

The Effectiveness of Music Therapy to Reduce Anxiety in Patients with Gastric Acid at Clinic

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ABSTRACT

This study aims to examine the effectiveness of music therapy in reducing anxiety levels in patients with acid reflux and to determine whether there are differences in anxiety reduction based on the Big Five personality traits. The subjects of the study consisted of 10 patients who met the inclusion criteria after undergoing a screening process involving medical records, anxiety assessment using the HARS scale, and personality evaluation using the Big Five personality scale. Music therapy was administered as an intervention to reduce anxiety in these patients. Data analysis was performed using the Wilcoxon Signed Ranks Test to compare anxiety levels before and after the intervention, and the Kruskal-Wallis Test to examine differences in anxiety reduction among the various personality groups. The results showed that music therapy was effective in reducing anxiety in patients with acid reflux. The Wilcoxon test indicated a significant reduction in anxiety levels, with the average anxiety score before the intervention being 30.50, and after the intervention, it decreased to 21.90. This demonstrates that music therapy can significantly reduce anxiety in acid reflux patients. Meanwhile, the Kruskal-Wallis Test revealed no significant difference in anxiety reduction across different personality traits, with a p-value of 0.188 ($p > 0.05$). Therefore, it can be concluded that while music therapy is effective in reducing anxiety in acid reflux patients, personality traits do not influence the response to this intervention.

Keywords: Anxiety, Music Therapy, Big Five Personality

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INTRODUCTION

Adulthood is a time when individuals face a multitude of responsibilities and pressures, including work, social, and health-related challenges. Among the common health issues during this phase is gastrointestinal discomfort, particularly gastroesophageal reflux disease (GERD), which manifests as symptoms like chest pain, regurgitation, and a burning throat sensation. This condition not only affects physical health but also has significant psychological impacts.

The causes of GERD in adults are often intertwined with lifestyle choices and anxiety. The stress of balancing work, family, and other life responsibilities can elevate anxiety levels, which in turn aggravates acid reflux symptoms and contributes to a decline

in overall health. Research shows a strong link between anxiety and GERD, with anxious individuals often experiencing heightened gastrointestinal discomfort, leading to a reduced quality of life.

Globally, anxiety disorders affect approximately 7.6% of the population, with a growing prevalence among adults dealing with work-related stress. In Indonesia, the rate stands at 6.2%, with 20% of these individuals also suffering from physical symptoms like GERD. Studies suggest that anxiety levels are rising, especially among young adults and workers, highlighting the deep connection between mental and physical health. GERD patients, in particular, often face elevated anxiety levels, which worsen their physical symptoms.

The relationship between anxiety and GERD has been extensively studied, with chronic stress shown to disrupt the balance between stomach acid production and the esophagus's protective mechanisms. Anxiety also increases sensitivity to gastrointestinal discomfort. As a result, addressing both the psychological and physical components is vital for improving health outcomes. Psychological interventions, such as music therapy, have demonstrated effectiveness in reducing anxiety and alleviating GERD symptoms.

In June 2024, the researcher interviewed an on-call doctor at Clinic X in Sidoarjo about the psychological issues faced by patients. The doctor noted that many patients with digestive problems, particularly those with acid reflux, struggled more with treatment due to high anxiety about their health. This anxiety often led them to worry excessively, even fearing death or heart attacks, when the issue was merely digestive in nature. The doctor stressed the importance of managing anxiety, suggesting that patients engage in religious activities, recreational pursuits, and listen to calming instrumental music.

Studies, including Goh et al. (2019), support the idea that stress and anxiety exacerbate acid reflux symptoms. Chronic stress affects the digestive system by increasing stomach acid production and disrupting motility, which leads to a decline in quality of life. On the other hand, Bradt and Dileo (2014) demonstrated that psychological interventions, like music therapy, can reduce anxiety and improve acid reflux conditions, emphasizing the need for a holistic approach to health.

Various psychological theories define anxiety in different ways. Freud viewed it as a result of internal conflict, while Max Hamilton and Aaron Beck focused on measurable physical and mental symptoms and cognitive distortions, respectively. Daniel Kahneman and Hayes emphasized the role of risk assessment and avoidance in anxiety. Additionally, personality traits play a role in anxiety levels, with neuroticism being closely linked to higher anxiety. Extraversion, agreeableness, and conscientiousness, on the other hand, help mitigate anxiety.

