Stress and Music on Students' Mental Health:

Evaluating Music as a Coping Strategy for Stress

by

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ABSTRACT

Stress is an arguably universal phenomenon that has maladaptive effects on individuals' mental health (i.e., depression). Individuals traditionally deal with stress through various coping strategies that fall under three coping styles: emotion-oriented coping, avoidance/disengagement coping, and problem-oriented coping. Furthermore, numerous studies have focused on the stress-reducing properties of music, but the literature lacks an examination of the use and effectiveness of music as a coping strategy. The current thesis examined the moderating role of music as a coping strategy in the link between stress and depression. Based on existing research, the author predicted that for participants who endorsed music coping as emotion-oriented or avoidance /disengagement-oriented, there would be an exacerbation of the stress-depression link. However, for participants who endorsed music coping as problem-oriented, there would be an attenuation of the stress-depression link. In an online survey-based study of 207 students attending Arizona State University, the author found that emotion-oriented music coping and avoidance/disengagement music coping exacerbated the relationship between stress and depression. The author, however, did not find support for the prediction that higher endorsement of problem-oriented music coping would buffer the effect of stress on depression. These results suggest that music coping may parallel alternative coping strategies in some respects but not others. Overall, the study findings support the further examination of music as a coping strategy in order to replicate emotion-oriented coping as the primary use of music.

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Introduction

I am hitting my head against the walls, but the walls are giving way – Gustav Mahler

Masterful composer, Gustav Mahler, seemed always destined for greatness. Having written his first composition at the age of four, Mahler made his public recital debut at only ten years old. As the years went by, so did his musical prowess, and yet, for all that it was worth, Mahler was not liked. His perfectionist attitude, a trait that permeated beyond his approach to music, did not resonate well with his colleagues, friends, and family. Effectively isolating himself from those attempting to reach out, Mahler's life was shrouded in self-feeding emotional turmoil. Yet, he managed the psychological distress with grace, enough to muster up some of the most musically complex and exciting symphonies ever written. And while it can be argued that the walls that stood in his way were those created by himself, I believe the quote above gives way to an important notion. Namely, people can cope with stress through music.

Fortunately for the rest of us, using music as a coping mechanism for stress does not necessitate creating an influential musical repertoire. Rather, coping with music is more likely to manifest itself as music listening. And people do listen, every day you are likely to happen by at least a handful of people with earphones wrapped over their heads or earbuds plugged into their ears. In fact, according to a survey polling over 3,000 Americans, people listen to music, voluntarily or involuntarily, for an average of four hours daily (Webster, 2014). To assume that four hours spent listening to music can be marked off as merely "passing the time" is to do a disservice to the many potentially interesting research investigations.

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As I will attempt to show, people listen to music for reasons that extend past pleasantries. They may, for example, listen to reflect on problems and how to better solve them. They may also listen as a means to vent negative emotions, or perhaps, simply use music as a way to escape the "real world." Whatever the reason, the important facet to keep in mind is once again, people can cope with stress through music. In fact, the examples just given can theoretically be generalized within three broader coping styles: problem-oriented, emotion-oriented, and avoidance/disengagement. In the following sections, I will discuss past trends in stress's effect on the human body, specifically regarding mental health. From there, I will discuss how individuals traditionally cope with stress, citing sex differences. Next, music is considered as a legitimate mechanism for stress coping, detailing how it may be used within the more well-established coping styles. Finally, I will present the aims and hypotheses for the current thesis.

Stress and Mental Health

Stress, and its debilitating effects on the human body, have long been a subject of interest in the field of psychology. Lazarus and Folkman (1984) described stress as a conditional state that occurs when an individual is subject to, or merely perceives, environmental demands as just within or beyond their control. More recently, Baum (1999) defined stress as a negative experience that is predictable by way of emotional, biochemical, physiological, cognitive, and behavioral accommodations. Stress is an arguably universal phenomenon that can lead to multiple physiological and psychological detriments on an individual's health, including headaches, fatigue, high blood pressure, as well as the heightened experience of stress-related emotions (e.g., anger, sadness,

anxiety) (Burke, Davis, Otte, & Mohr, 2005; Caspi et al., 2003; Grossman, Niemann, Schmidt, & Walach, 2004; Meyer, 1995, 2003).

Stress's effect on mental health is particularly important for the purposes of the current study. Maladaptive physical symptoms are often a by-product of stress affecting an individual's psychological well-being. Take, for example, depression. Depressive symptoms can present themselves as physical (e.g., restlessness, weight change, indigestion), but the mind is nonetheless the catalyst for the mood disorder. The type of stress associated with the onset of depression is more often acute than it is chronic. Stressful life events involving either threat, humiliation, loss, or defeat have the capacity to affect individuals to the point that they develop depression (Caspi et al., 2003; Kendler, Karkowski, & Prescott, 1999; Pine, Cohen, Johnson, & Brook, 2002).

While acute stress's effects can certainly prove prolonged and devastating, chronic stress is the more likely culprit for the wealth of associated mental health issues. Chronic stress is fostered by minor hassles which are a recurrent feature of everyday life. Few studies have analyzed chronic stress longitudinally when attempting to demonstrate a causal link between stress and health, opting instead for the cross-sectional approach. As such, chronic stress is traditionally difficult to map through experimental, and even nonexperimental, means (Bolger, DeLongis, Kessler, & Schilling, 1989; DeLongis, Folkman, & Lazarus, 1988). Over the years, however, we have seen tremendous gains in the literature pertaining to chronic stress and mental health. High levels of stress, chronic or otherwise, are related to an increase in psychologically maladaptive symptoms (e.g., anxiety, anger, and depression) (Dyson & Renk, 2006). The association is clear; there is a negative relationship between stress and mental health, such that the greater the stress,

the worse an individual's mental well-being. While this effect certainly has the capacity to prove overwhelming, people have consistently demonstrated various ways of coping with stress.

Coping with Stress

According to Lazarus and Folkman (1984), coping is a management process of the demands brought on by stressful events. Coping can be further described as either action-oriented or purely mental, whose purpose is to tolerate or minimize stressful environment demands (Lazarus and Launier - as cited in Taylor & Stanton, 2007). An important step in defining how people deal with stress effectively occurred when Lazarus and his research team created the Ways of Coping scale (Folkman & Lazarus, 1980).

The Ways of Coping scale built upon Lazarus's previous work and categorizes coping actions into two broader styles: problem-focused and emotion-focused. Folkman and Lazarus (1980) defined problem-focused coping as efforts made toward addressing a problem's source directly, and emotion-focused coping as efforts to reduce or simply deal with a problem's accompanying emotional distress. Each coping action is matched with a particular coping strategy and is considered by a respondent as something they would do in response to a stressful situation with either a "yes" or "no." For example, a problem-focused coping action could be "…got the person responsible to change his or her mind," while an emotion-focused coping action may read "…accepted sympathy and understanding from someone."

Lazarus's Ways of Coping scale, however, even after its revision (Folkman & Lazarus, 1985), was problematic. Carver, Scheier, and Weintraub (1989) contested that while Lazarus's problem-focused and emotion-focused coping dichotomy was telling, the

dichotomy had proven to be far too broad and ambiguous. Certain coping actions within the scale could be defined as both problem-focused and emotion-focused, implying that the scale's dichotomy was not equipped to accurately classify its own items. As investigations continued beyond 1985, researchers began to identify new coping strategies that would account for a larger array of coping actions, such as Carver et al. (1989), in their development of the "COPE," a multidimensional coping inventory.

The COPE includes 13 conceptually distinct scales, each with its own set of associated coping actions which can theoretically fit within three general coping styles: problem-oriented, emotion-oriented, and avoidance/disengagement. What marked the COPE as an improvement over the Ways of Coping scale was its ability to avoid ambiguity through clear classification. While problem-oriented and emotion-oriented coping styles are similar to Lazarus's dichotomy, the addition of an avoidance /disengagement coping style, in which individuals engage in denial or withdrawal from the situation altogether, is novel. Every coping action in the COPE is a sub-item of the 13 coping scales and by extension, the three general coping styles. For example, the coping action "I seek God's help," is indexed by the "religious coping" scale. Religious coping is a scale that falls under the emotion-oriented coping style. As another example, the coping action "I sleep a lot," is indexed by the "mental disengagement" scale, an avoidance/disengagement coping style product. In any such instance, participants are asked to consider each coping action as something they would do in response to a stressful event, not unlike the Ways of Coping scale. In the COPE, however, respondents are given the ability to answer on a four-point Likert scale ranging from "I usually don't do this at all" to "I usually do this a lot" (Carver et al., 1989).

