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THE UTILIZATION OF MUSIC AND AUTONOMOUS SENSORY MERIDIAN RESPONSE IN REDUCING STRESS

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THE UTILIZATION OF MUSIC AND AUTONOMOUS SENSORY MERIDIAN
RESPONSE IN REDUCING STRESS

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Social Work

by
Robert Denis Scott

May 2024

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ABSTRACT

Stress is often identified as a “silent killer” and the negative impact on one’s mental and physical well-being is greatly impacted without intervention. This study sought to determine which form of coping, autonomous sensory meridian response (ASMR) or music, is an effective strategy for reducing stress. The study was conceptualized using the positivist paradigm of research. An electronic survey was dispersed to participants via the website SurveyMonkey. Descriptive data was collected using demographic information gathered during the first portion of the survey. Participants’ self-identified stress levels were gathered before and after they viewed their randomly assigned coping strategy (ASMR or music) during the survey. Data was analyzed using a two-paired t-test via SPSS. The results show that music led to feelings of relaxation and comfort. Similarly, nervousness and anxiety significantly reduced for those assigned to the music group. For the ASMR group, calmness decreased but not significantly. Small non-significant decreases occurred in other emotions. Between groups, music increased positive relaxation while ASMR decreased nervousness and anxiety. Emotion improvements predicted enjoying music more than ASMR. Further research is needed with a larger and age-diverse sample.

ACKNOWLEDGEMENTS

I want to thank Dr. Hernández and Dr. Li for their support throughout this project. I am truly grateful for your guidance and direction. I would also like to thank all of the professors who have served as beacons of knowledge, helping me to navigate the complexities of social work. Your supportive presence is reflected in these pages.

DEDICATION

I dedicate this work to my parents, my family, and my friends. Thank you for your love and support.

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CHAPTER ONE

ASSESSMENT

Introduction

This chapter introduces the research focus of the study, the impact of stress and whether ASMR or music can help alleviate stress. This chapter also outlines why this study utilizes the positivist paradigm of research. A comprehensive literature review was conducted and the chosen theoretical orientation of the project was identified. Finally, potential contributions to micro social work are analyzed.

Research Question

The goal of this research was to determine which is a better strategy for helping to cope with stress: listening to music or viewing ASMR? For the purposes of this study, *stress* is defined as “the physiological or psychological response to internal or external stressors” (APA, 2022). *Coping* is defined as “the use of cognitive and behavioral strategies to manage the demands of a situation when these are appraised as taxing or exceeding one’s resources or to reduce the negative emotions and conflict caused by stress” (APA, 2022). Lastly, a *coping strategy* is “an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation or in modifying one’s reaction to such

a situation” (APA, 2022). In this study, listening to music and viewing ASMR videos are considered coping strategies.

Paradigm and Rationale for Chosen Paradigm

This study utilized the positivist paradigm of research. Positivism assumes that a single reality exists and can be analyzed, measured, and identified. The data collected within the study was measured and interpreted objectively and thus any potential bias by the student researcher was controlled. In addition, the aim of the study was to show a causal relationship between the independent variable, music or ASMR, and the dependent variable, reducing stress. Lastly, the study sought to create objective knowledge, the goal of positivism, regarding effective means of reducing stress by comparing the two coping strategies.

Literature Review

There are three types of stress defined by the American Psychological Association: acute, episodic-acute, and chronic (Kim, 2013). Acute stress is the general presence of stress in our daily lives. This may include being stuck in traffic on your way to work or receiving negative feedback from your boss. Episodic-acute stress occurs more frequently and with some amount of regularity. An example here might be reports due at the end of the month for your job. Lastly, is chronic stress. This is persistent stress that never subsides. Having to care for an elderly parent or daily arguments with your spouse are examples of

chronic stress. This portion of the study will review the prevalence of stress, its causes, its impacts, and helpful interventions.

Prevalence

The American Psychological Association's (2020) "Stress in America" report provides statistical data which shows just how stressed Americans are. Much of the data was gathered during the height of the COVID-19 pandemic, which in and of itself was a stressor that many were tasked with navigating on top of their already complex workload. Eight in ten adults reported that the COVID-19 pandemic was a significant source of stress in their lives. Two in three adults, or 67%, reported increased stress as a result of the pandemic. Half, or 49% of adults, reported that their behavior was negatively impacted by the stress caused by the pandemic. Twenty-one percent of respondents reported increased tension in their body and 20% said they found themselves "snapping" or getting angry quickly. Further data presented in the report shows a multitude of factors which are cause for stress for Americans, from climate change to immigration to the opioid epidemic running rampant in the country.

Causes

A recent report published by the American Psychological Association (2022) found that stress remains a major concern for many Americans. Among those surveyed, 87% reported stress related to the rise in prices of everyday items because of inflation, 81% due to supply chain issues, 81% because of global uncertainty, 80% showed concern about possible retaliation by Russia

following its invasion of Ukraine on February 24th, 2022, and 80% also reported concerns simply because of the war in Ukraine. Demographic data showed a deep divide as it pertains to stress based on age and race. Younger adults (age 18-43) reported money as their main concern of stress, far more than those age 44 and above. Most adults aged 26 to 43 reported housing costs and the overall economy as high stress markers. Furthermore, Black (67%) and Latino (75%) adults reported higher levels of stress due to money when compared to their White (63%) and Asian (57%) counterparts.

