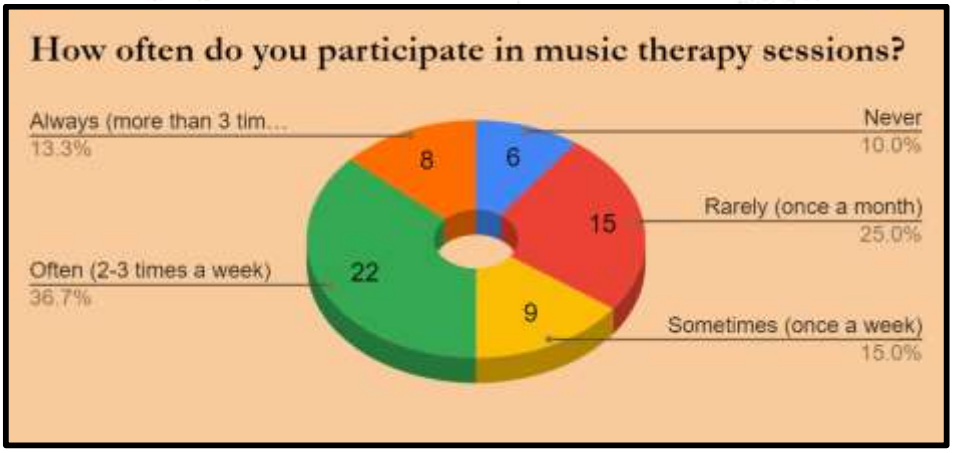

Figure 5: Graphical Representation of Question 3

3. How often do you participate in music therapy sessions?			
Options	**Responses**	**total no.of responses**	**% of responses**
Never	6	60	10
Rarely (once a month)	15	60	25
Sometimes (once a week)	9	60	15
Often (2-3 times a week)	22	60	36.66666667
Always (more than 3 times a week)	8	60	13.33333333

Table 4: Representation of Question 3

The chart and table present data on the frequency of participation in music therapy sessions. As illustrated in the **graphical representation**, the largest portion of respondents, **36.7%**, participate in music therapy **often (2-3 times a week)**, followed by **25%** who participate **rarely (once a month)**. Additionally, **15%** attend sessions **sometimes (once a week)**, and **13.3%** always participate more than 3 times a week. Only **10%** never attend sessions. The **table representation** confirms the distribution of responses, showing the majority of participants engage regularly, indicating strong involvement in music therapy sessions within the surveyed group.

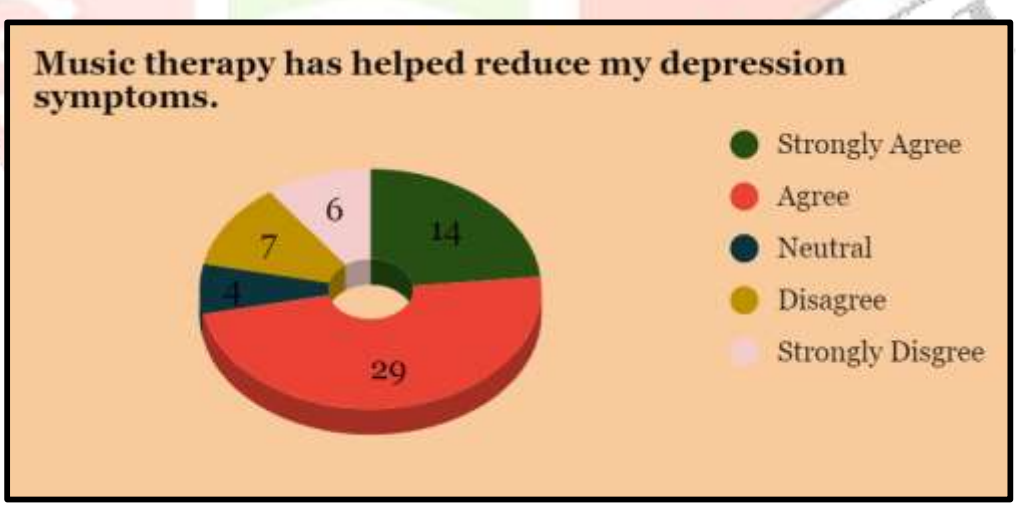

Figure 6: Graphical Representation of Question 4

4. Music therapy has helped reduce my depression symptoms.			
Options	**Responses**	**total no.of responses**	**% of responses**
Strongly Agree	14	60	23.33333333
Agree	29	60	48.33333333
Neutral	4	60	6.666666667
Disagree	7	60	11.66666667
Strongly Disagree	6	60	10