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Including a four-point Likert scale has self-explanatory benefits when compared to the Ways of Coping scale's binary answering system. Carver's "COPE" is just one of numerous coping measures that have been developed since Lazarus's fundamental work. The COPE, and others like it, have given way to an eager psychological research community interested in applying their use across multiple demographics. The result has been an abundance of related studies.

What is important to note is that many of these subsequent studies were interested in analyzing how certain groups cope in response to a natural or daily stressor (e.g., academics, work, and illness). In one such study, college students' ability to cope with academic stress was analyzed using a COPE adaptation entitled the "Student Coping Instrument" (SCOPE) (Struthers, Perry, & Menec, 2000). Academic stress was defined as student-perceived stress resulting from the need to do well in an introductory psychology course. It was predicted that students who engaged in problem-oriented coping would be able to more effectively deal with academic stress than students who used emotion-oriented coping, and the results supported that notion. Effectively dealing with stress was measured indirectly by way of student performance in the course. This study, however, did not include an analysis for the avoidance/disengagement coping style, although it was the case that the emotion-oriented coping style domain held a scale for "academic disengagement" (Struthers et al., 2000).

In another study, college students were once again analyzed for coping responses to stress; this time, researchers were also interested in looking at sex differences (Brougham, Zail, Mendoza, & Miller, 2009). Coping was measured through the "Revised COPE Inventory," an adaptation of the COPE created by Zuckerman and Gagne (2003).

The Revised COPE Inventory is a five-factor model including scales for self-help, accommodation, approach, avoidance, and self-punishment (all of which can be divided into either a problem-oriented or emotion-oriented coping style. Stress was measured more globally in this study, citing not only academic stress but stress derived from familial relationships, finances, daily hassles, and social relationships as well. Due to the study's primary focus on sex differences in coping strategy use and not necessarily one strategy's effectiveness over another, there was no attempt to establish a hypothesis beyond reported use. It was thought that women would report greater overall stress and engage in more emotion-oriented coping strategies versus problem-oriented coping strategies (Brougham et al., 2009). The results did well to support that notion, which logically lends itself to a possible follow-up study analyzing both coping strategy effectiveness and preferred coping style use. Perhaps it is the case that while women prefer to engage in emotion-oriented coping, stress would instead be better counteracted if they opted for problem-oriented coping.

Brougham and colleague's research points to a larger trend in the coping literature – examination of sex differences within coping strategy use. The idea that women tend to be more attracted to an emotion-oriented coping style, and men a problem-oriented coping style, is backed-up by a plethora of research (Ptacek, Smith & Dodge, 1994; Ptacek, Smith, & Zanas, 1992; Rosario, Shinn, Mørch, & Huckabee, 1988). Women, for example, are more liable to engage in venting, rumination, positive self-talk, wishful thinking, and avoidance relative to men (i.e., avoidance/disengagement coping style) (Tamres, Janicki, & Helgeson, 2002). Interestingly enough, in a recent meta-analytic review looking at sex differences in coping behavior, Tamres et al. (2002) found that

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while women do tend to be more attracted to emotion-oriented coping strategies, generally, they utilize all coping strategies to a greater degree than men. However, whenever men do engage in coping strategies, they tend to be problem-oriented. Furthermore, emotion-oriented coping strategies are often considered to be maladaptive, whereas problem-oriented coping strategies are more beneficial (Billings & Moos, 1981; Menaghan, 1982; Pearlin & Schooler, 1978), suggesting that men may benefit more from their coping strategies than women. With that in mind, sex is an important factor to consider in the current study's model.

Coping with Stress through Music

One glaring omission in traditional coping research is the inclusion of music as a form of coping. This is not to say, however, that music has yet to be examined in relation to stress. In fact, music has been studied for the past several decades as an effective means of mitigating stress; but, as with any budding field, controversies have arisen regarding definition and precision. Hanser (1988) was among the first to identify one such controversy as a lack of universal definition for what constitutes music that is "relaxing" or "sedative." This controversy was addressed by Pelletier (2004) in a meta-analysis conducted to analyze quantitative studies measuring music's effectiveness in stress reduction. In the review, 22 studies were considered, and of those that utilized prescribed "relaxing" music, categorized as "research-supported," the music was described as slow, orchestral, rhythmically-consistent, and soft in volume (i.e., common characteristics of the western classical genre).

Defining what makes music relaxing is all well and good, but the studies analyzed by Pelletier point to an even more important topic of consideration. Literature on music

as a stress mitigator has almost universally been concerned with providing evidence that the phenomenon exists in the first place. As a result, there is no current established model that accounts for why music has the capacity to alter emotional states and physiological indices for stress. What we do have, however, is a set of studies analyzing music's ability to reduce stress that is both physiologically and psychologically measured.

For example, Labbé, Schmidt, Babin, and Pharr (2007) examined whether varying music genres could reduce emotional distress and physiological arousal. Heart rate was used as a physiological measure, while anxiety was self-reported as a psychological measure. Participants were university students randomly assigned to one of four conditions: self-selected, classical, heavy metal, or silence. Prior to the stress task, described as a mentally challenging test, participants had their baseline physiological data collected. After task completion, participants either listened to their respective condition's music genre for 20 minutes or sat in silence for the same duration. Participants then completed the anxiety measure and had their heart rates recorded. The results suggested that those who had listened to self-selected or classical music had reduced stress, both physiologically and psychologically indexed, relative to those in the heavy metal and silence conditions (Labbé et al., 2007).

In a different approach, Mitchell and MacDonald (2006) looked at acute stress experienced when individuals submerge their hands in sub-zero temperature water. Physiological measures included tolerance time (i.e., how long an individual was able to keep their hand submerged). Psychological measures included a visual analog scale (VAS) through which participants could indicate their discomfort level. Randomly assigned to three conditions: white noise, preferred music, and pre-selected relaxing

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music, participants were asked to engage in three hand submersion trials, each lasting five minutes maximum. Music was played the moment participants submerged their hand into the cold water. Results found pain to be significantly more tolerable, as indicated by both tolerance time and the VAS, in the preferred music condition than in both the white noise and pre-selected relaxing music condition (Mitchell & MacDonald, 2006).

As the examples just discussed would imply, the focus has been primarily on using physiological and psychological measures to detect stress reduction brought on by music. On the other hand, few studies have looked to see whether music influences the mitigation of stress-related indices directly, and fewer still have made any attempt to establish music as its own coping strategy. The latter is especially perplexing, considering the existence of already well-established coping styles (e.g., problem-oriented, emotion-oriented, and avoidance/disengagement). It stands to reason that if music is a readily identifiable form of coping with stress, then there should be a viable attempt to see how well it coincides with existing coping styles. To the best of my knowledge, there has been only one such attempt in recent years.

In 2009, Miranda and Claes analyzed the extent to which various coping by music listening styles are related to depression in adolescence. The study's primary focus was on depression and peer affiliation, but coping by music listening styles was analyzed thoroughly. Miranda and Claes examined music listening as "emotion-oriented," "problem-oriented," or "avoidance/disengagement," which are fundamentally the same meanings as the coping styles discussed earlier. The way in which they were measured, however, was a novel pursuit that has direct implications for fitting music listening into the broader coping styles. The scale, which is without a proper title, has ten items related

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to one of the three coping styles: 5 items for emotion-oriented, 3 items for problem-oriented, and 2 items for avoidance/disengagement. Each item is considered in response to the prompt "When I am stressed by problems (e.g., at school, with friends, and family), I listen to my favorite music to…" on a five-point scale ranging from "never" to "always." Items include listening to music to "…avoid thinking about my problems," or to "…help myself experience more positive emotions, such as joy, happiness, and hope," or to "…help myself study (or work) better" (Miranda & Claes, 2009).

In their study, they found that among Canadian high school students, girls were more likely to endorse music as coping along all three dimensions (emotion-oriented, problem-oriented, and avoidance/disengagement). They also found that problem-oriented music coping was related to less depression in girls only, avoidance/disengagement music coping was related to more depression in girls only, and emotion-oriented music coping was related to more depression in boys only. While the coping styles were related to depression in the expected direction, the gender differences were contrary to predictions and past coping literature. It is unclear if these results are specific to this sample or age group, or are more indicative of music coping more generally.