Before one can assess the impact of stress, an understanding regarding how stress occurs can be helpful in minimizing its effect. Kim (2013) examined that Lazarus and Folkman (1984) helped to provide a psychological framework of stress. The concepts of appraisal (analyzing a stress event based on an individual's resources, consequences, and meanings) and coping (the way in which an individual manages stress) are key components which assist in explaining the process of stress. Lazarus (1991) updated his initial work to include three types of stress: harm, threat, and challenge. Each type of stress conjures up various emotional responses and require varied demands from the individual experiencing the stress. Kim (2013), in analyzing the work of Mroczek & Almeida (2004), found that age and gender play a significant role in the formation of stress as well as the handling of it. The duration of stress plays a vital role in how severe and limiting it can be on one's life.

Impacts

The effects of stress on the body and the mind are multi-pronged. McEwen & Sapolsky (2006) note that the body's process of responding to stress is known as Allostasis. Stress moves one out of the state of homeostasis, or normal functioning. When acute stress is present, one's body enters the "fight or flight" response. The body releases hormones, cortisol and adrenaline, into an individual's bloodstream to help them fight back against the stress. Once the stress is defeated, so to speak, the body proceeds back into homeostasis. In the case of chronic stress, if that "fight or flight" response is activated too much, its usefulness decreases and can lead to serious health concerns. The long-term effect of stress includes digestive system disruptions, obesity, immune system deficiencies, as well as increases in blood pressure and blood sugar levels (McEwen & Sapolsky, 2006). If stress is not managed proactively, depression and anxiety are two psychological impacts which can have a crippling effect on one's ability to function effectively on a daily basis.

Interventions

To help minimize the impact of stress, it is imperative that one utilize healthy coping strategies. This study presents two coping strategies (listening to music and ASMR) which have been shown to be helpful in reducing stress. As it pertains to music as a form of coping, de Witte et al. (2020) found that music listening is strongly associated with stress reduction by decreasing physiological arousal as indicated by reduced cortisol levels, lowered heart rate, and

decreases in mean arterial pressure. Similarly, de Witte and colleagues (2020) found that music can reduce negative emotions and feelings, such as subjective worry, state anxiety, restlessness or nervousness and can increase positive emotions and feelings, such as happiness. A notable finding within their analysis points to music effectively lowering stress levels through its quality to provide 'distraction' from stress-increasing feelings or thoughts. This aligns with the present study's assumption that music is a form of positive coping known as emotion-based coping.

ASMR, although studied less than music as a form of coping, has been shown to be effective in limiting the stress effect. ASMR is known to provide tingles (also referred to as "brain tingles" or "brain orgasms") (Poerio et al., 2018). This physiological response is often accompanied by relaxation and feelings of calm, as Poerio et al. (2018) make note. ASMR may come in many forms. The most common "triggers" include whispering, tapping, scratching, and hand movements which simulate close personal contact and attention. ASMR shares similar sensory responses commonly associated with listening to music, such as "spine shivers" and feelings of bliss and escape. To add credence to the overall experience of ASMR as a form of reducing stress, Poerio et al. (2018) conducted a study which found that participants reported the sensory response of tingling as well as increased levels of excitement and calmness, along with decreased levels of stress and sadness. Their findings provide empirical support

to support the notion that ASMR can be an effective coping strategy in helping to manage stress.

In summary, Americans reporting challenges related to stress are on the rise. This is concerning considering the negative effects associated with stress on the body. The need for better management of stress is necessary to prevent a breakdown in both physical and mental health well-being. This study expanded the tools available for the management of stress.

Theoretical Orientation

This study utilized the psychological theory of coping as first defined by Lazarus and Folkman (1984). They identified two methods of coping: 1) problem-focused coping; and 2) emotion-based coping. According to Lazarus and Folkman (1984), problem-focused coping considered whether a person solved the problem causing them stress or if they chose to avoid it. Here too, emotion-based coping described how an individual regulated one's emotions under stress (Stanisławski, 2019). For the purposes of this study, engaging in the coping strategy of listening to music or viewing ASMR was considered emotion-based coping. One was not initially solving the problem, which was causing them stress, but instead regulating their emotions and bringing themselves back to homeostasis, or an optimal level of mental functioning. It was then hypothesized that the individual could address the problem in a clear-minded and focused fashion. Stanisławski (2019), in analyzing the improvements made to Lazarus

and Folkman's initial theory of coping by Gol and Cook (2004), stated that emotion-based coping could take two forms: positive emotional-coping (humor, positive reinterpretation) or negative emotional-coping (venting, ruminating). As such, this study viewed listening to music or viewing ASMR as examples of positive emotional-coping.

