Perceptions of Music Listening as an Intervention with Mindfulness-Based Stress Reduction Techniques

by

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Abstract

Anxiety and depression levels among college students are high and expected to continue rising. The use of mindfulness-based stress reduction, or MBSR, combined with music listening has the potential to decrease the negative symptoms of anxiety and depression among college students. Research indicates using mindfulness meditation and music listening as separate interventions benefits psychological well-being. To date, however, no research could be found that evaluates the utilization and perceived benefits of music listening as an intervention with mindfulness to reduce negative symptoms of anxiety and depression in college students. There is a need for affordable, non-invasive, and easily accessible techniques for the reduction of stress, depression, and anxiety among college students. The aim of the present study is to assess students' utilization and perception of benefits of music listening combined with mindfulness to reduce the negative symptoms of stress, anxiety, and depression. A cross-sectional survey quantitative research design was used for this study. The results of this study contribute to the expanding literature surrounding the benefits of music listening as an intervention with mindfulness meditation and have implications for future research.

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Chapter 1. Introduction and Review of the Literature

According to the Anxiety and Depression Association of America, or ADAA, 18.1% of people living in the United States are affected by anxiety disorders and approximately 50% of people who receive a diagnosis of depression will also be diagnosed with an anxiety disorder (ADAA, 2018). According to Hirschfeld (2001), in a one-year period, around 10-20% of adults visited a primary care physician while experiencing either symptoms of anxiety or depression, and nearly half of those people experienced symptoms of each, comorbidly. College students have even increasingly higher incidences of anxiety and depression than the general adult population. The American Psychological Association reports anxiety and depression are the top two concerns among college students in the United States (American Psychological Association, 2013). Reports show approximately 41% of college students will be diagnosed with anxiety and approximately 36% of students will be diagnosed with depression (American Psychological Association, 2013).

The American College Health Association's, or ACHA, National College Health Assessment, or NCHA, reported in 2018 approximately 60% of college students experienced symptoms of anxiety and depression (ACHA, 2018). Anxiety and depression in college students can be attributed to abnormal sleep patterns, feelings of isolation due to transitioning into a new environment, pressure to succeed, stress of academic performance, and the uncertainty surrounding the transition out of school and into employment or a postsecondary educational setting (Baltaci et al., 2021; LeBlanc & Marques, 2019; Wen et al., 2022). Moreover, the COVID pandemic forced universities

and other academic institutions to close their doors and required classes be taken online, resulting in negative effects on college students' mental health (Chang et al., 2021).

The alarmingly high and rising prevalence of anxiety and depression in college students suggests a growing need for therapeutic interventions to address the negative symptoms of depression and anxiety many college students experience, such as poor academic performance, drug and alcohol abuse, and a higher risk for potential suicidal ideations (Baltaci et al., 2021; Duffy et al., 2019; Kraft et al., 2021). Lynch and colleagues (2018) demonstrated that mindfulness-based coping was an effective strategy for college students when they experience the stressors of college life, such as irregular sleeping habits and increased levels of stress due to academic expectations and responsibilities. Additionally, Carpenter and colleagues (2019) found that mindfulness interventions effectively decreased stress levels and created a sense of acceptance allowed subjects to feel less judgement in stressful situations. Furthermore, Wood (2019) stated that mindfulness is a practice that has become mainstream, and therefore seemingly less taboo than was once thought.

Music listening utilized as an intervention to increase the efficacy of mindfulness is a minimally invasive intervention that has the potential to improve academic success as a byproduct of the reduction in symptoms experienced with anxiety and depression (Chang et al., 2015). Watson (2019) reported approximately 70% of people between the ages of 18 and 34 engaged in music listening every day. Burrai and colleagues (2019) demonstrated the effects of listening to classical music among people living with heart failure and identified it as a viable intervention to reduce the symptoms of anxiety and depression. Additionally, Harney and colleagues (2022) reported a need for interventions

for anxiety that can be self-administered, because only about a fifth of the people who experience anxiety will seek help. In conclusion, music listening as an intervention can be an easily accessible intervention proven to reduce the negative symptoms of both anxiety and depression, while not requiring the assistance of a therapist to lead the intervention strategy (Burrai et al., 2019; Chang et al., 2015; Harney et al., 2022).

Research highlights the benefits of mindfulness-based stress reduction (MBSR) techniques, such as mindfulness meditation, and music listening as individual interventions to mitigate the symptoms of anxiety and depression that many college students experience (Arslan, 2022; Chen et al., 2022; Fallon et al., 2020; Harney et al., 2022; Reyes et al., 2022; Smith et al., 2021). Research regarding the effects of music listening combined with MBSR for the reduction of symptoms of anxiety and depression in college students is scarce at best, and no research could be found in Auburn University's library databases. Research does suggest, however, that music listening in conjunction with mindfulness meditation is a possible intervention to address negative psychological symptoms in diverse populations such as individuals who have had strokes (Baylan et al., 2019; Loo et al., 2020). Additional research, however, is still needed to explore college student's utilization and perception of music listening and MBSR when they experience symptoms stress, depression, and anxiety.

The current study aims to assess college students' utilization and perceptions of MBSR techniques, specifically mindfulness meditation, and music listening when they experience symptoms of stress, depression, and anxiety. The value of this study lies in the exploration of college students' awareness of and experiences with using MBSR techniques combined with music listening when they experience stress, depression, and

anxiety, as well as to provide data that can support the development of an accessible, self-administered intervention that college students can utilize to help reduce the negative symptoms of anxiety and depression without seeking professional counseling services. Research indicates college students are less likely to seek professional help when experiencing symptoms of anxiety and depression, suggesting interventions that do not require an individual to seek professional help are in demand (Baltaci et al., 2021; Farrer et al., 2016). The current research, therefore, was designed as an exploratory study to observe college students' utilization and perceptions of music listening and MBSR when they experience symptoms of stress, depression, and anxiety.

To explore the students' utilization and perception of MBSR techniques, specifically mindfulness meditation, and music listening as an intervention to mitigate the symptoms stress, depression, and anxiety, a cross-sectional survey research design for quantitative descriptive research was created. Participants were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University. Participant inclusion criteria were individuals who were enrolled in at least one college course at the time of the study, at least 19 years of age, and had internet access. After receiving and reviewing a recruitment email, which contained a link to the electronic study survey, all participants self-selected and consented to participate in study. The electronic study survey included a demographic questionnaire and a survey that assessed participants' utilization and perception of MBSR techniques and music listening when they experience symptoms of stress, depression, and anxiety. The information gathered through the current study aims to provide the foundation to justify the use of MBSR techniques with

music listening as an easily accessible intervention for college students experiencing anxiety and depression.

Definition of Terms

The following terms will be discussed in further detail in the following sections.

Anxiety: Anxiety is an emotion that presents itself in the form of tension, worry, and physiological disruptions (American Psychological Association, 2020A).

Depression: The American Psychiatric Association (2013) defines depression as persistent sadness and declination of interest in aspects of life that were once thought of as enjoyable.

Mindfulness: Mindfulness is the capacity of a human to be fully aware of their presence in the current environment, moment, physical state, or mental well-being, while creating feelings of self-acceptance and self-awareness (Arslan, 2022; Feruglio et al., 2020; Finkelstein-Fox et al., 2019; Mindfulness Staff, 2014).

Mindfulness-based stress reduction: Mindfulness-based stress reduction, or MBSR, is a technique used to promote mindfulness by systematically encouraging individuals to bring their attention to the present through stress reduction and self-regulation techniques such as body scanning and deep breathing (Chen et al., 2022; Feruglio et al., 2020; Maddock & Blair, 2021; Klawonn et al., 2019).

Mindfulness meditation: Mindfulness meditation is defined as a MBSR technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person "to slow their racing thoughts, let go, and calm their mind" (Cherry, 2023).

Music listening: Music listening for the purpose of this research is defined as the act of listening to music**.**

Literature Review

Druckenmiller (2022) reports over 40% of college students experience anxiety and depression. These numbers can be attributed to the stress associated with college life, such as academic performance and navigating interpersonal situations, as well as the added stressors created by the COVID 19 pandemic, such as fear of contracting COVID, spreading COVID, and the possibility of death as a result of COVID (Baltaci et al., 2021; LeBlanc & Marques, 2019; Tashiro et al., 2022; Wen et al., 2022; Zhang et al., 2021; Zou et al., 2018). While reports show increasing numbers regarding the prevalence of anxiety and depression, research also suggests many college students are unwilling to seek the professional services and support needed to help them address the negative symptoms of anxiety and depression they experience, due to the perceived stigma associated with seeking psychological services (Baltaci et al., 2021; Farrer et al., 2016). Music listening and MBSR techniques as individual interventions are accessible, self-administered interventions that require little guidance and have been proven to reduce the negative symptoms of anxiety and depression. No studies, however, were found that explore the utilization and perception of music listening and MBSR techniques to reduce the negative symptoms of stress, depression, and anxiety in college students (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014).

Anxiety

According to the American Psychological Association, anxiety is an emotion that presents itself in the form of tension, worry, and physiological disruptions (American Psychological Association, 2020A). Generalized Anxiety Disorder, or GAD, is the most common anxiety disorder and effects nearly seven million people, which is over three percent of the population in the United States (ADAA, 2018). Fear, stress, and anxiety are closely related, and the terms are often used interchangeably (American Psychiatric Association, 2013). The difference between fear and anxiety is that fear is the cluster of emotions felt when in the presence of a stressor, and anxiety is a heightened sense of worry about a stressor that could potentially occur (American Psychiatric Association, 2013). The feelings of worry associated with GAD expend the person's time and energy, while disrupting sleep patterns and can often cause physical symptoms, such as sweating, nausea, and diarrhea (American Psychiatric Association, 2013).

Anxiety disorders are common among college students and are associated with increased stress, poor academic performance, drug and alcohol abuse, and higher risks for potential suicidal ideations (Duffy et al., 2019; Kraft et al., 2021). Duffy and colleagues (2019), in a self-reported study of 610,543 college students, found that suicidal ideations among college students with mood and anxiety disorders rose significantly over the past decade. Duffy and colleagues (2019) suggested that mental health among college students has worsened over time, and poor mental health was indicative of negative outcomes, such as suicidal ideation, non-suicidal self-harm, and suicide attempts. Similarly, Farrer and colleagues (2016) demonstrated that individuals with mental health disorders were more likely to perform lower academically, have a higher prevalence of suicidal

ideations, and their vocational performance had the potential to become impacted by their mental health problems. Farrer and colleagues (2016) aimed to discover specific characteristics of individuals' demographics that may place them at higher risk for GAD. Their study determined students below the age of 26 were more likely to be diagnosed with GAD than those over 26 years of age, and college students exhibited a low amount of interest in finding assistance for their mental health problems (Farrer et al., 2016). These studies indicate a need for college students to have access to interventions to assist them in managing their anxiety symptoms, without having to attend regular counseling sessions (Duffy et al., 2019; Farrer et al., 2016; Kraft et al., 2021). Music listening with MBSR may offer an easily accessible treatment option.

Zou and colleagues (2018) found a strong correlation between mental health issues and events that negatively impact peoples' lives, such as difficulties in interpersonal relationships, economic hardships, and the stress of making major life decisions. Zou and colleagues (2018) stated poor mental health in college students can also be linked to diminished academic performance, as well as difficulty navigating interpersonal skills. In fact, Melnyk and colleagues (2015) stated students with mental health disorders had lower graduation rates than students without mental health disorders. Furthermore, Bowman and colleagues (2019) found students who experience symptoms of anxiety were less likely to remember tasks that they need to complete in the future. Using the Beck Anxiety Inventory, Bowman and colleagues (2019) determined that anxiety negatively affected individuals' memories. Additionally, Hartman and colleagues (2017) conducted a study among 191 undergraduate students to evaluate multiple traits associated with emotional dysregulation to determine if they contributed to test anxiety.

They were able to determine individuals with high levels of emotional dysregulation and test anxiety experienced an impaired ability to focus (Hartman et al., 2017). Finally, Harney and colleagues (2022), suggested a need for easily accessible self-administered interventions that do not require the individual to seek therapeutic services as a possible solution for the near 80% of people with anxiety who do not seek professional help. These research studies, along with others, indicate the need for an easily accessible and user-friendly intervention, such as music listening with mindfulness, to assist individuals experiencing negative symptoms of anxiety and stress (Bowman et al., 2019; Harney et al., 2022; Hartman et al., 2017; Melnyk et al., 2015; Zou et al., 2018).

Depression

The American Psychiatric Association defines depression as persistent sadness and declination of interest in aspects of life that were once thought of as enjoyable (American Psychiatric Association, 2013). Often, the negative symptoms of depression also cause weight loss, irregular sleep patterns, morbid thoughts, and a devalued perception of self-worth and life purpose (American Psychiatric Association, 2013). Nearly seven percent of adults in the U.S. are affected by depression annually, and close to 17% of the population will experience symptoms of depression at some point in their lives (Parekh, 2017). Diagnoses of depression generally occur post-adolescence to early adulthood (Parekh, 2017). Xie and colleagues (2019) stated that one of the most common problems associated with mental health is depression and college-aged individuals were more likely to experience depression than other age groups. Since the onset of COVID-19, the prevalence of depression in college students has risen due to numerous factors such as, isolation measures to prevent the spread of COVID, fear of contracting or

spreading COVID-19, excessive amounts of screen time due to online delivery of classes and employment, and sedentary lifestyles (Tashiro et al., 2022; Zhang et al., 2021).

Homicide, accidents, and suicide are three of the main causes of death in college-aged people (Garlow et al., 2008). Depression is one of the primary risk factors for suicide among college-aged individuals (Garlow et al., 2008). Garlow and colleagues (2008) performed a study to determine if suicidal ideations were directly related to symptoms of depression and found more than 16% of college students in their study reported previous attempts of suicide or self-harm. These are concerning numbers especially when confounded by the added stress associated with the COVID-19 pandemic, which increased the prevalence of both depression and anxiety among college students (El-Monshed et al., 2021; Tang et al., 2020). The rise of mental health disorders and stress during the pandemic led some individuals to doubt their physical and mental well-being and self-worth, which led to associated increased numbers of completed suicides amongst college students (El-Monshed et al., 2021; Tang et al., 2020).

Bowman and colleagues (2019) stated that depression effects people differently than anxiety. They found that depression inhibits a person's ability to separate themselves from their current task, whereas anxiety effects a person's ability to remember the tasks that they should perform (Bowman et al., 2019). Cha and colleagues (2018) studied the relationship between cognitive functioning and high anxiety among people with major depressive disorder. They found not only did anxiety effect cognitive functioning, but higher levels of anxiety were also found among people who were depressed (Cha et al., 2018; Wu et al., 2020). Additionally, through data found in the National College Health Assessment Surveys, researchers determined that depression negatively affected

academic performance (Gregory et al., 2018). When examining the effects of COVID-19 on overall mental health in college students, researchers found an increase in anxiety and depression levels that were associated with decreased quality of life (Wu et al., 2020). Easily accessible, self-administered interventions, such as music with mindfulness, are needed to assist college students who are impacted by negative effects of depression.

Comorbidity of Anxiety and Depression

Research indicates a high prevalence of comorbidity of anxiety and depression (Cha et al., 2018; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014). Salcedo (2018) reported over half of the people who experienced anxiety also experienced co-occurring symptoms of depression. Wu and Fang (2014) further explained over two-thirds of people diagnosed with a depressive disorder also experienced symptoms of anxiety, and many of those people met the criteria to be diagnosed with an anxiety disorder. Additionally, Hirschfeld (2001) demonstrated approximately 20% of adults reported symptoms of anxiety and depression annually, and the two disorders occurred comorbidly in over half of those individuals. Less than desirable outcomes such as, increased chances for relapse, higher risk for suicidal ideations, and longer lasting effects from the illnesses were associated among individuals who experienced anxiety and depression comorbidly (Cha et al., 2018). The rates of comorbidity of depression and anxiety disorders suggests that a treatment capable of reducing the negative symptoms of the two disorders would be preferable to best assist clients and reduce the invasiveness of treatment in their lives (Cha et al., 2018; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014).

Anxiety and Depression in College Students

As for the comorbidity of anxiety and depression in college students, research indicates depression and anxiety are among the highest prevalence of mental health disorders in college students with depression making up 32% and anxiety making up eight percent of mental health disorders (Kraft et al., 2021; Schwartz, 2006). Approximately 75% of people who experience a mental illness have the first onset of symptoms by the age of 25 (Pedrelli et al., 2015). Bitsika and Sharpley (2012) found that one in three Australian university students experienced anxiety and depression comorbidly. The American College Health Association (2018) stated approximately 60% of American college students experienced the symptoms of anxiety and/or depression, but not necessarily comorbidly. As stated previously, sleep disturbances are a common symptom of depression (American Psychiatric Association, 2013). Nyer and colleagues (2013) reported that students who experienced sleep problems as a symptom of their depression were also more likely to experience symptoms of anxiety due to the added stress of an irregular sleep pattern. Sleep disturbances are common among college students and can cause impairments in functioning and poor academic performance (Nayer et al., 2013). Results of self-reports reflected higher levels of anxiety among college students who experienced an impaired ability to sleep with depressive symptoms (Nayer et al., 2013). The impact of these findings suggest anxiety and depression occurring comorbidly in college students have the potential to negatively impact all aspects of their lives due to the increased stress college students face (American Psychiatric Association, 2013; Nayer et al., 2013).

Anxiety and depression in college students can be attributed to abnormal sleep patterns, feelings of isolation due to transitioning into a new environment, and stress caused by demands of academic performance (Baltaci et al., 2021; Duffy et al., 2019; Kraft et al., 2021; LeBlanc & Marques, 2019). This indicates college lifestyles can cultivate stress, which is symptomatic of both anxiety and depression (American Psychiatric Association, 2013; LeBlanc & Marques, 2019). As indicated by the research reviewed, symptoms related to anxiety and depression, such as stress, are associated with poor academic performance, which leads to amplification of other negative symptoms of anxiety and depression, such as suicidal ideations, morbid thoughts, devalued self-worth, and irregular sleep patterns (American Psychiatric Association, 2013; Bitsika & Sharpley, 2012; El-Monshed et al., 2021; Nayer et al., 2013; NCHA, 2018; Pedrelli et al., 2015; Tang et al., 2020). Despite having higher incidences of depression and anxiety leading to symptoms that negatively impact their success in college and beyond, Farrer and colleagues (2016) reported college students exhibited low interest in finding assistance for their mental health problems (Farrer et al., 2016). Taken together, the research in these areas highlight the pressing need for a treatment to promote a holistic reduction in symptoms that can be effective in treating both anxiety and depression simultaneously. Music listening with MBSR techniques, such as mindfulness meditation, is a promising treatment for college students hesitant to seek treatment as an easily accessible and noninvasive treatment and additional research is needed to support the efficacy of this treatment.

Compounding the numerous stressors of college life that can amplify the negative symptoms of anxiety and depression is the COVID-19 pandemic, which has been found

to exacerbate the symptoms of both anxiety and depression in college students (American Psychiatric Association, 2013; Fancourt et al., 2020; Harney et al., 2022; Hayat et al., 2022; LeBlanc & Marques, 2019; Zhang et al., 2021). In a recent study, Chang and colleagues (2021) found increasing numbers of confirmed COVID-19 cases contributed to the negative symptoms of anxiety and depression in college students. Additionally, Cheng and colleagues (2021) found a 52% prevalence of anxiety symptoms and 69% prevalence of depressive symptoms in American college students, which ranked the highest out of the countries studied. In general, the increase of negative symptoms of both anxiety and depression in college students can partially be attributed to the isolation measures took to decrease the spread of COVID-19, as well as the lack of knowledge of treatments for COVID-19 (Cheng et al., 2021; El-Monshed et al., 2021; Saravanan et al., 2020; Singh et al., 2020; Wu et al., 2020). Furthermore, Lee and colleagues (2021) stated approximately 85% of college students experienced anxiety, but only 21% sought treatment from a licensed counselor, citing the lack of access to treatments as a deterrent to receiving services. These studies indicate that college students are experiencing an increase in symptoms of stress, depression, and anxiety and are in need of an accessible treatment that can be completed outside of the counseling environment.

Mindfulness

Mindfulness is the capacity of a human to be fully aware of their presence in the current environment, moment, physical state, or mental well-being, while creating feelings of self-acceptance and self-awareness (Arslan, 2022; Feruglio et al., 2020; Finkelstein-Fox et al., 2019; Mindfulness Staff, 2014). As a method of treatment, mindfulness is comprised of exercises that can be used by a person to bring themselves

back to physical and mental equilibrium, while focusing on the cognitive processes that typically facilitate negative cognitions (Rockwell, 2019). Mindfulness routines decrease levels of stress by creating an open-minded, nonjudgmental attitude and can be readily implemented during stressful situations to reduce stress and lower one's anxiety when faced with daily stressors (Carpenter et al., 2019; Finkelstein-Fox et al., 2019; Mindfulness Staff, 2014; Rockwell, 2019).

Specifically, mindfulness-based stress reduction, or MBSR, techniques are used to promote mindfulness by systematically encouraging individuals to bring their attention to the present through stress reduction and self-regulation techniques such as body scanning and deep breathing (Chen et al., 2022; Feruglio et al., 2020; Maddock & Blair, 2021; Klawonn et al., 2019). Mindfulness-based stress reduction techniques have been shown to reduce symptoms of anxiety and depression in individuals with diverse academic backgrounds, such as adolescents in secondary school, undergraduate college students, nursing students, and medical students (Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Lynch et al., 2018; Parcover et al., 2018; Sampath et al., 2019; Song & Lindquist, 2015).

The ease of access to MBSR and the ability to perform mindfulness routines in any situation assists in promoting the overall effectiveness of MBSR as an intervention to reduce the negative symptoms of stress, depression, and anxiety among college students (Song & Lindquist, 2015). Song and Lindquist (2015) studied the effects of MBSR techniques in reducing stress among nursing students in Korea and found MBSR techniques successfully promoted the reduction of overall anxiety, depression, and stress levels. Sampath and colleagues (2019) studied mindfulness as a trait among 150 college

students to determine if levels of mindfulness were predictors of levels of stress, depression, and anxiety. They found that higher levels of mindfulness were associated with lower levels of depression (rho=-0.42, p=0.000), anxiety (rho=-0.33, p=0.001), and stress (rho=-0.26, p=0.10) (Sampath et al., 2019).

Additionally, Lynch and colleagues (2018) tested mindfulness-based coping among university students throughout an eight-week program aimed at improving various aspects of university life such as, academic performance, relationships, and mental and physical health. Their study reinforced the efficacy of MBSR techniques in significantly reducing the unique stressors associated with university life and culture, as well as lowering levels of stress and anxiety in their pilot study, and they called for additional research in this area (Lynch et al., 2018). Similarly, other researchers have noted the benefits of engaging in MBSR techniques longitudinally for college students with anxiety and depression, such as decreased perceptions of stress and increased perceptions of life satisfaction (Barbosa et al., 2013; Chlebak et al., 2013; Klawonn, 2019; Lynch et al., 2018; Maddock & Blair, 2021). This research indicates that MBSR techniques are effective interventions for promoting better mental health in college students (Barbosa et al., 2013; Chlebak et al., 2013; Klawonn, 2019; Lynch et al., 2018; Maddock & Blair, 2021).

Since the start of the COVID-19 pandemic, researchers began to explore the benefits of MBSR techniques as a coping mechanism to assist with alleviating the added stress associated with the pandemic (Arslan, 2022). Mindfulness-based stress reduction techniques have also been noted to help individuals cope with the fear and stress associated with the pandemic and promoted a higher overall sense of well-being (Arslan,

2022; Hong et al., 2020; Saricali et al., 2020). Research indicated mindfulness was an effective coping mechanism for reducing the obsession with death in young adults during the pandemic (Arslan, 2022; Conversano et al., 2020). While research about the effects of MBSR techniques during the pandemic is limited, it suggests promising results of MBSR techniques as effective coping mechanisms for the reduction of symptoms of stress, depression, and anxiety in college students generally (Arslan, 2022; Conversano et al., 2020; Saricali et al., 2020).

Mindfulness-based stress reduction techniques have been described as innovative ways to reduce the symptoms of anxiety and depression in postsecondary students (Felver et al., 2018). Further, it has been suggested the implementation of MBSR techniques should be a continual part of practitioners' treatment plans when working with college students who experience anxiety and depression (Felver et al., 2018). Halladay and colleagues (2018) indicated postsecondary students typically only sought appropriate means of treatment for mental illness that were easily accessible. They suggested that MBSR strategies have the potential to successfully reduce the negative symptoms of anxiety and depression (Halladay et al., 2018).

Further, the research on mindfulness indicates MBSR techniques are efficient interventions in reducing the symptoms of anxiety and depression among college students in both individual and group counseling settings (Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Lynch et al., 2018; Maddock & Blair, 2021; Parcover et al., 2018; Sampath et al., 2019; Song & Lindquist, 2015). Qualitative research showed MBSR techniques effectively produced feelings of calmness within individuals and when applied in group settings (Hjeltnes et al., 2015). Participants

experienced reduced feelings of negativity, and MBSR techniques promoted an interpersonal bond among participants that assisted in normalizing participants' anxiety and depression (Hjeltnes et al., 2015). Mindfulness can be used as a technique in group settings as a short-term intervention by affording practitioners a method to provide psychoeducation on MBSR strategies with larger numbers of people than in a traditional one-on-one counseling setting (Parcover et al., 2017; Reyes et al., 2022). Additionally, when implemented in group settings, MBSR techniques increase self-awareness while promoting increased positive well-being by reducing the symptoms of anxiety and depression (Parcover et al., 2017; Reyes et al., 2022).

One MBSR technique is mindfulness meditation. Mindfulness meditation is defined as a MBSR technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person "to slow their racing thoughts, let go, and calm their mind" (Cherry, 2023). Research indicates that mindfulness meditation is beneficial in reducing a person's stress, improving quality of sleep, lowering heart rate, and improving overall immunity (American Psychological Association, 2019; Kang et al., 2009). In a study conducted by Kang and colleagues (2009), 21 college students attended mindfulness meditation sessions across eight weeks, during which, their stress levels were monitored, and they completed pre- and post-tests to measure anxiety and depression levels. Their results were compared with a control group of students (n=20), who did not receive the mindfulness meditation intervention (Kang et al., 2009). Results of this study found mindfulness meditation was associated with lowered levels of stress, depression, and anxiety (Kang et al., 2009). Another study conducted by Shearer and colleagues (2016) confirmed that mindfulness meditation effectively reduced college

students' stress and anxiety levels. Over a four-week period, participants (n=27) engaged in mindfulness meditation and periodically assessed their stress, depression, and anxiety levels (Shearer et al., 2016). The results of this study indicated college students report lower levels of stress, depression, and anxiety on average when compared with a control group (n=20) (Shearer et al., 2016). Overall, research indicates MBSR techniques, specifically mindfulness meditation, are an easily accessible intervention that can reduce symptoms of stress, depression, and anxiety (American Psychological Association, 2019; Cherry, 2023; Kang et al., 2009; Shearer et al., 2016).

The ease of access and convenience of MBSR techniques, such as mindfulness meditation, allow for an effective treatment for stress, depression, and anxiety that a person can feel comfortable doing in most situations due to the noninvasive nature of the intervention (Halladay et al., 2018). Overall, MBSR techniques provide students with a research-based intervention for anxiety and depression that is typically less intrusive than other traditional modes of therapy (American Psychological Association, 2019; Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Kang et al., 2009; Lynch et al., 2018; Parcover et al., 2018; Sampath et al., 2019; Shearer et al., 2016; Song & Lindquist, 2015).

Music Listening as an Intervention

Music listening for the purpose of this research can be defined as the act of listening to music. Music listening has the potential to be combined with MBRS techniques, such as mindfulness meditation, to more holistically address the negative symptoms of stress, depression, and anxiety college students experience. Music listening has been used as an intervention to address symptoms of stress affecting academic

performance and the stress levels in medical patients, as well as improve overall physiology and psychological health (American College of Cardiology, 2018; Deshkar et al., 2015; Han et al., 2010; Jiang et al., 2016; Linnemann et al., 2016; Salehi et al., 2016; Thoma et al., 2014). Furthermore, music listening can be described as a method of treatment that does not significantly interfere with the normal routines of the patient's life, is affordable, suitable for most situations, and has few negative side effects (Chang et al., 2015).

Music can have varied uses for both the regulation of emotions and cognitions (Getz et al., 2012). Getz and colleagues (2012) determined that the type of music a person listened to was dependent upon the intended use for the music rather than the genre of music. For example, uses of music, as described by Getz and colleagues (2012), were for the governing of emotions, promoting positive improvement in cognitions, or occupying the silence in quiet situations that often require intense thought processing. Overall, the research suggested that the type of music being used may not be as important as the emotional connection the individual has with the particular type of music (Getz et al., 2012).