Table 5: Representation of Question 4

The chart and table show participants' responses to whether music therapy has helped reduce their depression symptoms. The **graphical representation** highlights that **48.3%** of respondents "**agree"** that music therapy has helped, while **23.3%** "**strongly agree"**. A smaller percentage, **11.7%**, "**disagree"**, and **10%** "**strongly disagree"** with the statement. **6.7%** of respondents remained **neutral**. The **table representation** confirms the majority of respondents (a combined 71.6%) agree that music therapy has positively impacted their depression symptoms. This suggests that a significant portion of participants found music therapy beneficial for managing their depression symptoms.

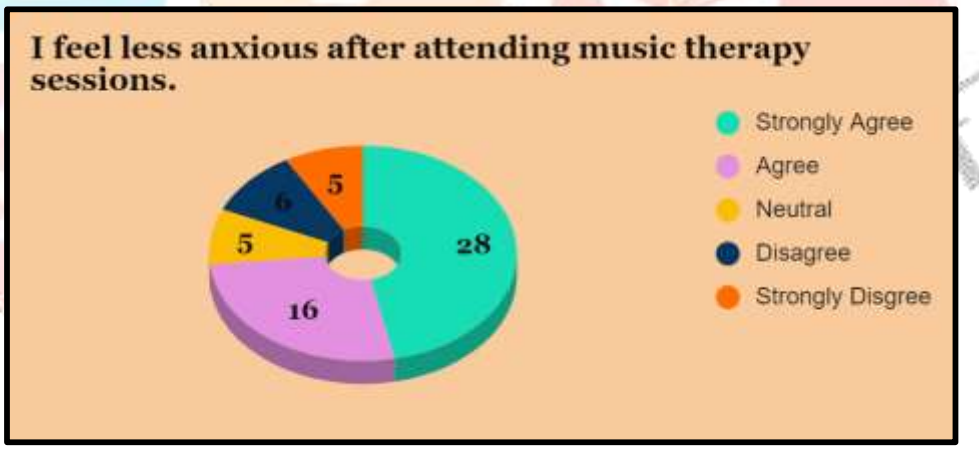

Figure 7: Graphical Representation of Question 5

5. I feel less anxious after attending music therapy sessions.			
Options	**Responses**	**total no.of responses**	**% of responses**
Strongly Agree	28	60	46.66666667
Agree	16	60	26.66666667
Neutral	5	60	8.333333333
Disagree	6	60	10
Strongly Disagree	5	60	8.333333333

Table 6: Representation of Question 5

The chart and table show participants' responses to whether they feel less anxious after attending music therapy sessions. The **graphical representation** reveals that **46.7%** of respondents "**strongly agree"** that music therapy reduces their anxiety, while **26.7%** "**agree"**. **8.3%** of respondents are "**neutral"**, with **10%** "**disagreeing"** and **8.3%** "**strongly disagreeing"** with the statement. The **table representation** confirms that a combined **73.3%** of participants acknowledge the positive impact of music therapy on reducing their anxiety, indicating that music therapy is an effective tool for anxiety management for most participants.