Miranda and Claes' (2009) scale is important, but in the context of the study performed, it raises the need for further examination and application to other samples. Measuring experienced depressive symptoms and the inability to affiliate with one's peers are not substitutes for measuring stress, even though it can certainly be said that stress plays a factor in both. What Miranda and Claes have provided is a suitable starting point from which music can be seriously considered as a coping strategy. After all, music listening has the capacity to be used as a problem-oriented, emotion-oriented, or

avoidance/disengagement-oriented coping approach. Some people may listen to music as way to mull over potential resolutions to problems they face (i.e., problem-oriented coping) (Miranda & Claes, 2009). Other people may listen to music to relieve themselves of overwhelming emotions (i.e., emotion-oriented coping) (Saarikallio & Erkkilä, 2007). Finally, still other individuals can find themselves listening to music as a way to effectively ignore a problem's existence (i.e., avoidance/disengagement coping) (Hutchinson, Baldwin, & Oh, 2006). The idea that people can, and do, cope with stress through music seems highly plausible but is in need of more systematic examination.

Current Thesis Study

The literature on coping with stress is extensive, as is the literature on the stress-reducing properties of music. What is lacking in the literature is an examination of the use and effectiveness of music as a coping strategy. The current study will examine these issues in a sample of college students. My thesis has three broad aims: 1) explore the use and prevalence of music as a coping strategy; 2) determine whether sex differences in music as a coping strategy mirror those in the prior coping literature; and 3) examine the moderating role of music as a coping strategy in the link between stress and depression. With regards to these aims, I will base my specific predictions on existing research. First, I predict that females will be more likely to endorse music as an emotion-oriented and avoidance/disengagement coping strategy, whereas males will be more likely to endorse music as a problem-oriented coping strategy. Lastly, I predict that music as a coping strategy will moderate the association between perceived stress and depressive symptoms. Specifically, I predict that for participants who endorse music coping as *emotion-oriented* or *avoidance/disengagement-oriented*, there will be an exacerbation of

the stress-depression link. However, for participants who endorse music coping as *problem-oriented*, there will be an attenuation of the stress-depression link.

Methods

Participants and Procedure

Participants were 214 students attending Arizona State University. Seven participants were removed for not completing the necessary measures leaving a total of 207 participants. All participants were required to be in their freshman year and have at least one sibling. The eligibility requirements were a result of this study sharing survey space with another study. The survey contained both overlapping and unique measures specific to each study's research. As such, eligibility requirements made on either study's end were applied to both. It is important to note that the requirements were not believed to be of theoretical consequence for the purposes of this particular study. Recruitment was conducted through Arizona State University's SONA System. Participants were asked to complete an online survey through Qualtrics. Time for completion was approximated at 30 minutes. For their participation, respondents were awarded two credits.

Measures

Demographic characteristics believed to be related to one or more of the major study variables were assessed, including parents' marital status, relationship status, biological sex, gender identity, age, household income, employment status, and race/ethnicity. *Parents' marital status* was categorized as either married, cohabiting, never married, divorced, separated, or widowed. *Relationship status* was categorized as single, in a relationship, married, divorced, separated, or widowed. *Biological sex* was

dichotomized as either female or male, but respondents also had the option to detail their *gender identity* as either female, male, transgender, or other. *Age range* in this sample was ranged from 18 years to 50+ and was represented as a continuous variable. *Household income* represented total family income at the time of the survey's completion and was categorized as less than $10,000, $10,000 - $19,999, $20,000 - $29,999, $30,000 - $39,999, $40,000 - $49,999, $50,000 - $59,999, $60,000 - $69,999, $70,000 - $79,999, $80,000 - $89,999, $90,000 - $99,999, $100,000 - $149,999, or more than $150,000. *Employment status* was categorized as either working, not working, or currently on leave. In addition, *number of hours worked per week* and *hourly pay* was obtained for all participants. *Race/ethnicity* was self-reported as either White (non-Hispanic), African American, Hispanic, Asian, Native American, or other.

Perceived Stress was assessed through the Perceived Stress Scale (PSS) by Cohen, Kamarck, and Mermelstein (1994). Responses range from 0 = *never* to 4 = *very often* in the context of the past month. The 14 item measure includes items such as "How often have you been upset because of something that happened unexpectedly?" and "How often have you felt nervous and stressed?" A total perceived stress score was created by summing scores from the individual items, with higher scores indicating greater perceived stress ($\alpha = 0.80$).

Mental health was assessed through the Center for Epidemiologic – Depression Inventory (CES-D) which is a well validated and reliable measure (Radloff, 1977). The measure assesses depression symptoms over the past week with responses ranging from 0 = *none/rarely (<1 day)* to 3 = *most (5-7 days)*. Example items include "I felt depressed,"

and "I felt fearful." A total depression score was created by summing scores from the individual items, with higher scores indicating greater depressive symptoms ($\alpha = 0.92$).

Coping with music was assessed through an adapted version of a measure from Miranda and Claes (2009). Modifications were made to the item list to ensure that there was an even number of items across domains (i.e., problem-oriented, emotion-oriented, avoidance/disengagement). Participants responded to the prompt "When I am stressed by problems (e.g., at school, with friends, and family), I listen to my favorite music…" on 12 items, including "to help me come up with a strategy to overcome my problems," to make me feel better," and "to avoid thinking about my problems." Items were subjected to a confirmatory factor analysis (CFA) with a pre-defined set of three factors total. The results were in line with the measure modifications. At extraction, the three factors accounted for 80.1% of the variance among the items. Furthermore, the "pattern matrix" held minimal cross-loadings and displayed conceptually distinguishable factors which allowed me to retain every item. From there, a set of three scales were created in line with the verified domains and their associated items: problem-oriented ($\alpha = 0.94$), emotion-oriented ($\alpha = 0.90$), and avoidance/disengagement ($\alpha = 0.89$). Scale scores were created by summing item responses. Higher scores indicate greater use of that particular coping by music style.

For exploratory purposes, additional music variables were assessed, including listening frequency, genre preference, music emotion preference, and lyric or music preference. *Listening frequency* was categorized as either 30 minutes or less, 1 to 2 hours, 3 to 4 hours, 4 to 5 hours, or 6 hours or more of average listening time in the past week. *Genre preference* was assessed through respondents ranking blues, classical, jazz,

country, electronic, international/world music, Latin, pop, rock, rap/hip-hop, soul, and "other" from most preferred to least preferred. *Music emotion preference* was assessed through extent of respondent agreement with five statements. Examples include "Most of my favorite music sounds sad." or "Most of my favorite music sounds happy," on a scale ranging from 0 = *strongly disagree* to 4 = *strongly agree*. *Lyric or music preference* was assessed through the question "In general, do you listen to songs for the lyrics or music?" with responses ranging from 0 = *only for the lyrics* to 4 = *only for the music*.

Overview of Analyses

My study's three broad aims are: 1) to evaluate the use and prevalence of music as a coping strategy; 2) to determine whether gender differences in music as a coping strategy mirror prior coping literature; and 3) to examine the moderating role of music as a coping strategy in the link between stress and depression. The first aim was analyzed through collected mean values and SD's of each scale (i.e., problem-oriented, emotion-oriented, avoidance/disengagement). The second aim was analyzed through a Multivariate Analysis of Variance (MANOVA) with sex as the independent variable and coping by music style scales as the dependent variables. The third aim was analyzed through a series of traditional moderation analyses evaluating coping by music style's influence on the relationship between stress and depression. Each moderation analysis satisfied one of the three hypotheses related to the third aim.

All moderation analyses were performed through Andrew Hayes' (2012) PROCESS macro for SPSS. In addition to automatically standardizing the predictor and moderator, PROCESS also provides data for visualizing the conditional effect of the predictor on the outcome. As a formality, bootstrapping was set at the default 5,000

samples. Key assumptions for linear regression (i.e., random sample, linearity, normal distribution of error scores and IVs, homoscedasticity, independent observations, and multicollinearity) were met. Tolerance scores were greater than .20, and VIF scores did not exceed the recommended 2.0 threshold.

Results

Preliminary Analyses

Descriptive statistics for the three coping by music styles (*Aim 1*) are presented in Table 1. Across both sexes, *emotion-oriented* was the most utilized form of music coping. However, females were also significantly more likely to endorse using music as an avoidance form of coping as compared to problem-oriented coping.

Table 1

Descriptives of Major Study Variables

Coping by Music Style	Total	Females	Males
	($N = 207$)	($n = 151$)	($n = 56$)
Emotion-Oriented	15.81 (3.79)	15.89_a (3.76)	15.70_a (3.83)
Avoidance/Disengagement	12.96 (4.11)	13.36_b (3.99)	11.91_b (4.32)
Problem-Oriented	11.76 (4.41)	11.48_c (4.37)	12.54_b (4.49)

Note. The different subscript letters represent paired samples comparisons within each sex. If values in the same column do not share the same subscript, the values are statistically different at $p < .05$.