There is substantial research demonstrating the positive effect of music listening for the reduction of stress among cardiology patients, dental patients, expecting mothers, and ventilated patients (American College of Cardiology, 2018; Chang et al., 2015; Han et al., 2010; Thoma et al., 2014). Together this research proves that music listening, as a mindfulness technique, is an effective means to reducing levels of stress during highly demanding situations for diverse individuals (American College of Cardiology, 2018; Chang et al., 2015; Han et al., 2010; Thoma et al., 2014). The American College of

Cardiology (2018) stated that listening to music while performing a cardiac stress test increased a person's stamina and caused the workout to be perceived as briefer in length of time. Waiting at a doctor's office is an additional factor that evokes anxiety, and Thoma and colleagues (2014) found dental patients who listened to music while waiting for their treatment reported lower levels of stress than those who chose to wait in silence. Pregnancy is often associated with an array of anxieties because of the many future unknowns and is an experience that will have a lifelong effect on the mother (Chang et al., 2015). Chang and colleagues (2015) demonstrated the effects of music listening on the psychosocial stress during pregnancy by prescribing expectant mothers with 30-minutes of music listening per day over the span of two weeks. This study observed 236 pregnant women with an experimental group (n=116) and a control group (n=120) (Chang et al., 2015). The researchers found the addition of music listening yielded significant results on the Pregnancy Stress Rating Scale ($F(1,294)=6.01$, ($p=0.02$)) and women who longitudinally listened to music reported lower levels of stress when compared with the control group (Chang et al., 2015).

Additionally, in China, it was found patients who are mechanically ventilated revealed lower levels of physiological stress when exposed to music listening (Han et al., 2010). Han and colleagues (2010) studied the effects of stress levels among 137 patients who were ventilated when using music as an intervention to reduce physiological stress response. Their study confirmed that music as an intervention for patients receiving mechanical ventilation significantly lowered the physiological stress ($p=0.048$) (Han et al., 2010). The impact of music listening on the levels of stress experienced by individuals in medical settings suggests that music listening is an appropriate way of

managing stress levels in situations that provoke feelings of anxiety (American College of Cardiology, 2018; Chang et al., 2015; Han et al., 2010; Thoma et al., 2014).

Music as an intervention in the classroom to improve performance during academic testing is an area in which there is minimal research. However, Linnemann and colleagues (2016) found not only does music reduce stress, but also music listening while other people were present amplified the reduction of stress. This suggests that a group environment, such as a testing setting, would serve as an ideal situation to facilitate increased positive results from music listening interventions when comparing group and individual intervention settings (Linnemann et al., 2016). Deshkar and colleagues (2015) found the use of Indian classical music as an intervention during testing reduced stress levels, consequently improving academic performance. It is also identified students are open and receptive to music listening as an intervention in the classroom during academic assessments, because of the subtlety and ease of the intervention (Deshkar et al., 2015). The lack of literature surrounding the use of music listening in postsecondary educational testing environment suggests a possible gap in research that remains to be addressed.

Overall, research on music listening suggests individuals in a variety of highly stressful situations and life experiences benefit from a music listening routine (American College of Cardiology, 2018; Chang et al., 2015; Deshkar et al., 2015; Getz et al., 2012; Han et al., 2010; Jiang et al., 2016; Linnemann et al., 2016; Salehi et al., 2016; Thoma et al. 2014). Research indicating amplified benefits of music listening in group settings may also indicate the possibility of improvements in academic performance. The benefits of music listening as an intervention, especially when combined with MBSR techniques, has the potential to holistically reduce the symptoms of stress, depression, and anxiety many

college students face and provide college students with an easily accessible treatment that can be completed without having to seek formal treatment. Research on the college student's utilization and perception of music listening and MSRB techniques is limited, however, indicating the need for additional research to be conducted on the topic.

Mindfulness-Based Stress Reduction with Music Listening

There are very few studies available that explore music listening in conjunction with MBSR techniques, such as mindfulness meditation, as an intervention for the stress, depression, and anxiety many college students experience (Baylan et al., 2019; Loo et al., 2020). Loo and colleagues (2020) found music listening could be used with mindfulness to alter mindfulness attentional skills to promote an individual's overall well-being. Further, Baylan and colleagues (2019) found music listening with mindfulness as a viable intervention for promoting psychological well-being in individuals who were recovering from strokes. Overall, research about the use and perceptions of music listening as an intervention with mindfulness is limited, but the available research suggests the combined use of music listening and mindfulness has the potential to promote psychological well-being (Baylan et al., 2019; Loo et al., 2020). Research, however, does not exist regarding the impact of music listening with MBSR techniques as an intervention to mitigate the negative symptoms of stress, depression, and anxiety many college students experience indicating a need for empirical evidence related to this topic.

Significance of the Study

An easily accessible and noninvasive intervention that has the potential to decrease the negative symptoms of stress, depression, and anxiety many college students experience is the use of music listening combined with MBSR techniques, such as

mindfulness meditation. As indicated in this literature review, stress, depression, and anxiety are common issues that college-aged students face due to several factors, such as academic performance demands and navigating new social interactions (ACHA, 2018; Bitsika & Sharpley, 2012; Duffy et al., 2019; Kraft et al., 2021; Zou et al., 2018). Symptoms of stress, depression, and anxiety can negatively impact college students by causing sleep disturbances, increased stress levels, and suicidal ideations, which negatively impact their overall academic performance and quality of life (Cha et al., 2018; Duffy et al., 2019; Kraft et al., 2021). Additionally, since the start of the COVID-19 pandemic, researchers have seen an increase in stress, depression, and anxiety in college students due to the added stressors caused by the high number of infections and death rates causing fear, worry, and feelings of isolation (Hayat et al., 2022; Lee et al., 2021; Tashiro et al., 2022; Zhang et al., 2021).

Research indicates many college students who experienced symptoms of stress, depression, and anxiety were hesitant to seek treatment, often citing the lack of access to treatment as a reason for not seeking professional counseling services (Baltaci et al., 2021; Farrer et al., 2016). Despite college students' hesitancy to seek treatment, a number of treatments, such as MBSR and music listening, have been identified as effective in reducing symptoms of anxiety and depression (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014). Specifically, MBSR techniques, such as mindfulness meditation, have been shown to reduce symptoms of stress, depression, and

anxiety in individuals with diverse academic backgrounds, such as adolescents in secondary school, undergraduate college students, nursing students, and medical students (Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Lynch et al., 2018; Parcover et al., 2018; Sampath et al., 2019; Song & Lindquist, 2015). Additionally, music listening has been used an intervention to address symptoms of stress effecting academic performance and the stress levels in medical patients, as well as improve overall physiology and psychological health (American College of Cardiology, 2018; Deshkar et al., 2015; Han et al., 2010; Jiang et al., 2016; Linnemann et al., 2016; Salehi et al., 2016; Thoma et al., 2014).

Research indicates both MBSR techniques and music listening are effective interventions for the reduction of stress associated both anxiety and depression (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014). There is no literature, however, exploring college students' utilization and perception of the two interventions in conjunction with one another as a holistic intervention to address stress and other symptoms of anxiety and depression. The current study intends to investigate college students' utilization and perception of MBSR techniques, specifically mindfulness meditation, and music listening when they experience symptoms of stress, depression, and anxiety. The aim of this study is to provide quantitative data to assist in further supporting the justification of utilizing MBSR techniques, specifically

mindfulness meditation, and music listening as an intervention for better, more easily accessible, and more holistic mode of treatment for stress, depression, and anxiety.

Hypotheses

The following hypotheses were created based on the review of the current literature and provide the foundation upon which this study's research questions were built.

H^0: College students do not utilize MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety.

H^1: College students do utilize MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety.

H^0: College students do not utilize music listening to address symptoms of stress, depression, and anxiety.

H^2: College students do utilize music listening to address symptoms of stress, depression, and anxiety.

H^0: College students do not utilize music listening as an intervention with mindfulness meditation to address symptoms of stress, depression, and anxiety.

H^3: College students do utilize music listening as an intervention with mindfulness meditation to address symptoms of stress, depression, and anxiety.

H^0: College students do not perceive MBSR techniques (e.g., mindfulness meditation) to be beneficial in addressing symptoms of stress, depression, and anxiety.

H^4: College students do perceive MBSR techniques (e.g., mindfulness meditation) to be beneficial in addressing symptoms of stress, depression, and anxiety.

H^0: College students do not perceive music listening to be beneficial in addressing symptoms of stress, depression, and anxiety.

H^5: College students do perceive music listening to be beneficial in addressing symptoms of stress, depression, and anxiety.

H^0: College students do not perceive music listening as an intervention with mindfulness meditation to be beneficial in addressing symptoms of stress, depression, and anxiety.

H^6: College students do perceive music listening as an intervention with mindfulness meditation to be beneficial in addressing symptoms of stress, depression, and anxiety.

Summary

The American Psychological Association reports anxiety and depression are the top two mental health concerns among college students in the United States (American Psychological Association, 2013). Reports show approximately 41% of college students will be diagnosed with anxiety and approximately 36% of students will be diagnosed with depression (American Psychological Association, 2013). Regarding the comorbidity of anxiety and depression in college students, research indicates depression and anxiety are among the highest prevalence of mental health disorders in college students with depression making up 32% and anxiety making up eight percent of mental health disorders (Kraft et al., 2021; Schwartz, 2006). Approximately 75% of people who experience a mental illness have the first onset of symptoms by the age of 25 (Pedrelli et al., 2015).

Research indicated the benefits of engaging in MBSR techniques, such as mindfulness meditation, for college students with anxiety and depression, such as decreased perceptions of stress and increased perceptions of life satisfaction (Barbosa et al., 2013; Chlebak et al., 2013; Klawonn, 2019; Lynch et al., 2018; Maddock & Blair, 2021). Music listening has been used as an intervention to address symptoms of stress affecting academic performance and the stress levels in medical patients, as well as improve overall physiology and psychological health (American College of Cardiology, 2018; Deshkar et al., 2015; Han et al., 2010; Jiang et al., 2016; Linnemann et al., 2016; Salehi et al., 2016; Thoma et al., 2014). Research indicates many college students who experienced symptoms of stress, depression, and anxiety were hesitant to seek treatment, often citing the lack of access to treatment as a reason for not seeking professional counseling services (Baltaci et al., 2021; Farrer et al., 2016).

Mindfulness-based stress reduction techniques combined with music listening has the potential to be an accessible, self-administered intervention that can assist college students in alleviating their symptoms of stress, depression, and anxiety. To date, however, no research could be found that evaluates college students' experience with these conditions and their utilization of MBSR techniques and music listening when they experience symptoms. The current study intended to investigate college students' utilization and perception of MBSR techniques, specifically mindfulness meditation, and music listening when they experience symptoms of stress, depression, and anxiety. The aim of the current study was to provide quantitative data to assist in further supporting the justification of utilizing MBSR techniques, such as mindfulness meditation, and music listening as an intervention for better, more easily accessible mode of treatment for

stress, depression, and anxiety that has the capabilities to treat each disorder effectively and simultaneously.

Chapter II describes the quantitative research design and research questions for the current study. Additionally, the chapter provides information about participant characteristics and recruitment methods, the data collection method, the instruments for data collection, and the theoretical basis for the research methodology.

Chapter II. Methods

As previously stated, many college students experience the negative symptoms of stress, depression, and anxiety (Cha et al., 2018; Druckenmiller, 2022; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014). Music listening and MBSR techniques, such as mindfulness meditation, as individual interventions are accessible, self-administered interventions requiring little guidance and have been proven to reduce the negative symptoms of stress, depression, and anxiety (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014). The current study intends to investigate college students' utilization and perception of MBSR techniques, specifically mindfulness meditation, and music listening when they experience symptoms of stress, depression, and anxiety. The aim of the current study is to provide quantitative data to assist in further supporting the justification of utilizing MBSR techniques and music listening as an intervention for better, more easily accessible mode of treatment for each disorder effectively and simultaneously. To explore students' utilization and perception of music listening and MSBR techniques, specifically mindfulness meditation, to address symptoms of stress, depression, and anxiety, the following research questions were empirically addressed using a cross-sectional survey research design:

1. To what extent are college students utilizing MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety?

2. To what extent are college students utilizing music listening to address symptoms of stress, depression, and anxiety?
3. To what extent are college students utilizing music listening combined with MBSR techniques to address symptoms of stress, depression, and anxiety?
4. To what extent do college students perceive MBSR techniques (e.g., mindfulness meditation) to be beneficial in addressing symptoms of stress, depression, and anxiety?
5. To what extent do college students perceive music listening to be beneficial in addressing symptoms of stress, depression, and anxiety?
6. To what extent do college students perceive music listening combined with MBSR techniques to be beneficial address symptoms of stress, depression, and anxiety?

Research Design

The research methodology employed in this study was a cross-sectional survey research design for quantitative research aimed at exploring college students' utilization and perception of music listening and MBSR techniques, specifically mindlessness meditation, to address their symptoms of stress, depression, and anxiety. A cross-sectional research design was selected, as it allowed the researcher to examine multiple variables, without requiring the manipulation of any of the variables examined (Levin, 2006). Additionally, a cross-sectional research design was employed as it is commonly used to estimate the associations between variables, determine the current characteristics in a population at a certain point in time, and establish preliminary evidence for causal relationships (Levin, 2006). Specifically, the cross-sectional survey research design

allowed the examination of college students' current utilization and perception of MBSR techniques (e.g., mindfulness meditation) and music listening to address symptoms of stress, depression, and anxiety.

Participants were college students recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University, creating a sample of convenience. The recruitment email (see Appendix A) was sent to 16 department personnel who then distributed it to their students to maintain the anonymity of participants. Upon receiving the recruitment email, students had the opportunity to self-select to participate in the study. Data collection occurred using an online survey, hosted on Qualtrics, consisting of a demographic survey and the study survey. The study survey aimed to assess participants' utilization and perception of MBSR techniques (e.g., mindfulness meditation) and music listening to address their symptoms of stress, depression, and anxiety (see Appendix B). Qualtrics was chosen as the platform for data collection as it is designed to securely store collected data. The online survey format was selected to provide participants instant access to the survey after they consented to participate and allowed for greater dissemination of the survey, resulting in more diversity amongst participants (Jones et al., 2013; Ponto, 2015).

Participant Characteristics

Auburn University graduate and undergraduate students were eligible to participate in the study if they were at least 19 years old, enrolled in at least one course at the time of the study, and had access to the internet. Participants self-selected to participate in the study based on their own identification of meeting the eligibility criteria listed on the recruitment email and information letter. Eligible participants assisted in

answering the research questions presented earlier in this chapter by providing quantitative data used to examine college students' utilization and perception of MBSR techniques, such as mindfulness meditation, and music listening to address their symptoms of stress, depression, and anxiety.

Sampling Procedures

Participant recruitment occurred between August 28, 2023 through October 11, 2023. Participant were recruited from students taking classes the Special Education, Rehabilitation, and Counseling Department at Auburn University. Sixteen faculty members from this department were contacted via email and provided with the study's recruitment email to be disseminated to students (see Appendix A). Faculty members agreeing to distribute the recruitment email shared it with their students. The recruitment email consisted of information related to participant eligibility, key elements of the study, a link to the survey and the researcher's contact information. The link directed students interested in participating in the study to an electronic survey, hosted by Qualtrics, which contained the information letter, a demographic questionnaire, and the study survey.

Since participants consented to participate in the study based on their own identification of meeting eligibility criteria, a self-selection sampling technique was utilized in the study (Lundqvist et al., 2018; Lundqvist et al., 2019). Prior to beginning the study's survey, all interested individuals were required to consent to participation, per the Auburn University Institutional Review Board requirements. The information letter was provided to participants on the first page of the study's survey and individuals were required to consent to participate in order to gain access to the survey (see Appendix B). Aligning with IRB requirements and ethical, best practices in research, the information

letter contained an overview of the study's purpose, participant responsibilities, and risks, benefits, and costs associated with participation in the study, as well as the researcher's contact information (Robinson III & Curry, 2008; Skarbek et al., 2006). The information letter also emphasized the voluntary nature and anonymity of participation in the study (Robinson III & Curry, 2008; Skarbek et al., 2006). The information letter was also presented in a downloadable PDF format to allow participants to retain a copy for their own records.

Sample Size and Power

A sample size of 11 participants was determined using G*power to achieve a significance level of p=0.05. According to G*Power, the power level for a one-tailed correlation, assuming the variables were ordinal, was expected to be 0.95, and yield a strong correlation of 0.8. It was also assumed that all data sets were independent of each other. Finally, it was assumed that there were no significant outliers in the data and there would be a normal distribution of scores.

Forty individuals consented to participate in the study and a total of 40 individuals completed the survey. Six incomplete data sets were excluded from the survey results. Two additional data sets were excluded due to the participants' ages. Ultimately, 32 data sets were used for analysis and interpretation. The power of the current study is .99, as calculated using G*Power, based on 32 participants using a one-tailed, bivariate correlation.

Measures

Prior to beginning the study survey, participants were presented with the information letter and were required to provide consent prior to starting the survey (see

Appendix B). Participants choosing to not complete the study after reading the information letter and understanding the purpose of the study and their rights and responsibilities as participants, selected the option to not provide consent and then were directed to the end of the study. Participants consenting to participate in the study, were directed to the demographic questionnaire, prior to completing the study's survey. The demographic questionnaire was utilized to gather information regarding participant characteristics including the university they attend, academic class standing, whether they are in their dissertation phase of their program, whether they are a full or part time student, gender, race/ethnicity, and age.

Participants also completed a survey aimed at examining their utilization and perception of music listening and MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety. This survey was created by the researcher, with approval by the researcher's academic advisor. The survey was divided into four sections. Section one explored participants' utilization of mindfulness-based stress reduction techniques. Section two examined participants' utilization of mindfulness meditation, as well as their perceived benefits of mindfulness meditation in reducing symptoms of stress, depression, and anxiety. Section three explored participants' utilization of music listening, as well as their perceived benefits of music listening in addressing symptoms of stress, depression, and anxiety. Finally, section four examined participants' utilization of music listening combined with mindfulness meditation, as well as their perceived benefits of music listening combined with mindfulness meditation in reducing symptoms of stress, depression, and anxiety. After participants completed the

study survey, they were provided a PDF document of a flyer containing mental health resources and tools (see Appendix C).

In each section of the survey, participants were asked if they utilized a given intervention, (e.g., mindfulness-based stress reduction, mindfulness meditation, music listening, or music listening combined with mindfulness meditation). If a participant answered yes, they were then directed to Likert-scale questions assessing their perception of the effectiveness of the given intervention in relation to reducing symptoms of stress, anxiety, and depression. If a participant indicated they did not utilize an intervention (e.g., mindfulness-based stress reduction, mindfulness meditation, music listening, or music listening combined with mindfulness meditation), skip logic was utilized and the participant was directed to the next section of the survey and was not presented with the Likert-scale questions for the intervention.

The content validity of the survey was determined by three Ph.D. level raters who evaluated the survey to determine the relevance of each question to this study's research questions. Content validity is the subjective opinion of experts regarding the extent to which items in the survey are representative or relevant to the constructs the survey is designed to assess (Hong et al., 2019). Because the study survey was created by the researcher and did not contain pre-established psychometric values, content validity allowed the researcher to determine the relevance of the instrument to the constructs being studied.

The raters were asked to rate the relevance of each survey item on a scale from one through three where one represented not relevant, two represented somewhat relevant, and three represented relevant. For the purposes of this study, all survey items

were required to receive a score of at least two to achieve content validity. All items on the survey receive a score of 2.33 or higher, indicating content validity within the survey. The following sections discuss each section of the study survey in more depth along with the content validity of each survey item.

Survey Section 1: Utilization of MSBR Techniques

Students' utilization of MBSR techniques were measured utilizing items 10 and 11 on the survey. Item 10 assessed if students utilized MBSR techniques. If participants selected "yes" to item 10 they were directed to item 11, which examined specific MBSR techniques the participants utilized using a free response question. If participants selected "no" for item 10, skip logic directed them to section two of the survey. Item 10 received a content validity rating of three. Item 11 received a content validity rating of three.

Survey Section 2: Utilization and Perception of Mindfulness Meditation

Students' utilization and perception of mindfulness meditation to address symptoms stress, depression, and anxiety were measured by items 12 through 21 on the survey. Item 12 asked participants if they practiced mindfulness meditation. If participants selected "no" on question 12, skip logic directed them to question 16. If participants selected "yes" on question 12, they were directed to questions 13 through 21. Item 12 received a content validity rating of 2.67.

Item 13 measured the frequency each week students practice mindfulness meditation and received a content validity rating of 2.67. Item 14 measured the daily frequency of which students practice mindfulness meditation and received a content validity rating of 2.67. Item 15 examined the average length of each mindfulness meditation session and received a content validity rating of 2.33.

Item 16 asked students if they practiced mindfulness meditation when experiencing stress and received a content validity rating of three. Item 17 examined students' perceived benefits of mindfulness meditation when experiencing stress and received a content validity rating of 2.67. Item 18 asked students if they practiced mindfulness meditation when experiencing symptoms of depression and received a content validity rating of 2.67. Item 19 examined students' perceptions of benefits of mindfulness meditation when experiencing symptoms of depression and received a content validity rating of 2.67. Item 20 asked students if they practiced mindfulness meditation when experiencing symptoms of anxiety and received a content validity rating of 2.67. Item 21 examined students' perceived benefits of mindfulness meditation when experiencing symptoms of anxiety and received a content validity rating of three.

Survey Section 3: Utilization and Perception of Music Listening

Students' utilization and perceptions of music listening to address symptoms stress, depression, and anxiety were measured using questions 22 through 31. Item 22 asked participants if they listened to music. If participants selected "no" on question 22, skip logic directed them to question 26. If participants selected "yes" on question 22, they were directed to questions 23 through 31. Item 22 received a content validity rating of three.

Item 23 measured the frequency each week students listened to music and received a content validity rating of 2.67. Item 24 measured the daily frequency that students listen to music and received a content validity rating of 2.67. Item 25 examined how many hours per day students listened to music and received a content validity rating of 2.67.

Item 26 asked students if they listened to music when experiencing stress and received a content validity rating of three. Item 27 examined students' perceived benefits of music listening when experiencing stress and received a content validity rating of 2.67. Item 28 asked students if they listened to music when experiencing symptoms of depression and received a content validity rating of 2.67. Item 29 examined students' perceived benefits of music listening when experiencing symptoms of depression and received a content validity rating of 2.67. Item 30 asked students if they listen to music when experiencing symptoms of anxiety and received a content validity rating of three. Item 31 examined students' perceived benefits of listening to music when experiencing symptoms of anxiety and received a content validity rating of 2.67.

Survey Section 4: Utilization and Perception of Music Listening with Mindfulness Meditation

Students' utilization and perception of music listening as an intervention with MBSR techniques to address symptoms of stress, depression, and anxiety were measured using questions 32 through 39. Item 32 asked participants if they have heard of using music listening as an intervention while practicing mindfulness meditation and received a content validity rating of 2.67. Item 33 asked participants if they used music listening as an intervention while practicing mindfulness meditation and received a content validity rating of 2.67.

Item 34 asked participants if they used music listening as an intervention while practicing mindfulness meditation when experiencing stress and received a content validity rating of 2.67. Item 35 examined students' perceived benefits of music listening as an intervention while practicing mindfulness meditation when experiencing stress and

received a content validity rating of 2.67. Item 36 asked participants if they used music listening as an intervention while practicing mindfulness meditation when experiencing symptoms of depression and received a content validity rating of 2.67. Item 37 examined students' perceived benefits of music listening as an intervention while practicing mindfulness meditation when experiencing symptoms of depression and received a content validity rating of 2.67. Item 38 asked participants if they used music listening as an intervention while practicing mindfulness meditation when experiencing symptoms of anxiety and received a content validity rating of 2.67. Item 39 examined students' perceived benefits of music listening as an intervention while practicing mindfulness meditation when experiencing symptoms of anxiety and received a content validity rating of 2.67.

Data Collection and Procedures

Upon receiving approval from the Auburn University Institutional Review Board, data collection occurred from August 28, 2023 through October 11, 2023. Data was collected using a Qualtrics survey, which uses double encryption security measures. Using Qualtrics as an electronic resource to gather information also ensured there is no chance that paper documents completed by participants could be misplaced or lost. The lack of paper documents will also reduce the risk of exposure of these documents to individuals other than the researcher. An initial recruitment email was sent to 16 personnel within the Special Education, Rehabilitation, and Counseling Department at Auburn University including professors, graduate assistants, and an administrator. The recruitment email contained an overview of the study, participant eligibility criteria, the researcher's contact information, and a link to the study's survey. Appendix A contains a

copy of the recruitment email and Appendix B contains copy of the study survey which contains the information letter. Upon receiving the recruitment email, departmental personnel shared the recruitment email and survey link with students enrolled in their programs and courses. By contacting key departmental personnel instead of students directly, the data collected remained anonymous, since the researcher did not have direct contact with potential participants and the data collected was not identifiable.

As previously mentioned, 16 personnel within the Special Education, Rehabilitation, and Counseling Department at Auburn University were contacted to complete one round of recruitment for the survey. Of the 16 departmental personnel contacted, 10 faculty members responded indicating that they would send the recruitment email to their students. One professor directed the researcher towards a student teacher as an additional contact for dissemination. The same professor also recommended the researcher enter the survey in Auburn's SONA system. However, since the researcher obtained the number of participants needed to validate the study, determined by G*Power, data collection through the SONA system was unnecessary. A total of 40 participants responded to the survey. A second round of recruitment was not required.

Upon self-selecting to participate in the study, participants were required to review the information letter and provide consent prior to completing the demographic questionnaire and study's survey. Students who did not provide consent, were directed to the end of the survey. In the current study, masking did not occur, as participants received all aspects of the survey upon providing consent. To be included in the survey, participants were required to have access to the internet, as the survey was electronic. The electronic format allowed for a greater distribution of the survey, in turn, increasing the

diversity and generalizability of study results, as well as providing participants with instant access to the survey. It was estimated that completion of the survey would take a total of 15-25 minutes. This estimation was based on the researcher's time to complete the survey. More time was added to the estimation to provide participants with ample time to complete the questions.

Quality of Measurements

Interrater reliability was not a concern for this study, as the researcher was only person who analyzed and interpreted the data. No additional researchers were not required to be trained to administer or interpret survey results. Further, since the researcher created the survey, the researcher was not required to undergo training or review assessment manuals prior to engaging in the study. The researcher did, however, remain up to date on their Collaborative Institutional Training Initiative, or CITI, certifications. CITI certifications are imperative to the research process as they ensure that researchers remain up to date on ethical considerations, best practices, trends and policies that impact the research process (Braunschweiger & Kenneth, 2007). Similarly, the researcher received additional training on specialized populations, and reviewed standards to ensure compliance with the Auburn University IRB requirements for researchers.

Data Diagnosis

Data sets were inspected to assure that each was complete and there were no irregularities among the answers. The researcher screened and cleaned the data to identify incomplete data sets and ensure all participants met the eligibility criteria of the study. A total of 40 data sets were collected on the survey. Among the 40 survey results, a total of

eight data sets were removed. Six datasets were removed due to incomplete datasets, and two datasets were removed as participants did not meet the study's age eligibility criteria. The results of the screening and cleaning of this data yielded 32 complete data sets which were used for the analysis provided in this study.

Analytic Strategies

Analysis of data was performed in three stages. In stage one, descriptive statistics were used to analyze demographic data (e.g., student academic standing, if the students are in the dissertation phase of their program, full or part-time standing, gender, race/ethnicity, and age). Descriptive statistics are used to provide summarization of data in an easy-to-read form (Cooksey, 2020; Kaliyadan & Kulkarni, 2019). Descriptive summary statistics rely on central tendencies (mean, median, and mode) to analyze the distribution of data, and the amount of change in data (Cooksey, 2020; Kaliyadan & Kulkarni, 2019). Descriptive statistics were chosen for this study due to the nature of the data collected and to provide a holistic view of participant demographics.

In stage two of the data analysis, descriptive statistics were used to summarize data regarding student utilization of the interventions: mindfulness meditation, music listening, and music listening combined with mindfulness meditation. Again, descriptive statistics were used to examine participants' utilization of each intervention to provide a holistic understanding of college students' use of each intervention.

In phase three of data analysis, one-tailed, bivariate correlational analyses were used to evaluate the relationships between participants' utilization of each intervention (e.g., mindfulness meditation, music listening, and music listening combined with mindfulness meditation) with their perceptions of the benefits of each intervention in

addressing negative symptoms of each mental health condition studied (e.g., stress, depression, and anxiety). Correlations were used to determine covariance of variables in quantitative research (Asamoah, 2014; Green & Salkind, 2016). Bivariate correlation analysis was used to analyze the relationships of variables linearly (Asamoah, 2014; Green & Salkind, 2016). A Spearman correlation was used to analyze this data set due to the use of Likert scales, which are categorized as ordinal variable (Asamoah, 2014; Green & Salkind, 2016). The Likert-scale questions used to assess participants' perceived benefits of each intervention when experiencing symptoms of stress, depression, and anxiety produced ordinal variables, therefore, Spearman correlations were the most appropriate statistical analyses.

One-tailed analyses are used to indicate the direction of the relationship between variables, when a hypothesis predicts a directional change (Banerjee et al., 2009; Bruin, 2006). The use of a one-tailed analysis allows for a smaller sample size resulting in a larger power (Banerjee et al., 2009; Bruin, 2006). One-tailed, bivariate correlations were used to analyze the data of this survey due to the expectation of a positive change predicted in the study's hypotheses. The current study hypothesized positive relationship between each intervention (e.g., mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation) and the mental health conditions examined (e.g., stress, depression, and anxiety).

Limitations of Study Design

Data collection through self-report designs can be affected by self-selection bias, social desirability bias, and experimental mortality (Ecker-Lyster, 2018; Frey, 2010; Lundqvist et al., 2019; Titus, 2007). Self-selection bias can occur if a student selects to

participate in the study when they do not actually meet the inclusion criteria for the test. Social desirability bias can also occur when participants self-report perceived benefits for each intervention. Participants may believe that it is more socially desirable to report benefits occur, even if they do not perceive benefits because reporting a positive perception is the social norm or is expected by the researcher (Lundqvist et al., 2019; Titus, 2007). Experimental mortality also posed a risk to the study, as participants may have not completed the survey due to the length of the survey or other external factors (Ecker-Lyster, 2018). These limitations may effect the internal and external validity of the study.