Potential Contribution of the Study to Micro Social Work Practice

This study stood to assist the field of social work by making impacts at the micro level. First, this study can potentially provide clinicians and social workers with additional tools for helping clients manage stress. Music therapy is an empirical-based technique which is widely known and utilized. ASMR, in contrast, is not widely used as a therapeutic intervention nor is it a known commodity. Its rise in popularity, especially on the social media app TikTok, makes it an interest-drawing tool to get people into therapy. In fact, a hashtag search of ASMR (“#asmr”) on the social media app reveals 271.5 billion views. Likewise, a search on the popular video-hosting platform YouTube shows nearly 4 million videos and 374,000 dedicated ASMR channels. Especially in this unsettled time in our nation, with COVID-19 still prevalent and an array of stressors present in everyday life, more tools at the disposal of social workers can only be viewed as a positive. Additionally, the use of music in reducing stress has led to positive outcomes within the healthcare domain (de Witte et al., 2020). The results of the study point to ASMR being a useful tool in which doctors and those within the

whole of healthcare can utilize it to help their patients manage stress, which has been shown to affect not only one's mental health but an individual's physical health as well.

Summary

Stress is well-known for being a “silent killer.” While some amount of stress is a normal product of the human condition, left untreated it can wreak havoc on one's mental and physical well-being. But all hope is not lost. Ramesh (2020) summarizes that listening to music in the context of a stressful situation increases coping abilities and reduces psychological stress. Likewise, because the results demonstrated that ASMR reduced nervousness and anxiety, it can be concluded that ASMR is an effective coping strategy for reducing stress. In the present, music has been an effective tool for reducing the stress associated with the COVID-19 pandemic (Ramesh, 2020). A plethora of listening/viewing material as it relates to ASMR points to the desire of many to escape the stress of everyday life and experience relaxation. The present study bolstered the effectiveness of ASMR as a coping strategy as well as solidified music as a positive form of self-soothing.

CHAPTER TWO

ENGAGEMENT

Introduction

This portion of the project discusses engagement strategies and related components tied to the study. Here, the study site is identified and engagement strategies, including the study's gatekeepers and self-preparation, are reviewed. Likewise, issues related to diversity, ethical concerns, political matters, and the role of technology in the study are also assessed. Additionally, a summary is provided at the end of this chapter.

Study Site

This project featured online data collection which was hosted by the website SurveyMonkey. The advantages of online surveys include speed and reach, ease, cost, flexibility, and automation (Ball, 2019). As such, there is not a study site in the traditional sense.

Engagement Strategies for Gatekeepers at Research Site

The study required approval from the University IRB, and as such they served as one of the study's gatekeepers. The other gatekeeper was the host site, SurveyMonkey, who distributed the survey. As this study was conducted via

online data collection, engagement entailed distribution of the study to gather participants which was completed by the host website.

Self-Preparation

The writer of this project, also known as the student researcher, successfully determined a research question, developed their study based on a relevant paradigm, and completed a thorough review of available literature related to stress and coping via music or ASMR. Next, a research question was posed and videos to be used within the study were settled upon. The next step was to input all relevant self-preparation materials into the SurveyMonkey website. This included embedding the YouTube videos selected to represent music as a form of coping as well as ASMR as an alternate form of coping with stress. A test survey link was given to family and friends of the student researcher to ensure proper functioning. After all data was collected and tabulated, SurveyMonkey provided the findings which were then exported into SPSS for analysis.

Diversity Issues

As one of the goals of this study was to reach as many participants as possible, the need for other language options while completing the participant survey was of high priority. The embedded videos within the survey(s) were presented in their original English language, however, participants had the option

to select subtitles in their native language. The goal of this study was to remain inclusive and diverse, so as to enhance the project's findings.

Ethical Issues

The student researcher took active measures to reduce the risk of harm done to participants during their participation. The study received approval from the Institutional Review Board signifying that this was the case. In addition, participant confidentiality was of the utmost importance to the study's creator. As such, surveys were set using the "track responses anonymously" feature provided by the host website SurveyMonkey. General demographic data was collected within the survey but was limited to age, sex, race, and current occupation. Website security at SurveyMonkey is upheld to the highest standard, which is why this student researcher selected it as the host website for this study's data collection.

Political Issues

Participants were informed that their responses would be collected by a student of, and published by, California State University, San Bernardino. They were also notified that their participation would help contribute to identifying positive means of coping with stress. Furthermore, participants were notified that consent would be granted upon participating in the survey. Because the study did not include strenuous means of participation, the personal safety of the study

participants was assured. Given that the survey was conducted via an online-only method, no political issues arose.

The Role of Technology in Engagement

The use of technology was ever-apparent during all phases of data collection and analysis. Engagement and survey participation were conducted in an online-only manner. This method was selected to limit any barriers that might exist with an in-person or designated site-designed study. During the survey introduction, the student researcher's contact information was provided. As the study's host, it was imperative that any concerns were addressed in a timely manner. Study complications did not arise due to the design's study and online nature. Participants needed to have internet access to assess the survey, but that was not seen as a barrier as the need for internet access exists almost on a universal basis.