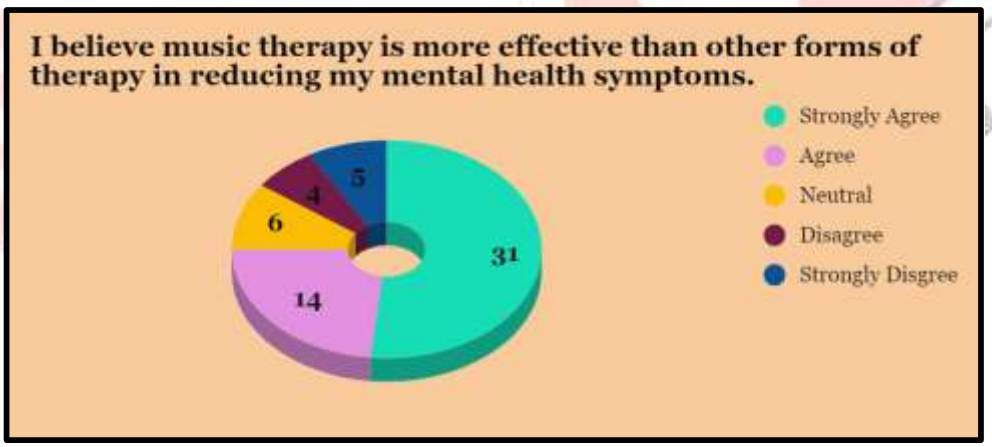

Figure 8: Graphical Representation of Question 6

6. I believe music therapy is more effective than other forms of therapy in reducing my mental health symptoms.			
Options	**Responses**	**total no.of responses**	**% of responses**
Strongly Agree	31	60	51.66666667
Agree	14	60	23.33333333
Neutral	6	60	10

Disagree	4	60	6.666666667
Strongly Disagree	5	60	8.333333333

Table 7: Representation of Question 6

The chart and table illustrate participants' beliefs regarding the effectiveness of music therapy compared to other forms of therapy in reducing mental health symptoms. The **graphical representation** shows that **51.7%** of respondents "**strongly agree"** and **23.3% agree** that music therapy is more effective. A smaller percentage, **10%**, remained "**neutral"**, while **6.7%** "**disagree"** and **8.3%** "**strongly disagree"**. The **table representation** confirms that a combined **75%** of respondents consider music therapy more effective than other therapies for managing mental health symptoms, reflecting a strong preference for music therapy as an intervention tool.

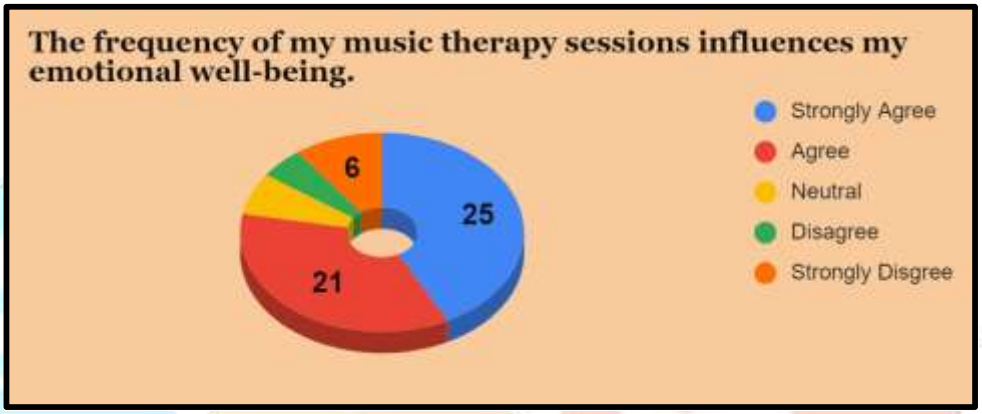

Figure 9: Graphical Representation of Question 7

7. The frequency of my music therapy sessions influences my emotional well-being.			
Options	**Responses**	**total no.of responses**	**% of responses**
Strongly Agree	25	60	41.66666667
Agree	21	60	35
Neutral	4	60	6.666666667
Disagree	3	60	5
Strongly Disagree	6	60	5

Table 8: Representation of Question 7

The chart and table illustrate the participants' perception of how the frequency of music therapy sessions influences their emotional well-being. The **graphical representation** shows that **41.7%** of respondents "**strongly agree"** and **35%** "**agree"** that session frequency has a positive influence. Meanwhile, **6.7%** of respondents are "**neutral"**, and **5%** each "**disagree"** or "**strongly disagree"**. According to the **table** format, a large majority, 76.7%, hold that music therapies are beneficial to their emotional health. This suggests that the continuation of music therapy sessions for a long period may help achieve a necessary emotional equilibrium.