Summary

Currently, there is little if any research examining the impact of MBSR techniques with music listening as an intervention to address the symptoms of stress, depression, and anxiety many college students face. The aim of the current study is to assess the utilization and perception of music listening and MBSR techniques, specifically mindfulness meditation, to reduce the negative symptoms stress, depression, and anxiety experienced by college students. Chapter II discusses the cross-sectional survey design used to examine college students' utilization and perception of music listening and MBSR techniques, such as mindlessness meditation, to address their symptoms of stress, depression, and anxiety.

Specifically, Chapter II discusses the study's methodology, participant characteristics, recruitment methods, measures, data collection procedures, data analytic strategies, and limitations of the research design. Participants for the study were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn

University. Eligibility for the study required that participants were at least 19 years of age, enrolled in at least one college course at the time of the study, and had internet access. Data was collected using an electronic survey created by the researcher. The electronic survey contained a demographic questionnaire, which collected data regarding participant's academic standing, if they are in the dissertation phase of their program, full or part-time standing, gender, race/ethnicity, and age. The electronic survey also contained a four-part questionnaire aimed at assessing participants' utilization of mindfulness meditation, music listening, and music listening combined with mindfulness meditation and their perceived benefits of each intervention in addressing their symptoms of anxiety, depression, and stress.

Upon approval by the Auburn University Institutional Review Board, the researcher collected data using an online survey hosted by Qualtrics. Qualtrics provided the researcher a secure site to collect, maintain, and analyze the data. The survey was disseminated using the recruitment email. The researcher contacted 16 personnel within the Special Education, Rehabilitation, and Counseling Department at Auburn University to complete one round of recruitment for the survey. Of the 16 departmental personnel contacted, 10 faculty members responded indicating they would send the recruitment email to their students. A total of 40 participants agreed to participate in the survey because of recruiting efforts. However, a total of eight datasets were removed, six because the participants did not fully complete the survey, and two because participants were younger than the criterion age of 19. The exclusion of these data sets resulted in a total of 32 datasets that were suitable and used for analysis and interpretation.

To analyze the survey data, three analytic phases were completed. In phase one, demographic data was analyzed utilizing descriptive statistics. In phase two, items examining participants' utilization of each intervention (e.g., mindfulness meditation, music listening, and music listening combined with music listening) when experiencing each mental health condition examined (e.g., stress, depression, and anxiety) were analyzed using summary statistics. In phase three, nine, one-tailed, Spearman correlation analyses were conducted to determine the relationship between participants' utilization of mindfulness meditation, music listening, and music listening combined with mindfulness and their perceived benefits in addressing stress, depression, and anxiety experienced. Chapter III provides a summary of the data analysis.

Data collection through self-report method may have been negatively impacted by self-selection bias, social desirability bias, and experimental mortality (Ecker-Lyster, 2018; Frey, 2010; Lundqvist et al., 2019; Titus, 2007). Self-selection bias occurred if a student selected to participate in the study when they did not actually meet the inclusion criteria for the study. Social desirability bias occurred if participants inaccurately self-reported their utilization and perceived benefits of each intervention in an attempt to produce results they believed the researcher was attempting to obtain or to portray more positive mental health outcomes (Lundqvist et al., 2019; Titus, 2007). Experimental mortality was a risk due to the length of the survey and the possibility of students not completing the survey due to external factors outside of the researcher's control (Ecker-Lyster, 2018). These limitations effect the internal and external validity of the study.

Chapter III. Results

Chapter III presents the results and findings of the three data analytic phases utilized in the current study. The purpose of the present study was to provide quantitative data to assist in further supporting the justification of utilizing MBSR and music listening as combined interventions for a better, more easily accessible mode of treatment for anxiety and depression that has the capabilities to treat each disorder effectively and simultaneously. This study was guided by six research questions which aimed to examine undergraduate and graduate college students' utilization and perception of a MBSR technique (e.g., mindfulness meditation), music listening, and music listening combined with mindfulness meditation to address symptoms stress, depression, and anxiety. To collect qualitative data, a cross-sectional survey research design was utilized. Participants for this study were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University. The researcher contacted 16 faculty members within the department to request the recruitment email and survey link be sent to students (see Appendix A for a copy of the recruitment email). Of the 16 faculty members contacted for recruitment, 10 faculty members agreed to send the recruitment email and survey link to their students. The recruitment email contained eligibility criteria, an overview of the study, and a link to the study survey (see Appendix B for a copy of the study survey which contains the information letter).

Participants were eligible to participate in the study if they were over the age of 19 and enrolled in university classes at the time of the study. Participants self-selected to complete the survey and were directed to the study survey, which was hosted by Qualtrics (see Appendix B for a copy of the study survey which contains the information

letter). Prior to gaining access to the demographic questionnaire and study survey, participants were required to review the informed consent documentation and provide consent (see Appendix B for a copy of the study survey which contains the information letter).

Upon providing consent, participants were directed to the demographic questionnaire. This portion of the survey collected information regarding participants' university affiliation, academic class standing, if they are in their dissertation phase of their program, whether they were a full or part time student, gender, race/ethnicity, and age. Next, participants competed the study's survey, which was created by the researcher and aimed to examine college student's utilization and perception of mindfulness meditation, music listening, and music listening combined with mindfulness mediation to address symptoms of anxiety, depression and stress. Upon completion of the study survey, participants were provided with a downloadable flyer containing mental health tools and resources. It was estimated that completion of the survey would take 15-25 minutes. Forty students consented to participate in the study. Six data sets, however, were incomplete and were excluded from data analysis. Two additional data sets were excluded, as these participants indicated being 18 years old and inclusion criteria for the study required participants to be at least 19 years old. This cleaning and screening of data resulted in a total of 32 data sets which were used for analysis.

Data analysis for data collected on the study survey was completed in three stages. First, the descriptive statistics were used to analyze and summarize information obtained on the demographic questionnaire. Next, descriptive summary statistics were performed to evaluate participants' utilization of a MBSR technique (e.g., mindfulness

meditation), music listening, and music listening combined with mindfulness meditation to address anxiety, depression, and stress experienced. Finally, nine, one-tailed Spearman correlation analyses were conducted to analyze the participants' perceived benefits of each intervention (e.g., mindfulness meditation, music listening, and music listening combined with mindfulness meditation) to address symptoms of anxiety, depression, and stress. The results of each stage of data analysis are provided throughout the remainder of Chapter III.

Demographics

As previously discussed, a total of 40 students consented to participate in the study. Six individuals, however, did not complete the entirety of the survey and their data was removed from analysis. Additionally, two more data sets were excluded from analysis as these participants indicated being 18 years old, and therefore did not meet eligibility requirements of the study. A total of 32 data sets were analyze in this study. Table 1 provides an overview of participant characteristics, as collected on the demographic questionnaire.

Table 1. Demographics

Demographic	N=32	%
Academic Class Standing		
Freshman	0	0
Sophomore	5	15.6
Junior	12	35.3
Senior	5	15.6
Master's level	4	12.5
Doctoral Level	6	18.8
Other, please specify:	0	0
In Dissertation or Thesis Phase		
Yes	3	9.4
No	23	71.9
Not applicable	6	18.8
Full or Part Time Status		

Full time	31	96.9
Part time	1	3.1
Gender		
Male	1	3.1
Female	29	90.6
Non-binary/third gender	2	6.3
Prefer not to say	0	0
Other, please specify:	0	0
Race/Ethnicity		
African American/Black	3	9.4
Asian	1	3.1
Biracial	0	0
Caucasian/White	28	87.5
Multiracial/Multiethnic	0	0
Native American	0	0
Pacific Islander	0	0
Prefer not to say	0	0
Other, please specify:	0	0

Examining participant demographics, academic class standing ranged from sophomore to the doctoral level. Five participants (n=32; 15.6%) reported being sophomores. Twelve participants (n=32; 35.3%) reported being juniors. Five participants (n=32; 15.6%) reported being seniors. Four participants (n=32; 12.5%) were master's level students, and six participants (n=32; 18.8%) were doctoral level students. There were no participants who were freshman or categorized as a different class standing than the standings listed in this survey item. Overall, a total of 22 participants (n=32; 68.8%) were classified as undergraduate students, and 10 participants (n=32; 31.3%) were classified as graduate students.

Participants were also asked to identify if they were in the dissertation or thesis phase of their academic program. Three participants (n=32; 9.4%) indicated they were in the dissertation or thesis phase of their academic program, 23 participants (n=32; 71.9%) indicated they were not in the dissertation or thesis phase of their program, and six participants (n=32; 18.8%) indicated this item was not applicable. Overall, a majority of

participants (n=29; 90.7%) were not completing their dissertation or thesis at the time of the study.

Participants were then prompted to indicate if they were enrolled full or part time at the time of the study. Thirty-one participants (n=32; 96.9%) indicated that they were enrolled full time. Only one participant (n=32; 3.1%) indicated they were enrolled as a part time student at the time of the study.

Regarding participants' gender, one participant (n=32; 3.1%) identified as male. Twenty-nine participants (n=32; 90.6%) identified as female, and two participants (n=32; 6.3%) identified as non-binary/third gender. There were no participants who did chose to not disclose their gender, and no participants identified as any other gender than the genders listed on the survey item.

In terms of participants' race/ethnicity, three participants (n=32; 9.4%) identified as African American/Black. One participant (n=32; 3.1%) identified as Asian, and 28 participants (n=32; 87.5%) identified as Caucasian/White. There were no participants who identified as Multiracial/Multiethnic, Native American, or Pacific Islander. Additionally, there were no participants who chose to not disclose their race/ethnicity, and no participants identified as any other race/ethnicity other than the races/ethnicities listed on the survey item.

Additionally, participants were asked two free response questions on the demographic questionnaire. First, participants were asked which university they attended. This question was included in the demographic questionnaire, as the researcher was unsure if they would obtain the required sample size to achieve statistical power solely from Auburn University and was prepared to recruit from other universities. After the

first round of recruitment, however, the research exceeded the required sample size, and closed the study to analyze the data. All 32 participants, therefore, indicated that they attended "Auburn" or "Auburn University" to this item on the demographic questionnaire.

The second free response item on the demographic questionnaire asked participants' their age. Participants' ages ranged from 19 to 45. The average age of participants was 22.9 years old (SD=5.9). Specifically, five participants (n=32; 15.6%) reported being 19 years old, 11 participants (n=32; 34.4%) indicated being 20 years old, and five participants (n=32; 15.6%) reported being 21 years old. Additionally, two participants (n=32; 6.3%) reported being 22 years old, three participants (n=32; 9.4%) indicated being 24 years old, one participant (n=32; 3.1%) reported being 26 years old, and two participants (n=32; 6.3%) indicated being 27 years old. Two participants (n=32; 6.3%) reported being 36 years old, and one participant (n=32; 3.1%) reported being 45 years old at the time of study. Table 2 provides an overview of participants' ages, as collected on the demographic questionnaire.

Table 2. Age

Age in years	N=32	%
19	5	15.6
20	11	34.4
21	5	15.6
22	2	6.3
24	3	9.4
26	1	3.1
27	2	6.3
36	2	6.3
45	1	3.1
Mean: 22.9	**Standard Deviation:**	5.9

Research Question 1: To what extent are college students utilizing MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety?

To examine the extent to which undergraduate and graduate college students utilize MBSR techniques, specifically mindfulness meditation, participants were asked to self-identify if they use MBSR and mindfulness meditation, and if so, the frequency and duration of use. After completing the demographic questionnaire, participants were directed to the study survey, which was created by the researcher, and asked if they utilized any MBSR techniques. Nineteen participants (n=32; 59.4%) indicated they engaged in a MBSR technique. Thirteen participants (n=32; 40.6%) indicated they did not practice any MBSR techniques. Table 3 provides an overview of participant responses on the study survey item assessing utilization of MBSR techniques.

Table 3. Utilization of MBSR Techniques

Item	Yes		No	
	N=32	%	N=32	%
Do you practice mindfulness-based stress reduction techniques? (A meditation-based therapy that can be used for stress reduction, such as deep breathing, muscles relaxation exercises, guided imagery, body scans, meditation, etc.)	19	59.4	13	40.6

Participants who utilized any MBSR techniques (n=19) were then asked to identify what MBSR techniques they utilize in a free response question. A total of 19 participants (n=32; 59.4%) completed this item, with 14 of the participants (n=19; 73.7%) indicating that they use more than one MBSR technique. Nine participants (n=19; 50%) reported practicing deep breathing or breathing exercises, and two participants (n=19; 10.5%) indicated they specifically utilize box breathing. Eight participants (n=19; 42.1%)

indicated they engage in meditation, and four participants (n=19; 21.1%) reported practicing yoga. Two participants (n=19; 10.5%) indicated they utilize grounding techniques, and three participants (n=19; 15.8%) reported using body scanning techniques. Additionally, two participants (n=19; 10.5%) reported listening to music as a MBSR technique. Finally, one participant (n=19; 5.3%) indicated utilizing the RAIN technique, one participant (n=19; 5.3%) reported using self-care days, one participant (n=19; 5.3%) utilized cold plunges, one participant (n=19; 5.3%) indicated walking, one participant (n=19; 5.3%) reported sleeping, and one participant (n=19; 5.3%) reported using reading as a MBSR technique.

Next, participants were asked if they specifically practiced mindfulness meditation, which was defined as a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person to slow their racing thoughts, let go, and calm their mind. Fifteen participants (n=32; 46.9%) indicated they do practice mindfulness meditation. Seventeen participants (n=32; 53.1%) indicated they do not utilize mindfulness meditation. Table 4 provides an overview of participant responses on the study survey item assessing utilization of mindfulness meditation.

Table 4. Utilization of Mindfulness Meditation

Item	Yes		No	
	N=32	%	N=32	%
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	15	46.9	17	53.1

The 15 participants who reporting using mindfulness meditation were then asked items regarding their frequency of use. Weekly frequency ranged from using mindfulness meditation 1.5 times per week to eight times per week. On average, the 15 participants utilize mindfulness meditation 3.6 times per week (SD=1.9). Three participants (n=15; 20%) used mindfulness meditation twice per week, five participants (n=15; 33.3%) used mindfulness meditation three times per week, one participant (n=15; 6.7%) used mindfulness meditation four times per week, two participant (n=15; 13.3%) used mindfulness meditation five times per week, one participant (n=15; 6.7%) used mindfulness meditation seven times per week, and one participant (n=15; 6.7%) used mindfulness meditation eight times per week. One participant (n=15; 6.7%) used mindfulness meditation one to two times per week, and one participant (n=15; 6.7%) used mindfulness meditation two to three times per week. For reporting and analysis of the two participant responses that contained a range, the mean of the range was utilized (e.g., 1.5 times per week and 2.5 times per week). Table 5 provides an overview of participants' weekly frequency of mindfulness meditation use.

Table 5. Weekly Frequency of Mindfulness Meditation Use

Weekly Frequency of Mindfulness Meditation Use	N=15	%
1.5 times per week	1	6.7
2 times per week	3	20
2.5 times per week	1	6.7
3 times per week	5	33.3
4 times per week	1	6.7
5 times per week	2	13.3
7 times per week	1	6.7
8 times per week	1	36.7
Mean: 3.6 times per week	**Standard Deviation:**	1.9 times per week

Participants who reported using mindfulness meditation (n=15) were then asked to describe how often they engage in a mindfulness meditation on an average day. Daily frequency ranged from using mindfulness meditation one time per day to three times per day. On average, those who utilized mindfulness meditation use this technique 1.2 times per day (n=14; SD=.58). One participant (n=15; 6.7%) indicated they utilized mindfulness meditation one to two days per week. Since this participant did not report their weekly mindfulness meditation use instead of their daily use, this response was excluded from the mean calculation. Twelve participants (n=15; 80%) indicated they practice mindfulness meditation once a day. Additionally, one participant (n=15; 6.7%) indicated they practice mindfulness meditation twice per day, and one participant (n=15; 6.7%) reported using mindfulness meditation three times per day. Table 6 provides an overview of participants' daily frequency of mindfulness meditation use.

Table 6. Daily Frequency of Mindfulness Meditation Use

Daily Frequency of Mindfulness Meditation Use	N=15	%
1 time per day	12	80
2 times per day	1	6.7
3 times per day	1	6.7
1-2 days per week	1	6.7
Mean: 1.2 times per day **Standard Deviation:**	.58 times per day	

Next, participants who reported using mindfulness meditation (n=15) were asked how long each mindfulness meditation session lasts on average. Mindfulness meditation sessions ranged from 2.5 to 52.5 minutes. On average, the 15 participants who utilized mindfulness meditation engage in this MSBR technique for 17.3 minutes per session (SD=13.7). Specifically, three participants (n=15; 20%) indicated average mindfulness meditation session last 30 minutes, and two participants (n=15; 13.3%) reported average

mindfulness meditation sessions last 20 minutes. Three participants (n=15; 20%) indicated average mindfulness meditation sessions last 10 minutes, and three participants (n=15; 20%) reported average mindfulness meditation sessions last five minutes. One participant (n=15; 6.7%) indicated average mindfulness meditation sessions last between one and five minutes, one participant (n=15; 6.7%) reported average mindfulness meditation sessions last five to 10 minutes, one participant (n=15; 6.7%) reported average mindfulness meditation sessions last 10 to 15 minutes, and one participant (n=15; 6.7%) indicated average mindfulness meditation sessions last between 45 and 60 minutes. For data analysis of the three participant responses that contained a range, the mean of the range was utilized (e.g., 2.5 minutes, 7.5 minutes, 12.5 minutes, and 52.5 minutes). Table 7 provides an overview of participants' average mindfulness meditation session duration in minutes.

Table 7. Average Duration of Mindfulness Meditation Session in Minutes

Average Duration of Mindfulness Meditation Session in Minutes	N=15	%
2.5 minutes	1	6.7
5 minutes	3	20
7.5 minutes	1	6.7
10 minutes	3	20
12.5 minutes	1	6.7
20 minutes	2	13.3
30 minutes	3	20
52.5 minutes	1	6.7
Mean: 17.3 minutes	**Standard Deviation:** 13.7 minutes	

Participants (n=32) were then asked if they practiced mindfulness meditation when they experience stress, depression, and anxiety. Regarding the use of mindfulness meditation to address stress, 15 participants (n=32; 46.9%) reported engaging in mindfulness meditation when experiencing stress, while 17 participants (n=32; 53.1%)

did not use mindfulness meditation for stress. When experiencing depression, seven participants (n=32; 21.9%) indicated they utilize mindfulness meditation to address depressive symptoms, while 25 participants (n=32; 78.1%) did not use mindfulness meditation for depression. Regarding the use of mindfulness meditation to address anxiety, 18 participants (n=32; 56.3%) of participants indicated they engage in mindfulness meditation when experiencing anxiety, while 14 participants (n=32; 43.8%) did not use mindfulness meditation for anxiety. Table 8 provides an overview of participants' utilization of mindfulness meditation in addressing stress, depression, and anxiety. Overall, since at least 50% of participants reported utilizing mindfulness meditation when experiencing only one of the three mental health conditions examined (e.g., anxiety), the null hypothesis for research question one was accepted, and the alternative hypothesis was rejected.

Table 8. Utilization of Mindfulness Meditation to Address Stress, Depression and Anxiety

Item	**Yes**		**No**	
	N=32	%	N=32	%
Do you practice mindfulness meditation when you are experiencing stress?	15	46.9	17	53.1
Do you practice mindfulness meditation when you are experiencing depression?	7	21.9	25	78.1
Do you practice mindfulness meditation when you are experiencing anxiety?	18	56.3	14	43.8

Research Question 2: To what extent are college students utilizing music listening to address symptoms of stress, depression, and anxiety?

To examine research question two, participants were asked to self-identify if they listen to music, and if so, the frequency and duration of music listening. Of the 32

participants, 31 participants (n=32; 96.9%) reported they do listen to music. Only one participant (n=32; 3.1%) reported they do not listen to music. Table 9 provides an overview of participants' utilization of music listening.

Table 9. Utilization of Music Listening

Item	**Yes**		**No**	
	N=32	%	N=32	%
Do you listen to music?	31	96.9	1	3.1

Participants who reported listening to music (n=31) were then asked on an average week, how many days per week do they listen to music. Music listening ranged from four days per week to seven days per week. On average, participants listened to music 6.7 days per week (n=31; SD=.74). Specifically, 26 participants (n=31; 83.9%) reported listening to music seven days per week. Two participants (n=31; 6.5%) indicated listening to music six days per week, and two participants (n=31; 6.5%) reported listening to music five days per week. Only one participant (n=31; 3.2%) reported listening to music four days per week. Table 10 provides a pictural distribution of participants' average weekly music listening in days per week.

Table 10. Weekly Frequency of Music Listening

Weekly Frequency of Music Listening in Days per Week	N=31	%
4 days per week	1	3.2
5 days per week	2	6.5
6 days per week	2	6.5
7 days per week	26	83.9
Mean: 6.7 days per week	**Standard Deviation:**	.74 days per week

Next, participants who reported listening to music (n=31) were asked how many times per day they listen to music. Daily music listening ranged from 1.5 times per day to all day. On average, participants (n=28) listen to music 4.71 times per day (SD=3.1). For

the mean calculation, three participants (n=31; 9.7%) indicated they listened to music all day. Since these participants did not provide a numerical value, their responses were excluded from the mean calculation.

Examining participants daily music use, four participants (n=31; 12.9%) reported listening music 10 times per day. One participant (n=31; 3.2%) indicated listening to music seven times per day, and one participant (n=31; 3.2%) reported listening to music six times per day. Five participants (n=31; 16.1%) indicated listening to music five times per day, and two participants (n=31; 6.5%) reported listening to music four times per day. Six participants (n=31; 19.4%) indicated listening to music three times per day, and five participants (n=31; 16.1%) reported listening to music twice daily. Two participants (n=31; 6.5%) reported listening to music one to two times per day, one participant (n=31; 3.2%) indicated listening to music two to three times per day, and one participant (n=31; 3.2%) reported listening to music 10 to 15 times per day. For data analysis of the four participant responses that contained a range, the mean of the range was utilized (e.g., 1.5 times per day, 2.5 times per day, and 12.5 times per day). Table 11 provides an overview of participants' average daily music listening.

Table 11. Daily Frequency of Music Listening

Daily Frequency of Music Listening in Times per Day	N=31	%
1.5 times per day	2	6.5
2 times per day	5	16.1
2.5 times per day	1	3.2
3 times per day	6	19.4
4 times per day	2	6.5
5 times per day	5	16.1
6 times per day	1	3.2
7 times per day	1	3.2
10 times per day	4	12.9
12.5 times per day	1	3.2

All day			3	9.7
Mean:	4.71 times per day	**Standard Deviation:**	3.1 times per day	

Participants who reported listening to music (n=31) were asked to report how many hours per day they listened to music on average. Participants responses ranged from 45 minutes to 20 hours. On average, participants (n=31) listen to music 3.9 hours per day (SD=3.7). Specifically, one participant (n=31; 3.2%) reported listening to 20 hours per day, and one participant (n=31; 3.2%) indicated they listened to music 12 hours per day. Two participants (n=31; 6.4%) reported listening to music six hours per day, and three participants (n=31; 9.7%) indicated they listen to music five hours per day. Six participants (n=31; 19.4%) reported listening to music four hours per day, and six participants (n=31; 19.4%) indicated listening to music three hours per day. Seven participants (n=31; 22.6%) reported listening to music two hours per day, and one participant (n=31; 3.2%) indicated listening to music one hour per day. Three participants (n=31; 9.7%) reported listening to music for one to two hours per day, and one participant (n=31; 3.2%) indicated they listened to music 30 minutes to one hour per day. For data analysis of the four participant responses that contained a range, the mean of the range was utilized (e.g., 1.5 hours and 0.75 hours). Table 12 provides an overview of participants' average hours spent listening to music per day.

Table 12. Average Hours Spent Listening to Music Daily

Average Hours Spent Listening to Music Daily	N=31	%
0.75 hours	1	3.2
1 hour	1	3.2
1.5 hours	3	9.7
2 hours	7	22.6
3 hours	6	19.4
4 hours	6	19.4

5 hours		3	9.7
6 hours		2	6.4
12 hours		1	3.2
20 hours		1	3.2
Mean:	3.9 hours	**Standard Deviation:**	3.7 hours

Participants (n=32) were then asked if they listened to music when they experience stress, depression, and anxiety. Regarding listening to music to address stress and depression, 30 participants (n=32; 93.8%) reported listening to music when they experience stress and depression, while two participants (n=32; 6.3%) did not listen to music when experiencing stress and depression. Examining participants use of music listening to address anxiety, 27 participants (n=32; 84.4%) reported listening to music when they experience anxiety, while five participants (n=32;15.6%) did not listen to music when experiencing anxiety. Table 13 provides an overview of participants' utilization of music listening in addressing stress, depression, and anxiety. Overall, since at least 50% of participants reported utilizing music listening when experiencing all three mental health conditions examined (e.g., stress, depression, and anxiety), the null hypothesis for research question two was rejected and the alternative hypothesis was accepted.

Table 13. Utilization of Music Listening to Address Stress, Depression, and Anxiety

Item	**Yes**		**No**	
	N=32	%	N=32	%
Do you listen to music when you are experiencing stress?	30	93.8	2	6.3
Do you listen to music when you are experiencing depression?	30	93.8	2	6.3
Do you listen to music when you are experiencing anxiety?	27	84.4	5	15.6

Research Question 3: To what extent are college students utilizing music listening combined with MBSR techniques to address symptoms of stress, depression, and anxiety?

To examine research question three, participants (n=32) were first asked if they have heard of listening to music as an intervention while practicing mindfulness meditation, a MBSR technique. Fifteen participants (n=32; 46.9%) indicated having awareness of music listening as an intervention while practicing mindfulness meditation. Seventeen participants (n=32; 53.1%) reporting not being aware of music listening as an intervention when combined with mindfulness meditation. Table 14 provides an overview of participants' awareness of music listening combined with mindfulness meditation as an intervention.

Table 14. Awareness of Music Listening Combined with Mindfulness Meditation as an Intervention

Item	**Yes**		**No**	
	N=32	%	N=32	%
Have you ever heard of listening to music as an intervention while you practice mindfulness meditation?	15	46.9	17	53.1

Next, participants (n=32) were asked if they listened to music while practicing mindfulness meditation in general. Nine participants (n=32; 28.1%) reported listening to music while practicing mindfulness meditation. Twenty-three participants (n=32; 71.9%) indicated that they do not listen to music listening while practicing mindfulness meditation. Table 15 provides an overview of participants' utilization of music listening combined with mindfulness meditation as an intervention.

Table 15. Utilization of Music Listening Combined with Mindfulness Meditation

Item	Yes		No	
	N=32	%	N=32	%
Do you listen to music while practicing mindfulness meditation?	9	28.1	23	71.9

Participants (n=32) were then asked if they listened to music while practicing mindfulness meditation when experiencing stress, depression, and anxiety. Regarding listening to music while practicing mindfulness meditation to address stress experienced, twelve participants (n=32; 37.5%) reported listening to music while practicing mindfulness meditation to address stress experienced, while 20 participants (n=32; 62.5%) did not use music listening while practicing mindfulness meditation to address stress experienced. When experiencing depression, 10 participants (n=32; 31.3%) indicated listening to music while practicing mindfulness meditation to address depressive symptoms, while 22 participants (n=32; 68.8%) did not listening to music while practicing mindfulness meditation for depression. Regarding the listening to music while practicing mindfulness meditation to address anxiety, 11 participants (n=32; 34.4%) of participants indicated they listening to music while practicing mindfulness meditation when experiencing anxiety, while 21 participants (n=32; 65.6%) did not listening to music while practicing mindfulness meditation for anxiety. Table 16 provides an overview of participants' utilization of listening to music while practicing mindfulness meditation in addressing stress, depression, and anxiety. Overall, since at least 50% of participants did not report listening to music while practicing mindfulness meditation when experiencing the three mental health conditions examined (e.g., stress, depression,

and anxiety), the null hypothesis for research question three was accepted and the alternative hypothesis was rejected.

Table 16. Utilization of Music Listening Combined with Mindfulness Meditation to Address Stress, Depression, and Anxiety

Item	Yes		No	
	N=32	%	N=32	%
Do you listen to music while practicing mindfulness meditation when you are experiencing stress?	12	37.5	20	62.5
Do you listen to music while practicing mindfulness meditation when you are experiencing depression?	10	31.1	22	68.8
Do you listen to music while practicing mindfulness meditation when you are experiencing anxiety?	11	34.4	21	65.6

Research Question 4: To what extent do college students perceive MBSR techniques (e.g., mindfulness meditation) to be beneficial in addressing symptoms of stress, depression, and anxiety?

To examine research question four, Spearman, one-tailed correlational analyses were conducted for the three Likert-scale questions utilized on the study survey to assess participants' perceived benefits of mindfulness meditation, a MBSR technique, in addressing symptoms of stress, depression, and anxiety. Survey items utilized to measure perceived benefits of mindfulness meditation consisted of a five-point Likert-scale, ranging from Strongly Agree to Strongly Disagree. Each Spearman correlation analysis compared participants utilization of mindfulness meditation with their perceived benefit of the intervention for each mental health condition (e.g., stress, depression, and anxiety).