Summary

The study was conducted in an online-only fashion. As such, issues related to gatekeeper access, diversity, ethical, and political issues did not present any barriers to data collection. The process of completing the survey(s) was self-guided and designed to be easily understood. The student researcher's goal was to reach as many participants as possible to increase study validity while also presenting findings that will prove beneficial to all of society. Because

the study relied heavily on technology, issues related to security, confidentiality, and access were considered in the study design process. Many barriers that typically exist with other forms of data collection simply did not exist given the utilization of an online-only design. Lastly, participants were encouraged to reach out to the student researcher should they have any questions or concerns during the data collection phase.

CHAPTER THREE

IMPLEMENTATION

Introduction

The study sought to determine which method of stress relief is more effective: listening to music or ASMR? This chapter includes a descriptive analysis of the study participants and how those participants were selected. Also examined in this chapter are data gathering, phases of data collection, as well as data recording and analysis. Finally, termination and follow-up methods will be discussed, and a chapter summary are provided.

Study Participants

The study did not assume limitations on who can participate. Those who participated were not turned away based on gender. In addition, participant ages were 18 and above. The study did not limit participation due to race. All races were encouraged to participate. The goal was to have a diverse racial makeup as the study's findings aimed to benefit everyone within society. Lastly, the study encouraged participation from a diverse makeup of occupations, as stress is felt along a wide swath of job trades. Here too, those who were not currently employed were welcome to participate in the study. They were given the freedom to select not currently working within the demographic portion of the study's survey.

Selection of Participants

This study selected participants using the convenience sampling method. The host website, SurveyMonkey, assisted in finding participants by emailing survey invitations to potential participants. This was done after demographic data criteria had been set. Because this study had no limitations on who can participate, the selected demographic criteria was neutral in nature. SurveyMonkey does not allow participants to complete the same survey more than once which was an important factor in selecting the site as host for the study's survey.

Data Gathering

Participants were asked to complete an online survey (see: Appendix A). The survey began with demographic questions. Next, participants were asked to complete 3 math problems of varying difficulty. The final math problem included a timer for one minute. Next, participants were asked 9 Likert scale questions to measure their current emotional status. The 9 Likert scale questions were designed to measure key aspects of stress, including feeling calm, tense, upset, relaxed, etc. They were adapted from the State-Trait Anxiety Inventory (STAI; Spielberger et al., 1983). Participants then viewed either the musical piece selected or an ASMR video. SurveyMonkey assisted in randomly assigning which version of the survey a participant was to complete. To conclude, participants were asked the same 9 questions presented before. The pre- and

post-intervention scores on this scale served as the key outcome measure of stress levels.

Phases of Data Collection

To begin, participants were presented with a description of the study, the voluntary nature of the study, as well as information related to informed consent (see: Appendix B). Participants were then able to complete their assigned survey. Data collection began immediately as participants completed their designated survey via the SurveyMonkey website. Upon completing the survey, participants were provided with the researcher's contact information and instructed to contact the researcher should they have any questions or concerns about the study.

Data Recording

Participant data was collected by the host website and accessible to the study's curator throughout the duration of the study. Following completion of the study, data was available for analysis and analyzed in SPSS.

Data Analysis

The study was conducted using quantitative analysis. Data was available within the study's "dashboard" on the SurveyMonkey site in real-time. Because access is study specific, only this writer had access to the login information

necessary to view the data collected. Data collection was monitored daily to ensure participation and address any concerns participants might have had. Compiled data was analyzed in SPSS and prepared in written form. Descriptive data was analyzed using the demographic data collected. In addition, a paired-sample t-test was conducted to see which of the techniques is a more effective coping strategy in reducing stress. For this study, the independent variable was the coping strategy, which had two levels: either viewing an ASMR video or listening to a musical piece. Alternatively, the dependent variable was the participants' stress levels, as measured by the scores they gave in response to the stress-related items on the survey before and after viewing the ASMR video or listening to the musical piece.

Termination and Follow-Up

Upon completion of their assigned survey, participants were shown a screen thanking them for their participation. Participants were informed that survey data and a final study report would be available via [CSUSB ScholarWorks](#). This concluded the participant portion of the study and termination was immediate. Due to the online nature of the study, no follow-up was necessary following the study's end.

Summary

This chapter of the study looked at various aspects of participant involvement, including the selection of contributors as well as insight into what questions participants were asked to answer. Information related to data collection and analysis was also provided. Lastly, study termination and follow-up procedures were examined.

CHAPTER FOUR

RESULTS

Introduction

This chapter presents the statistical analysis of the study examining the effects of music and ASMR for stress relief. Pre- and post-tests compared emotion changes within groups, while the Mann-Whitney U test compared differences between groups. Additionally, regression modeling was utilized to predict group membership.

Presentation of the Findings

Descriptive Statistics

A total of 50 participants completed the survey. Figure C1 (Appendix C), showcases the gender breakdown of the sample which was comprised of 48% male and 52% female. Figure C2 (Appendix C) shows that a majority (68%) of study participants were Caucasian, with small percentages of other ethnicities including African-American (6%), Latino/Hispanic (10%), Asian (8%), and Native American (4%). Lastly, as shown in Figure C3 (Appendix C), most participants were aged 30-44 (40.38%) or 45-60 (25%).