Music therapy has proven effective in alleviating anxiety, utilizing the power of music to influence emotions and behavior. Research by Bradt and Dileo (2014) and others has shown that music therapy can significantly reduce anxiety, particularly in hospitalized patients. Personality traits, such as neuroticism, may also affect how individuals respond to music therapy, with those high in neuroticism potentially benefiting the most.

An initial observation at Clinic X found that 20% of GERD patients also experienced anxiety, which the doctor noted could delay their recovery. This observation led the researcher to investigate the effectiveness of music therapy in reducing anxiety in GERD patients, considering their personality profiles based on the Big Five model. This research aims to explore how music therapy can reduce anxiety in GERD patients at Clinic X in Sidoarjo, while considering their individual personality traits.

METHOD

In research, the population refers to the general group or area consisting of objects or subjects that share specific qualities and characteristics, as defined by the researcher for study and analysis (Sugiyono, 2018). For this study, the population includes all patients at Klinik Pratama X in Sidoarjo. The group of subjects must possess certain defining characteristics that differentiate them from other groups, which could include location as well as individual traits.

Sugiyono (2018) further explains that a population is a general area made up of objects or subjects that possess specific qualities and characteristics set by the researcher. This group should share the same traits, distinguishing it from other groups. In this study, the population consisted of patients from Klinik Pratama X in Sidoarjo, as recorded in medical records from September, October, and November 2024, with a total of 280 patients.

A sample, on the other hand, is a subset of the population selected using specific procedures to represent the larger group (Sugiyono, 2018). A sample is considered representative if its characteristics align with those of the population (Ratih, et al., 2017). The process of sampling simplifies the research. In this study, quota sampling was employed, where participants were selected based on certain characteristics from the population that the researcher wanted to focus on. The sample needed to represent the population accurately, reflecting its true nature. In this research, the sample consisted of patients diagnosed with acid reflux at Klinik Pratama X in Sidoarjo, who also experienced anxiety. Only patients with moderate to very high anxiety scores were included in the sample, and they had to exhibit one of the five personality traits from the Big Five Personality model.

Out of 162 patients who were provided with a Google Form containing the HARS scale, 88 patients returned the forms. These 88 patients were analyzed based on their age distribution, with participants ranging from 20 to 70 years old. In this group, 9 patients were aged between 20-30 years, 18 patients were 31-40 years old, 26 patients were 41-50 years old, another 26 patients were 51-60 years old, and the remaining 9 patients were between 61-70 years old.

As for gender, among the 88 patients, 50 were male (58%) and 38 were female (42%). From these 88 patients, those with the highest scores in each of the Big Five personality traits were selected for further analysis, resulting in a group of 40 patients. The age distribution within this group remained similar, with 8 patients aged 20-30 years, 12

patients aged 31-40 years, 12 patients aged 41-50 years, 4 patients aged 51-60 years, and another 4 patients aged 61-70 years.

Following this, the 40 patients were further screened for their anxiety levels, using the HARS scale. Based on their anxiety scores, 10 patients were selected for music therapy. These 10 patients represented various personality traits: 2 had conscientiousness, 2 had agreeableness, 2 had extraversion, 2 had neuroticism, and 2 had openness.

The research utilized purposive sampling, meaning participants were selected based on the specific aims of the study. The objective was to assess the effectiveness of music therapy in reducing anxiety in patients with acid reflux, considering their personality types. The inclusion criteria for participants in the study were: patients aged 20-70 from Klinik Pratama X Sidoarjo who had a diagnosis of acid reflux based on their medical records, patients with diverse Big Five personality traits, and those who exhibited high anxiety levels. Additionally, participants had to agree to provide information by completing and signing an informed consent form.

Thus, this study utilized a thorough and systematic selection process to ensure that the sample accurately represented the population, and it aimed to provide meaningful insights into the relationship between personality traits, anxiety levels, and the effectiveness of music therapy in reducing anxiety among acid reflux patients.

Data analysis is the process of transforming raw data into a simpler, more understandable form that can be easily interpreted. In this study, the data was analyzed using two statistical methods: the Wilcoxon Signed Ranks Test and the Kruskal-Wallis Test.

Once the necessary assumptions were tested, the next step was to conduct hypothesis testing. For this study, a non-parametric statistical test was chosen due to the data not following a normal distribution. Since the assumption of normality was not met and the sample size was relatively small ($N \leq 30$), the researcher decided to use the Wilcoxon Signed Ranks Test.