Of the participants (n=15) who indicated they utilize mindfulness meditation when experiencing stress, 13 participants (n=15; 86.7%) Strongly Agreed mindfulness meditation was beneficial when experiencing stress. Two participants (n=15; 13.3%)

Somewhat Agreed mindfulness meditation was beneficial when experiencing stress. No participants Neither Agreed or Disagreed, Somewhat Disagreed, or Strongly Disagreed that mindfulness meditation was beneficial when experiencing stress. Table 17 provides an overview of participant response regarding their perceived benefit of mindfulness meditation when experiencing stress.

Table 17. Perceived Benefits of Mindfulness Meditation to Address Stress

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=15	%	N=15	%	N=15	%	N=15	%	N=15	%
Mindfulness meditation is beneficial when you are experiencing stress.	13	86.7	2	13.3	0	0	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing stress. Table 18 provides the results of this Spearman correlation analysis. There was a weak, positive correlation between the two variables, $r_s(13) = .294$, $p = .144$. The 95% confidence interval for this correlation was -.184 to 1.00. Table 19 provides the confidence interval of this Spearman correlation analysis. This correlation, however, was not statistically significant, indicating there was not a statistically significant relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing stress.

Table 18. Spearman Rho Correlation Between Utilization of Mindfulness Meditation and Perceived Benefits when Experiencing Stress

		Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	Mindfulness meditation is beneficial when you are experiencing stress.
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	Correlation Coefficient	1.000	.294
	Sig. (1-tailed)	.	.144
	N	32	15
Mindfulness meditation is beneficial when you are experiencing stress.	Correlation Coefficient	.294	1.000
	Sig. (1-tailed)	.144	.
	N	15	15

Table 19. Spearman Rho Correlation Confidence Interval between Utilization of Mindfulness Meditation and Perceived Benefits when Experiencing Stress

	Spearman's rho	Significance(1-tailed)	95% Confidence Intervals (1-tailed)[a,b] Lower	Upper
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body. - Mindfulness meditation is beneficial when you are experiencing stress.	.294	.144	-.184	1.000

a. Estimation is based on Fisher's r-to-z transformation.

b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Of the participants (n=7) who indicated they utilize mindfulness meditation when experiencing depression, six participants (n=7; 85.7%) Strongly Agreed mindfulness meditation was beneficial when experiencing depression. One participant (n=7; 14.3%)

Somewhat Agreed mindfulness meditation was beneficial when experiencing depression. No participants Neither Agreed or Disagreed, Somewhat Disagreed, or Strongly Disagreed that mindfulness meditation was beneficial when experiencing depression. Table 20 provides an overview of participant responses regarding their perceived benefit of mindfulness meditation when experiencing depression.

Table 20. Perceived Benefits of Mindfulness Meditation to Address Depression

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=7	%	N=7	%	N=7	%	N=7	%	N=7	%
Mindfulness meditation is beneficial when you are experiencing depression.	6	85.7	1	14.3	0	0	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing depression. Table 21 provides the results of this Spearman correlation analysis. There was a strong, positive correlation between the two variables, $r_s(5) = 1.00$, $p = .01$. The 95% confidence interval for this correlation could not be computed as there was a perfect, positive correlation ($r_s(5) = 1.00$). Table 22 provides the confidence interval of this Spearman correlation analysis. This correlation was statistically significant at the 0.01 level, indicating there was a statistically significant relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing depression.

Table 21. Spearman Rho Correlation Between Utilization of Mindfulness Meditation and Perceived Benefits when Experiencing Depression

		Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	Mindfulness meditation is beneficial in reducing your depression
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	Correlation Coefficient	1.000	1.000**
	Sig. (1-tailed)	.	.
	N	32	7
Mindfulness meditation is beneficial in reducing your depression	Correlation Coefficient	1.000**	1.000
	Sig. (1-tailed)	.	.
	N	7	7

**. Correlation is significant at the 0.01 level (1-tailed).

Table 22. Spearman Rho Correlation Confidence Interval between Utilization of Mindfulness Meditation and Perceived Benefits when Experiencing Depression

			95% Confidence Intervals (1-tailed)[b,c]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body. - Mindfulness meditation is beneficial in reducing your depression	1.000[a]	<.001	.	.

a. Confidence Interval cannot be computed for this variable pair because the correlation is 1 or -1.
b. Estimation is based on Fisher's r-to-z transformation.
c. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Of the participants (n=18) who indicated they utilize mindfulness meditation when experiencing anxiety, 13 participants (n=13; 72.2%) Strongly Agreed mindfulness meditation was beneficial when experiencing anxiety. Four participants (n=15; 26.7%)

Somewhat Agreed mindfulness meditation was beneficial when experiencing anxiety. One participant (n=15; 6.7%) Neither Agreed nor Disagreed mindfulness meditation was beneficial when experiencing anxiety. No participants Somewhat Disagreed or Strongly Disagreed that mindfulness meditation was beneficial when experiencing anxiety. Table 23 provides an overview of participant responses regarding their perceived benefit of mindfulness meditation when experiencing anxiety.

Table 23. Perceived Benefits of Mindfulness Meditation to Address Anxiety

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=18	%	N=18	%	N=18	%	N=18	%	N=18	%
Mindfulness meditation is beneficial when you are experiencing anxiety.	13	72.2	4	26.7	1	6.7	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. Table 24 provides the results of the Spearman correlation analysis. There was a strong, positive correlation between the two variables, $r_s(16) = .592$, $p = .005$. The 95% confidence interval for this correlation was .238 to 1.00. Table 25 provides the confidence interval of this Spearman correlation analysis. This correlation was statistically significant at the 0.01 level, indicating there was a statistically significant relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the null hypostasis was

rejected, and the alternative relationship was accepted. These results indicate a relationship between participants' utilization and perception of mindfulness meditation to address stress, depression, and anxiety.

Table 24. Spearman Rho Correlation Between Utilization of Mindfulness Meditation and Perceived Benefits when Experiencing Anxiety

		Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	Mindfulness meditation is beneficial in reducing your anxiety
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.	Correlation Coefficient	1.000	.592**
	Sig. (1-tailed)	.	.005
	N	32	18
Mindfulness meditation is beneficial in reducing your anxiety	Correlation Coefficient	.592**	1.000
	Sig. (1-tailed)	.005	.
	N	18	18

**. Correlation is significant at the 0.01 level (1-tailed).

Table 25. Spearman Rho Correlation Confidence Interval between Utilization of Mindfulness Meditation and Perceived Benefits when Experiencing Anxiety

			95% Confidence Intervals (1-tailed)[a,b]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body. - Mindfulness meditation is beneficial in reducing your anxiety	.592	.005	.238	1.000

a. Estimation is based on Fisher's r-to-z transformation.
b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Research Question 5: To what extent do college students perceive music listening to be beneficial in addressing symptoms of stress, depression, and anxiety?

To examine research question five, Spearman, one-tailed correlational analyses were conducted for the three Likert-scale questions utilized on the study survey to assess

participants' perceived benefits of listening to music when experiencing stress, depression, and anxiety. Survey items utilized to measure perceived benefits of music listening consisted of a five-point Likert-scale, ranging from Strongly Agree to Strongly Disagree. Each Spearman correlation analysis compared participants utilization of music listening with their perceived benefit of the intervention for each mental health condition (e.g., stress, depression, and anxiety).

Of the participants (n=30) who indicated they utilize music listening when experiencing stress, 22 participants (n=30; 73.3%) Strongly Agreed music listening was beneficial when experiencing stress. Eight participants (n=30; 26.7%) Somewhat Agreed music listening was beneficial when experiencing stress. No participants Neither Agreed or Disagreed, Somewhat Disagreed, or Strongly Disagreed that music listening was beneficial when experiencing stress. Table 26 provides an overview of participant responses regarding their perceived benefit of music listening when experiencing stress.

Table 26. Perceived Benefits of Music Listening to Address Stress

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=30	%	N=30	%	N=30	%	N=30	%	N=30	%
Music listening is beneficial when you are experiencing stress.	22	73.3	8	26.7	0	0	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing stress. The datasets of both variables, however, were highly correlated, as only one participant indicted they did not listen to music and this variable is considered constant. A correlation coefficient could not be

calculated, as there was not enough variance between datasets. Table 27 provides the results confidence interval of this Spearman correlation analysis indicating that the correlation could not be computed. This correlation was not statistically significant, indicating there was a statistically significant relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing stress.

Table 27. Spearman Rho Correlation Between Utilization of Music Listening and Perceived Benefits when Experiencing Stress

	Spearman's rho	Significance(1-tailed)	95% Confidence Intervals (1-tailed)[b,c]	
			Lower	Upper
Do you listen to music? - Music listening is beneficial in reducing your stress	.[a]	.	.	.

a. Cannot be computed because at least one of the variables is constant.
b. Estimation is based on Fisher's r-to-z transformation.
c. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Of the participants (n=30) who indicated they utilize music listening when experiencing depression, 17 participants (n=30; 56.7%) Strongly Agreed music listening was beneficial when experiencing depression. Eight participants (n=30; 26.7%) Somewhat Agreed music listening was beneficial when experiencing depression. Four participants (n=30; 13.3%) Neither Agreed nor Disagreed music listening was beneficial when experiencing depression. One participant (n=30; 3.3%) Somewhat Disagreed music listening was beneficial when experiencing depression. No participants Strongly Disagreed that music listening was beneficial when experiencing depression. Table 28 provides an overview of participant responses regarding their perceived benefit of music listening when experiencing depression.

Table 28. Perceived Benefits of Music Listening to Address Depression

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=30	%	N=30	%	N=30	%	N=30	%	N=30	%
Music listening is beneficial when you are experiencing depression.	17	56.7	8	26.7	4	13.3	1	3.3	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing depression. Table 29 provides the results of this Spearman correlation analysis. There was a weak, positive correlation between the two variables, $r_s(28) = .205$, $p = -.156$. The 95% confidence interval for this correlation was -1.00 to .167. Table 30 provides the confidence interval of this Spearman correlation analysis. This correlation, however, was not statistically significant, indicating there was not a statistically significant relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing depression.

Table 29. Spearman Rho Correlation Between Utilization of Music Listening and Perceived Benefits when Experiencing Depression

		Do you listen to music?	Music listening is beneficial in reducing your depression
Do you listen to music?	Correlation Coefficient	1.000	-.156
	Sig. (1-tailed)	.	.205
	N	32	30
Music listening is beneficial in reducing your depression	Correlation Coefficient	-.156	1.000
	Sig. (1-tailed)	.205	.
	N	30	30

Table 30. Spearman Rho Correlation Confidence Interval between Utilization of Music Listening and Perceived Benefits when Experiencing Depression

			95% Confidence Intervals (1-tailed)[a,b]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you listen to music? - Music listening is beneficial in reducing your depression	-.156	.205	-1.000	.167

a. Estimation is based on Fisher's r-to-z transformation.
b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Of the participants (n=27) who indicated they utilize music listening when experiencing anxiety, 19 participants (n=27; 70.4%) Strongly Agreed mindfulness meditation was beneficial when experiencing anxiety. Seven participants (n=27; 25.9%) Somewhat Agreed music listening was beneficial when experiencing anxiety. One participant (n=27; 3.7%) Neither Agreed nor Disagreed music listening was beneficial when experiencing anxiety. No participants Somewhat Disagreed or Strongly Disagreed that music listening was beneficial when experiencing anxiety. Table 31 provides an overview of participant responses regarding their perceived benefit of music listening when experiencing anxiety.

Table 31. Perceived Benefits of Music Listening to Address Anxiety

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=27	%	N=27	%	N=27	%	N=27	%	N=27	%
Music listening is beneficial when you are experiencing anxiety.	19	79.4	7	25.9	1	3.7	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing anxiety. The datasets of both variables, however, were highly correlated, as only one participant indicated they did not listen to

music and this variable is considered constant. A correlation coefficient could not be calculated, as there was not enough variance between datasets. Table 32 provides the results confidence interval of this Spearman correlation analysis indicating that the correlation could not be computed. This correlation was not statistically significant, indicating there was a statistically significant relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing anxiety. Overall, since all three one-tailed, Spearman correlation analyses did not produce statistically significant results, the null hypostasis was accepted, and the alternative relationship was rejected. These results indicate there is not a relationship between participants' utilization and perception of music listening to address stress, depression, and anxiety.

Table 32. Spearman Rho Correlation Between Utilization of Music Listening and Perceived Benefits when Experiencing

			95% Confidence Intervals (1-tailed)[b,c]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you listen to music? - Music listening is beneficial in reducing your anxiety	.[a]	.	.	.

a. Cannot be computed because at least one of the variables is constant.
b. Estimation is based on Fisher's r-to-z transformation.
c. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Research Question 6: To what extent do college students perceive music listening combined with MBSR techniques to be beneficial address symptoms of stress, depression, and anxiety?

To examine research question six, Spearman, one-tailed correlational analyses were conducted for the three Likert-scale questions utilized on the study survey to assess

participants' perceived benefits of music listening combined with mindfulness meditation, a MBSR technique, in addressing symptoms of stress, depression, and anxiety. Survey items utilized to measure perceived benefits of music listening combined with mindfulness meditation consisted of a five-point Likert-scale, ranging from Strongly Agree to Strongly Disagree. Each Spearman correlation analysis compared participants utilization of music listening combined with mindfulness meditation with their perceived benefit of the intervention for each mental health condition (e.g., stress, depression, and anxiety).

Of the participants (n=12) who indicated they utilize music listening combined with mindfulness meditation when experiencing stress, nine participants (n=12; 75%) Strongly Agreed music listening combined with mindfulness meditation was beneficial when experiencing stress. Two participants (n=12; 16.7%) Somewhat Agreed music listening combined with mindfulness meditation was beneficial when experiencing stress. One participant (n=12; 8.3%) Neither Agreed nor Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing stress. No participants Somewhat Disagreed, or Strongly Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing stress. Table 33 provides an overview of participant responses regarding their perceived benefit of music listening combined with mindfulness meditation when experiencing stress.

Table 33. Perceived Benefits of Music Listening Combined with Mindfulness Meditation to Address Stress

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=12	%	N=12	%	N=12	%	N=12	%	N=12	%
Listening to music while practicing mindfulness meditation is beneficial in reducing your stress.	9	75	2	16.7	1	8.3	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing stress. Table 34 provides the results of this Spearman correlation analysis. There was a strong, positive correlation between the two variables, $r_s(10) = .587$, $p = .022$. The 95% confidence interval for this correlation was .108 to 1.00. Table 35 provides the confidence interval of this Spearman correlation analysis. This correlation was statistically significant at the 0.05 level, indicating there was a statistically significant relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing stress.

Table 34. Spearman Rho Correlation Between Utilization of Music Listening Combined with Mindfulness Meditation and Perceived Benefits when Experiencing Stress

		Do you listen to music while practicing mindfulness meditation?	Listening to music while practicing mindfulness meditation is beneficial in reducing your stress
Do you listen to music while practicing mindfulness meditation?	Correlation Coefficient	1.000	.587*
	Sig. (1-tailed)	.	.022
	N	32	12
Listening to music while practicing mindfulness meditation is beneficial in reducing your stress	Correlation Coefficient	.587*	1.000
	Sig. (1-tailed)	.022	.
	N	12	12

*. Correlation is significant at the 0.05 level (1-tailed).

Table 35. Spearman Rho Correlation Confidence Interval between Utilization of Music Listening Combined with Mindfulness Meditation and Perceived Benefits when Experiencing Stress

			95% Confidence Intervals (1-tailed)[a,b]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you listen to music while practicing mindfulness meditation? - Listening to music while practicing mindfulness meditation is beneficial in reducing your stress	.587	.022	.108	1.000

a. Estimation is based on Fisher's r-to-z transformation.
b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Of the participants (n=10) who indicated they utilize music listening combined with mindfulness meditation when experiencing depression, seven participants (n=10; 70%) Strongly Agreed music listening combined with mindfulness meditation was beneficial when experiencing depression. Two participants (n=10; 20%) Somewhat Agreed music listening combined with mindfulness meditation was beneficial when experiencing depression. One participant (n=10; 10%) Neither Agreed nor Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing depression. No participants Somewhat Disagreed or Strongly Disagreed that music

listening combined with mindfulness meditation was beneficial when experiencing depression. Table 36 provides an overview of participant responses regarding their perceived benefit of music listening combined with mindfulness meditation when experiencing depression.

Table 36. Perceived Benefits of Music Listening Combined with Mindfulness Meditation to Address Depression

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=10	%	N=10	%	N=10	%	N=10	%	N=10	%
Listening to music while practicing mindfulness meditation is beneficial in reducing your depression.	7	70	2	20	1	10	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing depression. Table 37 provides the results of this Spearman correlation analysis. There was a strong, positive correlation between the two variables, $r_s(8) = .791$, $p = .003$. The 95% confidence interval for this correlation was .408 to 1.00. Table 38 provides the confidence interval of this Spearman correlation analysis. This correlation was statistically significant at the 0.01 level, indicating there was a statistically significant relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing depression.

Table 37. Spearman Rho Correlation Between Utilization of Music Listening Combined with Mindfulness Meditation and Perceived Benefits when Experiencing Depression

		Do you listen to music while practicing mindfulness meditation?	Listening to music while practicing mindfulness meditation is beneficial in reducing your depression
Do you listen to music while practicing mindfulness meditation?	Correlation Coefficient	1.000	.791**
	Sig. (1-tailed)	.	.003
	N	32	10
Listening to music while practicing mindfulness meditation is beneficial in reducing your depression	Correlation Coefficient	.791**	1.000
	Sig. (1-tailed)	.003	.
	N	10	10

**. Correlation is significant at the 0.01 level (1-tailed).

Table 38. Spearman Rho Correlation Confidence Interval between Utilization of Music Listening Combined with Mindfulness Meditation and Perceived Benefits when Experiencing Depression

			95% Confidence Intervals (1-tailed)[a,b]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you listen to music while practicing mindfulness meditation? - Listening to music while practicing mindfulness meditation is beneficial in reducing your depression	.791	.003	.408	1.000

a. Estimation is based on Fisher's r-to-z transformation.
b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Of the participants (n=11) who indicated they utilize music listening combined with mindfulness meditation when experiencing anxiety, nine participants (n=11; 81.8%) Strongly Agreed music listening combined with mindfulness meditation was beneficial when experiencing anxiety. One participant (n=11; 9.1%) Somewhat Agreed music listening combined with mindfulness meditation was beneficial when experiencing anxiety. One participant (n=11; 9.1%) Neither Agreed nor Disagreed music listening combined with mindfulness meditation was beneficial when experiencing anxiety. No participants Somewhat Disagreed or Strongly Disagreed that music listening combined

with mindfulness meditation was beneficial when experiencing anxiety. Table 39 provides an overview of participant response regarding their perceived benefit of music listening combined with mindfulness meditation when experiencing anxiety.

Table 39. Perceived Benefits of Music Listening Combined with Mindfulness Meditation to Address Anxiety

Item	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	N=11	%	N=11	%	N=11	%	N=11	%	N=11	%
Listening to music while practicing mindfulness meditation is beneficial in reducing your anxiety.	9	81.8	1	9.1	1	9.1	0	0	0	0

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. Table 40 provides the results of the Spearman correlation analysis. There was a weak, positive correlation between the two variables, $r_s(9) = .442$, $p = .087$. The 95% confidence interval for this correlation was -.123 to 1.00. Table 41 provides the confidence interval of this Spearman correlation analysis. This correlation was not statistically significant, indicating there was not a statistically significant relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the null hypostasis was rejected, and the alternative relationship was accepted. These results indicate a relationship between participants'

utilization and perception of music listening combined with mindfulness meditation to address stress, depression, and anxiety.

Table 40. Spearman Rho Correlation Between Utilization of Music Listening Combined with Mindfulness Meditation and Perceived Benefits when Experiencing Anxiety

		Do you listen to music while practicing mindfulness meditation?	Listening to music while practicing mindfulness meditation is beneficial when you are feeling anxious
Do you listen to music while practicing mindfulness meditation?	Correlation Coefficient	1.000	.442
	Sig. (1-tailed)	.	.087
	N	32	11
Listening to music while practicing mindfulness meditation is beneficial when you are feeling anxious	Correlation Coefficient	.442	1.000
	Sig. (1-tailed)	.087	.
	N	11	11

Table 41. Spearman Rho Correlation Confidence Interval between Utilization of Music Listening Combined with Mindfulness Meditation and Perceived Benefits when Experiencing Anxiety

			95% Confidence Intervals (1-tailed)[a,b]	
	Spearman's rho	Significance(1-tailed)	Lower	Upper
Do you listen to music while practicing mindfulness meditation? - Listening to music while practicing mindfulness meditation is beneficial when you are feeling anxious	.442	.087	-.123	1.000

a. Estimation is based on Fisher's r-to-z transformation.
b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

Summary

The aim of the current study is to provide quantitative data to assist in further supporting the justification of utilizing MBSR and music listening as an intervention for better, more easily accessible treatment for anxiety and depression that has the capabilities to treat each disorder effectively and simultaneously. To answer the research questions that guided this study, a cross-sectional survey research design for quantitative

statistics was employed. Participants were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University. Eligibility criteria included being 19 years old and enrolled in at least one college course, and participants self-selected to complete the study. Data was collected using an online survey, which was hosted by Qualtrics. The study survey was comprised of a demographic questionnaire and a survey, designed by the researcher, to examine participants utilization of mindfulness meditation, music listening, and music listening combined with mindfulness meditation and their perceived benefits of each intervention in addressing symptoms of stress, depression, and anxiety.

Results of this study indicate participants utilized mindfulness meditation to address symptoms of stress, depression, and anxiety. At least 50% of participants did not report utilizing mindfulness meditation when experiencing only one of the three mental health conditions examined (e.g., stress). This resulted in the null hypothesis being accepted for research question one. Additionally, results of the study indicate participants utilized music listening when experiencing stress, depression, and anxiety. At least 50% of participants reported utilizing music listening when experiencing all three mental health conditions examined (e.g., stress, depression, and anxiety). This resulted in the null hypothesis being rejected for research question two. Finally, results of the study indicate participants did not utilize music listening combined with mindfulness meditation when experiencing stress, depression, and anxiety, since at least 50% of participants did not report utilizing mindfulness meditation when experiencing any of the three mental health conditions examined. This resulted in the null hypothesis being accepted for research question three.

Exploring the relationship between utilization of mindfulness meditation and perceived benefits of the intervention in addressing stress, depression, and anxiety, results of the one-tailed, Spearman correlational analyses indicated there was a strong, positive correlation between utilization of mindfulness meditation and perceived benefits when experiencing depression and anxiety. These correlations were both statistically significant at the 0.01 level. There was a weak, positive correlation between utilization of mindfulness meditation and perceived benefits when experiencing stress, however, this correlation was not statistically significant. Since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the null hypostasis was rejected for research question four. These results indicate a relationship between participants' utilization and perception of mindfulness meditation to address stress, depression, and anxiety.

Examining the relationship between utilization of music listening and perceived benefits of the intervention in addressing stress, depression, and anxiety, results of the one-tailed, Spearman correlational analyses indicated there was a weak, positive correlation between utilization of music and perceived benefits when experiencing depression. This correlation, however, was not statistically significant. The correlation between the utilization of music listening and perceived benefits when experiencing stress and anxiety could not be computed as the utilization of music listening variable was considered constant and there was not enough variance in datasets. Since all three one-tailed, Spearman correlation analyses failed to produce statistically significant results, the null hypostasis was accepted for research question five. These results indicate

there is not a relationship between participants' utilization and perception of music listening to address stress, depression, and anxiety.

Finally, exploring the relationship between utilization of music listening combined with mindfulness meditation and perceived benefits of the intervention in addressing stress, depression, and anxiety, results of the one-tailed, Spearman correlational analyses indicated there was a strong, positive correlation between utilization of music listening combined with mindfulness meditation and perceived benefits when experiencing stress and depression. These correlations were both statistically significant at the 0.05 and 0.01 levels, respectively. There was a weak, positive correlation between utilization of music listening combined with mindfulness meditation and perceived benefits when experiencing anxiety, however, this correlation was not statistically significant. Since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the null hypostasis was rejected for research question six. These results indicate a relationship between participants' utilization and perception of music listening combined with mindfulness meditation to address stress, depression, and anxiety. Chapter IV includes a discussion of the results, limitations of the study, and implication for future research and the counseling field.

Chapter IV Discussion

As previously stated, many college students experience negative symptoms of stress, depression, and anxiety (Cha et al., 2018; Druckenmiller, 2022; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014). Music listening and MBSR techniques, such as mindfulness meditation, as individual interventions are accessible, self-administered interventions requiring little guidance and have been proven to reduce the negative symptoms of stress, depression, and anxiety (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014). Due to limited research on using music listening combined with mindfulness meditation to address the stress, anxiety, and depression college students experience, the current study was designed to examine college student's utilization and perceived benefits of mindfulness meditation, music listening, and music listening combined with mindfulness meditation as interventions in addressing stress, depression, and anxiety experienced.

The aim of the current study is to provide quantitative data to assist in further justification for utilizing MBSR techniques, such as mindfulness meditation, and music listening as an intervention for better, more easily accessible mode of treatment stress, depression, and anxiety and has the capabilities to treat each disorder effectively and simultaneously. To achieve the study's goal and answer the research questions, a cross-sectional survey research design was employed. A total of 40 responses were received for this study. The 40 responses were screened prior to analysis, and a total of eight

responses were removed. Two datasets were removed due to participants failure to meeting the age eligibility criteria of the study. Six additional datasets were incomplete and therefore excluded. Data analysis occurred in three stages. First, demographic information was analyzed using demographic statistics. Second, summary statistics were utilized to examine students' utilization of each intervention (e.g., mindfulness meditation, music listening, and music listening combined with mindfulness mediation). Finally, one-tailed, bivariate Spearman correlational analyses were conducted to examine the relationships between student's utilization of mindfulness meditation, music listening, and music listening combined with mindfulness meditation and their perceived benefits in addressing symptoms of stress, depression, and anxiety experienced.

The remainder of Chapter IV presents and discusses the findings of each data analysis phase in terms of each research question examined. Chapter IV also contains the limitations of the study, such as a lack of participant diversity, the recruitment process, the distribution method, external environmental factors present during data collection, low response rate, and the study design. Additionally, implications for future research are presented in this study.

Findings

Research question one of this research study aimed to examine students' utilization of MBSR techniques (e.g., mindfulness meditation) to address symptoms of anxiety, depression, and stress. Results indicated over half of participants (n=19; 59.4%) engaged in MBSR techniques. Most participants who reported practicing MBSR techniques also indicated practicing multiple techniques, including deep breathing or breathing exercises, meditation, yoga, grounding techniques, body scanning techniques,

listening to music, RAIN technique, self-care days, cold plunges, walking, sleeping, and reading. Interestingly, no participants specifically named mindfulness meditation as a practice in the free response question that examined the MBSR techniques participants utilized. This may be a result of participants not having a list of MBSR techniques to choose from. For instance, some of the participants who reported practicing meditation may have also selected mindfulness meditation if provided a multiple-choice question with definitions of each MBSR technique.

Participants were asked if they practice the specific MBSR technique, mindfulness meditation, defined in the survey as a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person to slow their racing thoughts, let go, and calm their mind. Less than half of participants (n=15; 46.9%) indicated they do practice mindfulness meditation. Of participants (n=15) who reported practicing mindfulness meditation, the vast majority (n=14) reported using this MBSR technique multiple times per week (M=3.6, SD=1.9). Results also indicate that most participants (n=12) utilize mindfulness meditation once per day (M=1.2, SD=.58), and mindfulness meditation sessions last 17.3 minutes on average (SD=13.7). These findings indicated participants viewed mindfulness meditation as a brief, daily practice, demonstrating its usefulness as an accessible MBSR technique requiring little time commitment. These findings also indicate that college students can adapt the frequency and duration of mindfulness meditation sessions to best meet their needs. For example, if a college student is experiencing severe symptoms of stress, depression, or anxiety, they could increase the frequency and duration of mindfulness meditation sessions as needed. Further, if a college student has a busy day, they could decrease the

duration of their mindfulness meditation session to fit their schedule. This finding indicated that mindfulness meditation is an intervention that can be individualized to best meet the ever-changing needs of college students.

Upon being asked about the utilization of mindfulness meditation for stress, depression, and anxiety 15 participants (n=32; 46.9%) used mindfulness meditation for stress, seven participants used it for depression (n=32; 21.9%), and 18 participants used it for anxiety (n=32; 56.3%). The low response rate of participants utilization of mindfulness meditation for depression may be a result of the lower frequency of depression among college students in the general population. Research indicates that 41% of college students are diagnosed with anxiety, whereas 36% of college students are diagnosed with depression (American Psychological Association, 2013). Based on the variance in national statistics on depression and anxiety rates in college students, it was expected that fewer students would respond to survey items examining perceptions benefits for each intervention in addressing depression experienced.

Interestingly, only 15 people (n=32; 46.9%) reported using mindfulness meditation in general, yet 16 reported using it specifically for stress, and 18 participants (n=32; 46.9%) reported using it for anxiety (n=32; 56.3%). This inconsistency may have resulted from participants' confusion surrounding the definition of mindfulness meditation and other MBSR techniques. There are many similarities between MBSR techniques and names of MBSR techniques tend to be used interchangeably, possibly contributing to this finding. Overall, analysis of research question one indicated that college students utilized mindfulness meditation when experiencing stress and anxiety,

but not necessarily depression and anxiety, as less than 50% of participants reported utilizing mindfulness meditation when experiencing depression and anxiety.