Paired Samples T-Tests

For the music group, feelings of relaxation significantly increased from a mean of 3.08 before to 3.92 after listening based on the paired samples t-test

($t(25)=-3.009$, $p=.006$). Comfort also significantly increased from a mean of 3.42 to 4.00 ($t(25)=-3.638$, $p=.001$). Nervousness significantly decreased from 2.27 to 1.65 ($t(25)=2.609$, $p=.015$) as did anxiety decreasing from 2.46 to 1.81 ($t(25)=2.708$, $p=.012$).

For the ASMR group, calmness decreased from a mean of 3.21 before to 2.79 after based on descriptive statistics from the paired samples t-test, but this change was not statistically significant based on inferential testing. Small non-significant decreases occurred in other emotions when comparing ASMR means before and after.

These findings are visually represented in Table C1 (music) and Table C2 (ASMR) in Appendix C of this paper.

Mann-Whitney U Test

The Mann-Whitney U test revealed music led to significantly greater improvements in calmness (mean ranks: 29.77 vs 20.88, $p=.025$) and relaxation (mean ranks: 29.63 vs 19.76, $p=.011$) compared to ASMR. However, ASMR resulted in significantly greater reductions in self-reported nervousness (mean ranks: 29.88 vs 21.46, $p=.027$) and anxiety (mean ranks: 29.33 vs 21.17, $p=.027$). Figure C4 and C5 (Appendix C) provides a visual depiction of these findings.

Multiple Regression

A multiple regression model found only increases in positive emotions significantly predicted belonging to the music group rather than ASMR ($B=.055$,

p=.011). The model explained 31.5% of variance in group membership (R-squared=.315).

Summary

Music reduced nervousness and increased relaxation based on pre-and-post-test data. ASMR was shown to reduce participant levels of calmness. Between the groups, music increased positive relaxation while ASMR decreased nervousness and anxiety. Emotion improvements predicted enjoying music more than ASMR.

CHAPTER FIVE

DISCUSSION

Introduction

This chapter discusses the key findings of the study and the implications the results have for the social work field. The limitations of the current study are also examined, and suggestions for future research are proposed.

Discussion

This research provides evidence that both music and ASMR improve emotions, but potentially in different ways. Music was more effective for increasing positive relaxation, while ASMR had a larger impact on reducing anxiety and nervousness. These findings expand previous research on the benefit of music and provide added support as to ASMR's potential to assist with stress reduction.

A limitation is the small sample size, which may have missed smaller effects. Also, the adult sample could explain the insignificant ASMR findings. Prior research indicates ASMR has a stronger impact in adolescents and young adults, perhaps due to lower baseline anxiety levels in youth (Poerio et al., 2018). This study's adult sample may have reduced ASMR's effects. Further research should examine ASMR in younger populations to determine its therapeutic potential.

This study showcases accessible and low-cost options like music and ASMR for regulating emotions and coping with stress. Both forms of coping could give people tools to boost relaxation and lessen negative feelings in everyday life. The age limitation indicates ASMR should be explored further in youth who may benefit more from its anxiety-reducing effects.

Recommendations for Practice, Policy, and Research

Social workers within a clinical setting could utilize music or ASMR as tools that clients can use to improve relaxation or lessen the effect of stress. From a wider perspective, an emphasis should be placed on utilizing music and ASMR within a larger context to improve stress levels among those in all age groups. Further research on mechanisms and long-term effects are needed, and the study's findings show a need for such to occur.

Conclusion

This study deduces that both music and ASMR show promise for regulating emotions and reducing stress. Both are low-cost and accessible. Each form of relaxation can serve as valuable tools for social worker practitioners in helping to improve stress management among clients. While the study's results provide additional evidence for music as an evidence-based intervention, more research should be conducted on the newer use of ASMR to further solidify it as an evidence-based therapeutic tool.

APPENDIX A
ONLINE SURVEY QUESTIONNAIRE

ONLINE SURVEY QUESTIONNAIRE

1) What is your age?

2) What gender do you identify as?

Male

Female

Non-Binary

Other

3) Please specify your ethnicity (select all that apply).

Caucasian

African-American

Latino or Hispanic

Asian

Native American

Native Hawaiian or Pacific Islander

Other

4) What is your current occupation?

5) Please solve the following:

1) $6+6=$

2) $3x=9$; $x=$

3) Please solve the following (you have 1 minute): $2^2(x+3) + 9 - 5 = 32$; $x=$

6) Please answer the following:

I feel calm.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel tense.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel upset.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel relaxed.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel jittery.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel content.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel nervous.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel comfortable.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel anxious.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

7) Please view the following:

ASMR video OR musical piece

8) Please answer the following again:

I feel calm.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel tense.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel upset.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel relaxed.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel jittery.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel content.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel nervous.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel comfortable.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

I feel anxious.