Table 2 reports the correlations for the primary study variables, collapsed across sex. All three forms of music coping were significantly correlated with each other, with emotion-oriented and avoidance showing the strongest correlation. Emotion-oriented and avoidance/disengagement music coping were both positively related to perceived stress and depression. Problem-oriented music coping, showed no significant association with perceived stress and depression. Table 3 displays the correlations separately for females

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(above the diagonal) and males (below the diagonal). The results mirror those in Table 2 with one exception. For females, there was a significant relationship between emotion-oriented music coping and depression ($p < .01$), but not for males.

Table 2

Correlations of Major Study Variables for Total Sample

Variable	1	2	3	4	5
1. PSS	-				
2. CES-D	.68***	-			
3. Emotion-Oriented	.23***	.20**	-		
4. Avoidance/Disengagement	.40***	.36***	.62***	-	
5. Problem-Oriented	-.03	.03	.38***	.32***	-

Note. PSS = Perceived Stress Scale; CES-D = Center for Epidemiologic Studies Depression Scale; Emotion-Oriented = Music Coping Subscale; Avoidance/Disengagement = Music Coping Subscale; Problem-Oriented = Music Coping Subscale. *$p < .05$; **$p < .01$; ***$p < .001$.

Table 3

Correlations of Major Study Variables by Sex

Variable	1	2	3	4	5
1. PSS	-	.70***	.22**	.35***	.00
2. CES-D	.64***	-	.25**	.39***	.08
3. Emotion-Oriented	.27*	.06	-	.63***	.34***
4. Avoidance/Disengagement	.50***	.29*	.62***	-	.31***
5. Problem-Oriented	-.08	-.12	.51***	.43***	-

Note. Female correlations are represented above the diagonal and male are below the diagonal. PSS = Perceived Stress Scale; CES-D = Center for Epidemiologic Studies Depression Scale; Emotion-Oriented = Music Coping Subscale; Avoidance/Disengagement = Music Coping Subscale; Problem-Oriented = Music Coping Subscale. *$p < .05$; **$p < .01$; ***$p < .001$.

Role of Sex in Coping by Music

In determining whether sex differences were present between the three different coping by music styles (*Aim 2*), a MANOVA indicated a significant effect for sex, Wilks' $\lambda = 0.95$, $F(3, 202) = 3.91$, $\eta^2 = .06$, $p = .01$. In partial support of my hypothesis, post-hoc

univariate analyses revealed only one significant sex difference, *avoidance /disengagement* music coping was utilized more by females ($M = 13.36$) than males ($M = 11.91$), $F(1, 204) = 5.14$, $\eta^2 = .03$, $p = .02$. Males and females did not differ in their endorsement of using music as emotion-oriented or problem-oriented coping strategies.

Moderating Role of Coping by Music on Perceived Stress and Depression

Prior to the moderation analyses, several potential sociodemographic and music covariates (i.e., biological sex, class, race/ethnicity, household income, number of hours worked per week, and listening frequency) were examined for inclusion in the moderation analyses. Specifically, a covariate analysis was performed with multiple linear regression using depression scores as the outcome variable and all of the potential covariates entered simultaneously. None were significant; as a result, the moderation analyses did not include any covariates.

A series of moderated hierarchical regression analyses using PROCESS were conducted to establish whether the relationship between perceived stress and depression varied as a factor of the three coping by music styles (*Aim 3*). A separate model was analyzed for each form of music coping. Scores for both perceived stress and coping by music style were standardized prior to the analyses. As shown in Table 4, as predicted, there was a statistically significant interaction between *avoidance/disengagement* music coping and perceived stress ($b = 1.59$, $SE = 0.55$, $t(203) = 2.90$, $p = .004$), qualified by a significant increase in the proportion of variability accounted for within depression, over and above the main effects, $\Delta R^2 = .021$, $F(1, 203) = 8.44$, $p = .004$. Additionally, as predicted, there was a marginally significant interaction between *emotion-oriented* music coping and perceived stress ($b = 1.25$, $SE = 0.65$, $t(203) = 1.93$, $p = .056$), qualified by a

marginally significant increase in the proportion of variability accounted for within

depression, over and above the main effects, $\Delta R^2 = .010$, $F(1, 203) = 3.71$, $p = .056$.

However, contrary to my prediction, there was no significant interaction of *problem-*

oriented music coping and perceived stress.

Table 4

Summary of Moderated Hierarchical Regression Models ($N = 207$)

| Variable	B	$SE\ B$	β	ΔR^2	R^2
Emotion-Oriented Music Coping					
Step 1					0.46^{***}
Perceived Stress	7.78	0.62	0.67^{***}		
Emotion-Oriented	0.50	0.62	0.04		
Step 2				$0.01^{\dagger}$	$0.47^{\dagger}$
Emotion-Oriented x Stress	1.25	0.65	$0.11^{\dagger}$		
Avoidance/Disengagement Music Coping					
Step 1					0.46^{***}
Perceived Stress	7.43	0.66	0.63^{***}		
Avoidance/Disengagement	1.18	0.66	0.10		
Step 2				0.02^{**}	0.49^{**}
Avoidance/Disengagement x Stress	1.59	0.55	0.15^{**}		
Problem-Oriented Music Coping					
Step 1					0.46^{***}
Perceived Stress	7.92	0.60	0.68^{***}		
Problem-Oriented	0.58	0.61	0.05		
Step 2				0.00	0.47
Problem-Oriented x Stress	-0.17	0.64	-0.01		

Note. Variables were standardized prior to creating the interaction terms. $^{\dagger}p = .05$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Subsequent simple slope analyses were performed to examine the conditional

effect of perceived stress on depression at various values of the two coping by music

styles with significant and marginally significant interaction terms (i.e., avoidance /disengagement and emotion-oriented). These analyses revealed, as predicted, greater use of music as an avoidance/disengagement coping strategy (1+ SD above the mean) resulted in a steeper slope between perceived stress and depression ($b = 8.81$, $SE = 0.80$, $t(25) = 11.00$, $p < .001$) than for those individuals who were least likely (1+ SD below the mean) to endorse this strategy ($b = 5.62$, $SE = 0.89$, $t(31) = 6.28$, $p < .001$). The difference between the two slopes was significant, $t(60) = 2.67$, $p = .010$. These findings suggest that a greater use of avoidance/disengagement music coping exacerbates the effect of perceived stress on depression (see Figure 1).

Figure 1

Effect of Perceived Stress on Depression by Avoidance/Disengagement-Oriented Music Coping
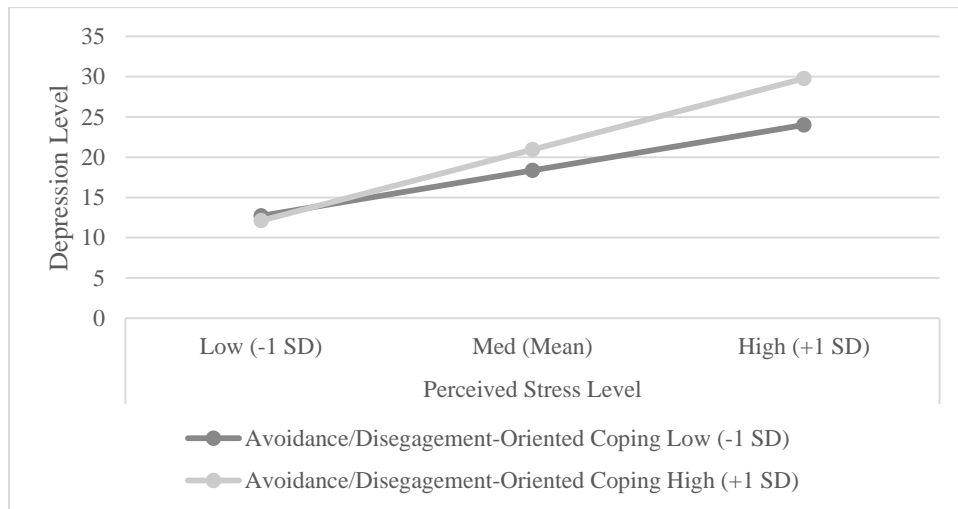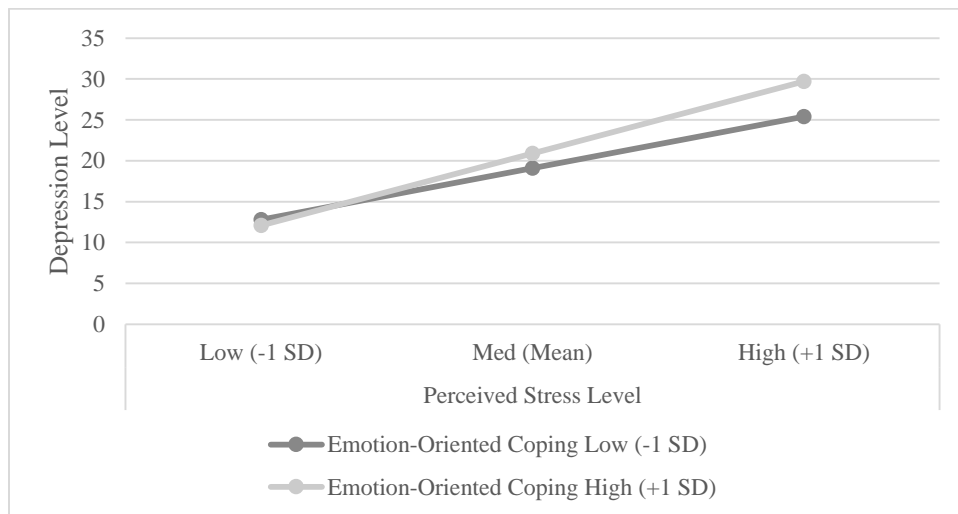