Research question two was designed to examine college students' utilization of music listening to address symptoms of stress, depression, and anxiety. Results indicated that almost all participants (n=31; 96.9%) listen to music. Most participants (n=26; 83.9%) listen to music every day (M=6.7, SD=.74), multiple times per day (M=4.71; SD=3.1) for multiple hours per day (M=3.9; SD=3.7). An interesting finding in the data is some participants (n=3, 9.7%) reported listening to music all day when asked their daily frequency of music listening, however, no one indicated they listen to music for 24 hours when asked their hourly listening per day. This finding highlights the inconsistencies that can occur with free response research questions. Future research may benefit from asking only forced choice items to reduce the inconsistencies observed in this study's free response items. Overall, the analysis of the frequency and duration of music listening among college students indicated music listening is popular among college students, and many college students frequently listen to music. This suggested music listening as an intervention is easily accessible and implementable treatment, as most college students already incorporate music listening throughout their daily routines.

Participants were then asked if they listen to music when they experience stress, depression, and anxiety. Again, almost all participants reported they listen to music when they are experiencing stress (n=30; 93.8%), depression (n=30; 93.8%), and anxiety (n=27; 84.4%). According to these findings, music listening is a popular coping strategy college students turn to when they are experiencing stress, depression, and anxiety, strongly indicating that music listening is an easily accessible treatment for college

student to address stress, depression, and anxiety, they are already incorporating it into their daily routines. Future research could benefit from further exploring how and when college students listen to music to better understand if music listening is simply part of a daily routine, being used when experiencing negative mental health symptoms, or both. Overall, analysis of research question two indicated that college students utilized music listening when experiencing stress, depression, and anxiety. Over 50% of participants reported utilizing music listening when experiencing all three mental health conditions examined (e.g., stress, depression, and anxiety).

Research question three sought to assess college students' utilization of music listening combined with a MBSR technique (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety. Results indicated less than half of participants (n=15; 46.9%) were even aware of music listening as an intervention while practicing mindfulness meditation. This finding was expected due to the lack of current research available on the use of this combination. Unsurprisingly, when asked if they actually utilized music listening combined with mindfulness meditation, few participants (n=9; 28.1%) reported listening to music while practicing mindfulness meditation. This finding can be attributed to the overall lack of awareness of music listening combined with mindfulness meditation as an intervention, as participants would not be expected to engage in an intervention that they were unaware existed. Overall, these findings indicate the need for more research to be conducted to validity the efficacy of music listening combined with mindfulness meditation as an intervention, and in turn, implemented with more clients receiving counseling services.

Next, participants were asked if they listened to music while practicing mindfulness meditation when they were experiencing stress, depression, and anxiety. As expected, few participants utilize mindfulness meditation to address symptoms of stress (n=12; 37.5%), depression (n=10; 31.3%), and anxiety (n=11; 34.4%). These findings indicated an overall lack of awareness and utilization of music listening as an intervention with mindfulness meditation among college students. Again, these results were expected given the limited research on music listening combined with mindfulness meditation and indicate a need for increased psychoeducation and research on the intervention. Interestingly, and similar to the findings of the utilization of mindfulness meditation to address stress and anxiety in research question one, more participants indicated they utilized music listening combined with mindfulness meditation to when experiencing stress (n=12; 37.5%), depression (n=10; 31.3%), and anxiety (n=11; 34.4%), than reporting using this intervention in general (n=9; 28.1%). Again, this finding may be attributed to confusion surrounding the definition of the intervention or other external variables that impact participants' response. Additional research is needed to further explore and better understand college students' utilization of music listening combined with mindfulness meditation to address various mental health conditions. Overall, analysis of research question three indicated that college students do not utilize music listening combined with mindfulness meditation when experiencing stress, depression, and anxiety, since less than 50% of participants reported utilizing music listening combined with mindfulness meditation when experiencing all three mental health conditions examined.

Research question four of this research study sought to explore students' perceived benefits of MBSR techniques (e.g., mindfulness meditation) in addressing symptoms of stress, depression, and anxiety. To examine this research question, the relationship between college students' utilization of mindfulness meditation and their perceived benefits of the intervention in address their stress, depression, and anxiety was analyzed. A one-tailed, bivariate Spearman correlation analysis produced a weak, positive correlation between participants' utilization of mindfulness meditation and their perceived benefits when experiencing stress ($r_s(13) = .294$, $p = .144$). This correlation was not statistically significant. The participants who reported practicing the intervention when experiencing stress (n=15), however, all reported some level of agreement that the intervention is beneficial in reducing their stress, with most participants strongly agreeing (n=13; 86.7%). This indicates that although there was not a statistically significant correlation between the utilization of mindfulness meditation and perceived benefits when experiencing stress, participants still found mindfulness meditation is beneficial in reducing stress. Future research should be conducted to further examine and validate this finding.

One-tailed, bivariate Spearman correlation analyses produced strong, positive correlations between participants' utilization of mindfulness meditation and their perceived benefits when experiencing depression ($r_s(5) = 1.00$, $p = .01$) and anxiety ($r_s(16) = .592$, $p = .005$). These correlations were both statistically significant at the .01 level. Participants who reported practicing the intervention when experiencing depression (n=7) and anxiety (n=18) all reported some level of agreement that the intervention is beneficial in reducing their depression and anxiety. Specifically, almost all participants

who practiced mindfulness meditation when experiencing depression (n=7) strongly agreed that the intervention is beneficial when they are experiencing depression (n=6; 85.7%). Similarly, almost all participants who practiced mindfulness meditation when experiencing anxiety (n=18) strongly agreed that the intervention is beneficial when they are experiencing depression (n=13; 72.2%). These findings indicate statistically significant correlations between the utilization of mindfulness meditation and perceived benefits when experiencing depression and anxiety. Overall, participants found mindfulness meditation beneficial in reducing their depression and anxiety. Future research should be conducted to further examine and validate this finding.

As mentioned previously, research indicates a lower rate of depression among college students (American Psychological Association, 2013). The lower rate of perceived benefits of mindfulness meditation for depression may result from the lower rate of college students who experience depression and the limited sample size. Again, research would benefit from conducting a similar study with a larger sample size to further validate the findings of this study.

Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the alternative relationship was accepted and indicated participants perceived the utilization of mindfulness meditation beneficial in reducing symptoms of stress, depression, and anxiety experienced. These findings also further confirm previous researchers' findings indicating mindfulness meditation is beneficial in reducing depression and anxiety college students commonly experience, but not necessarily their stress.

Research question five sought to explore students' perceived benefits of music listening in addressing symptoms of stress, depression, and anxiety. To examine this research question, the relationship between college students' utilization of music listening and their perceived benefits of the intervention in address their stress, depression, and anxiety was analyzed. A one-tailed, bivariate Spearman correlation analysis produced a weak, positive correlation between participants utilization of music listening and their perceived benefits when experiencing depression ($r_s(28) = .205$, $p = -.156$). This correlation was not statistically significant. Of the participants who reported practicing the intervention when experiencing stress (n=30), however, a majority reported some level of agreement that the intervention is beneficial in reducing their stress, with most participants strongly agreeing (n=17; 56,7%). This indicates that although there was not a statistically significant correlation between the utilization of mindfulness meditation and perceived benefits when experiencing depression, participants still found mindfulness meditation beneficial in reducing their depression. Interestingly, however, this is the only item on the study's survey in which a participant (n=1; 3.3%) indicated disagreeing that a given intervention (e.g., mindfulness meditation, music listening, and music listening combined with mindfulness meditation) was not beneficial for a given mental health condition (e.g., stress, depression, or anxiety). This finding may suggest music listening is more of a daily routine than an intervention specifically practiced when experiencing depression. Since the present study provided a high-level overview of college students' perceived benefits of music listening in reducing their depression, additional research is needed to further understand the nuances of music listening as an intervention to address various mental health conditions.

When analyzing the relationship between the utilization of music listening and the perceived benefits of the intervention in reducing participants' stress and anxiety, one-tailed, bivariate Spearman correlation analyses were unable to be calculated, as there was not enough variance between datasets and the utilization of music listening variable is considered a constant, instead of an ordinal variable. Although these correlations were not statistically significant, among participants who reported practicing the intervention when experiencing stress (n=30), all reported some level of agreement the intervention is beneficial in reducing their stress, with almost all participants strongly agreeing (n=27; 73.3%). Similarly, almost all participants who listen to music when experiencing anxiety (n=18) perceived benefits, with a vast majority strongly agreeing that the intervention is beneficial when they are experiencing anxiety (n=19; 79.4%). Interestingly, one participant (n=1; 3.7%) reported neutrality regarding their perception of the benefits of music listening in reducing their anxiety. This finding, however, may be indicative that music listening is utilized more as a daily routine rather than a specific intervention, highlighting the need for future research to further examine the perceived benefits of music listening on anxiety. These findings indicate statistically significant correlations between the utilization of mindfulness meditation and perceived benefits when experiencing depression and anxiety.

Overall, none of the three one-tailed, Spearman correlation analyses produced statistically significant results, and the null hypostasis was accepted for research question five, indicating participants did not perceive the utilization of music listening beneficial in reducing symptoms of stress, depression, and anxiety. These results also indicate there is not a relationship between participants' utilization and perception of music listening to

address stress, depression, and anxiety. Additionally, these findings, while not statistically significant, suggested music listening could potentially be an accessible, affordable, and noninvasive method of treatment for college students when they experience stress, depression, and anxiety. Future research should be conducted to further examine and validate this finding, since the results of these analyses were not statistically significant.

Finally, research question six was intended to assess college students' perceived benefits of music listening combined with mindfulness meditation, a MBSR technique, in addressing symptoms of stress, depression, and anxiety. To examine this research question, the relationship between college students' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention in address their stress, depression, and anxiety was analyzed. A one-tailed, bivariate Spearman correlation analysis produced a weak, positive correlation between participants utilization of music listening combined with mindfulness meditation and their perceived benefits when experiencing anxiety ($r_s(9) = .442$, $p = .087$). This correlation was not statistically significant. Of the participants who reported practicing the combined intervention when experiencing anxiety (n=11), however, most reported some level of agreement that the intervention is beneficial in reducing their anxiety, with most participants strongly agreeing (n=9; 81.8%). This indicates that even although there was not a statistically significant correlation between the utilization of music listening combined with mindfulness meditation when experiencing anxiety, participants generally still found mindfulness meditation combined with music listening beneficial in reducing their anxiety.

One-tailed, bivariate Spearman correlation analyses produced strong, positive correlations between participants utilization of music listening combined with mindfulness meditation and their perceived benefits when experiencing stress ($r_s(10) = .587$, $p = .022$) and depression ($r_s(8) = .791$, $p = .003$). These correlations were both statistically significant at the .05 and .01 levels respectively. Of participants who reported practicing the intervention when experiencing stress (n=12) and depression (n=10), most reported some level of agreement that the intervention is beneficial in reducing their stress and depression. Specifically, almost all participants who practiced mindfulness meditation when experiencing depression (n=7) strongly agreed that the intervention is beneficial when they are experiencing stress (n=9; 75%). Similarly, almost all participants who practiced music listening combined with mindfulness meditation when experiencing depression (n=10) strongly agreed that the intervention is beneficial when they are experiencing depression (n=7; 70%). These findings indicate statistically significant correlations between the utilization of music listening combined with mindfulness meditation and perceived benefits when experiencing stress and depression. Overall, participants found the utilization of music listening combined with mindfulness meditation beneficial in reducing their stress and depression. Future research should be conducted to further examine and validate this finding. Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the alternative relationship was accepted and indicated participants perceived the utilization of music listening combined with mindfulness meditation beneficial in reducing symptoms of stress, depression, and anxiety experienced.

Limitations of the Study

Every research study contains limitations, and the present study is no exception. Limitations of the current study include a lack of participant diversity, the recruitment process, the distribution method, external environmental factors potentially impacting data collection, a low response rate, and the study design. These limitations could have influenced the results of the study and threatened the reliability and validity of results. By examining the limitations of the current study, the research can discern alternative research designs and strategies that can be implemented in future research studies examining this topic.

The first limitation of the study is the lack of diversity that existed within the sample. A vast majority of the participants identified as full-time (n=31; 96.9%), Caucasian/white (n=28; 87.5%), female (n=29; 90.6%), undergraduate students (n=22; 68.8%). This finding could be attributed to the convenience sample the researcher used for recruitment. Participants were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University, which is a predominately white, southern university. Demographically, the department also has a larger population of undergraduate students when compared to graduate students and students within the department are predominately Caucasian/white females. To address this, the researcher could have sampled students in departments across Auburn University or included other universities across the nation in the recruitment efforts. Recruiting from the Special Education, Rehabilitation, and Counseling Department, however, created a sample of convenience and allowed the researcher to achieve the target sample size. The lack of diversity in the sample prevented the results from being generalized to the total college

population. Future research should aim to sample a more diverse population so it can be more representative of the general college student population and increase the generalizability of study findings.

The second limitation of the study is the recruitment process. Recruitment for this study was conducted via email, as this allowed the survey responses to remain completely anonymous as the researcher had no contact with potential participants and the data was identifiable. The recruitment email was sent to 16 personnel within Auburn University's Special Education, Rehabilitation, and Counseling Department. The 16 personnel contacted included graduate assistants, professors, and administrative personnel. Of the 16 personnel contacted, only 10 responded (n=16; 62.5%) via email confirming with the researcher they would disseminate the study among their students. The low response rate from personnel contacted indicate an unwillingness to share the recruitment email with their students due to external factors outside of the researcher's control. Additionally, while 10 departmental personnel indicated they would distribute the recruitment email to their students, the was no guarantee or confirmation that the recruitment email was actually shared with students. This could have negatively impacted the sample size, as the recruitment email did not reach as many students. In futures studies, therefore, the researcher should plan for a low response rate to the request to disseminate the recruitment email to students by contacting and sharing the recruitment email with additional personnel outside of the Special Education, Rehabilitation, and Counseling Department at Auburn University to ensure a broader audience. This would also potentially increase the diversity of participants, and further increase the generalizability of results.

The third limitation of the study is the distribution method. The current study was distributed via email, as this method allowed the researcher to contact more departmental personnel in a shorter period, therefore increase the number of people contacted to disseminate the recruitment email. The researcher contacted Special Education, Rehabilitation, and Counseling Department personnel and requested they send the recruitment email and link to the study survey to students, instead of contacting students directly, allowing the data to remain anonymous. The lack of direct contact with students, however, prevented the researcher from building rapport with potential participants, which may have otherwise resulted in a higher response rate. This limitation also did not allow the researcher to confirm the total amount of students who received the email. Without knowing the number of students who actually received the recruitment email and link to the survey, the researcher has no way of calculating a response rate for participants. In future research, the researcher may consider alternative distribution methods (e.g., direct participant recruitment, asking professors how many students they sent their recruitment email to, etc.), and their limitations to design a distribution method that contains a method for the number of students who are recruited versus the actual number of respondents, to more accurately calculate response rates and increase sample size.

The fourth limitation of the study are external factors potentially impacting data collection. These compounding variables, while outside of the researcher's control, may have contributed to incomplete surveys and data sets (i.e., loss of internet connection, interruptions, personal factors, etc.). These factors could have prevented participants from having the ability to complete the survey and can be attributed to the lack of standardized

testing environment. Since the researcher did not have any direct contact with participants and did not require participants to complete the survey in a testing environment, external factors and distractions present in the environment in which participants completed the survey could have contributed to the eight incomplete datasets received. Research indicates electronic surveys requiring less time commitment from participants typically reduce some external factors that impact study completion (Maymone et al., 2018; Revilla and Ochoa, 2017). External factors surrounding time commitment can be alleviated by notifying participants of the estimated length of the survey prior to their commitment to participate (Maymone et al., 2018; Oppenheimer et al., 2011). To mitigate this type of limitation, the researcher informed participants, in the information letter, about time commitment required to complete the survey as an attempt to ensure the students could set aside an appropriate amount of time for completion of the survey (e.g., 15-20 minutes). In future research, the researcher should consider having participants complete the study survey in a distraction-free, testing environment to minimize the impact of external factors on study completion.

The fifth limitation of the study is the low response rate. While electronic surveys afford the researcher an ability to easily track responses and response rates, research indicated electronic survey design does often yield a lower number of responses than other modalities of dissemination (Fan and Yan, 2010; Maymone et al., 2018; Oppenheimer et al., 2011; Sebo et al., 2017). Implementation of email and postal mail reminders to complete the survey can assist in addressing this limitation (Maymone et al., 2018; Dykema et al., 2013). To address the possibility of a low response rate the researcher contacted the administrator for Auburn University's Special Education,

Rehabilitation, and Counseling Department and requested they disseminate the survey to all the department's students, in addition to the faculty members and instructors who also disseminated the recruitment email. This strategy increased the chances that students were exposed to the recruitment email more than one time. While this study obtained more participants (n=32) than the target sample size (n=8) and provided valuable data to increase the understanding of college students' utilization and perception of the benefits of mindfulness meditation, music listening, and music listening combined with mindfulness meditation in addressing stress, depression, and anxiety experienced, the sample size was still relatively small, negatively impacting the generalizability of the study. In future research, the researcher should consider multiple recruitment methods to increase the response rate, and in turn, increase the sample size, power, and generalizability of the results.

The sixth and final limitation of this study is associated with the study design itself, as previously discussed. Data collection through self-report method may have been negatively impacted by self-selection bias, social desirability bias, and experimental mortality (Ecker-Lyster, 2018; Frey, 2010; Lundqvist et al., 2019; Titus, 2007). Self-selection bias occurred if a student selected to participate in the study when they did not actually meet the inclusion criteria for the study. Social desirability bias occurred if participants inaccurately self-reported their utilization and perceived benefits of each intervention in an attempt to produce results they believed the researcher was attempting to obtain or to portray more positive mental health outcomes (Lundqvist et al., 2019; Titus, 2007). Experimental mortality was a risk due to the length of the survey and the possibility of students not completing the survey due to external factors outside of the

researcher's control (Ecker-Lyster, 2018). These limitations effect the internal and external validity of the study.

Implications for Future Research and the Counseling Field

This study was created to provide a foundational understanding of college students' utilization and perceptions of mindfulness meditation, music listening, and music listening combined with mindfulness meditation to address stress, depression, and anxiety experienced. The study achieved its goal by yielding an overview of the topic and producing results similar to other studies exploring MBSR techniques and music listening to address stress, anxiety, and depression experienced by college students. Future research, however, would benefit from a more in-depth exploration of the symptoms that cause students to engage in each intervention, or whether or not they have a formal diagnosis of anxiety or depression. This information would provide the researcher with a better understanding of each interventions' effectiveness and how the effectiveness of the treatment for people without a diagnosis compares to that for people with a formal diagnosis. It would also be beneficial for the researcher to ask questions about the specific symptoms' participants feel benefits from each intervention.

Future research studies would also benefit from a larger sample size. A larger sample size would increase the generalizability of findings and would also allow the researcher to perform more sophisticated analysis of data (e.g., MANOVA, ANOVA, etc.) as the sample demographics would be less skewed. With a larger sample size, the researcher would be able to separate participants into groups based on their demographic characteristics, allowing the researcher to study utilization and perception of interventions on all three mental health conditions for different groups. For example, the

researcher could evaluate graduate students against undergraduate students to determine who uses and perceives more benefits for each intervention and mental health condition. Overall, the larger sample size would allow the researcher to further validate the effectiveness of all three interventions, while also allowing for a deeper interpretation of data.

Additionally, future research would benefit from different research designs to glean a more nuanced understanding of the topic. For example, an experimental design study could be implemented. The experimental design could collect both pre- and post-test data to quantify the actual benefits of MBSR techniques, specifically mindfulness meditation combined with music listening, in addressing specific symptoms of stress, depression, and anxiety. A qualitative study could also be utilized to gain rich data surrounding perceived benefits and distinctions of when and how college students use each intervention. The qualitative information would help the researcher find emerging themes and aspects of topics yet to be explored, since this is a new field with limited research.

Finally, additional studies examining the utilization and perceptions of mindfulness meditation, music listening, and music listening combined with mindfulness meditation to address stress, depression, and anxiety experienced by diverse populations is still needed. This will assist the researcher with identifying if benefits are perceived by other disability groups with an aim of making it a more universal treatment. This would also help the researcher identify groups that would not benefit from this intervention. Having this understanding would help improve best-practices used in the field.

The current study, as well as future research, provides a number of implications for the field of counseling and counselor education. First, it can assist counselors to identify trends related to clients who are college students regarding their stress, anxiety, and depression, as well as identify positive coping strategies or interventions they use in their daily life. Counselor educators can also use the information to better prepare their students to work with college students by being more aware of the mental health conditions they experience. It can also help counselor educators better train their students to utilize unique and creative best-practices and interventions with clients. Mindfulness-based stress reduction techniques and music listening are both accessible and minimally invasive emerging intervention and there is not much known about them, especially when utilized simultaneously. Therefore, research on this topic would also increase the general knowledge of counselors, counselor educators, and counseling students of music listening combined with MBSR techniques to holistically address mental health conditions and symptoms college students experience.

As previously stated, research indicates college students are hesitant to seek mental health treatment (Baltaci et al., 2021; Farrer et al., 2016). Information gleaned from the current study can be used to help counselors, counselor educators, and counseling students by providing a mode of treatment for people experiencing negative symptoms of stress, depression, and anxiety that can be implemented without having to seek treatment or be trained to utilize. Counselors are charged with advocating in the community, and MBSR techniques combined with music listening can be an intervention shared with community members through psychoeducation and advocacy efforts. This research also impacts the field by increasing the understanding of music listening as an

intervention with mindfulness meditation, which is an emerging and understudied combination intervention. This research helped to further validate these interventions as beneficial in addressing college students' symptoms of stress, depression, and anxiety. Future research will help further validate and potentially make this a best-practice intervention widely adapted in the field. Counselors and counselor educators are also charged with continually improving the field to better meet client's needs. The current study achieves this by providing evidence to further validate mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation, as a noninvasive and easily accessible form of treatment for clients experiencing stress, depression, and anxiety.

Summary

Stress, depression, and anxiety are common issues that college age students face due to a number of factors that are unique to college life (ACHA, 2018; Bitsika & Sharpley, 2012; Duffy et al., 2019; Kraft et al., 2021; Zou et al., 2018). Research indicates, however, many college students who experienced symptoms of stress, depression, and anxiety are hesitant to seek treatment (Baltaci et al., 2021; Farrer et al., 2016). Research indicates both MBSR techniques, such as mindfulness meditation, and music listening are effective interventions for the reduction of stress associated both anxiety and depression and can be utilized as holistic, noninvasive, and easily accessible interventions to address negative symptoms of stress, depression, and anxiety (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et

al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014).

The aim of this study was to increase knowledge in the field of college students' utilization and perceptions of mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation to address their stress, depression, and anxiety. In terms of college students' utilization of MBSR techniques, specifically mindfulness meditation, to address stress, depression, and anxiety, results indicated more than half of the participants used MBSR techniques and most participants used more than one technique. Less than half of the participants used mindfulness meditation, but of those who did, they tended to use it once per day and multiple times per week. The average mindfulness session lasted 17 minutes, which indicated it is a relatively brief intervention, but could also be extended depending on severity of symptoms. Overall, participants mostly utilized mindfulness meditation to address stress and anxiety, but not as much for depression.

Regarding college students' utilization of music listening to address stress, depression, and anxiety, results indicated all but one participant listen to music. Most of the participants listen to music every day, multiple times per day, and listen to music about four hours per day on average. Findings also indicated music listening was utilized equally to address symptoms of stress, depression, and anxiety.

Regarding college students' utilization of music listening combined with mindfulness meditation to address stress, depression, and anxiety, results indicated less than half of the participants have heard of music listening as an intervention while practicing mindfulness meditation. This result was expected, considering this is an

emerging and understudied intervention. There were few participants who actually listened to music while practicing mindfulness meditation, but they used it fairly equally to address symptoms of stress, depression, and anxiety.

In terms of the relationship between college students' utilization of mindfulness meditation and perceived benefits in addressing stress, depression, and anxiety, there was a weak, positive correlation between the utilization and perception of mindfulness meditation in addressing stress experienced. This relationship, however, was not statistically significant. The correlation analysis of the utilization and perception of mindfulness meditation in addressing both depression and anxiety produced a strong, positive correlation. Both relationships were statistically significant, indicating a relationship between the utilization of mindfulness meditation and perceived benefits in address depression and anxiety.

Regarding the relationship between college students' utilization of music listening and perceived benefits in addressing stress, depression, and anxiety, there was a weak, positive correlation between the utilization and perception of music listening in addressing depression experienced. This relationship, however, was not statistically significant. The correlation analysis of the utilization and perception of music listening in addressing both stress and anxiety could not be computed as there was not enough variance in the datasets. Participant responses, however, do indicate that college students perceive music listening to be beneficial in addressing their stress, depression, and anxiety.

The relationship between college students' utilization of music listening as an intervention with mindfulness meditation and perceived benefits in addressing stress,

depression, and anxiety, resulted in strong positive correlations between the utilization and perception of music listening as an intervention with mindfulness meditation in addressing stress and depression. Both relationships were statistically significant, indicating a relationship between the utilization of music listening as an intervention with mindfulness meditation and perceived benefits in address stress and depression. The relationship between college students' utilization of music listening as an intervention with mindfulness meditation and perceived benefits of anxiety, resulted in a weak, positive correlation, which was not statistically significant.

The current study achieved its goal of providing an overview understanding of college students' utilization and perceptions of mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation in addressing symptoms of stress, depression, and anxiety. This study, however, contained several limitations. While this study did achieve the target sample size, the sample was relatively small. The small sample size of this study potentially impacted the accuracy and generalizability of the results. Additionally, the study lacks diversity amongst participant demographic characteristics, also impacting the generalizability of findings. The recruitment process could have contributed to the lower response rate from students. The distribution method (e.g., email) could have impacted the study as the research did not have direct contact with potential participants and could not confirm the number of students reached in recruitment efforts. Compounding variable, outside the researcher's control, could have negatively impacted data collection, resulting in incomplete survey responses. Finally, the survey research designed used in this study contained limitations that threaten the reliability and validity of findings.

Future research on mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation on addressing stress, depression, and anxiety could help counselors and counselor educators to develop new best practices for the field of counseling. It could help counselors implement noninvasive and easily accessible treatment modalities with their clients. Counselor educators could use the information to provide counseling students with the tools needed to implement these interventions. In summary, this study helps contribute to the field of counseling by offering insight about college students' utilization and perceptions of mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation on addressing stress, depression, and anxiety.

Chapter V. Manuscript

Introduction

According to the Anxiety and Depression Association of America, or ADAA, 18.1% of people living in the United States are affected by anxiety disorders and approximately 50% of people who receive a diagnosis of depression will also be diagnosed with an anxiety disorder (ADAA, 2018). According to Hirschfeld (2001), in a one-year period, around 10-20% of adults visited a primary care physician while experiencing either symptoms of anxiety or depression, and nearly half of those people experienced symptoms of each, comorbidly. College students have even increasingly higher incidences of anxiety and depression than the general adult population. The American Psychological Association reports anxiety and depression are the top two concerns among college students in the United States (American Psychological Association, 2013). Reports show approximately 41% of college students will be diagnosed with anxiety and approximately 36% of students will be diagnosed with depression (American Psychological Association, 2013).

The American College Health Association's, or ACHA, National College Health Assessment, or NCHA, reported in 2018 approximately 60% of college students experienced symptoms of anxiety and depression (ACHA, 2018). Anxiety and depression in college students can be attributed to abnormal sleep patterns, feelings of isolation due to transitioning into a new environment, pressure to succeed, stress of academic performance, and the uncertainty surrounding the transition out of school and into employment or a postsecondary educational setting (Baltaci et al., 2021; LeBlanc & Marques, 2019; Wen et al., 2022). Moreover, the COVID pandemic forced universities

and other academic institutions to close their doors and required classes be taken online, resulting in negative effects on college students' mental health (Chang et al., 2021).

The alarmingly high and rising prevalence of anxiety and depression in college students suggests a growing need for therapeutic interventions to address the negative symptoms of depression and anxiety many college students experience, such as poor academic performance, drug and alcohol abuse, and a higher risk for potential suicidal ideations (Baltaci et al., 2021; Duffy et al., 2019; Kraft et al., 2021). Research highlights the benefits of mindfulness-based stress reduction (MBSR) techniques, such as mindfulness meditation, and music listening as individual interventions to mitigate the symptoms of anxiety and depression that many college students experience (Arslan, 2022; Chen et al., 2022; Fallon et al., 2020; Harney et al., 2022; Reyes et al., 2022; Smith et al., 2021). Additionally, music listening utilized as an intervention to increase the efficacy of mindfulness is a minimally invasive and easily accessible intervention that is proven to reduce the negative symptoms of both anxiety and depression, while not requiring the assistance of a therapist to lead the intervention strategy (Burrai et al., 2019; Chang et al., 2015; Harney et al., 2022). Research does suggest that music listening in conjunction with mindfulness meditation is a possible intervention to address negative psychological symptoms in diverse populations (Baylan et al., 2019; Loo et al., 2020). Additional research, however, is still needed to explore college student's utilization and perception of music listening and MBSR when they experience symptoms stress, depression, and anxiety.