Not at all

A little bit

Somewhat

Moderately
so

Very much
so

APPENDIX B
INFORMED CONSENT

INFORMED CONSENT



WE DEFINE THE *Future*

Project Title: The Utilization of ASMR and Music in Reducing Stress

The study in which you are being asked to participate is designed to investigate ASMR and music's impact on stress. This study is being conducted by Robert Scott under the supervision of Dr. Yawen Li, Research Coordinator at California State University, San Bernardino. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

PURPOSE:

The purpose of this study is to examine coping strategies for reducing stress.

DESCRIPTION:

If you agree to proceed with the survey, you will be asked to answer some demographic questions, complete a series of tasks, and rate your current level of stress. You will then be asked to either watch a video containing a musical piece or ASMR. Finally, you will complete another stress rating questionnaire.

PARTICIPATION:

Your participation is completely voluntary, and you do not have to answer any questions you do not wish to answer. You may skip or not answer any questions and can freely withdraw from participation at any time.

ANONIMITY:

Your participation in this survey is **100% anonymous**. No personal information will be collected and responses from all participants will be analyzed in aggregate.

DURATION:

Your participation in this survey will take no more than 15 minutes.

RISKS:

There are no foreseeable risks associated with participating in this survey.

BENEFITS:

Once the study is complete and prepared in written form, the findings may yield concrete evidence regarding effective coping strategies for reducing stress.

CONTACT:

If you have any questions or concerns, feel free to contact me at:
robert.scott0870@coyote.csusb.edu.

RESULTS:

Results can be viewed at [CSUSB ScholarWorks](#) by searching the study title, "THE UTILIZATION OF MUSIC AND ASMR IN REDUCING STRESS."

CONFIRMATION STATEMENT:

I understand that I must be 18 years of age or older to participate in your study, have read and

understand the consent document and agree to participate in your study.

YES NO

APPENDIX C
DATA CHARTS

DATA CHARTS

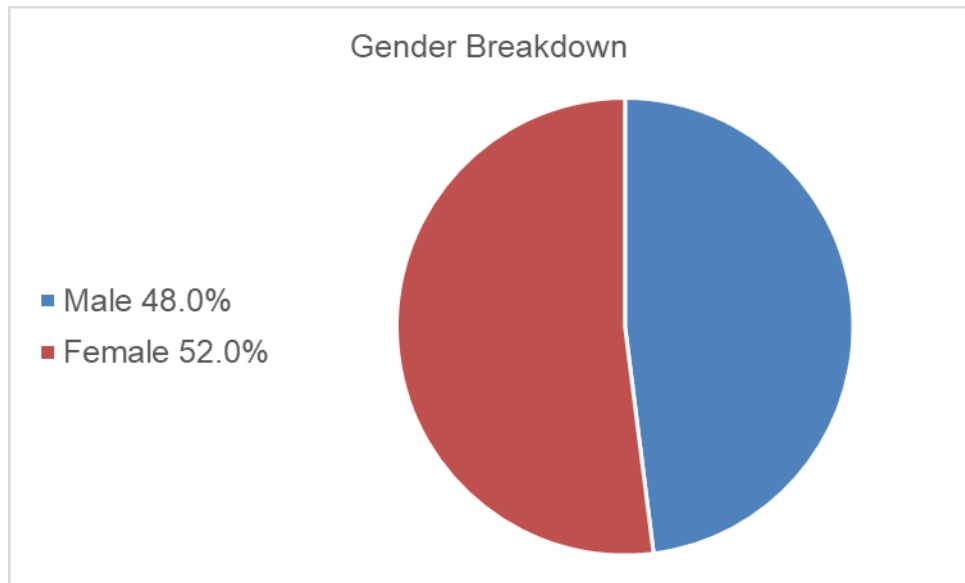


Figure C1. Gender distribution of study participants (N = 50).

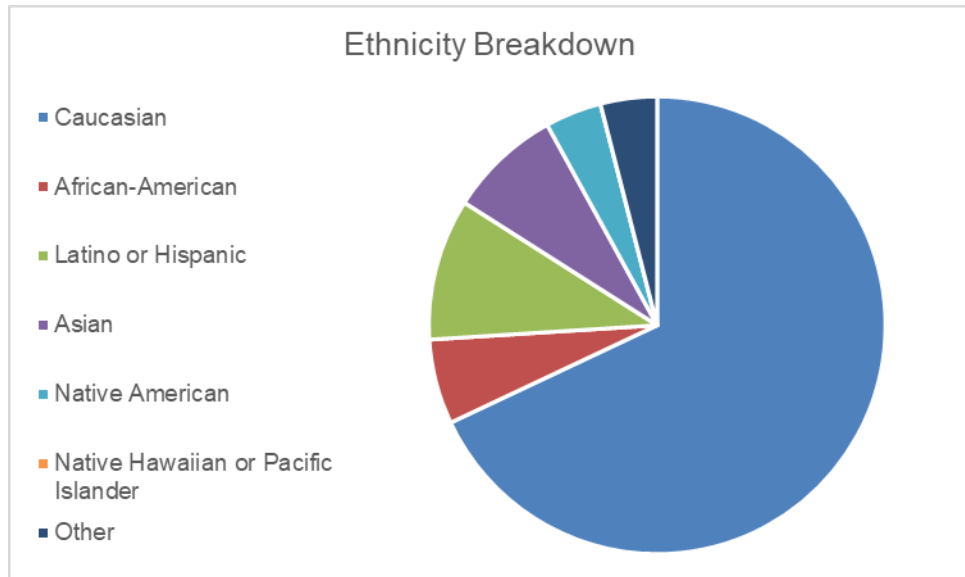


Figure C2. Ethnic distribution of study participants (N = 50).