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

Similarly, and again as predicted, greater use of music as an emotion-oriented coping strategy (1+ SD above the mean) resulted in a steeper slope between perceived

stress and depression ($b = 8.78$, $SE = 0.81$, $t(48) = 10.88$, $p < .001$) than for those

individuals who were least likely (1+ SD below the mean) to endorse this strategy ($b =$

6.28, $SE = 0.99$, $t(37) = 6.32$, $p < .001$). The difference between the two slopes was

marginally significant, $t(89) = 1.95$, $p = .054$. These findings suggest that a greater use of

emotion-oriented music coping tends to exacerbate the effect of perceived stress on

depression (see Figure 2).

Figure 2

Effect of Perceived Stress on Depression by Emotion-Oriented Music Coping

Note. For ease of presentation and relevance, the figure does not include a line
representing moderate levels of the coping strategy.

Post-Hoc Analyses

Recall that the MANOVA resulted in a significant effect of sex on the three

different coping by music styles, in which females and males differed on

avoidance/disengagement music coping. In order to determine whether this effect would

translate to the moderating role of music coping, separate moderation analyses mirroring

those in the main hypotheses were performed for each sex. For females, there was a

statistically significant interaction between avoidance/disengagement music coping and perceived stress ($b = 1.56$, $SE = 0.61$, $t(146) = 2.55$, $p = .01$), qualified by a significant increase in the proportion of variability accounted for within depression, over and above the main effects, $\Delta R^2 = .021$, $F(1, 146) = 6.50$, $p = .01$. A simple slope analysis revealed that this moderation was in the same direction as described above for the full sample, with a greater use of avoidance/disengagement coping (1+ SD above the mean) exacerbating the effect of perceived stress on depression ($b = 8.95$, $SE = 0.89$, $t(17) = 10.03$, $p < .001$) more than less use of this strategy (1+ SD below the mean) ($b = 5.93$, $SE = 0.99$, $t(16) = 6.02$, $p < .001$). The difference between the two slopes was significant, $t(37) = 2.27$, $p = .03$. For males, however, the interaction of avoidance/disengagement music coping and perceived stress on depression was not significant.

Discussion

The current study is the first, to my knowledge, to examine prevalence and effectiveness of music as a coping strategy. The results of the study were largely in line with my predictions, with the exception of problem-oriented music coping. Below, I discuss the main findings of the study, their implications for theory and future research, as well as limitation of the current study.

Music as a Coping Strategy

The current study's initial aim was to explore the degree to which individuals endorse the various coping by music strategies. Overall, emotion-oriented music coping was shown to be most predominantly used, followed by avoidance/disengagement music coping and problem-oriented music coping. When considered separately by sex, the pattern was replicated in females and further substantiated by a series of paired

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comparisons. These findings were consistent with prior coping literature describing females as engaging in emotion-oriented and avoidance/disengagement coping more so than problem-oriented coping (Ptacek et al., 1994; Ptacek et al., 1992; Rosario et al., 1988). For males, however, the results were not as consistent with prior literature. Although problem-oriented music coping was used marginally more frequently than avoidance/disengagement music coping, it did not exceed males' endorsement of emotion-oriented music coping – which is at odds with prior studies describing males as primarily users of problem-oriented coping (Tamres et al., 2002).

Nonetheless, emotion-oriented music coping's relatively high usage rate is not only reminiscent of Miranda and Claes' (2009) work, but is also consistent with music's immediate recognition as an emotive force. Composers, when writing music, often include descriptors (e.g., triumphantly, solemnly, and jubilantly) in-between musical phrases to denote how a particular line should be played. The result is the musical intent to evoke a wide range of emotions within both musicians and music listeners alike. Emotions that we, as individuals, can identify in music we come in contact with and that span the entire human capacity to feel. Given that much of emotion-oriented coping is focused on either reassuring or altering an emotional state, it is not surprising that the emotionally evocative nature of music and variety of emotional offerings are well-suited to music being used predominantly as an emotion-oriented coping strategy.

Role of Sex in Coping by Music

The current study's second aim was to determine whether sex differences in music as a coping strategy mirror prior coping literature. Recall that analyses showed a significant sex difference on coping by music, but only for avoidance/disengagement

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music coping. Consistent with prior research and my prediction, females' use of music as avoidance/disengagement coping was greater than males' use. This finding was further supported by a post-hoc moderation analysis showing that the interaction between avoidance/disengagement music coping and perceived stress on depression was significant for females but not for males. I attribute this result, in part, to the overall sample being disproportionately female (73%). The smaller male sample size led to a less powerful analysis, and effectively made it more difficult to test for sex differences. While time constraints and recruitment tools did not allow for proportional sampling of males and females in the current study, future studies should make proportional sampling a deliberate focus in order to determine whether these sex differences are replicated.

However, contrary to prior research and my prediction, was the absence of any difference between males' and females' endorsement of emotion-oriented music coping. That is to say, males and females endorse music as an emotion-oriented coping strategy similarly. This similarity in endorsement of emotion-oriented music coping, coupled with the fact that both sexes endorsed emotion-oriented music coping at a higher rate compared to the other music coping strategies, substantiates music's role as an emotive force. In other words, it appears that music coping is unique from other types of coping where sex differences are more common. Future research is needed to further explore this idea and try to understand what it is about music that makes it a primarily emotion-oriented coping strategy.

Moderating Role of Coping by Music on Perceived Stress and Depression

The current study's third and most critical aim was to examine the moderating role of music as a coping strategy in the link between perceived stress and depression.

The corresponding hypotheses to this aim will be considered successively in light of their results. It was predicted that higher endorsement of avoidance/disengagement music coping would exacerbate the relationship between perceived stress and depression, relative to lower endorsement of this strategy. Results supported this hypothesis and it is consistent with prior coping literature suggesting that avoidance/disengagement coping is maladaptive (Tamres et al., 2002). This finding is none too surprising when considered theoretically. A concerted effort to use music as a means to continually avoid or deny a problem is at odds with effective steps to resolve that problem. It stands to reason that in a situation where multiple problems have persisted through avoidance/disengagement music coping, what remains is an individual overwhelmed by perceived stress and heightened depression.

Secondly, it was similarly predicted that higher endorsement of emotion-oriented music coping would exacerbate the relationship between perceived stress and depression, relative to lower endorsement of this strategy. This hypothesis was marginally supported with results similar to those in the avoidance/disengagement music coping moderation analysis. This finding prompted me to consider rumination as a potential explanation for emotion-oriented music coping's maladaptive effect on perceived stress and depression. Rumination is an emotion-oriented coping strategy in which an individual focuses on their problems and potential consequences. While not inherently negatively, there is evidence to suggest that excessive rumination is maladaptive, such that individuals who dwell on their problems to the point of obsession are unable to progress beyond the problem to a resolution. Moreover, fixation on one's problems is often *un*accompanied by any solution-driven mindset that the behavior might imply (Tamres et al., 2002). Music is

well-suited for rumination. An individual may repeatedly listen to a song, because the lyrics describe exactly the problem they are enduring. Consider, for example, an individual who has recently experienced a romantic break-up, and as a result, has started to frequently listen to songs that encapsulate the feeling of having one's heart broken. As opposed to taking steps toward solving their problem, the individual is simply reminded, over and over again, of their perceived stress and depression.