The current study aims to assess college students' utilization and perceptions of MBSR techniques, specifically mindfulness meditation, and music listening when they

experience symptoms of stress, depression, and anxiety. The value of this study lies in the exploration of college students' awareness of and experiences with using MBSR techniques combined with music listening when they experience stress, depression, and anxiety, as well as to provide data that can support the development of an accessible, self-administered intervention that college students can utilize to help reduce the negative symptoms of anxiety and depression without seeking professional counseling services. Research indicates college students are less likely to seek professional help when experiencing symptoms of anxiety and depression, suggesting interventions that do not require an individual to seek professional help are in demand (Baltaci et al., 2021; Farrer et al., 2016). The current research, therefore, was designed as an exploratory study to observe college students' utilization and perceptions of music listening and MBSR when they experience symptoms of stress, depression, and anxiety.

Literature Review

Druckenmiller (2022) reports over 40% of college students experience anxiety and depression. These numbers can be attributed to the increased stress associated with college life, such as academic performance and navigating interpersonal situations, as well as the added stressors created by the COVID 19 pandemic, such as fear of contracting COVID, spreading COVID, and the possibility of death as a result of COVID (Baltaci et al., 2021; LeBlanc & Marques, 2019; Tashiro et al., 2022; Wen et al., 2022; Zhang et al., 2021; Zou et al., 2018). While reports show increasing numbers regarding the prevalence of anxiety and depression, research also suggests many college students are unwilling to seek the professional services and support needed to help them address the negative symptoms of anxiety and depression they experience, due to the perceived

stigma associated with seeking psychological services (Baltaci et al., 2021; Farrer et al., 2016). Music listening and MBSR techniques as individual interventions are accessible, self-administered interventions that require little guidance and have been proven to reduce the negative symptoms of anxiety and depression. No studies, however, were found that explore the utilization and perception of music listening and MBSR techniques to reduce the negative symptoms of stress, depression, and anxiety in college students (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014).

Anxiety

According to the American Psychological Association, anxiety is an emotion that presents itself in the form of tension, worry, and physiological disruptions (American Psychological Association, 2020A). Generalized Anxiety Disorder, or GAD, is the most common anxiety disorder and effects nearly seven million people, which is over three percent of the population in the United States (ADAA, 2018). Anxiety disorders are common among college students and are associated with increased stress, decreased focus, poor academic performance, drug and alcohol abuse, lower graduation rates, and higher risks for potential suicidal ideations (Duffy et al., 2019; Hartman et al., 2017; Kraft et al., 2021; Melnyk et al., 2015; Zou et al., 2018). While anxiety disorders are common among college students, research indicates that college students are reluctant to receive professional, therapeutic services to address symptoms of anxiety (Duffy et al., 2019; Farrer et al., 2016; Harney et al., 2022; Kraft et al., 2021). These studies indicate a

need for college students to have access to interventions to assist them in managing their anxiety symptoms, without having to attend regular counseling sessions (Duffy et al., 2019; Farrer et al., 2016; Kraft et al., 2021).

Depression

The American Psychiatric Association defines depression as persistent sadness and declination of interest in aspects of life that were once thought of as enjoyable (American Psychiatric Association, 2013). Often, the negative symptoms of depression also cause weight loss, irregular sleep patterns, morbid thoughts, and a devalued perception of self-worth and life purpose (American Psychiatric Association, 2013). Nearly seven percent of adults in the U.S. are affected by depression annually, and close to 17% of the population will experience symptoms of depression at some point in their lives (Parekh, 2017). Since the onset of COVID-19, the prevalence of depression in college students has risen due to numerous factors such as, isolation measures to prevent the spread of COVID, fear of contracting or spreading COVID-19, excessive amounts of screen time due to online delivery of classes and employment, and sedentary lifestyles (Tashiro et al., 2022; Zhang et al., 2021). For college students, depression can cause students to have difficulty remembering tasks and reduced academic performance, as well as lead to suicide (Bowman et al., 2019; Cha et al., 2018; Gregory et al., 2018; Wu et al., 2020). Easily accessible, self-administered interventions, such as music listening with mindfulness, are needed to assist college students who are impacted by negative effects of depression.

Comorbidity of Anxiety and Depression

Research indicates a high prevalence of comorbidity of anxiety and depression (Cha et al., 2018; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014). Less than desirable outcomes such as, increased chances for relapse, higher risk for suicidal ideations, and longer lasting effects from the illnesses were associated among individuals who experienced anxiety and depression comorbidly (Cha et al., 2018). The rates of comorbidity of depression and anxiety disorders suggests that a treatment capable of reducing the negative symptoms of the two disorders would be preferable to best assist clients and reduce the invasiveness of treatment in their lives (Cha et al., 2018; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014).

As for the comorbidity of anxiety and depression in college students, research indicates depression and anxiety are among the highest prevalence of mental health disorders in college students with depression making up 32% and anxiety making up eight percent of mental health disorders (Kraft et al., 2021; Schwartz, 2006). Approximately 75% of people who experience a mental illness have the first onset of symptoms by the age of 25 (Pedrelli et al., 2015). The American College Health Association (2018) stated approximately 60% of American college students experienced the symptoms of anxiety and/or depression, but not necessarily comorbidly. Anxiety and depression in college students can be attributed to abnormal sleep patterns, feelings of isolation due to transitioning into a new environment, and stress caused by demands of academic performance (Baltaci et al., 2021; Duffy et al., 2019; Kraft et al., 2021; LeBlanc & Marques, 2019). This indicates college lifestyles can cultivate stress, which is

symptomatic of both anxiety and depression (American Psychiatric Association, 2013; LeBlanc & Marques, 2019).

As indicated by the research reviewed, symptoms related to anxiety and depression, such as stress, are associated with poor academic performance, which leads to amplification of other negative symptoms of anxiety and depression, such as suicidal ideations, morbid thoughts, devalued self-worth, and irregular sleep patterns (American Psychiatric Association, 2013; Bitsika & Sharpley, 2012; El-Monshed et al., 2021; Nayer et al., 2013; NCHA, 2018; Pedrelli et al., 2015; Tang et al., 2020). Despite having higher incidences of depression and anxiety leading to symptoms that negatively impact their success in college and beyond, Farrer and colleagues (2016) reported college students exhibited low interest in finding assistance for their mental health problems (Farrer et al., 2016). Taken together, the research in these areas highlight the pressing need for a treatment to promote a holistic reduction in symptoms that can be effective in treating both anxiety and depression simultaneously. Music listening with MBSR techniques, such as mindfulness meditation, is a promising treatment for college students hesitant to seek treatment as an easily accessible and noninvasive treatment and additional research is needed to support the efficacy of this treatment.

Mindfulness

Mindfulness is the capacity of a human to be fully aware of their presence in the current environment, moment, physical state, or mental well-being, while creating feelings of self-acceptance and self-awareness (Arslan, 2022; Feruglio et al., 2020; Finkelstein-Fox et al., 2019; Mindfulness Staff, 2014). Specifically, mindfulness-based stress reduction, or MBSR, techniques are used to promote mindfulness by systematically

encouraging individuals to bring their attention to the present through stress reduction and self-regulation techniques such as body scanning and deep breathing (Chen et al., 2022; Feruglio et al., 2020; Maddock & Blair, 2021; Klawonn et al., 2019). Mindfulness-based stress reduction techniques have been shown to reduce symptoms of anxiety and depression in individuals with diverse academic backgrounds, such as adolescents in secondary school, undergraduate college students, nursing students, and medical students (Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Lynch et al., 2018; Parcover et al., 2018; Sampath et al., 2019; Song & Lindquist, 2015). The ease of access to MBSR and the ability to perform mindfulness routines in any situation assists in promoting the overall effectiveness of MBSR as an intervention to reduce the negative symptoms of stress, depression, and anxiety among college students (Song & Lindquist, 2015).

Researchers have noted the benefits of engaging in MBSR techniques longitudinally for college students with anxiety and depression, which include decreased perceptions of stress and increased perceptions of life satisfaction (Barbosa et al., 2013; Chlebak et al., 2013; Klawonn, 2019; Lynch et al., 2018; Maddock & Blair, 2021). Further, the research on mindfulness indicates MBSR techniques are efficient interventions in reducing the symptoms of anxiety and depression among college students in both individual and group counseling settings (Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Lynch et al., 2018; Maddock & Blair, 2021; Parcover et al., 2018; Sampath et al., 2019; Song & Lindquist, 2015). Additionally, when implemented in group settings, MBSR techniques increase self-awareness while promoting increased positive well-being by reducing the symptoms of anxiety and

depression (Parcover et al., 2017; Reyes et al., 2022). This research indicates that MBSR techniques are effective interventions for promoting better mental health in college students (Barbosa et al., 2013; Chlebak et al., 2013; Klawonn, 2019; Lynch et al., 2018; Maddock & Blair, 2021).

One MBSR technique is mindfulness meditation. Mindfulness meditation is defined as a MBSR technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person "to slow their racing thoughts, let go, and calm their mind" (Cherry, 2023). Research indicates that mindfulness meditation is beneficial in reducing a person's stress, improving quality of sleep, lowering heart rate, and improving overall immunity (American Psychological Association, 2019; Kang et al., 2009). The ease of access and convenience of MBSR techniques, such as mindfulness meditation, allow for an effective treatment for stress, depression, and anxiety that a person can feel comfortable doing in most situations due to the noninvasive nature of the intervention (Halladay et al., 2018). Overall, MBSR techniques provide students with a research-based intervention for anxiety and depression that is typically less intrusive than other traditional modes of therapy (American Psychological Association, 2019; Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Kang et al., 2009; Lynch et al., 2018; Parcover et al., 2018; Sampath et al., 2019; Shearer et al., 2016; Song & Lindquist, 2015).

Music Listening as an Intervention

Music listening for the purpose of this research can be defined as the act of listening to music and has the potential to be combined with MBRS techniques, such as mindfulness meditation, to address the negative symptoms of stress, depression, and

anxiety college students experience more holistically. Research on music listening suggests individuals in a variety of highly stressful situations and life experiences benefit from a music listening routine, as listening to music has been shown reduce stress levels and promote positive physiological and psychological wellbeing (American College of Cardiology, 2018; Chang et al., 2015; Deshkar et al., 2015; Getz et al., 2012; Han et al., 2010; Jiang et al., 2016; Linnemann et al., 2016; Salehi et al., 2016; Thoma et al. 2014). Furthermore, music listening can be described as a method of treatment that does not significantly interfere with the normal routines of the patient's life, is affordable, suitable for most situations, and has few negative side effects (Chang et al., 2015). The benefits of music listening as an intervention, especially when combined with MBSR techniques, has the potential to holistically reduce the symptoms of stress, depression, and anxiety many college students face and provide college students with an easily accessible treatment that can be completed without having to seek formal treatment. Research on the college student's utilization and perception of music listening and MSRB techniques is limited, however, indicating the need for additional research to be conducted on the topic.

Mindfulness-Based Stress Reduction with Music Listening

Research regarding the use and perceptions of music listening as an intervention with mindfulness is limited, but the available research suggests the combined use of music listening and mindfulness has the potential to promote psychological well-being (Baylan et al., 2019; Loo et al., 2020). Research, however, does not exist regarding the impact of music listening with MBSR techniques as an intervention to mitigate the negative symptoms of stress, depression, and anxiety many college students experience. This indicates a need for further empirical evidence to validate the efficacy of MBSR

combined with music listening to mitigate negative symptoms of stress, depression, and anxiety college students experience.

Significance of the Study

An easily accessible and noninvasive intervention that has the potential to decrease the negative symptoms of stress, depression, and anxiety many college students experience is the use of music listening combined with MBSR techniques, such as mindfulness meditation. Symptoms of stress, depression, and anxiety can negatively impact college students by causing sleep disturbances, increased stress levels, and suicidal ideations, which negatively impact their overall academic performance and quality of life (Cha et al., 2018; Duffy et al., 2019; Kraft et al., 2021). Additionally, since the start of the COVID-19 pandemic, researchers have seen an increase in stress, depression, and anxiety in college students due to the added stressors caused by the high number of infections and death rates causing fear, worry, and feelings of isolation (Hayat et al., 2022; Lee et al., 2021; Tashiro et al., 2022; Zhang et al., 2021).

Research indicates many college students who experienced symptoms of stress, depression, and anxiety were hesitant to seek treatment, often citing the lack of access to treatment as a reason for not seeking professional counseling services (Baltaci et al., 2021; Farrer et al., 2016). Despite college students' hesitancy to seek treatment, a number of treatments, such as MBSR and music listening, have been identified as effective in reducing symptoms of anxiety and depression (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019;

Song & Lindquist, 2015; Thoma et al., 2014). Specifically, MBSR techniques, such as mindfulness meditation, have been shown to reduce symptoms of stress, depression, and anxiety in individuals with diverse academic backgrounds, such as adolescents in secondary school, undergraduate college students, nursing students, and medical students (Chen et al., 2022; Felver et al., 2018; Halladay et al., 2018; Hjeltnes et al., 2015; Lynch et al., 2018; Parcover et al., 2018; Sampath et al., 2019; Song & Lindquist, 2015). Additionally, music listening has been used an intervention to address symptoms of stress effecting academic performance and the stress levels in medical patients, as well as improve overall physiology and psychological health (American College of Cardiology, 2018; Deshkar et al., 2015; Han et al., 2010; Jiang et al., 2016; Linnemann et al., 2016; Salehi et al., 2016; Thoma et al., 2014).

Research indicates both MBSR techniques and music listening are effective interventions for the reduction of stress associated both anxiety and depression (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014). There is no literature, however, exploring college students' utilization and perception of the two interventions in conjunction with one another as a holistic intervention to address stress and other symptoms of anxiety and depression. The current study intended to investigate college students' utilization and perception of MBSR techniques, specifically mindfulness meditation, and music listening when they experience symptoms of stress, depression, and anxiety. The aim of this study was to provide quantitative data to assist in

further supporting the justification of utilizing MBSR techniques, specifically mindfulness meditation, and music listening as an intervention for better, more easily accessible, and more holistic mode of treatment for stress, depression, and anxiety.

Methodology

The research methodology employed in this study was a cross-sectional survey research design for quantitative research aimed at exploring college students' utilization and perception of music listening and MBSR techniques, specifically mindlessness meditation, to address their symptoms of stress, depression, and anxiety. Participants for the study were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University. Data was collected using an electronic, Qualtrics survey that contained a demographic questionnaire and a survey created by the researcher. Recruitment and data collection procedures for this study were approved by Auburn University's IRB. To explore students' utilization and perception of music listening and MSBR techniques, specifically mindfulness meditation, to address symptoms of stress, depression, and anxiety, the following research questions were empirically addressed using a cross-sectional survey research design:

7. To what extent are college students utilizing MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety?
8. To what extent are college students utilizing music listening to address symptoms of stress, depression, and anxiety?
9. To what extent are college students utilizing music listening combined with MBSR techniques to address symptoms of stress, depression, and anxiety?

10. To what extent do college students perceive MBSR techniques (e.g., mindfulness meditation) to be beneficial in addressing symptoms of stress, depression, and anxiety?
11. To what extent do college students perceive music listening to be beneficial in addressing symptoms of stress, depression, and anxiety?
12. To what extent do college students perceive music listening combined with MBSR techniques to be beneficial address symptoms of stress, depression, and anxiety?

Participant Characteristics

Auburn University graduate and undergraduate students were eligible to participate in the study if they were at least 19 years old, enrolled in at least one course at the time of the study, and had access to the internet. Participants self-selected to participate in the study based on their own identification of meeting the eligibility criteria listed on the recruitment email and information letter. Participants assisted in answering the study's research questions by providing quantitative data used to examine college students' utilization and perception of mindfulness meditation and music listening to address their symptoms of stress, depression, and anxiety.

Sampling and Data Procedures

Participant recruitment and data collection occurred between August 28, 2023 and October 11, 2023. Participants were recruited from students taking classes the Special Education, Rehabilitation, and Counseling Department at Auburn University. Sixteen faculty members from this department were contacted via email and provided with the study's recruitment email to be disseminated to students and 10 faculty members

responded indicating that they would send the recruitment email to their students. The recruitment email consisted of information related to participant eligibility, key elements of the study, a link to the survey and the researcher's contact information. The link directed students interested in participating in the study to an electronic survey, hosted by Qualtrics, which contained the information letter, a demographic questionnaire, and the study survey.

Prior to beginning the study's survey, all interested individuals were required to consent to participation after reviewing the information letter, per the Auburn University Institutional Review Board requirements. The information letter was also presented in a downloadable PDF format to allow participants to retain a copy for their own records. Participants who provided consent were then directed to the demographic questionnaire followed by the study survey. It was estimated that completion of the survey would take a total of 15-25 minutes and participants did not receive compensation.

Upon completion of data collection, the researcher screened and cleaned the data to identify incomplete data sets, ensure all participants met the eligibility criteria, and there were no irregularities among the answers. A total of 40 data sets were collected on the survey. Among the 40 survey results, a total of eight data sets were removed. Six datasets were removed due to incomplete datasets, and two datasets were removed as participants did not meet the study's age eligibility criteria. The results of the screening and cleaning of this data yielded 32 complete data sets which were used for the analysis provided in this study.

Measures

Prior to beginning the study survey, participants were presented with the information letter and were required to provide consent prior to starting the survey. Then, participants who provided consent were directed to the demographic questionnaire. The demographic questionnaire was utilized to gather information regarding participant characteristics including the university they attend, academic class standing, whether they are in their dissertation phase of their program, whether they are a full or part time student, gender, race/ethnicity, and age.

Participants then completed a survey aimed at examining their utilization and perception of music listening and MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety. This survey was created by the researcher, with approval by the researcher's academic advisor. The survey was divided into four sections. Section one explored participants' utilization of mindfulness-based stress reduction techniques. Section two examined participants' utilization of mindfulness meditation, as well as their perceived benefits of mindfulness meditation in reducing symptoms of stress, depression, and anxiety. Section three explored participants' utilization of music listening, as well as their perceived benefits of music listening in addressing symptoms of stress, depression, and anxiety. Finally, section four examined participants' utilization of music listening combined with mindfulness meditation, as well as their perceived benefits of music listening combined with mindfulness meditation in reducing symptoms of stress, depression, and anxiety. After completing the study survey, participants were provided a PDF flyer containing mental health resources and tools.

The content validity of the study survey was determined by three Ph.D. level raters who evaluated the survey to determine the relevance of each question to this study's research questions. Content validity is the subjective opinion of experts regarding the extent to which items in the survey are representative or relevant to the constructs the survey is designed to assess (Hong et al., 2019). Because the study survey was created by the researcher and did not contain pre-established psychometric values, content validity allowed the researcher to determine the relevance of the instrument to the constructs being studied. The raters were asked to rate the relevance of each survey item on a scale from one through three where one represented not relevant, two represented somewhat relevant, and three represented relevant. For the purposes of this study, all survey items were required to receive a score of at least two to achieve content validity. All items on the survey receive a score of 2.33 or higher, indicating content validity within the survey.

Data Analysis

Analysis of data was performed in three stages. In stage one, descriptive statistics were used to analyze demographic data (e.g., student academic standing, if the students are in the dissertation phase of their program, full or part-time standing, gender, race/ethnicity, and age). In stage two of the data analysis, descriptive statistics were used to summarize data regarding student utilization of the interventions: mindfulness meditation, music listening, and music listening combined with mindfulness meditation. Descriptive statistics were used to examine participants' utilization of each intervention and demographic characteristics. In phase three of data analysis, one-tailed, bivariate correlational analyses were used to evaluate the relationships between participants' utilization of each intervention (e.g., mindfulness meditation, music listening, and music

listening combined with mindfulness meditation) with their perceptions of the benefits of each intervention in addressing negative symptoms of each mental health condition studied (e.g., stress, depression, and anxiety). The Likert-scale questions used to assess participants' perceived benefits of each intervention when experiencing symptoms of stress, depression, and anxiety produced ordinal variables, therefore, Spearman correlations were the most appropriate statistical analyses.

Results

Data analysis for this study occurred in three phases and included descriptive statistics and nine, one-tailed Spearman correlation analyses. Descriptive statistics allowed the researcher to holistically examine participants' demographic characteristics and their utilization of each intervention (e.g., mindfulness meditation, music listening, music listening combined with mindfulness meditation). The Spearman correlational analyses provided summary statistics to examine participants' perception of each intervention in addressing symptoms of stress, depression, and anxiety.

Demographic Information

A total of 40 students consented to participate in the study. Six individuals, however, did not complete the entirety of the survey and their data was removed from analysis. Additionally, two more data sets were excluded from analysis as these participants indicated being 18 years old, and therefore did not meet eligibility requirements of the study. A total of 32 data sets were analyze in this study.

Examining participant demographics, academic class standing ranged from sophomore to the doctoral level. Five participants (n=32; 15.6%) reported being sophomores. Twelve participants (n=32; 35.3%) reported being juniors. Five participants

(n=32; 15.6%) reported being seniors. Four participants (n=32; 12.5%) were master's level students, and six participants (n=32; 18.8%) were doctoral level students. There were no participants who were freshman or categorized as a different class standing than the standings listed in this survey item. Overall, a total of 22 participants (n=32; 68.8%) were classified as undergraduate students, and 10 participants (n=32; 31.3%) were classified as graduate students.

Participants were also asked to identify if they were in the dissertation or thesis phase of their academic program. Three participants (n=32; 9.4%) indicated they were in the dissertation or thesis phase of their academic program, 23 participants (n=32; 71.9%) indicated they were not in the dissertation or thesis phase of their program, and six participants (n=32; 18.8%) indicated this item was not applicable. Overall, a majority of participants (n=29; 90.7%) were not completing their dissertation or thesis at the time of the study. Participants were then prompted to indicate if they were enrolled full or part time at the time of the study. Thirty-one participants (n=32; 96.9%) indicated that they were enrolled full time. Only one participant (n=32; 3.1%) indicated they were enrolled as a part time student at the time of the study.

Regarding participants' gender, one participant (n=32; 3.1%) identified as male. Twenty-nine participants (n=32; 90.6%) identified as female, and two participants (n=32; 6.3%) identified as non-binary/third gender. There were no participants who did chose to not disclose their gender, and no participants identified as any other gender than the genders listed on the survey item. In terms of participants' race/ethnicity, three participants (n=32; 9.4%) identified as African American/Black. One participant (n=32; 3.1%) identified as Asian, and 28 participants (n=32; 87.5%) identified as

Caucasian/White. There were no participants who identified as Multiracial/Multiethnic, Native American, or Pacific Islander. Additionally, there were no participants who chose to not disclose their race/ethnicity, and no participants identified as any other race/ethnicity other than the races/ethnicities listed on the survey item.

Additionally, participants were asked two free response questions on the demographic questionnaire. First, participants were asked which university they attended. All 32 participants indicated that they attended "Auburn" or "Auburn University" to this item on the demographic questionnaire. The second free response item on the demographic questionnaire asked participants' their age. Participants' ages ranged from 19 to 45. The average age of participants was 22.9 years old (SD=5.9). Specifically, five participants (n=32; 15.6%) reported being 19 years old, 11 participants (n=32; 34.4%) indicated being 20 years old, and five participants (n=32; 15.6%) reported being 21 years old. Additionally, two participants (n=32; 6.3%) reported being 22 years old, three participants (n=32; 9.4%) indicated being 24 years old, one participant (n=32; 3.1%) reported being 26 years old, and two participants (n=32; 6.3%) indicated being 27 years old. Two participants (n=32; 6.3%) reported being 36 years old, and one participant (n=32; 3.1%) reported being 45 years old at the time of study.

Research Question 1: To what extent are college students utilizing MBSR techniques (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety?

To examine the extent to which undergraduate and graduate college students utilize MBSR techniques, specifically mindfulness meditation, participants were asked to self-identify if they use MBSR and mindfulness meditation, and if so, the frequency and

duration of use. Nineteen participants (n=32; 59.4%) indicated they engaged in a MBSR technique. Thirteen participants (n=32; 40.6%) indicated they did not practice any MBSR techniques.

Participants who utilized any MBSR techniques (n=19) were then asked to identify what MBSR techniques they utilize in a free response question. All 19 participants (n=32; 59.4%) completed this item, with 14 of the participants (n=19; 73.7%) indicating that they use more than one MBSR technique. Nine participants (n=19; 50%) reported practicing deep breathing or breathing exercises, and two participants (n=19; 10.5%) indicated they specifically utilize box breathing. Eight participants (n=19; 42.1%) indicated they engage in meditation, and four participants (n=19; 21.1%) reported practicing yoga. Two participants (n=19; 10.5%) indicated they utilize grounding techniques, and three participants (n=19; 15.8%) reported using body scanning techniques. Additionally, two participants (n=19; 10.5%) reported listening to music as a MBSR technique. Finally, one participant (n=19; 5.3%) indicated utilizing the RAIN technique, one participant (n=19; 5.3%) reported using self-care days, one participant (n=19; 5.3%) utilized cold plunges, one participant (n=19; 5.3%) indicated walking, one participant (n=19; 5.3%) reported sleeping, and one participant (n=19; 5.3%) reported using reading as a MBSR technique.

Next, participants were asked if they specifically practiced mindfulness meditation, which was defined as a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person to slow their racing thoughts, let go, and calm their mind. Fifteen participants (n=32; 46.9%) indicated they

do practice mindfulness meditation. Seventeen participants (n=32; 53.1%) indicated they do not utilize mindfulness meditation.

The 15 participants who reporting using mindfulness meditation were then asked items regarding their frequency of use. Weekly frequency ranged from using mindfulness meditation 1.5 times per week to eight times per week. On average, the 15 participants utilize mindfulness meditation 3.6 times per week (SD=1.9). Three participants (n=15; 20%) used mindfulness meditation twice per week, five participants (n=15; 33.3%) used mindfulness meditation three times per week, one participant (n=15; 6.7%) used mindfulness meditation four times per week, two participant (n=15; 13.3%) used mindfulness meditation five times per week, one participant (n=15; 6.7%) used mindfulness meditation seven times per week, and one participant (n=15; 6.7%) used mindfulness meditation eight times per week. One participant (n=15; 6.7%) used mindfulness meditation one to two times per week, and one participant (n=15; 6.7%) used mindfulness meditation two to three times per week. For reporting and analysis of the two participant responses that contained a range, the mean of the range was utilized (e.g., 1.5 times per week and 2.5 times per week).

Participants who reported using mindfulness meditation (n=15) were then asked to describe how often they engage in a mindfulness meditation on an average day. Daily frequency ranged from using mindfulness meditation one time per day to three times per day. On average, those who utilized mindfulness meditation use this technique 1.2 times per day (n=14; SD=.58). One participant (n=15; 6.7%) indicated they utilized mindfulness meditation one to two days per week. Since this participant did not report their weekly mindfulness meditation use instead of their daily use, this response was

excluded from the mean calculation. Twelve participants (n=15; 80%) indicated they practice mindfulness meditation once a day. Additionally, one participant (n=15; 6.7%) indicated they practice mindfulness meditation twice per day, and one participant (n=15; 6.7%) reported using mindfulness meditation three times per day.

Next, participants who reported using mindfulness meditation (n=15) were asked how long each mindfulness meditation session lasts on average. Mindfulness meditation sessions ranged from 2.5 to 52.5 minutes. On average, the 15 participants who utilized mindfulness meditation engage in this MSBR technique for 17.3 minutes per session (SD=13.7). Specifically, three participants (n=15; 20%) indicated average mindfulness meditation session last 30 minutes, and two participants (n=15; 13.3%) reported average mindfulness meditation sessions last 20 minutes. Three participants (n=15; 20%) indicated average mindfulness meditation sessions last 10 minutes, and three participants (n=15; 20%) reported average mindfulness meditation sessions last five minutes. One participant (n=15; 6.7%) indicated average mindfulness meditation sessions last between one and five minutes, one participant (n=15; 6.7%) reported average mindfulness meditation sessions last five to 10 minutes, one participant (n=15; 6.7%) reported average mindfulness meditation sessions last 10 to 15 minutes, and one participant (n=15; 6.7%) indicated average mindfulness meditation sessions last between 45 and 60 minutes. For data analysis of the three participant responses that contained a range, the mean of the range was utilized (e.g., 2.5 minutes, 7.5 minutes, 12.5 minutes, and 52.5 minutes).

Participants (n=32) were then asked if they practiced mindfulness meditation when they experience stress, depression, and anxiety. Regarding the use of mindfulness meditation to address stress, 15 participants (n=32; 46.9%) reported engaging in

mindfulness meditation when experiencing stress, while 17 participants (n=32; 53.1%) did not use mindfulness meditation for stress. When experiencing depression, seven participants (n=32; 21.9%) indicated they utilize mindfulness meditation to address depressive symptoms, while 25 participants (n=32; 78.1%) did not use mindfulness meditation for depression. Regarding the use of mindfulness meditation to address anxiety, 18 participants (n=32; 56.3%) of participants indicated they engage in mindfulness meditation when experiencing anxiety, while 14 participants (n=32; 43.8%) did not use mindfulness meditation for anxiety. Overall, since at least 50% of participants reported utilizing mindfulness meditation when experiencing only one of the three mental health conditions examined (e.g., anxiety), the null hypothesis for research question one was accepted.

Research Question 2: To what extent are college students utilizing music listening to address symptoms of stress, depression, and anxiety?

To examine research question two, participants were asked to self-identify if they listen to music, and if so, the frequency and duration of music listening. Of the 32 participants, 31 participants (n=32; 96.9%) reported they do listen to music. Only one participant (n=32; 3.1%) reported they do not listen to music.