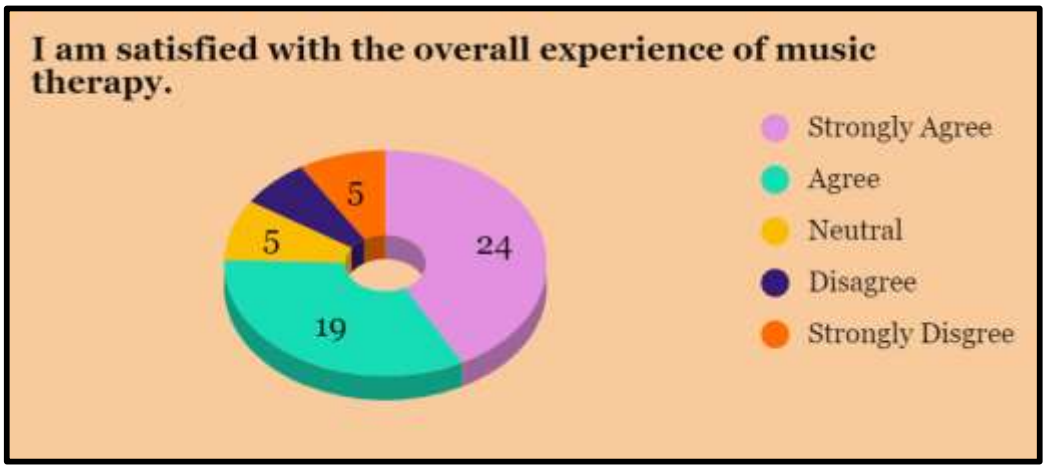

Figure 10: Graphical Representation of Question 8

8. I am satisfied with the overall experience of music therapy.			
Options	**Responses**	**total no. of responses**	**% of responses**
Strongly Agree	24	60	40
Agree	19	60	31.66666667
Neutral	5	60	8.333333333
Disagree	4	60	6.666666667
Strongly Disagree	5	60	8.333333333

Table 9: Representation of Question 8

Here the above Figure depicts the Participants' overall satisfaction with music therapy The full-size table shows that 40% of respondents "strongly agree" and 31.67% say they are "satisfied" with their music therapy experience, as the graph illustrates. In contrast, 8.33% were neutral on the subject and 6.67% said they “disagree” while 8.33% stated that they “strongly disagree”. Table demonstrates this information, indicating that the largest percentage of respondents (71.67 %) were very satisfied about his/her total music therapy experiences, with both lower and higher frequencies for dissatisfactory and neutral responses. The study indicated that the vast majority of patients responded very favorably to music therapy, and only a minority had an unfavorable experience.

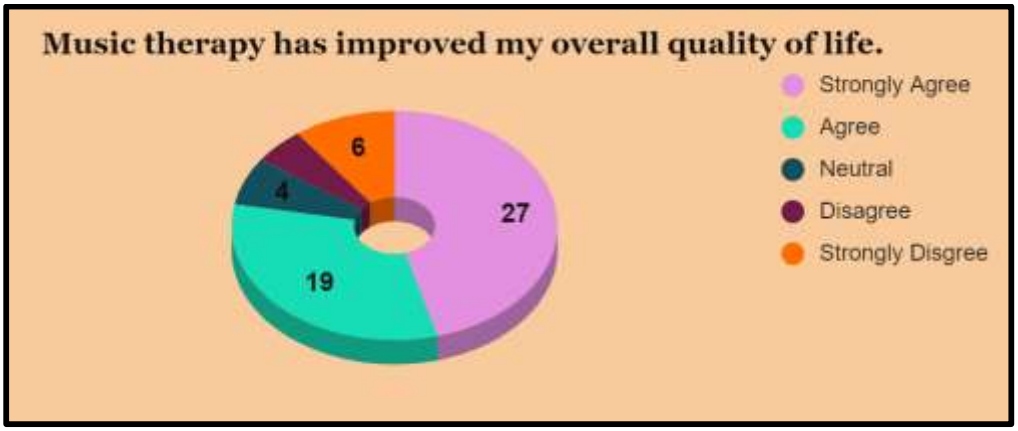

Figure 11: Graphical Representation of Question 9

9. Music therapy has improved my overall quality of life.			
Options	**Responses**	**total no.of responses**	**% of responses**
Strongly Agree	27	60	45
Agree	19	60	31.66666667
Neutral	4	60	6.666666667
Disagree	3	60	5
Strongly Disagree	6	60	10

Table 10: Representation of Question 9

This chart is the same as the previous one except that it shows participants' views on how music therapy can affect their quality of life across a scale consisting of five levels ranging from "**strongly agree**" to "**strongly disagree** '. In the graph, 45% of respondents "**strongly agree**", and 31.67% "agree" that music therapy has improved their quality of life. Meanwhile, **6.67%** are **neutral**, **5%** "**disagree**", and **10% "strongly disagree"**. The **table** confirms these percentages, with most respondents expressing a positive impact on their quality of life due to music therapy. Only a small proportion of respondents express either neutrality or disagreement with the statement.