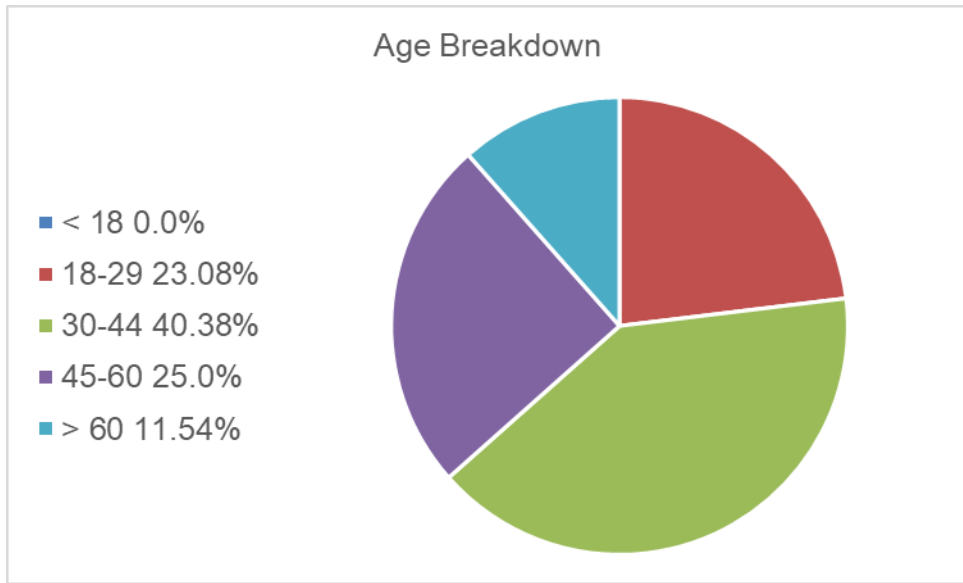


Figure C3. Age distribution of study participants (N = 50).

Table C1. Paired t-test results comparing pre and post test emotion scores for the music group (N = 26).

		Paired Differences						Significance		
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Calm score at pre-test - Calm score at post-test	-.38462	1.55118	.30421	-1.01115	.24192	-1.264	25	.109	.218
Pair 2	Relaxed score at pre-test - Relaxed score at post-test	-.84615	1.43366	.28116	-1.42522	-.26709	-3.009	25	.003	.006
Pair 3	Content score at pre-test - Content score at post-test	-.61538	1.26734	.24855	-1.12727	-.10349	-2.476	25	.010	.020
Pair 4	Comfortable score at pre-test - Comfortable score at post-test	-.57692	.80861	.15858	-.90353	-.25032	-3.638	25	<.001	.001
Pair 5	Tense score at pre-test - Tense score at post-test	.38462	1.06120	.20812	-.04401	.81324	1.848	25	.038	.076
Pair 6	Upset score at pre-test - Upset score at post-test	.15385	1.15559	.22663	-.31291	.62060	.679	25	.252	.503
Pair 7	Jittery score at pre-test - Jittery score at post-test	-.07692	1.49461	.29312	-.68061	.52676	-.262	25	.398	.795
Pair 8	Nervous score at pre-test - Nervous score at post-test	.61538	1.20256	.23584	.12966	1.10111	2.609	25	.008	.015
Pair 9	Anxious score at pre-test - Anxious score at post-test	.65385	1.23101	.24142	.15663	1.15106	2.708	25	.006	.012

a. Please view the following: = Music

Table C2. Paired t-test results comparing pre and post-test emotion scores for the ASMR group (N = 24).

		Paired Differences							Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Calm score at pre-test - Calm score at post-test	.41667	1.01795	.20779	-.01318	.84651	2.005	23	.028	.057
Pair 2	Relaxed score at pre-test - Relaxed score at post-test	.26087	1.68462	.35127	-.46761	.98935	.743	22	.233	.466
Pair 3	Content score at pre-test - Content score at post-test	.21739	1.44463	.30123	-.40731	.84210	.722	22	.239	.478
Pair 4	Comfortable score at pre-test - Comfortable score at post-test	.25000	1.29380	.26410	-.29632	.79632	.947	23	.177	.354
Pair 5	Tense score at pre-test - Tense score at post-test	.08333	1.31601	.26863	-.47237	.63904	.310	23	.380	.759
Pair 6	Upset score at pre-test - Upset score at post-test	.04545	1.39650	.29774	-.57372	.66463	.153	21	.440	.880
Pair 7	Jittery score at pre-test - Jittery score at post-test	-.13636	1.08213	.23071	-.61615	.34342	-.591	21	.280	.561
Pair 8	Nervous score at pre-test - Nervous score at post-test	-.20833	1.10253	.22505	-.67389	.25723	-.926	23	.182	.364
Pair 9	Anxious score at pre-test - Anxious score at post-test	-.17391	.77765	.16215	-.51020	.16237	-1.073	22	.148	.295