Participants who reported listening to music (n=31) were then asked on an average week, how many days per week do they listen to music. Music listening ranged from four days per week to seven days per week. On average, participants listened to music 6.7 days per week (n=31; SD=.74). Specifically, 26 participants (n=31; 83.9%) reported listening to music seven days per week. Two participants (n=31; 6.5%) indicated listening to music six days per week, and two participants (n=31; 6.5%) reported listening

to music five days per week. Only one participant (n=31; 3.2%) reported listening to music four days per week.

Next, participants who reported listening to music (n=31) were asked how many times per day they listen to music. Daily music listening ranged from 1.5 times per day to all day. On average, participants (n=28) listen to music 4.71 times per day (SD=3.1). For the mean calculation, three participants (n=31; 9.7%) indicated they listened to music all day. Since these participants did not provide a numerical value, their responses were excluded from the mean calculation. Examining participants daily music use, four participants (n=31; 12.9%) reported listening music 10 times per day. One participant (n=31; 3.2%) indicated listening to music seven times per day, and one participant (n=31; 3.2%) reported listening to music six times per day. Five participants (n=31; 16.1%) indicated listening to music five times per day, and two participants (n=31; 6.5%) reported listening to music four times per day. Six participants (n=31; 19.4%) indicated listening to music three times per day, and five participants (n=31; 16.1%) reported listening to music twice daily. Two participants (n=31; 6.5%) reported listening to music one to two times per day, one participant (n=31; 3.2%) indicated listening to music two to three times per day, and one participant (n=31; 3.2%) reported listening to music 10 to 15 times per day. For data analysis of the four participant responses that contained a range, the mean of the range was utilized (e.g., 1.5 times per day, 2.5 times per day, and 12.5 times per day).

Participants who reported listening to music (n=31) were asked to report how many hours per day they listened to music on average. Participants responses ranged from 45 minutes to 20 hours. On average, participants (n=31) listen to music 3.9 hours

per day (SD=3.7). Specifically, one participant (n=31; 3.2%) reported listening to 20 hours per day, and one participant (n=31; 3.2%) indicated they listened to music 12 hours per day. Two participants (n=31; 6.4%) reported listening to music six hours per day, and three participants (n=31; 9.7%) indicated they listen to music five hours per day. Six participants (n=31; 19.4%) reported listening to music four hours per day, and six participants (n=31; 19.4%) indicated listening to music three hours per day. Seven participants (n=31; 22.6%) reported listening to music two hours per day, and one participant (n=31; 3.2%) indicated listening to music one hour per day. Three participants (n=31; 9.7%) reported listening to music for one to two hours per day, and one participant (n=31; 3.2%) indicated they listened to music 30 minutes to one hour per day. For data analysis of the four participant responses that contained a range, the mean of the range was utilized (e.g., 1.5 hours and 0.75 hours).

Participants (n=32) were then asked if they listened to music when they experience stress, depression, and anxiety. Regarding listening to music to address stress and depression, 30 participants (n=32; 93.8%) reported listening to music when they experience stress and depression, while two participants (n=32; 6.3%) did not listen to music when experiencing stress and depression. Examining participants use of music listening to address anxiety, 27 participants (n=32; 84.4%) reported listening to music when they experience anxiety, while five participants (n=32;15.6%) did not listen to music when experiencing anxiety. Overall, since at least 50% of participants reported utilizing music listening when experiencing all three mental health conditions examined (e.g., stress, depression, and anxiety), the null hypothesis for research question two was rejected.

Research Question 3: To what extent are college students utilizing music listening combined with MBSR techniques to address symptoms of stress, depression, and anxiety?

To examine research question three, participants (n=32) were first asked if they have heard of listening to music as an intervention while practicing mindfulness meditation. Fifteen participants (n=32; 46.9%) indicated having awareness of music listening as an intervention while practicing mindfulness meditation. Seventeen participants (n=32; 53.1%) reporting not being aware of music listening as an intervention when combined with mindfulness meditation.

Next, participants (n=32) were asked if they listened to music while practicing mindfulness meditation in general. Nine participants (n=32; 28.1%) reported listening to music while practicing mindfulness meditation. Twenty-three participants (n=32; 71.9%) indicated that they do not listen to music listening while practicing mindfulness meditation. Participants (n=32) were then asked if they listened to music while practicing mindfulness meditation when experiencing stress, depression, and anxiety. Regarding listening to music while practicing mindfulness meditation to address stress experienced, twelve participants (n=32; 37.5%) reported listening to music while practicing mindfulness meditation to address stress experienced, while 20 participants (n=32; 62.5%) did not use music listening while practicing mindfulness meditation to address stress experienced. When experiencing depression, 10 participants (n=32; 31.3%) indicated listening to music while practicing mindfulness meditation to address depressive symptoms, while 22 participants (n=32; 68.8%) did not listening to music while practicing mindfulness meditation for depression. Regarding the listening to music

while practicing mindfulness meditation to address anxiety, 11 participants (n=32; 34.4%) of participants indicated they listening to music while practicing mindfulness meditation when experiencing anxiety, while 21 participants (n=32; 65.6%) did not listening to music while practicing mindfulness meditation for anxiety. Overall, since at least 50% of participants did not report listening to music while practicing mindfulness meditation when experiencing the three mental health conditions examined (e.g., stress, depression, and anxiety), the null hypothesis for research question three was accepted.

Research Question 4: To what extent do college students perceive MBSR techniques (e.g., mindfulness meditation) to be beneficial in addressing symptoms of stress, depression, and anxiety?

To examine research question four, Spearman, one-tailed correlational analyses were conducted for the three Likert-scale questions utilized on the study survey to assess participants' perceived benefits of mindfulness meditation, a MBSR technique, in addressing symptoms of stress, depression, and anxiety. Survey items utilized to measure perceived benefits of mindfulness meditation consisted of a five-point Likert-scale, ranging from Strongly Agree to Strongly Disagree. Each Spearman correlation analysis compared participants utilization of mindfulness meditation with their perceived benefit of the intervention for each mental health condition (e.g., stress, depression, and anxiety).

Of the participants (n=15) who indicated they utilize mindfulness meditation when experiencing stress, 13 participants (n=15; 86.7%) Strongly Agreed mindfulness meditation was beneficial when experiencing stress. Two participants (n=15; 13.3%) Somewhat Agreed mindfulness meditation was beneficial when experiencing stress. No

participants Neither Agreed or Disagreed, Somewhat Disagreed, or Strongly Disagreed that mindfulness meditation was beneficial when experiencing stress.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing stress. There was a weak, positive correlation between the two variables, $r_s(13) = .294$, $p = .144$. The 95% confidence interval for this correlation was -.184 to 1.00. This correlation, however, was not statistically significant, indicating there was not a statistically significant relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing stress.

Of the participants (n=7) who indicated they utilize mindfulness meditation when experiencing depression, six participants (n=7; 85.7%) Strongly Agreed mindfulness meditation was beneficial when experiencing depression. One participant (n=7; 14.3%) Somewhat Agreed mindfulness meditation was beneficial when experiencing depression. No participants Neither Agreed or Disagreed, Somewhat Disagreed, or Strongly Disagreed that mindfulness meditation was beneficial when experiencing depression.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing depression. There was a strong, positive correlation between the two variables, $r_s(5) = 1.00$, $p = .01$. The 95% confidence interval for this correlation could not be computed as there was a perfect, positive correlation ($r_s(5) = 1.00$). This correlation was statistically significant at the 0.01 level, indicating there was a statistically significant relationship between participants'

utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing depression.

Of the participants (n=18) who indicated they utilize mindfulness meditation when experiencing anxiety, 13 participants (n=13; 72.2%) Strongly Agreed mindfulness meditation was beneficial when experiencing anxiety. Four participants (n=15; 26.7%) Somewhat Agreed mindfulness meditation was beneficial when experiencing anxiety. One participant (n=15; 6.7%) Neither Agreed nor Disagreed mindfulness meditation was beneficial when experiencing anxiety. No participants Somewhat Disagreed or Strongly Disagreed that mindfulness meditation was beneficial when experiencing anxiety.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. There was a strong, positive correlation between the two variables, $r_s(16) = .592$, $p = .005$. The 95% confidence interval for this correlation was .238 to 1.00. This correlation was statistically significant at the 0.01 level, indicating there was a statistically significant relationship between participants' utilization of mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the null hypostasis was rejected, and the alternative relationship was accepted. These results indicate a relationship between participants' utilization and perception of mindfulness meditation to address stress, depression, and anxiety.

Research Question 5: To what extent do college students perceive music listening to be beneficial in addressing symptoms of stress, depression, and anxiety?

To examine research question five, Spearman, one-tailed correlational analyses were conducted for the three Likert-scale questions utilized on the study survey to assess participants' perceived benefits of listening to music when experiencing stress, depression, and anxiety. Survey items utilized to measure perceived benefits of music listening consisted of a five-point Likert-scale, ranging from Strongly Agree to Strongly Disagree. Each Spearman correlation analysis compared participants utilization of music listening with their perceived benefit of the intervention for each mental health condition (e.g., stress, depression, and anxiety).

Of the participants (n=30) who indicated they utilize music listening when experiencing stress, 22 participants (n=30; 73.3%) Strongly Agreed music listening was beneficial when experiencing stress. Eight participants (n=30; 26.7%) Somewhat Agreed music listening was beneficial when experiencing stress. No participants Neither Agreed or Disagreed, Somewhat Disagreed, or Strongly Disagreed that music listening was beneficial when experiencing stress.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing stress. The datasets of both variables, however, were highly correlated, as only one participant indicted they did not listen to music and this variable is considered constant. A correlation coefficient could not be calculated, as there was not enough variance between datasets. This correlation was not statistically significant, indicating there was not a statistically significant relationship

between participants' utilization of music listening and their perceived benefits of the intervention when experiencing stress.

Of the participants (n=30) who indicated they utilize music listening when experiencing depression, 17 participants (n=30; 56.7%) Strongly Agreed music listening was beneficial when experiencing depression. Eight participants (n=30; 26.7%) Somewhat Agreed music listening was beneficial when experiencing depression. Four participants (n=30; 13.3%) Neither Agreed nor Disagreed music listening was beneficial when experiencing depression. One participant (n=30; 3.3%) Somewhat Disagreed music listening was beneficial when experiencing depression. No participants Strongly Disagreed that music listening was beneficial when experiencing depression.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing depression. There was a weak, positive correlation between the two variables, $r_s(28) = .205$, $p = -.156$. The 95% confidence interval for this correlation was -1.00 to .167. This correlation, however, was not statistically significant, indicating there was not a statistically significant relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing depression.

Of the participants (n=27) who indicated they utilize music listening when experiencing anxiety, 19 participants (n=27; 70.4%) Strongly Agreed mindfulness meditation was beneficial when experiencing anxiety. Seven participants (n=27; 25.9%) Somewhat Agreed music listening was beneficial when experiencing anxiety. One participant (n=27; 3.7%) Neither Agreed nor Disagreed music listening was beneficial

when experiencing anxiety. No participants Somewhat Disagreed or Strongly Disagreed that music listening was beneficial when experiencing anxiety.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing anxiety. The datasets of both variables, however, were highly correlated, as only one participant indicated they did not listen to music and this variable is considered constant. A correlation coefficient could not be calculated, as there was not enough variance between datasets. This correlation was not statistically significant, indicating there was a statistically significant relationship between participants' utilization of music listening and their perceived benefits of the intervention when experiencing anxiety. Overall, since all three one-tailed, Spearman correlation analyses did not produce statistically significant results, the null hypostasis was accepted, and the alternative relationship was rejected. These results indicate there is not a relationship between participants' utilization and perception of music listening to address stress, depression, and anxiety.

Research Question 6: To what extent do college students perceive music listening combined with MBSR techniques to be beneficial address symptoms of stress, depression, and anxiety?

To examine research question six, Spearman, one-tailed correlational analyses were conducted for the three Likert-scale questions utilized on the study survey to assess participants' perceived benefits of music listening combined with mindfulness meditation, a MBSR technique, in addressing symptoms of stress, depression, and anxiety. Survey items utilized to measure perceived benefits of music listening combined

with mindfulness meditation consisted of a five-point Likert-scale, ranging from Strongly Agree to Strongly Disagree. Each Spearman correlation analysis compared participants utilization of music listening combined with mindfulness meditation with their perceived benefit of the intervention for each mental health condition (e.g., stress, depression, and anxiety).

Of the participants (n=12) who indicated they utilize music listening combined with mindfulness meditation when experiencing stress, nine participants (n=12; 75%) Strongly Agreed music listening combined with mindfulness meditation was beneficial when experiencing stress. Two participants (n=12; 16.7%) Somewhat Agreed music listening combined with mindfulness meditation was beneficial when experiencing stress. One participant (n=12; 8.3%) Neither Agreed nor Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing stress. No participants Somewhat Disagreed, or Strongly Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing stress.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing stress. There was a strong, positive correlation between the two variables, $r_s(10) = .587$, $p = .022$. The 95% confidence interval for this correlation was .108 to 1.00. This correlation was statistically significant at the 0.05 level, indicating there was a statistically significant relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing stress.

Of the participants (n=10) who indicated they utilize music listening combined with mindfulness meditation when experiencing depression, seven participants (n=10; 70%) Strongly Agreed music listening combined with mindfulness meditation was beneficial when experiencing depression. Two participants (n=10; 20%) Somewhat Agreed music listening combined with mindfulness meditation was beneficial when experiencing depression. One participant (n=10; 10%) Neither Agreed nor Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing depression. No participants Somewhat Disagreed or Strongly Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing depression.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing depression. There was a strong, positive correlation between the two variables, $r_s(8) = .791$, $p = .003$. The 95% confidence interval for this correlation was .408 to 1.00. This correlation was statistically significant at the 0.01 level, indicating there was a statistically significant relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing depression.

Of the participants (n=11) who indicated they utilize music listening combined with mindfulness meditation when experiencing anxiety, nine participants (n=11; 81.8%) Strongly Agreed music listening combined with mindfulness meditation was beneficial when experiencing anxiety. One participant (n=11; 9.1%) Somewhat Agreed music

listening combined with mindfulness meditation was beneficial when experiencing anxiety. One participant (n=11; 9.1%) Neither Agreed nor Disagreed music listening combined with mindfulness meditation was beneficial when experiencing anxiety. No participants Somewhat Disagreed or Strongly Disagreed that music listening combined with mindfulness meditation was beneficial when experiencing anxiety.

A one-tailed, Spearman correlation analysis was conducted to examine the relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. There was a weak, positive correlation between the two variables, $r_s(9) = .442$, $p = .087$. The 95% confidence interval for this correlation was -.123 to 1.00. This correlation was not statistically significant, indicating there was not a statistically significant relationship between participants' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention when experiencing anxiety. Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the null hypostasis was rejected, and the alternative relationship was accepted. These results indicate a relationship between participants' utilization and perception of music listening combined with mindfulness meditation to address stress, depression, and anxiety.

Discussion

As previously stated, many college students experience negative symptoms of stress, depression, and anxiety (Cha et al., 2018; Druckenmiller, 2022; Hirschfeld, 2001; Salcedo, 2018; Wu et al., 2020; Wu & Fang, 2014). Music listening and MBSR techniques, such as mindfulness meditation, as individual interventions are accessible,

self-administered interventions requiring little guidance and have been proven to reduce the negative symptoms of stress, depression, and anxiety (American College of Cardiology, 2018; Chang et al., 2015; Chen et al., 2022; Deshkar et al., 2015; Felver et al., 2018; Halladay et al., 2018; Han et al., 2010; Hjeltnes et al., 2015; Jiang et al., 2016; Linnemann et al., 2016; Lynch et al., 2018; Parcover et al., 2018; Salehi et al., 2016; Sampath et al., 2019; Song & Lindquist, 2015; Thoma et al., 2014). Due to limited research on using music listening combined with mindfulness meditation to address the stress, anxiety, and depression college students experience, the current study was designed to examine college student's utilization and perceived benefits of mindfulness meditation, music listening, and music listening combined with mindfulness meditation as interventions in addressing stress, depression, and anxiety experienced.

To achieve the study's goal and answer the research questions, a cross-sectional survey research design was employed. A total of 40 responses were received for this study and a total of eight responses were removed during the data screening process, resulting in 32 data sets being used for analysis. Data analysis occurred in three stages. First, demographic information was analyzed using demographic statistics. Second, summary statistics were utilized to examine students' utilization of each intervention (e.g., mindfulness meditation, music listening, and music listening combined with mindfulness mediation). Finally, one-tailed, bivariate Spearman correlational analyses were conducted to examine the relationships between student's utilization of mindfulness meditation, music listening, and music listening combined with mindfulness meditation and their perceived benefits in addressing symptoms of stress, depression, and anxiety experienced.

Findings

Research question one aimed to examine students' utilization of MBSR techniques (e.g., mindfulness meditation) to address symptoms of anxiety, depression, and stress. Results indicated over half of participants (n=19; 59.4%) engaged in MBSR techniques. Most participants who reported practicing MBSR techniques also indicated practicing multiple techniques. Interestingly, no participants specifically named mindfulness meditation as a practice in the free response question that examined the MBSR techniques participants utilized. This may be a result of participants not having a list of MBSR techniques to choose from. For instance, some of the participants who reported practicing meditation may have also selected mindfulness meditation if provided a multiple-choice question with definitions of each MBSR technique.

Participants were asked if they practice the specific MBSR technique, mindfulness meditation, defined in the survey as a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, allowing a person to slow their racing thoughts, let go, and calm their mind. Less than half of participants (n=15; 46.9%) indicated they do practice mindfulness meditation. Of participants (n=15) who reported practicing mindfulness meditation, the vast majority (n=14) reported using this MBSR technique multiple times per week (M=3.6, SD=1.9). Results also indicate that most participants (n=12) utilize mindfulness meditation once per day (M=1.2, SD=.58), and mindfulness meditation sessions last 17.3 minutes on average (SD=13.7). These findings indicated participants viewed mindfulness meditation as a brief, daily practice, demonstrating its usefulness as an accessible MBSR technique requiring little time commitment. These findings also indicate that college students can adapt the

frequency and duration of mindfulness meditation sessions to best meet their needs. For example, if a college student is experiencing severe symptoms of stress, depression, or anxiety, they could increase the frequency and duration of mindfulness meditation sessions as needed. Further, if a college student has a busy day, they could decrease the duration of their mindfulness meditation session to fit their schedule. This finding indicated that mindfulness meditation is an intervention that can be individualized to best meet the ever-changing needs of college students.

Upon being asked about the utilization of mindfulness meditation for stress, depression, and anxiety, 15 participants (n=32; 46.9%) used mindfulness meditation for stress, seven participants used it for depression (n=32; 21.9%), and 18 participants used it for anxiety (n=32; 56.3%). The low response rate of participants utilization of mindfulness meditation for depression may be a result of the lower frequency of depression among college students in the general population. Research indicates that 41% of college students are diagnosed with anxiety, whereas 36% of college students are diagnosed with depression (American Psychological Association, 2013). Based on the variance in national statistics on depression and anxiety rates in college students, it was expected that fewer students would respond to survey items examining perceptions benefits for each intervention in addressing depression experienced.

Interestingly, only 15 people (n=32; 46.9%) reported using mindfulness meditation in general, yet 16 reported using it specifically for stress, and 18 participants (n=32; 46.9%) reported using it for anxiety (n=32; 56.3%). This inconsistency may have resulted from participants' confusion surrounding the definition of mindfulness meditation and other MBSR techniques. There are many similarities between MBSR

techniques and names of MBSR techniques tend to be used interchangeably, possibly contributing to this finding. Overall, analysis of research question one indicated that college students utilized mindfulness meditation when experiencing stress and anxiety, but not necessarily depression and anxiety, as less than 50% of participants reported utilizing mindfulness meditation when experiencing depression and anxiety.

Research question two was designed to examine college students' utilization of music listening to address symptoms of stress, depression, and anxiety. Results indicated that almost all participants (n=31; 96.9%) listen to music. Most participants (n=26; 83.9%) listen to music every day (M=6.7, SD=.74), multiple times per day (M=4.71; SD=3.1) for multiple hours per day (M=3.9; SD=3.7). An interesting finding in the data is some participants (n=3, 9.7%) reported listening to music all day when asked their daily frequency of music listening, however, no one indicated they listen to music for 24 hours when asked their hourly listening per day. This finding highlights the inconsistencies that can occur with free response research questions. Future research may benefit from asking only forced choice items to reduce the inconsistencies observed in this study's free response items. Overall, the analysis of the frequency and duration of music listening among college students indicated music listening is popular among college students, and many college students frequently listen to music. This suggested music listening as an intervention is easily accessible and implementable treatment, as most college students already incorporate music listening throughout their daily routines.

Participants were then asked if they listen to music when they experience stress, depression, and anxiety. Again, almost all participants reported they listen to music when they are experiencing stress (n=30; 93.8%), depression (n=30; 93.8%), and anxiety

(n=27; 84.4%). According to these findings, music listening is a popular coping strategy college students turn to when they are experiencing stress, depression, and anxiety, strongly indicating that music listening is an easily accessible treatment for college student to address stress, depression, and anxiety, they are already incorporating it into their daily routines. Future research could benefit from further exploring how and when college students listen to music to better understand if music listening is simply part of a daily routine, being used when experiencing negative mental health symptoms, or both. Overall, analysis of research question two indicated that college students utilized music listening when experiencing stress, depression, and anxiety. Over 50% of participants reported utilizing music listening when experiencing all three mental health conditions examined (e.g., stress, depression, and anxiety).

Research question three sought to assess college students' utilization of music listening combined with a MBSR technique (e.g., mindfulness meditation) to address symptoms of stress, depression, and anxiety. Results indicated less than half of participants (n=15; 46.9%) were even aware of music listening as an intervention while practicing mindfulness meditation. This finding was expected due to the lack of current research available on the use of this combination. Unsurprisingly, when asked if they actually utilized music listening combined with mindfulness meditation, few participants (n=9; 28.1%) reported listening to music while practicing mindfulness meditation. This finding can be attributed to the overall lack of awareness of music listening combined with mindfulness meditation as an intervention, as participants would not be expected to engage in an intervention that they were unaware existed. Overall, these findings indicate the need for more research to be conducted to validity the efficacy of music listening

combined with mindfulness meditation as an intervention, and in turn, implemented with more clients receiving counseling services.

Next, participants were asked if they listened to music while practicing mindfulness meditation when they were experiencing stress, depression, and anxiety. As expected, few participants utilize mindfulness meditation to address symptoms of stress (n=12; 37.5%), depression (n=10; 31.3%), and anxiety (n=11; 34.4%). These findings indicated an overall lack of awareness and utilization of music listening as an intervention with mindfulness meditation among college students. Again, these results were expected given the limited research on music listening combined with mindfulness meditation and indicate a need for increased psychoeducation and research on the intervention. Interestingly, and like the findings of the utilization of mindfulness meditation to address stress and anxiety in research question one, more participants indicated they utilized music listening combined with mindfulness meditation to when experiencing stress (n=12; 37.5%), depression (n=10; 31.3%), and anxiety (n=11; 34.4%), than reporting using this intervention in general (n=9; 28.1%). Again, this finding may be attributed to confusion surrounding the definition of the intervention or other compounding variables that impact participants' response. Additional research is needed to further explore and better understand college students' utilization of music listening combined with mindfulness meditation to address various mental health conditions. Overall, analysis of research question three indicated that college students do not utilize music listening combined with mindfulness meditation when experiencing stress, depression, and anxiety, since less than 50% of participants reported utilizing

music listening combined with mindfulness meditation when experiencing all three mental health conditions examined.

Research question four of this research study sought to explore students' perceived benefits of MBSR techniques (e.g., mindfulness meditation) in addressing symptoms of stress, depression, and anxiety. To examine this research question, the relationship between college students' utilization of mindfulness meditation and their perceived benefits of the intervention in address their stress, depression, and anxiety was analyzed. A one-tailed, bivariate Spearman correlation analysis produced a weak, positive correlation between participants' utilization of mindfulness meditation and their perceived benefits when experiencing stress ($r_s(13) = .294$, $p = .144$). This correlation was not statistically significant. The participants who reported practicing the intervention when experiencing stress (n=15), however, all reported some level of agreement that the intervention is beneficial in reducing their stress, with most participants strongly agreeing (n=13; 86.7%). This indicates that although there was not a statistically significant correlation between the utilization of mindfulness meditation and perceived benefits when experiencing stress, participants still found mindfulness meditation t4beneficial in reducing stress. Future research should be conducted to further examine and validate this finding.

One-tailed, bivariate Spearman correlation analyses produced strong, positive correlations between participants' utilization of mindfulness meditation and their perceived benefits when experiencing depression ($r_s(5) = 1.00$, $p = .01$) and anxiety ($r_s(16) = .592$, $p = .005$). These correlations were both statistically significant at the .01 level. Participants who reported practicing the intervention when experiencing depression

(n=7) and anxiety (n=18) all reported some level of agreement that the intervention is beneficial in reducing their depression and anxiety. Specifically, almost all participants who practiced mindfulness meditation when experiencing depression (n=7) strongly agreed that the intervention is beneficial when they are experiencing depression (n=6; 85.7%). Similarly, almost all participants who practiced mindfulness meditation when experiencing anxiety (n=18) strongly agreed that the intervention is beneficial when they are experiencing depression (n=13; 72.2%). These findings indicate statistically significant correlations between the utilization of mindfulness meditation and perceived benefits when experiencing depression and anxiety. Overall, participants found mindfulness meditation beneficial in reducing their depression and anxiety. Future research should be conducted to further examine and validate this finding.

As mentioned previously, research indicates a lower rate of depression among college students (American Psychological Association, 2013). The lower rate of perceived benefits of mindfulness meditation for depression may result from the lower rate of college students who experience depression and the limited sample size. Again, research would benefit from conducting a similar study with a larger sample size to further validate the findings of this study.

Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the alternative relationship was accepted and indicated participants perceived the utilization of mindfulness meditation beneficial in reducing symptoms of stress, depression, and anxiety experienced. These findings also further confirm previous researchers' findings indicating mindfulness meditation is

beneficial in reducing depression and anxiety college students commonly experience, but not necessarily their stress.

Research question five sought to explore students' perceived benefits of music listening in addressing symptoms of stress, depression, and anxiety. To examine this research question, the relationship between college students' utilization of music listening and their perceived benefits of the intervention in address their stress, depression, and anxiety was analyzed. A one-tailed, bivariate Spearman correlation analysis produced a weak, positive correlation between participants utilization of music listening and their perceived benefits when experiencing depression ($r_s(28) = .205$, $p = -.156$). This correlation was not statistically significant. Of the participants who reported practicing the intervention when experiencing stress (n=30), however, a majority reported some level of agreement that the intervention is beneficial in reducing their stress, with most participants strongly agreeing (n=17; 56,7%). This indicates that although there was not a statistically significant correlation between the utilization of mindfulness meditation and perceived benefits when experiencing depression, participants still found mindfulness meditation beneficial in reducing their depression. Interestingly, however, this is the only item on the study's survey in which a participant (n=1; 3.3%) indicated disagreeing that a given intervention (e.g., mindfulness meditation, music listening, and music listening combined with mindfulness meditation) was not beneficial for a given mental health condition (e.g., stress, depression, or anxiety). This finding may suggest music listening is more of a daily routine than an intervention specifically practiced when experiencing depression. Since the present study provided a high-level overview of college students' perceived benefits of music listening in reducing their depression, additional research is

needed to further understand the nuances of music listening as an intervention to address various mental health conditions.

When analyzing the relationship between the utilization of music listening and the perceived benefits of the intervention in reducing participants' stress and anxiety, one-tailed, bivariate Spearman correlation analyses were unable to be calculated, as there was not enough variance between datasets and the utilization of music listening variable is considered a constant, instead of an ordinal variable. Although these correlations were not statistically significant, among participants who reported practicing the intervention when experiencing stress (n=30), all reported some level of agreement the intervention is beneficial in reducing their stress, with almost all participants strongly agreeing (n=27; 73.3%). Similarly, almost all participants who listen to music when experiencing anxiety (n=18) perceived benefits, with a vast majority strongly agreeing that the intervention is beneficial when they are experiencing anxiety (n=19; 79.4%). Interestingly, one participant (n=1; 3.7%) reported neutrality regarding their perception of the benefits of music listening in reducing their anxiety. This finding, however, may be indicative that music listening is utilized more as a daily routine rather than a specific intervention, highlighting the need for future research to further examine the perceived benefits of music listening on anxiety. These findings indicate statistically significant correlations between the utilization of mindfulness meditation and perceived benefits when experiencing depression and anxiety.

Overall, none of the three one-tailed, Spearman correlation analyses produced statistically significant results, and the null hypostasis was accepted for research question five, indicating participants did not perceive the utilization of music listening beneficial

in reducing symptoms of stress, depression, and anxiety. These results also indicate there is not a relationship between participants' utilization and perception of music listening to address stress, depression, and anxiety. Additionally, these findings, while not statistically significant, suggested music listening could potentially be an accessible, affordable, and noninvasive method of treatment for college students when they experience stress, depression, and anxiety. Future research should be conducted to further examine and validate this finding, since the results of these analyses were not statistically significant.