Finally, it was predicted that higher endorsement of problem-oriented music coping would buffer the effect of perceived stress on depression, relative to lower endorsement of this strategy. This hypothesis was not supported by the results. In the current study's planning phase, there was some difficulty in conceptualizing how music could effectively be employed as a problem-oriented coping strategy. Admittedly, any individual would be hard-pressed to solve a problem directly by music listening alone. Rather, music's role as a problem-oriented coping strategy was thought to be indirect. In other words, it is a tool that *helps* individuals to clear their minds in order to solve problems, but it is not responsible for solving problems directly. Furthermore, all of the problem-oriented music coping items in the current study's coping by music scale contextualize problem-oriented music coping as indirect (e.g., to *help* me concentrate my efforts to find solutions to my problems). There is reason to believe, however, that problem-oriented music coping might also be a direct means by which problems are solved. I speak mostly with reference to guidance. A song's lyrics, for example, can serve as a form of instrumental social support and provide the advice needed to solve a problem. Again, returning to the example of relationship problems, a song's lyrics may give guidance on whether to end or continue the relationship. One direction for future

research would be to include items in the music coping measure that tap into the idea of direct problem-solving.

One other potential explanation for the lack of a buffering effect of problem-oriented music coping is that the current study considered only perceived, general stress. At its core, problem-oriented music coping, indirect or direct, may be best equipped to handle specific problems, especially romantic problems as the majority of modern music focuses on love and relationships. As a result, problem-oriented music coping may be more relevant for specific stressors as opposed to perceived stress. A potential future study would be to examine music coping in the context of a specific stressor, such as relationship problems or break-up. Additionally, it would be interesting to examine whether males and females differ in music coping for relationship stressors.

Limitations and Future Directions

Many of the current study's limitations and future directions have already been discussed, but there are still a few remaining points to cover. First, listening to music is not the sole means by which an individual can engage in coping by music. It is the most common method, to be sure, if for no other reasons than convenience and accessibility; but, one can easily imagine an individual engaging in music coping through playing a musical instrument. In order to maintain methodological simplicity, the current study did not measure nor take into account whether an individual was a musician. Nonetheless, I would argue that those who play, connect with music on a much deeper level than your average everyday listener. Future research would benefit from comparing the moderating role of music coping between musicians and non-musicians.

Another limitation is that the reported results are qualified by the study's cross-sectional design. Due to perceived stress, coping by music, and depression being assessed simultaneously, the temporal relations between the variables cannot be tested. Future longitudinal investigations should address this limitation, and allow for the opportunity to examine individuals' endorsement of coping by music over a prolonged period of time. Despite these limitations, the current study has provided initial evidence for the legitimacy of music as a valid coping strategy.

While the current study did contain a measure assessing individuals' music genre preference, its design did not allow for any informative statistical analyses. Future research could create a valid and reliable measure, and examine whether varying genres uniquely affect the moderating role of coping by music as prior research has suggested that some types of music are less relaxing than others (Pelletier, 2004).

Another possible direction is to opt for a measurement of anxiety in place of depression. Anxiety differs from depression in that it is characterized by excessive worry, whereas depression is more commonly lethargic. Emotion-oriented music coping or more specifically, rumination, could worsen anxiety considering that fixating on uncertain outcomes in highly stressful situations is an unhealthy mix. Avoidance/disengagement music coping might improve anxiety in individuals that feel the need to urgently escape from excessively stressful situations. Problem-oriented music coping could also improve anxiety in individuals that desire to halt the anxiety's source as soon as possible. With that in mind, the results with anxiety could look entirely different from the current study's moderation effects for emotion-oriented music coping, avoidance/disengagement music coping, and problem-oriented music coping.

Conclusions

   The current study is a novel approach to understanding stress and coping. Surprisingly, the traditional coping literature has never examined music coping as a moderator between perceived stress and depression. The study findings support the further examination of music as a coping strategy in order to replicate emotion-oriented coping as the primary use of music. Furthermore, the results for both avoidance/disengagement music coping and emotion-oriented music coping's maladaptive effect on perceived stress and depression is in line with prior coping research. On the other hand, problem-oriented music coping was not in line with prior coping research. Taken together, these results demonstrate that music coping may parallel alternative coping strategies in some respects but not others. It is worth noting that despite the current study's results, coping with music may still be a viable means to overcome hardships; but, as is the case often in life, context matters and too much of a good thing is not always ideal. I think back to the figurative walls at which Gustav Mahler so fervently pummeled away – music, at his side. Perhaps, what he needed most was a different approach, but I suspect he would disagree.

If a composer could say what he had to say in words, he would not bother trying to say it in music – Gustav Mahler

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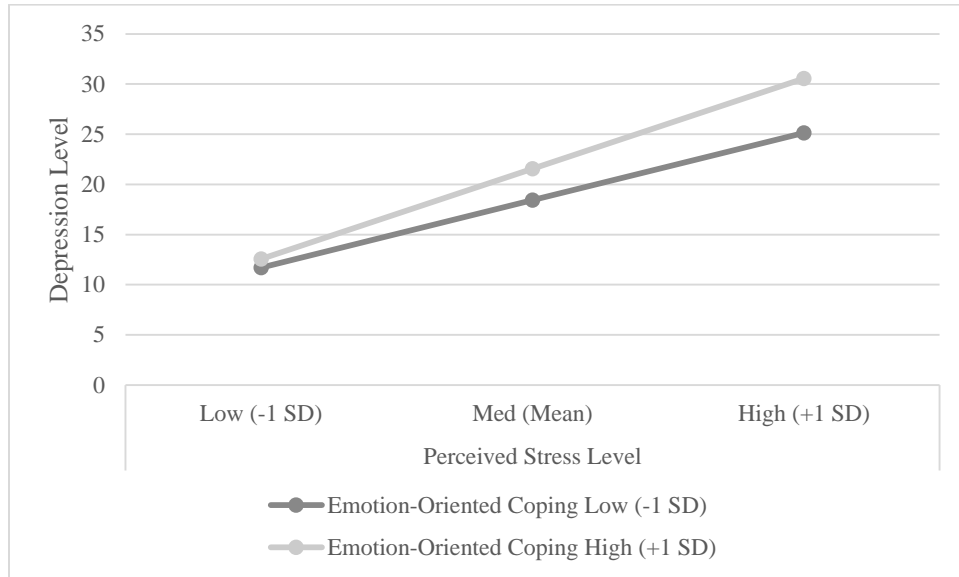
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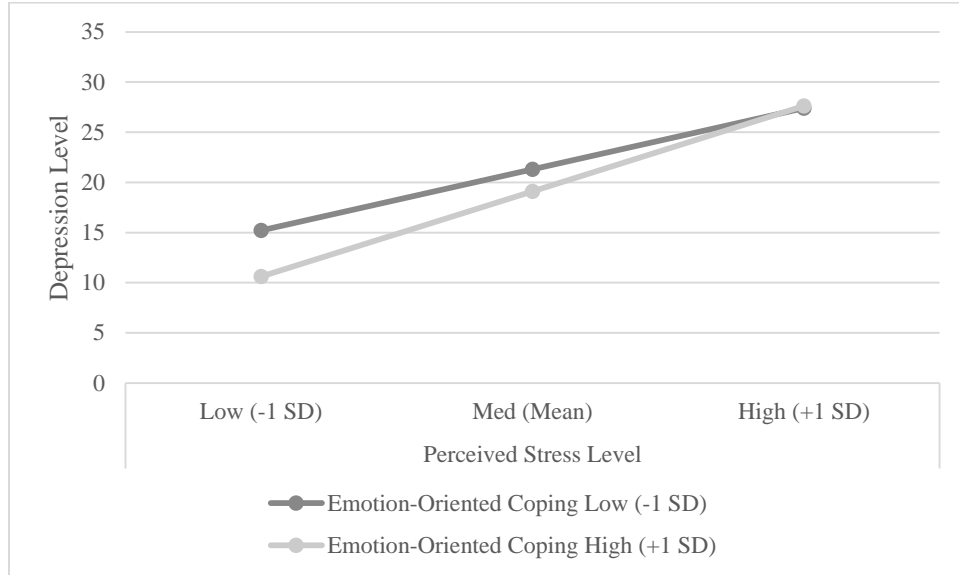
APPENDIX A