This test is applied to compare two related sets of data to determine if there is a significant difference between them. In other words, it helps assess if the measurements before and after an intervention are different. The decision rule for interpreting the results is as follows: if the significance value (p-value) is greater than 0.05, it indicates that there is no significant difference between the two measurements, meaning the null hypothesis (H_0) is accepted. Conversely, if the significance value is less than 0.05, it indicates a significant difference, and the null hypothesis is rejected.

The Kruskal-Wallis Test is a non-parametric method used to compare more than two independent groups to determine if there are any significant differences between them. In this study, the researcher is examining five different personality traits, which form five independent groups. These groups are not paired, meaning each group consists of different individuals.

For this test, the decision rule is: if the significance value (p-value) is less than 0.05, it suggests that there is a significant difference between the groups, and the null hypothesis

(H0) is rejected. If the p-value is greater than 0.05, it indicates that there is no significant difference between the groups, and the null hypothesis is accepted. Both of these tests help in determining whether the intervention (in this case, music therapy) had a meaningful impact on reducing anxiety in patients with different personality traits.

FINDING AND DISCUSSION

RESEARCH RESULT

This study was conducted in a hotel meeting room in Surabaya, with music therapy interventions carried out over two days, on December 1st and 2nd, 2024. Each session lasted between 90 to 120 minutes, based on an agreement between the researcher, music therapist, and participants. The study involved 10 subjects diagnosed with acid reflux and varying levels of anxiety, selected through screening using the HARS scale and the Big Five personality scale.

The analysis using the Wilcoxon Signed Ranks Test showed a significant reduction in the anxiety levels of participants after the music therapy intervention. The average anxiety score before the intervention was 33.80 (high anxiety), which decreased to 22.80 (moderate anxiety) after the therapy. The statistical test results indicated a Z value of -2.807 with a p-value of 0.005 ($p < 0.05$), indicating a significant difference between pre-intervention and post-intervention anxiety levels.

However, the Kruskal-Wallis Test analysis to compare the effect of music therapy based on Big Five personality traits showed that, although there was a difference in average anxiety reduction across personality traits, the difference was not statistically significant ($p = 0.360 > 0.05$). This suggests that although anxiety decreased for all subjects, the impact of music therapy did not significantly differ based on personality type.

Overall, the findings of this study support the first hypothesis that music therapy is effective in reducing anxiety in patients with acid reflux. However, the second hypothesis, which expected a differential effect based on Big Five personality traits, was not supported. Other factors such as social support or individual music preferences may have more influence on therapy responses than personality traits. This study demonstrates that music therapy has a positive effect on all individuals, regardless of their personality dimensions, due to its universal therapeutic nature in reducing anxiety and stress.

DISCUSSION

This study, conducted in a hotel meeting room in Surabaya, involved music therapy interventions on December 1st and 2nd, 2024, lasting 90 to 120 minutes per session. It included 10 participants with acid reflux and varying anxiety levels, identified using the HARS and Big Five personality scales. Results from the Wilcoxon Signed Ranks Test revealed a significant reduction in anxiety, with average scores decreasing from 33.80 (high anxiety) to 22.80 (moderate anxiety) after therapy ($p = 0.005$). However, the Kruskal-Wallis Test showed no significant difference in anxiety reduction based on personality traits ($p = 0.360$). The study confirmed that music therapy is effective in reducing anxiety in acid reflux patients but did not find a differential effect based on personality

traits, suggesting that factors like social support or music preferences might play a larger role in therapy outcomes.

CONCLUSION

Modern life and work present complex challenges, with social, economic, and technological pressures affecting both physical and mental health. Anxiety, driven by work stress and uncertainties, often exacerbates physical issues like acid reflux by increasing cortisol production, which worsens symptoms of GERD. This study aimed to help patients with acid reflux manage their anxiety by using music therapy, a non-pharmacological approach known to reduce anxiety and provide psychological benefits without medication side effects.

The findings show that music therapy effectively reduces anxiety in patients with acid reflux, regardless of personality traits. While personality can influence anxiety levels before therapy, the benefits of music therapy were similar across all personality types. Therefore, music therapy proves to be an effective, alternative treatment for anxiety, especially in patients with physical conditions, and can be integrated into broader healthcare strategies.

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