Finally, research question six was intended to assess college students' perceived benefits of music listening combined with mindfulness meditation, a MBSR technique, in addressing symptoms of stress, depression, and anxiety. To examine this research question, the relationship between college students' utilization of music listening combined with mindfulness meditation and their perceived benefits of the intervention in address their stress, depression, and anxiety was analyzed. A one-tailed, bivariate Spearman correlation analysis produced a weak, positive correlation between participants utilization of music listening combined with mindfulness meditation and their perceived benefits when experiencing anxiety ($r_s(9) = .442$, $p = .087$). This correlation was not statistically significant. Of the participants who reported practicing the combined intervention when experiencing anxiety (n=11), however, most reported some level of agreement that the intervention is beneficial in reducing their anxiety, with most participants strongly agreeing (n=9; 81.8%). This indicates that even although there was not a statistically significant correlation between the utilization of music listening combined with mindfulness meditation when experiencing anxiety, participants generally

still found mindfulness meditation combined with music listening beneficial in reducing their anxiety.

One-tailed, bivariate Spearman correlation analyses produced strong, positive correlations between participants utilization of music listening combined with mindfulness meditation and their perceived benefits when experiencing stress ($r_s(10) = .587$, $p = .022$) and depression ($r_s(8) = .791$, $p = .003$). These correlations were both statistically significant at the .05 and .01 levels respectively. Of participants who reported practicing the intervention when experiencing stress (n=12) and depression (n=10), most reported some level of agreement that the intervention is beneficial in reducing their stress and depression. Specifically, almost all participants who practiced mindfulness meditation when experiencing depression (n=7) strongly agreed that the intervention is beneficial when they are experiencing stress (n=9; 75%). Similarly, almost all participants who practiced music listening combined with mindfulness meditation when experiencing depression (n=10) strongly agreed that the intervention is beneficial when they are experiencing depression (n=7; 70%). These findings indicate statistically significant correlations between the utilization of music listening combined with mindfulness meditation and perceived benefits when experiencing stress and depression. Overall, participants found the utilization of music listening combined with mindfulness meditation beneficial in reducing their stress and depression. Future research should be conducted to further examine and validate this finding. Overall, since two out of the three one-tailed, Spearman correlation analyses produced statistically significant results, the alternative relationship was accepted and indicated participants perceived the utilization

of music listening combined with mindfulness meditation beneficial in reducing symptoms of stress, depression, and anxiety experienced.

Limitations of the Study

Every research study contains limitations, and the present study is no exception. Limitations of the current study include a lack of participant diversity, the recruitment process, the distribution method, external environmental factors potentially impacting data collection, a low response rate, and the study design. These limitations could have influenced the results of the study and threatened the reliability and validity of results. By examining the limitations of the current study, the research can discern alternative research designs and strategies that can be implemented in future research studies examining this topic.

The first limitation of the study is the lack of diversity that existed within the sample. A vast majority of the participants identified as full-time (n=31; 96.9%), Caucasian/white (n=28; 87.5%), female (n=29; 90.6%), undergraduate students (n=22; 68.8%). This finding could be attributed to the convenience sample the researcher used for recruitment. Participants were recruited from the Special Education, Rehabilitation, and Counseling Department at Auburn University, which is a predominately white, southern university. Demographically, the department also has a larger population of undergraduate students when compared to graduate students, and students within the department are predominately Caucasian/white females. To address this, the researcher could have sampled students in departments across Auburn University or included other universities across the nation in the recruitment efforts. Recruiting from the Special Education, Rehabilitation, and Counseling Department, however, created a sample of

convenience and allowed the researcher to achieve the target sample size. The lack of diversity in the sample prevented the results from being generalized to the total college population. Future research should aim to sample a more diverse population so it can be more representative of the general college student population and increase the generalizability of study findings.

The second limitation of the study is the recruitment process. Recruitment for this study was conducted via email, as this allowed the survey responses to remain completely anonymous as the researcher had no contact with potential participants and the data was identifiable. The recruitment email was sent to 16 personnel within Auburn University's Special Education, Rehabilitation, and Counseling Department. The 16 personnel contacted included graduate assistants, professors, and administrative personnel. Of the 16 personnel contacted, only 10 responded (n=16; 62.5%) via email confirming with the researcher they would disseminate the study among their students. The low response rate from personnel contacted indicate an unwillingness to share the recruitment email with their students due to external factors outside of the researcher's control. Additionally, while 10 departmental personnel indicated they would distribute the recruitment email to their students, the was no guarantee or confirmation that the recruitment email was actually shared with students. This could have negatively impacted the sample size, as the recruitment email did not reach as many students. In futures studies, therefore, the researcher should plan for a low response rate to the request to disseminate the recruitment email to students by contacting and sharing the recruitment email with additional personnel outside of the Special Education, Rehabilitation, and Counseling Department at Auburn University to ensure a broader audience. This would also

potentially increase the diversity of participants, and further increase the generalizability of results.

The third limitation of the study is the distribution method. The current study was distributed via email, as this method allowed the researcher to contact more departmental personnel in a shorter period, therefore increase the number of people contacted to disseminate the recruitment email. The researcher contacted Special Education, Rehabilitation, and Counseling Department personnel and requested they send the recruitment email and link to the study survey to students, instead of contacting students directly, allowing the data to remain anonymous. The lack of direct contact with students, however, prevented the researcher from building rapport with potential participants, which may have otherwise resulted in a higher response rate. This limitation also did not allow the researcher to confirm the total amount of students who received the email. Without knowing the number of students who actually received the recruitment email and link to the survey, the researcher has no way of calculating a response rate for participants. In future research, the researcher may consider alternative distribution methods (e.g., direct participant recruitment, asking professors how many students they sent their recruitment email to, etc.), and their limitations to design a distribution method that contains a method for the number of students who are recruited versus the actual number of respondents, to calculate response rates and increase sample size more accurately.

The fourth limitation of the study are external factors potentially impacting data collection. These compounding variables, while outside of the researcher's control, may have contributed to incomplete surveys and data sets (i.e., loss of internet connection,

interruptions, personal factors, etc.). These factors could have prevented participants from having the ability to complete the survey and can be attributed to the lack of standardized testing environment. Since the researcher did not have any direct contact with participants and did not require participants to complete the survey in a testing environment, external factors and distractions present in the environment in which participants completed the survey could have contributed to the eight incomplete datasets received. External factors surrounding time commitment can be alleviated by notifying participants of the estimated length of the survey prior to their commitment to participate (Maymone et al., 2018; Oppenheimer et al., 2011). To mitigate this type of limitation, the researcher informed participants, in the information letter, about time commitment required to complete the survey as an attempt to ensure the students could set aside an appropriate amount of time for completion of the survey (e.g., 15-20 minutes). In future research, the researcher should consider having participants complete the study survey in a distraction-free, testing environment to minimize the impact of external factors on study completion.

The fifth limitation of the study is the low response rate. While electronic surveys afford the researcher an ability to easily track responses and response rates, research indicated electronic survey design does often yield a lower number of responses than other modalities of dissemination (Fan and Yan, 2010; Maymone et al., 2018; Oppenheimer et al., 2011; Sebo et al., 2017). To address the possibility of a low response rate the researcher contacted the administrator for Auburn University's Special Education, Rehabilitation, and Counseling Department and requested they disseminate the survey to all of the department's students, in addition to the faculty members and

instructors who also disseminated the recruitment email. This strategy increased the chances that students were exposed to the recruitment email more than one time. While this study obtained more participants (n=32) than the target sample size (n=8) and provided valuable data to increase the understanding of college students' utilization and perception of the benefits of mindfulness meditation, music listening, and music listening combined with mindfulness meditation in addressing stress, depression, and anxiety experienced, the sample size was still relatively small, negatively impacting the generalizability of the study. In future research, the researcher should consider multiple recruitment methods to increase the response rate, and in turn, increase the sample size, power, and generalizability of the results.

The sixth and final limitation of this study is associated with the study design itself. Data collection through self-report method may have been negatively impacted by self-selection bias, social desirability bias, and experimental mortality (Ecker-Lyster, 2018; Frey, 2010; Lundqvist et al., 2019; Titus, 2007). Self-selection bias occurred if a student selected to participate in the study when they did not actually meet the inclusion criteria for the study. Social desirability bias occurred if participants inaccurately self-reported their utilization and perceived benefits of each intervention in an attempt to produce results they believed the researcher was attempting to obtain or to portray more positive mental health outcomes (Lundqvist et al., 2019; Titus, 2007). Experimental mortality was a risk due to the length of the survey and the possibility of students not completing the survey due to external factors outside of the researcher's control (Ecker-Lyster, 2018). These limitations effect the internal and external validity of the study.

Implications for Future Research and the Counseling Field

This study was created to provide a foundational understanding of college students' utilization and perceptions of mindfulness meditation, music listening, and music listening combined with mindfulness meditation to address stress, depression, and anxiety experienced. The study achieved its goal by yielding an overview of the topic and producing results like other studies exploring MBSR techniques and music listening to address stress, anxiety, and depression experienced by college students. Future research, however, would benefit from a more in-depth exploration of the symptoms that cause students to engage in each intervention, or whether they have a formal diagnosis of anxiety or depression. This information would provide the researcher with a better understanding of each interventions' effectiveness and how the effectiveness of the treatment for people without a diagnosis compares to that for people with a formal diagnosis. It would also be beneficial for the researcher to ask questions about the specific symptoms' participants feel benefits from each intervention.

Future research studies would also benefit from a larger sample size. A larger sample size would increase the generalizability of findings and would also allow the researcher to perform more sophisticated analysis of data (e.g., MANOVA, ANOVA, etc.) as the sample demographics would be less skewed. With a larger sample size, the researcher would be able to separate participants into groups based on their demographic characteristics, allowing the researcher to study utilization and perception of interventions on all three mental health conditions for different groups. For example, the researcher could evaluate graduate students against undergraduate students to determine who uses and perceives more benefits for each intervention and mental health condition.

Overall, the larger sample size would allow the researcher to further validate the effectiveness of all three interventions, while also allowing for a deeper interpretation of data.

Additionally, future research would benefit from different research designs to glean a more nuanced understanding of the topic. For example, an experimental design study could be implemented. The experimental design could collect both pre- and post-test data to quantify the actual benefits of MBSR techniques, specifically mindfulness meditation combined with music listening, in addressing specific symptoms of stress, depression, and anxiety. A qualitative study could also be utilized to gain rich data surrounding perceived benefits and distinctions of when and how college students use each intervention. The qualitative information would help the researcher find emerging themes and aspects of topics yet to be explored, since this is a new field with limited research.

Finally, additional studies examining the utilization and perceptions of mindfulness meditation, music listening, and music listening combined with mindfulness meditation to address stress, depression, and anxiety experienced by diverse populations is still needed. This will assist the researcher with identifying if benefits are perceived by other disability groups with an aim of making it a more universal treatment. This would also help the researcher identify groups that would not benefit from this intervention. Having this understanding would help improve best-practices used in the field.

The current study, as well as future research, provides several implications for the field of counseling and counselor education. First, it can assist counselors to identify trends related to clients who are college students regarding their stress, anxiety, and depression, as well as identify positive coping strategies or interventions they use in their

daily life. Counselor educators can also use the information to better prepare their students to work with college students by being more aware of the mental health conditions they experience. It can also help counselor educators better train their students to utilize unique and creative best-practices and interventions with clients. Mindfulness-based stress reduction techniques and music listening are both accessible and minimally invasive emerging intervention and there is not much known about them, especially when utilized simultaneously. Therefore, research on this topic would also increase the general knowledge of counselors, counselor educators, and counseling students of music listening combined with MBSR techniques to holistically address mental health conditions and symptoms college students experience.

As previously stated, research indicates college students are hesitant to seek mental health treatment (Baltaci et al., 2021; Farrer et al., 2016). Information gleaned from the current study can be used to help counselors, counselor educators, and counseling students by providing a mode of treatment for people experiencing negative symptoms of stress, depression, and anxiety that can be implemented without having to seek treatment or be trained to utilize. Counselors are charged with advocating in the community, and MBSR techniques combined with music listening can be an intervention shared with community members through psychoeducation and advocacy efforts. This research also impacts the field by increasing the understanding of music listening as an intervention with mindfulness meditation, which is an emerging and understudied combination intervention. This research helped to further validate these interventions as beneficial in addressing college students' symptoms of stress, depression, and anxiety. Future research will help further validate and potentially make this a best-practice intervention widely

adapted in the field. Counselors and counselor educators are also charged with continually improving the field to better meet client's needs. The current study achieves this by providing evidence to further validate mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation, as a noninvasive and easily accessible form of treatment for clients experiencing stress, depression, and anxiety.

Conclusion

The aim of this study was to increase knowledge in the field of college students' utilization and perceptions of mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation to address their stress, depression, and anxiety. In terms of college students' utilization of MBSR techniques, specifically mindfulness meditation, to address stress, depression, and anxiety, results indicated more than half of the participants used MBSR techniques and most participants used more than one technique. Less than half of the participants used mindfulness meditation, but of those who did, they tended to use it once per day and multiple times per week. The average mindfulness session lasted 17 minutes, which indicated it is a relatively brief intervention, but could also be extended depending on severity of symptoms. Overall, participants mostly utilized mindfulness meditation to address stress and anxiety, but not as much for depression.

Regarding college students' utilization of music listening to address stress, depression, and anxiety, results indicated all but one participant listen to music. Most of the participants listen to music every day, multiple times per day, and listen to music

about four hours per day on average. Findings also indicated music listening was utilized fairly equally to address symptoms of stress, depression, and anxiety.

Regarding college students' utilization of music listening combined with mindfulness meditation to address stress, depression, and anxiety, results indicated less than half of the participants have heard of music listening as an intervention while practicing mindfulness meditation. This result was expected, considering this is an emerging and understudied intervention. There were few participants who actually listened to music while practicing mindfulness meditation, but they used it fairly equally to address symptoms of stress, depression, and anxiety.

In terms of the relationship between college students' utilization of mindfulness meditation and perceived benefits in addressing stress, depression, and anxiety, there was a weak, positive correlation between the utilization and perception of mindfulness meditation in addressing stress experienced. This relationship, however, was not statistically significant. The correlation analysis of the utilization and perception of mindfulness meditation in addressing both depression and anxiety produced a strong, positive correlation. Both relationships were statistically significant, indicating a relationship between the utilization of mindfulness meditation and perceived benefits in address depression and anxiety.

Regarding the relationship between college students' utilization of music listening and perceived benefits in addressing stress, depression, and anxiety, there was a weak, positive correlation between the utilization and perception of music listening in addressing depression experienced. This relationship, however, was not statistically significant. The correlation analysis of the utilization and perception of music listening in

addressing both stress and anxiety could not be computed as there was not enough variance in the datasets. Participant responses, however, do indicate that college students perceive music listening to be beneficial in addressing their stress, depression, and anxiety.

The relationship between college students' utilization of music listening as an intervention with mindfulness meditation and perceived benefits in addressing stress, depression, and anxiety, resulted in strong positive correlations between the utilization and perception of music listening as an intervention with mindfulness meditation in addressing stress and depression. Both relationships were statistically significant, indicating a relationship between the utilization of music listening as an intervention with mindfulness meditation and perceived benefits in address stress and depression. The relationship between college students' utilization of music listening as an intervention with mindfulness meditation and perceived benefits of anxiety, resulted in a weak, positive correlation, which was not statistically significant.

The current study achieved its goal of providing an overview understanding of college students' utilization and perceptions of mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation in addressing symptoms of stress, depression, and anxiety. This study, however, contained several limitations. While this study did achieve the target sample size, the sample was relatively small. The small sample size of this study potentially impacted the accuracy and generalizability of the results. Additionally, the study lacks diversity amongst participant demographic characteristics, also impacting the generalizability of findings. The recruitment process could have contributed to the lower response rate from students. The

distribution method (e.g., email) could have impacted the study as the research did not have direct contact with potential participants and could not confirm the number of students reached in recruitment efforts. Compounding variable, outside the researcher's control, could have negatively impacted data collection, resulting in incomplete survey responses. Finally, the survey research designed used in this study contained limitations that threaten the reliability and validity of findings.

Future research on mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation on addressing stress, depression, and anxiety could help counselors and counselor educators to develop new best practices for the field of counseling. It could help counselors implement noninvasive and easily accessible treatment modalities with their clients. Counselor educators could use the information to provide counseling students with the tools needed to implement these interventions. In summary, this study helps contribute to the field of counseling by offering insight about college students' utilization and perceptions of mindfulness meditation, music listening, and music listening as an intervention with mindfulness meditation on addressing stress, depression, and anxiety.

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Appendix A

Recruitment Email

E-MAIL INVITATION FOR ON-LINE SURVEY

Dear Professor,

I am a doctoral student in the Department of Special Education, Rehabilitation and Counseling at Auburn University. I would like to invite you to participate in my research study to examine the use of mindfulness-based stress reduction techniques and music listening as interventions for a better, more easily accessible mode of treatment for anxiety and depression experienced by many college students. You may participate if you are over the age of 19, have internet access, and are currently enrolled in at least one university course.

Participants will be asked to complete a demographic questionnaire and a survey assessing their use and perceptions of mindfulness-based stress reduction techniques and music listening in relation to symptoms of anxiety and depression. This survey will take approximately 15-25 minutes to complete.

There are no risks associated with this study. All information will be collected using an online survey hosted by Qualtrics and all collected information will be stored in a BOX folder. Additionally, I remind you that your participation in this study is voluntary and will not affect your university standing or status.

If you participate in this study, you can expect to assist in increasing the understanding of the use of music listening and mindfulness-based stress reduction techniques in reducing the negative symptoms of anxiety and depression experienced by many college students. I cannot promise you that you will receive any or all of the benefits described.

Compensation will not be offered for participation in this study. If you decide to participate, you will not incur any costs.

Any information obtained in connection with this study will remain anonymous. Information obtained through your participation may be used to fulfill dissertation requirements, published in professional journals and presented at professional conferences.

If you would like to know more information about this study, an information letter can be obtained as a downloadable PDF at the beginning of the Qualtrics survey. If you decide to participate after reading the letter, you can access the survey from a link in the letter. The Qualtrics survey can be found at the following link: Click here for survey.

If you have any questions, please contact me at Brandon Worthey or my advisor, Dr. Nicolas Derzis, at bcw0013@auburn.edu and derzinc@auburn.edu.

Thank you for your consideration,
Brandon Worthey

Appendix B

Study Survey, which Contains the Information Letter

DEPARTMENT OF

SPECIAL EDUCATION, REHABILITATION, AND COUNSELING

INFORMATION LETTER
for a Research Study entitled
"Student's Perception of Music listening as an intervention with mindfulness-based stress reduction techniques"

You are invited to participate in a research study to understand the use of mindfulness-based stress reduction and music listening for a potential mode of treatment for the symptoms of anxiety and depression in college students. The study is being conducted by Brandon Worthey, under the direction of Dr. Nicholas Derzis, Associate Professor, in the Auburn University Department of Special Education, Rehabilitation and Counseling. You were selected as a possible participant because you are currently enrolled in a university and are age 19 or older.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to complete an online survey. Your total time commitment will be approximately 15-25 minutes.

Are there any risks or discomforts? Minimal risks are involved with this study, and the study does not run the risk of causing the participant either physical or psychological discomfort or be deceived as discomfort above and beyond what the person would experience in daily life.

Are there any benefits to yourself or others? If you participate in this study, you can expect to assist in increasing the understanding of the use of music listening and mindfulness-based stress reduction techniques in reducing the negative

symptoms of anxiety and depression experienced by many college students. I cannot promise you that you will receive any or all of the benefits described.

Will you receive compensation for participating? Compensation will not be offered for participation in this study.

Are there any costs? If you decide to participate, you will not incur any costs. Auburn University has not provided for any payment if you are harmed as a result of participating in this study.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, you can simply exit the survey by closing your browser. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with your university.

Your privacy will be protected. Any information obtained in connection with this study will remain anonymous. Information obtained through your participation may be used to fulfill dissertation requirements, published in professional journals and presented at professional conferences.

If you have questions about this study, contact Brandon Worthey at bcw0013@auburn.edu or Dr. Nicholas Derzis at derzinc@auburn.edu. A copy of this document can be downloaded below for your records.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

Downloadable Information letter

- ○ I consent
- ○ I do not consent

Survey

What university do you attend?

What is your academic class standing?

- ○ Freshman
- ○ Sophomore
- ○ Junior
- ○ Senior
- ○ Master's level
- ○ Doctoral level
- ○ Other, please specify: _____

Are you in the dissertation or thesis phase of your program?

- ○ Yes
- ○ No
- ○ Not applicable

Are you a full time or part time student? (Full time status for undergraduate students is being enrolled in 12 or more credit hours and 9 or more credit hours for graduate students)

- ○ Full time
- ○ Part time

Gender

- ○ Male
- ○ Female
- ○ Non-binary/third gender

- ○ Prefer not to say
- ○ Other, please specify: _____

Race/Ethnicity

- ○ African American/Black
- ○ Asian
- ○ Biracial
- ○ Caucasian/White
- ○ Multiracial/Multiethnic
- ○ Native American
- ○ Pacific Islander
- ○ Prefer not to say
- ○ Other, please specify: _____

What is your age?

_____

Do you practice mindfulness-based stress reduction techniques? (A meditation based therapy that can be used for stress reduction, such as deep breathing, muscle relaxation exercises, guided imagery, body scan, seated meditation, etc.)

- ○ Yes
- ○ No

What mindfulness-based stress reduction techniques do you practice?

Do you practice mindfulness meditation? Mindfulness meditation is a technique that allows a person to become more aware of their breath, bodily sensations, and thoughts, which allows a person to slow their racing thoughts, let go of negativity, and calm their mind and body.

- ○ Yes
- ○ No

Please indicate how many times per week you practice mindfulness meditation on average.

Please indicate how many times per day you practice mindfulness meditation on average.

Please indicate how long each mindfulness meditation session lasts on average.

Do you practice mindfulness meditation when you are experiencing stress?

- ○ Yes
- ○ No

Mindfulness meditation is beneficial when you are experiencing stress.

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Do you practice mindfulness meditation when you are feeling depressed?

- ○ Yes
- ○ No

Mindfulness meditation is beneficial in reducing your depression

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor diagree
- ○ Somewhat disagree
- ○ Strongly disagree

Do you practice mindfulness meditation when you are feeling anxious?

- ○ Yes
- ○ No

Mindfulness meditation is beneficial in reducing your anxiety

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Do you listen to music?

- ○ Yes
- ○ No

Please indicate how many days per week you listen to music on average.

Please indicate how many times day you listen to music on average.

Please indicate how many hours per day you listen to music on average.

Do you listen to music when you are experiencing stress?

- ○ Yes
- ○ No

Music listening is beneficial in reducing your stress

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Do you listen to music when you are feeling depressed?

- ○ Yes
- ○ No

Music listening is beneficial in reducing your depression

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Do you listen to music when you are feeling anxious?

- ○ Yes
- ○ No

Music listening is beneficial in reducing your anxiety

- ○ strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Have you ever heard of listening to music as an intervention while you practice mindfulness meditation?

- ○ Yes
- ○ No

Do you listen to music while practicing mindfulness meditation?

- ○ Yes
- ○ No

Do you listen to music while practicing mindfulness meditation when you are experiencing stress?

- ○ Yes
- ○ No

Listening to music while practicing mindfulness meditation is beneficial in reducing your stress

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree

- ○ Somewhat disagree
- ○ Strongly disagree

Do you listen to music while practicing mindfulness meditation when you are feeling depressed?

- ○ Yes
- ○ No

Listening to music while practicing mindfulness meditation is beneficial in reducing your depression

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Do you listen to music while practicing mindfulness meditation when you are feeling anxious?

- ○ Yes
- ○ No

Listening to music while practicing mindfulness meditation is beneficial when you are feeling anxious

- ○ Strongly agree
- ○ Somewhat agree

- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Survey end

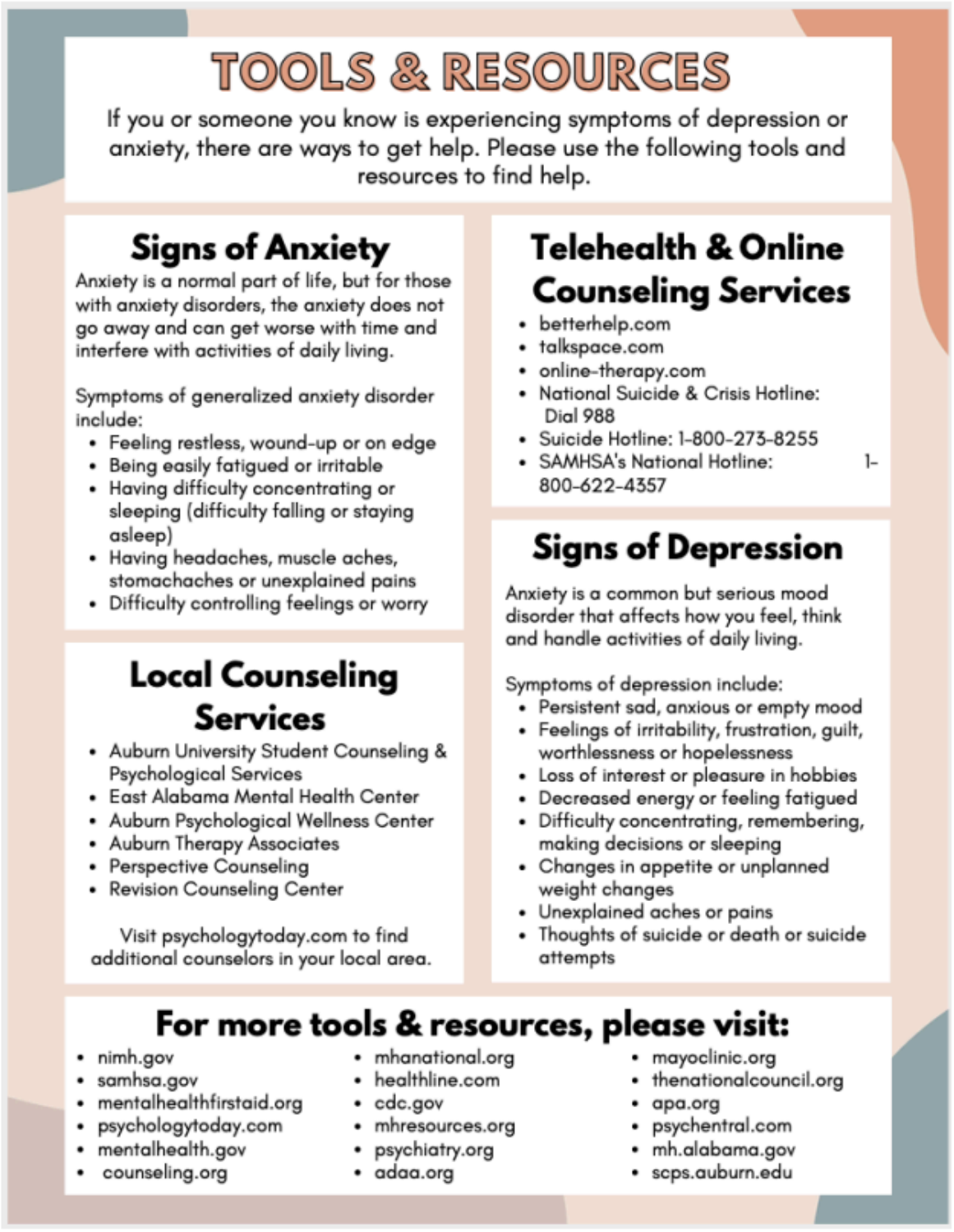
Thank you for completing this survey!

If you or someone you know is experiencing symptoms of depression or anxiety, there are ways to get help. Please use the following link to access tools and resources to find help.

Mental health tools & resources

Appendix C

Mental Health Resources and Tools Flyer



TOOLS & RESOURCES

If you or someone you know is experiencing symptoms of depression or anxiety, there are ways to get help. Please use the following tools and resources to find help.

Signs of Anxiety

Anxiety is a normal part of life, but for those with anxiety disorders, the anxiety does not go away and can get worse with time and interfere with activities of daily living.

Symptoms of generalized anxiety disorder include:

- Feeling restless, wound-up or on edge
- Being easily fatigued or irritable
- Having difficulty concentrating or sleeping (difficulty falling or staying asleep)
- Having headaches, muscle aches, stomachaches or unexplained pains
- Difficulty controlling feelings or worry

Local Counseling Services

- Auburn University Student Counseling & Psychological Services
- East Alabama Mental Health Center
- Auburn Psychological Wellness Center
- Auburn Therapy Associates
- Perspective Counseling
- Revision Counseling Center

Visit psychologytoday.com to find additional counselors in your local area.

Telehealth & Online Counseling Services

- betterhelp.com
- talkspace.com
- online-therapy.com
- National Suicide & Crisis Hotline: Dial 988
- Suicide Hotline: 1-800-273-8255
- SAMHSA's National Hotline: 1-800-622-4357

Signs of Depression

Anxiety is a common but serious mood disorder that affects how you feel, think and handle activities of daily living.

Symptoms of depression include:

- Persistent sad, anxious or empty mood
- Feelings of irritability, frustration, guilt, worthlessness or hopelessness
- Loss of interest or pleasure in hobbies
- Decreased energy or feeling fatigued
- Difficulty concentrating, remembering, making decisions or sleeping
- Changes in appetite or unplanned weight changes
- Unexplained aches or pains
- Thoughts of suicide or death or suicide attempts

For more tools & resources, please visit:

- nimh.gov
- samhsa.gov
- mentalhealthfirstaid.org
- psychologytoday.com
- mentalhealth.gov
- counseling.org
- mhanational.org
- healthline.com
- cdc.gov
- mhresources.org
- psychiatry.org
- adaa.org
- mayoclinic.org
- thenationalcouncil.org
- apa.org
- psychentral.com
- mh.alabama.gov
- scps.auburn.edu