FIGURES

Effect of Perceived Stress on Depression by Emotion-Oriented Music Coping (Female)
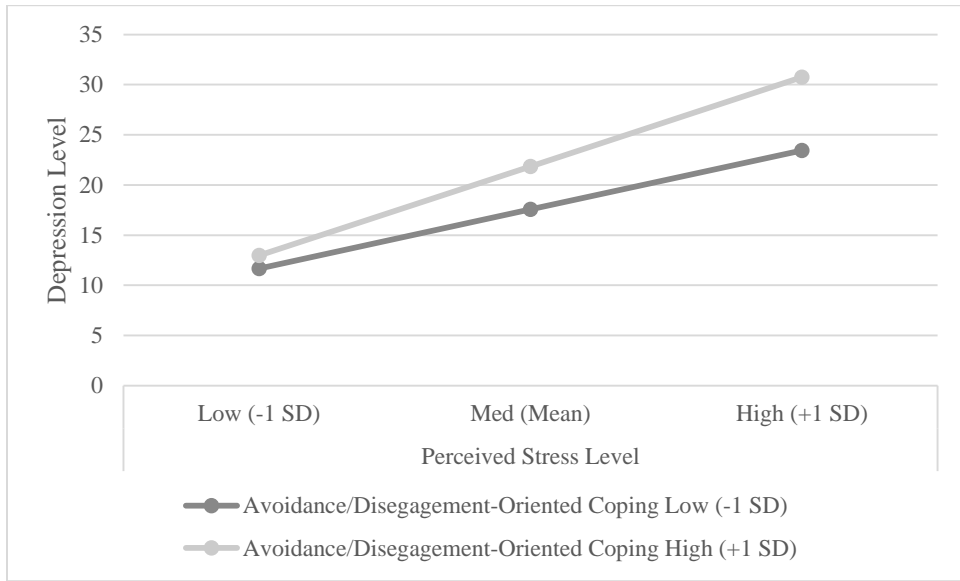

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy

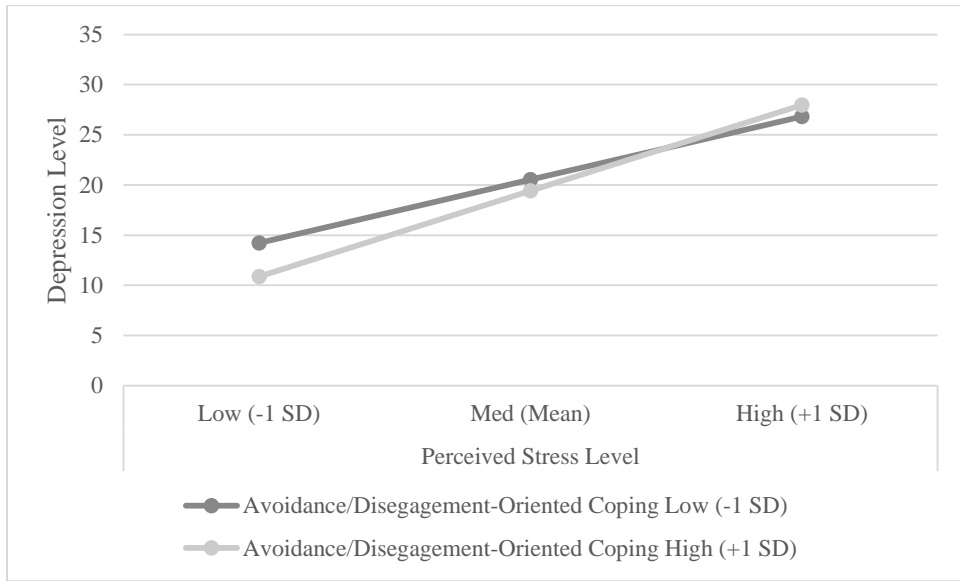*Effect of Perceived Stress on Depression by Emotion-Oriented Music Coping (Male)*

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

Effect of Perceived Stress on Depression by Avoidance/Disengagement-Oriented Music
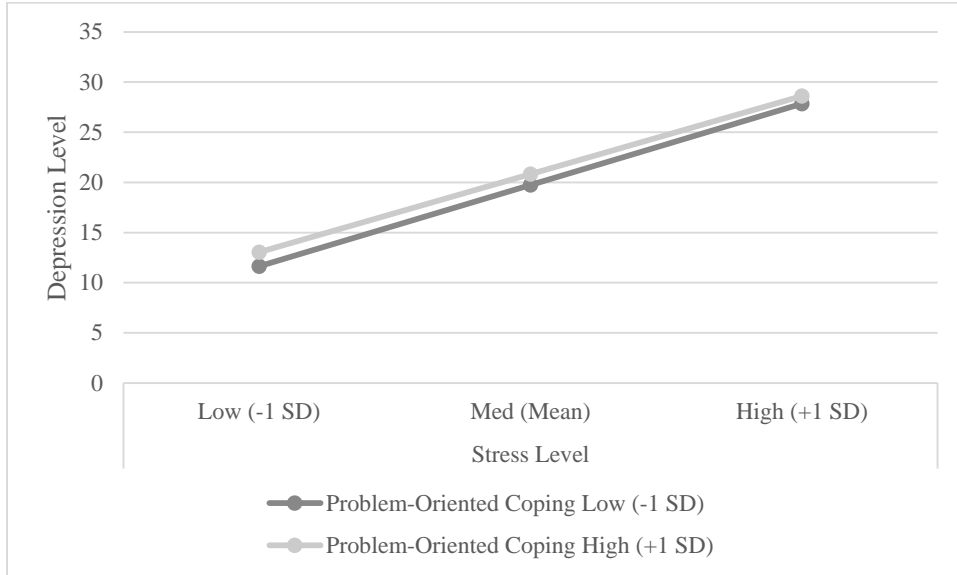
Coping (Female)

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

Effect of Perceived Stress on Depression by Avoidance/Disengagement-Oriented Music

Coping (Male)

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

Effect of Perceived Stress on Depression by Problem-Oriented Music Coping
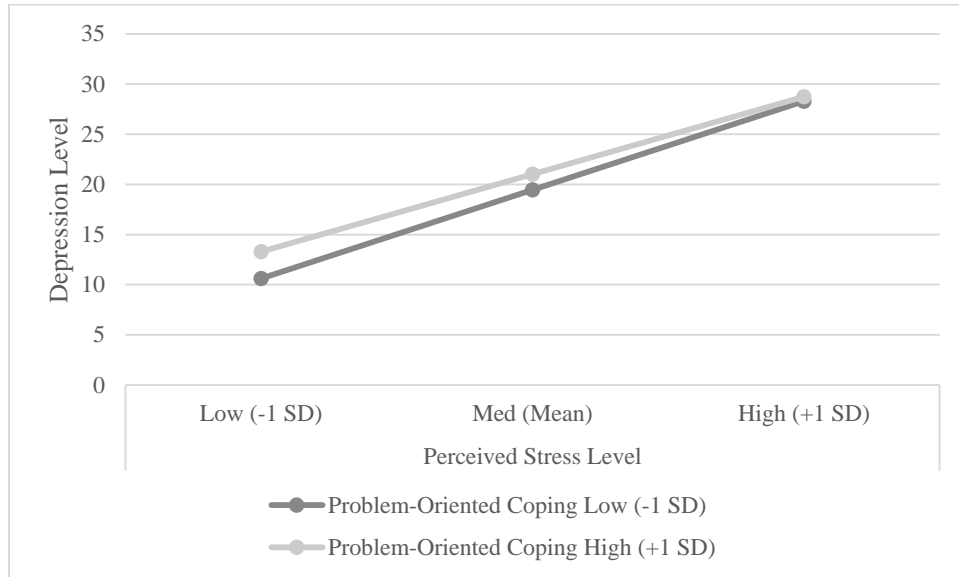

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

Effect of Perceived Stress on Depression by Problem-Oriented Music Coping (Female)

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

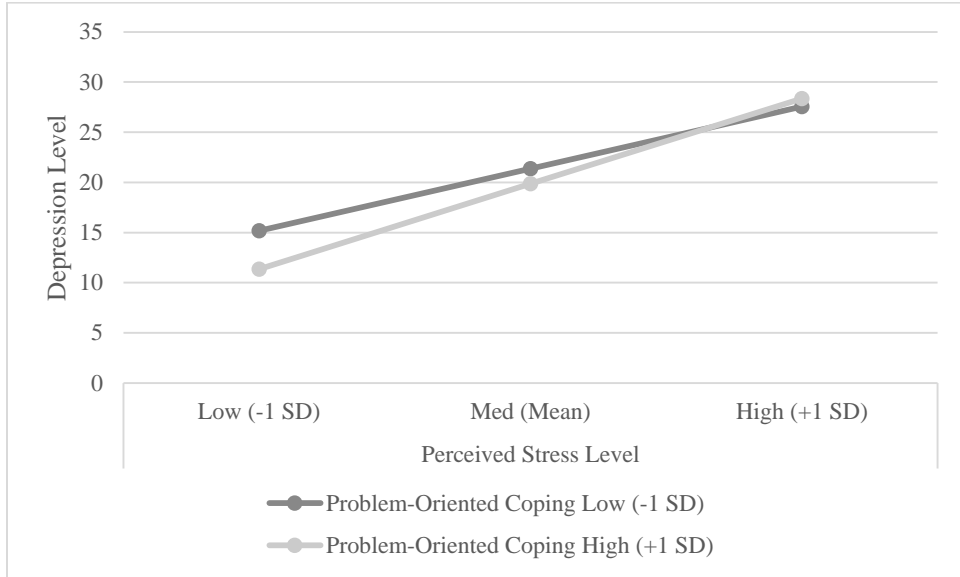*Effect of Perceived Stress on Depression by Problem-Oriented Music Coping (Male)*

Note. For ease of presentation and relevance, the figure does not include a line representing moderate levels of the coping strategy.

APPENDIX B

QUESTIONNAIRE

CONSENT FORM

Project Title: Project U.P. (Under Pressure): Dealing with pressure during college

Investigators: Litzia Cortez and Jonathan Covarrubias

INTRODUCTION: We invite you to take part in a research study that will examine how a variety of experiences and daily struggles that college freshmen endure impact their lives. We want to learn how college students deal with various issues and how loved ones such as family and friends are involved. We expect at least at least 150 college students, 18 years of age and older, to participate in this research study.

YOUR PARTICIPATION: If you decide to take part in this experiment, you will be asked to complete a onetime online questionnaire through the SONA system that should take around 45 minutes to complete. Upon completion of the questionnaire you will be granted 2 research course credits.

VOLUNTARY PARTICIPATION: You are free to decide whether you wish to participate in this study. Instead of being in this research study, your choices may include reading and completing quizzes on research articles. You can leave the research at any time and it will not be held against you.

BENEFITS: We cannot promise any benefits to you or others from your taking part in this research. Your participation in this study may enable us to help future individuals dealing with particular issues commonly experienced by college students.

RISKS: Overall, there are no anticipated risks beyond those encountered in everyday life. However, a few of the questions we ask may require you to remember stressful events, and this may lead to increases in distress. If any part of the study causes you to become distressed (symptoms of distress and/or depression include sleep disruption, concentration problems, changes in appetite, and similar disruptions in normal functioning), please call Dr. Kristin Mickelson at (602) 543-1632 for an appropriate referral.

QUESTIONS: If you have any questions now, during or following your participation regarding this study, please contact Kristin D. Mickelson at (602) 543-1632. This research has been reviewed and approved by the Social Behavioral IRB. You may talk to them at (480) 965-6788 or by email at research.integrity@asu.edu if:
·   Your questions, concerns, or complaints are not being answered by the research team.
·   You cannot reach the research team.
·   You want to talk to someone besides the research team.
·   You have questions about your rights as a research participant.
·   You want to get information or provide input about this research.

CONFIDENTIALITY: Efforts will be made to limit the use and disclosure of your personal information, including research study records, to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the University board that reviews research (and Federal Agencies) who want to make sure the researchers are doing their jobs correctly and protecting your information and rights.

CONSENT: If you agree to participate, please complete and submit the survey. By reading this form you acknowledge that you understand it and have had any questions regarding the risks and benefits of this study satisfactorily answered, and that you are voluntarily consenting to participate in this study.

By moving to the next question, you are stating that you understand the above information.

Parents' Marital Status:
What is your parents' marital status?
- Married
- Cohabiting
- Never Married
- Divorced
- Separated
- Widowed

Relationship Status:
What is your current relationship status?
- Single
- In a Relationship
- Married
- Divorced
- Separated
- Widowed

Biological Sex:
Are you a biological female or male?
- Female
- Male

Gender Identity:
Do you identify as female, male, trans, or other?
- Female
- Male
- Trans
- Other

Age:
What is your age?

Household Income:
- Less than $10,000
- $10,000 to $19,999
- $20,000 to $29,999
- $30,000 to $39,999
- $40,000 to $49,999
- $50,000 to $59,999
- $60,000 to $69,999
- $70,000 to $79,999
- $80,000 to $89,999
- $90,000 to $99,999
- $100,000 to $149,999
- More than $150,000

Employment Status:
Are you currently working at a paid job?
- Yes
- No
- Currently on Leave

Race/Ethnicity
What is your race?
- White (Non-Hispanic)
- African American
- Hispanic
- Asian
- Native American
- Other

Perceived Stress Scale:

The questions in this scale ask you about your feelings and thoughts during the PAST MONTH. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them, and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

0 – Never
1 – Almost Never
2 – Sometimes
3 – Fairly Often
4 – Very Often

How often have you been upset because of something happened unexpectedly?
How often have you felt that you were unable to control the important things in your life?
How often have you felt nervous or "stressed?"
How often have you dealt successfully with irritating life hassles?
How often have you felt that you were effectively coping with important changes that were occurring in your life?
How often have you felt confident about your ability handle your personal problems?
How often have you felt that things were going your way?
How often have you found that you could not cope with all the things that you had to do?
How often have you been able to control irritation in your life?
How often have you felt that you were on top of things?
How often have you been angered because of things that happened that were outside of your control?
How often have you found yourself thinking about things that you have to accomplish?
How often have you been able to control the way you spend your time?
How often have you felt difficulties were piling up so high that you could not overcome them?

CES-D:
Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the <u>PAST WEEK</u>.

0 – Rarely or None of the Time (Less than 1 Day)
1 – Some or a Little of the Time (1-2 Days)
2 – Occasionally or a Moderate Amount of Time (3-4 Days)
3 – Most or All of the Time (5-7 Days)

I was bothered by things that usually don't bother me
I did not feel like eating; my appetite was poor
I felt that I could not shake off the blues even with help from my family or friends
I felt that I was just as good as other people
I had trouble keeping my mind on what I was doing
I felt depressed
I felt that everything I did was an effort
I felt hopeful about the future
I thought my life had been a failure
I felt fearful
My sleep was restless
I was happy
I talked less than usual
I felt lonely
People were unfriendly
I enjoyed life
I had crying spells
I felt sad
I felt that people dislike me
I could not get "going"

Coping with Music:
Some people listen to music when they experience a situation that is stressful. Please read the following statements and indicate (from 0 to 4) if that happens to you.
When I am stressed by problems (e.g. at school, with friends, and family), I listen to my favorite music

0 – Never
1 – Rarely
2 – Sometimes
3 – Often
4 – Always

…to avoid thinking about my problems
…to avoid thinking about people that are causing me problems
…to enter into a safe place where I can get away from my problems[*]
…to focus my attention on something else[*]
…to help me concentrate my efforts to find solutions to my problems
…to help me take action to solve my problems
…to help me come up with a strategy to overcome my problems[*]
…to help me figure out which steps to take next toward fixing my problems[*]
…to reduce my stress and help myself to relax
…to make me feel better[*]
…to help myself reduce my negative emotions (e.g. frustration and anger)
…to help myself gain more positive emotions (e.g. happiness and hopefulness)

Note. [*]Item that is an addition to the original *Coping with Music* scale used in Miranda and Claes (2009)

Listening Frequency:
In the PAST WEEK, how many hours did you listen to music each day on average?
- 30 Minutes or Less
- 1 to 2 Hours
- 3 to 4 Hours
- 4 to 5 Hours
- 6 Hours or More

In the PAST WEEK, how many hours did you listen to sad music each day on average?
- 30 Minutes or Less
- 1 to 2 Hours
- 3 to 4 Hours
- 4 to 5 Hours
- 6 Hours or More

In the PAST WEEK, how many hours did you listen to happy music each day on average?
- 30 Minutes or Less
- 1 to 2 Hours
- 3 to 4 Hours
- 4 to 5 Hours
- 6 Hours or More

Genre Preference:
Please rank the following music genres in order from most preferred to least preferred (i.e. most preferred = 1, so on and so forth)

Blues
Classical
Jazz
Country
Electronic
International/World Music
Latin
Pop
Rock
Rap/Hip-Hop
Soul
Other

Music Emotion Preference:
Please indicate the extent to which you agree with each of the following statements.

0 – Strongly Disagree
1 – Disagree
2 – Neutral
3 – Agree
4 – Strongly Agree

In general…
Most of my favorite music sounds sad
Most of my favorite music sounds happy
If I feel a need for comfort, I listen to sad music
If I feel a need for comfort, I listen to happy music

Lyric or Music Preference:
In general, do you listen to songs for the lyrics or music?
0 – Only for the Lyrics
1 – Mostly for the Lyrics
2 – Both
3 – Mostly for the Music
4 – Only for the Music