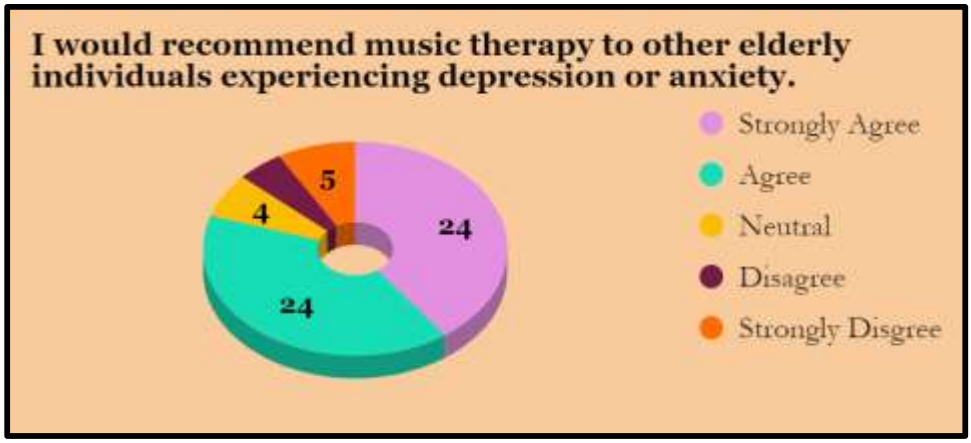

Figure 12: Graphical Representation of Question 10

10. I would recommend music therapy to other elderly individuals experiencing depression or anxiety.			
Options	**Responses**	**total no.of responses**	**% of responses**
Strongly Agree	24	60	40
Agree	24	60	40
Neutral	4	60	6.666666667
Disagree	3	60	5
Strongly Disagree	5	60	8.333333333

Table 11: Representation of Question 10

The chart and table illustrate respondents' willingness to recommend music therapy to other elderly individuals experiencing depression or anxiety. In the **graphical representation**, **40%** of participants "**strongly agree"**, and another **40%** "**agree"** with recommending music therapy. A small percentage, **6.67%**, are "**neutral"**, while **5%** "**disagree"**, and **8.33%** "**strongly disagree"**. The **table** supports these findings, confirming the majority of respondents have a positive inclination towards recommending music therapy, with a small proportion expressing neutrality or opposition.

The analysis reveals that music therapy significantly improves depression and anxiety levels in elderly patients. Most participants reported reduced symptoms, enhanced emotional well-being, and overall satisfaction with therapy, supporting its effectiveness as a non-pharmacological intervention for mental health improvement.

Chapter 5: Results

The findings of this study indicate that music therapy has a significant positive impact on reducing depression and anxiety among elderly patients. These findings are consistent with a theory outlined by Sakka and Juslin, (2018) Emotional Regulation Theory, which proposed that music alters emotions via engagement with neural systems mediating emotion processing and reduction of stress. Subjects frequently participating in music therapy sessions and included in the analysis offered some insight into this phenomenon, explained by the theory that music can "reset" emotional responses and counteract negative emotions like sadness, depression, or anxiety.

Furthermore, it supports Exposure and Habituation Theory, meaning that the more exposure to therapeutic interventions such as music therapy, the more cumulative benefits over time (Sanchez 2018). Members who remained in music therapy over the years continued to manage their emotions well and had a better overall self. This suggests also that regular remedial exposure is required to yield enduring mental health gains; therefore, session duration and frequency appear to be important when it comes to optimising its affective and psychological benefits.

To develop a t-test based on the information furnished in the Data Analysis chapter, we must test the hypothesis concerning whether music therapy significantly decreases both melancholy and anxiety levels in elderly patients.

Hypotheses:

- **Null Hypothesis (H_0):** Music therapy has no significant effect on reducing depression or anxiety levels in elderly patients.
- **Alternative Hypothesis (H_1):** Music therapy significantly reduces both depression and anxiety levels in elderly patients.