a. Please view the following: = ASMR

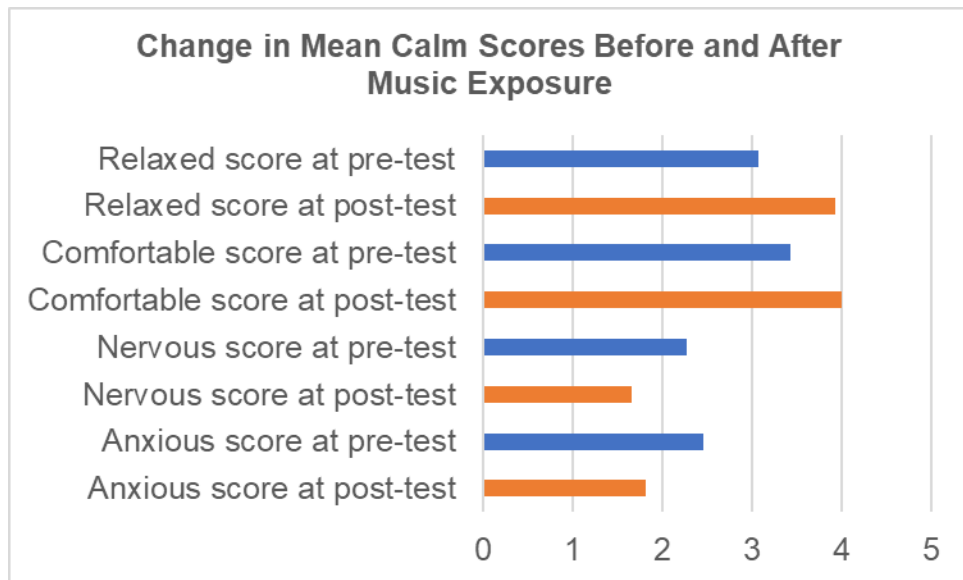


Figure C4. Mean calmness scores before and after exposure to music intervention among study participants (N = 26).

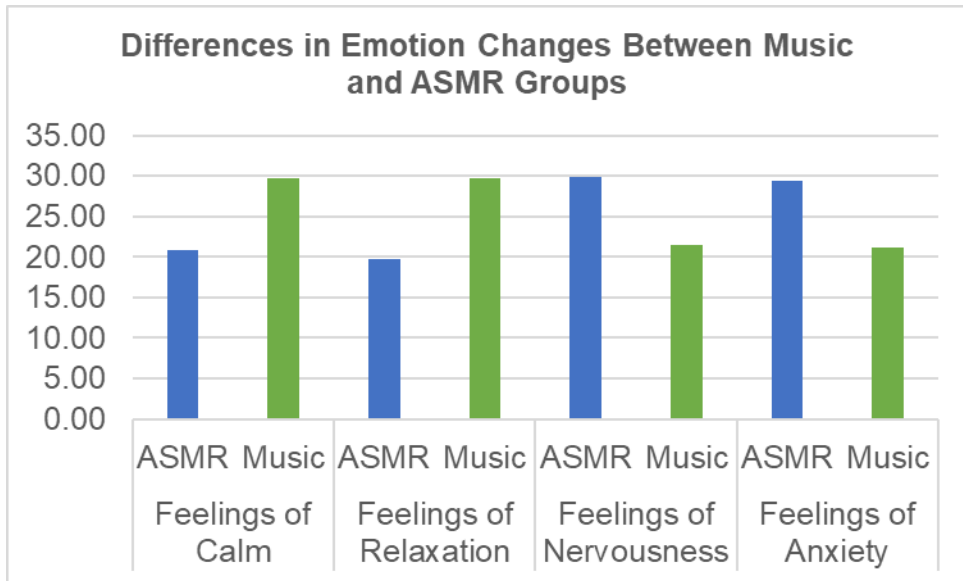


Figure C5. Mean ranks of emotion change scores between music and ASMR groups based on Mann-Whitney U tests. Higher mean ranks indicate greater improvements for that emotion.

APPENDIX D
IRB APPROVAL

IRB APPROVAL

Date: 10-30-2023

IRB #: IRB-FY2023-234

Title: ASMR and Music

Creation Date: 2-8-2023

End Date:

Status: **Approved**

Principal Investigator: Yawen Li

Review Board: Main IRB Designated Reviewers for School of Social Work

Sponsor:

Study History

Submission Type	Initial	Review Type	Exempt	Decision	Exempt
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Key Study Contacts

Member	Robert Scott	Role	Co-Principal Investigator	Contact	robert.scott0870@coyote.csusb.edu
Member	Yawen Li	Role	Principal Investigator	Contact	Yawen.Li@csusb.edu
Member	Yawen Li	Role	Primary Contact	Contact	Yawen.Li@csusb.edu

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