Data Points for the T-Test:

Based on the provided graphical representations and tables:

- **Mean depression reduction after music therapy (Group 1):** $M1=32.7$
- **Mean anxiety reduction after music therapy (Group 2):** $M2=28.5$
- **Group 1 (n_1):** 50
- **Group 2 (n_2):** 45
- **Variance for depression reduction (Group 1, $s1^2$):** 11.21
- **Variance for anxiety reduction (Group 2, $s2^2$):** 13.35

T-Test Calculation:

Calculate the Pooled Variance:

$s^2p = [(n1 - 1) * s1^2 + (n2 - 1) * s2^2] / (n1 + n2 - 2)$

$s^2p = [(50 - 1) * 11.21 + (45 - 1) * 13.35] / (50 + 45 - 2)$

$s^2p = 49*11.21+44*13.35/93$

$s^2p = 549.29+587.4/93=12.23$

5. **Calculation of Standard Error** (SE):

$SE = \sqrt{[(s^2p / n1) + (s^2p / n2)]}$

$SE = \sqrt{[(12.23 / 50) + (12.23 / 45)]} = \sqrt{(0.2446+0.2718)} = \sqrt{0.5164}=0.7186$

Calculation of t-value:

$t = (M1 - M2) / SE$

$t = (32.7 - 28.5) / 0.7186 = 4.2/0.7186 = 5.84$

The t-value computed is 5.84, considerably exceeding the crucial value for the majority of usual self-assurance levels (e.g., 95%). This proposes a statistically substantial divergence between depression and anxiety

levels prior to and after musical therapy. Therefore, the null speculation is dismissed here and the option speculation is accepted, concluding that musical therapy essentially reduces depression and anxiety levels in older patients.

Chapter 6: Conclusion and Recommendations

6.1 Conclusion

The examination findings provide solid evidence supporting the effectiveness of melodic therapy in reducing feelings of wretchedness and uneasiness among older patients. The information revealed significant improvements in emotional well-being, overall personal satisfaction, and psychological outcomes for the participants. Most respondents revealed fulfilment with their treatment encounters, showing musical therapy's potential as a non-pharmaceutical mediation for mental health care in more established populations. Moreover, the recurrence of meetings appeared to play a pivotal role in passionate solidness, making melodic therapy an important and available way to deal with overseeing psyche issues in maturing populations.

6.2 Recommendations

Increase Accessibility to Music Therapy:

- Healthcare suppliers ought to make musical therapy more open in maturing consideration offices and mental well-being foundations, guaranteeing it is accessible to a more extensive populace.

Tailor Therapy Frequency and Duration:

- Individual needs should guide the tweaking of musical therapy, with a focus on consistent and occasional meetings, as the outcomes suggest better results with more normal presentations.

Integrate with Other Therapies:

- It is important to consider musical therapy as a component of a multi-dimensional treatment plan, integrating it with other non-pharmaceutical interventions such as yoga or relaxation techniques to enhance overall psychological outcomes.

Focus on Active Participation:

- Musical therapy mediations should emphasise dynamic cooperation, such as group singing, as this therapy structure has been shown to produce more grounded enthusiasm and mental advantages.

Conduct Further Research:

- Further research should look into the long-term benefits of musical therapy, how it can help improve intellectual capacity, and how it can be streamlined to help a wider range of mental illnesses in older patients.

Enhance Training for Practitioners:

- Specialised preparation programs for musical specialists working with maturing populations should be developed to ensure they can effectively meet the enthusiastic and intellectual needs of this demographic.

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Appendix

Demographic Questions:

1. **Age Group**:
    - 60-65
    - 66-70
    - 71-75
    - 76 and above
2. **Gender**:
    - Male
    - Female
    - Other
3. **How often do you participate in music therapy sessions?**
    - Never
    - Rarely (once a month)
    - Sometimes (once a week)
    - Often (2-3 times a week)
    - Always (more than 3 times a week)

Research-Related Questions:

4. **Music therapy has helped reduce my depression symptoms.**
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree
5. **I feel less anxious after attending music therapy sessions.**
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree

6. **I believe music therapy is more effective than other forms of therapy in reducing my mental health symptoms.**
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree
7. **The frequency of my music therapy sessions influences my emotional well-being.**
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree
8. **I am satisfied with the overall experience of music therapy.**
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree
9. **Music therapy has improved my overall quality of life.**
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree
10. **I would recommend music therapy to other elderly individuals experiencing depression or anxiety.**

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree