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Wellness Among University Music Students: An Exploratory Study of the Correlates of Subjective Vitality

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Abstract

For many music students, the transition to university-level studies can be a time characterized by high levels of stress as they adjust to academic standards and the challenges of demanding performance assessments. Given this context, this study investigated the impact of stress on students' well-being, specifically the facet of subjective vitality, defined in the literature as a feeling of energy and aliveness. Our focus was to explore whether certain psycho-social traits would moderate the negative effects of stress on vitality. Working from an empirically-derived conceptual model, our central hypotheses were (a) that stress and self-oriented perfectionism would be negatively related to vitality, whereas adaptability and quality of peer relationships would be positively related to vitality; and (b) that the relationship between stress and vitality would be moderated by students' self-oriented perfectionism, adaptability, and quality of peer relationships. Participants were 293 undergraduate and graduate music majors from university schools of music and conservatoires in the United States and Australia. Findings revealed that stress was a significant negative predictor of vitality, but self-oriented perfectionism was not. In addition, both adaptability and quality of peer relationships were significant positive predictors of vitality. However, neither self-oriented perfectionism, adaptability, nor quality of peer relationships moderated the effects of stress on vitality. These findings are discussed with regard to practical recommendations for helping students deal with the stressors in their environments and potential theoretical avenues to explore through future research.

Keywords: Subjective Vitality, Perfectionism, Adaptability, Peer Relationships, University-level Music Students, Well-being

Introduction

Psychological well-being is a critical determinant of whether students have successful and meaningful experiences in higher education (Eisenberg, Gollust, Golberstein, & Hefner, 2007). The transition to university however, brings with it the stresses of adjusting to new academic standards and social expectations, as well as adapting to a more autonomous lifestyle. For many students, the financial burden of university can also be daunting and a substantial source of pressure. As such, the need for mental health-related services among university-level students continues to be a prominent topic among researchers (Gallagher, 2005; Kitzrow, 2003) with studies indicating that as many as one in five students may be suffering from some clinical disorder (Auerbach et al., 2016; Eisenberg et al., 2007). Not surprisingly, therefore, the degree to which students are able to manage the social and emotional challenges that appear during their higher education experiences can be a stronger predictor of retention than measures of academic achievement (Gerdes & Mallinckrodt, 1994).

The need to understand the nature of psychological well-being among university-level arts students may be particularly pressing. Lipson, Zhou, Wagner, Beck, and Eisenberg (2016) examined how incidences of mental health issues varied according to students' discipline of study by surveying more than 60,000 undergraduate and graduate students from 81 universities that varied broadly regarding institution type, enrollment size, and geographic location. Students working within the disciplines of music, visual art, and architecture were found to be significantly more likely to screen positive for depression and anxiety and report suicidal ideation when compared to their peers in other disciplines (Lipson et al., 2016). Lipson et al. suggest that this may be due to several typical features of university arts programs such as (a) competitive orientations among students, (b) the solitude involved in developing one's artistic craft, and (c) the frequency of public and potentially harsh critique of students' personal work.

Research regarding the well-being of university-level music students[1], specifically, is consistent with the evidence surrounding arts students in general. For example, Perkins, Reid, Araújo, Clark, and Williamon's (2017) qualitative findings from interviews of student musicians in UK conservatoires are consistent with the work of Lipson et al. (2016). The participants in Perkins et al.'s (2017) study identified several features of conservatoire environments that they

[1] We use the term "university-level music students" to refer to students who study music in higher education in many settings (public university, private university, conservatoire, etc.).

perceive as barriers to their health such as (a) feeling continuously "under the spotlight" (p. 11), (b) competition among students, (c) pressure to excel, (d) negativity of feedback, and (e) excessive workloads. In recognition of this reality, efforts to orient music programs in higher education towards proactive practices that lead to optimal functioning and help to prevent injury and the development of psychological disorders are beginning to become more prominent. Relatively large-scale initiatives such as the Health Promotion in Schools of Music Project (HPSM) in the US (Chesky, Dawson, & Manchester, 2006) and the Musical Impact Project in the UK (http://www.musicalimpact.org/) have made important contributions to advancing our understanding of theoretical and practical issues related to musicians' health and well-being.

Most research aimed at investigating university-level music students' well-being actually emphasizes the presence or treatment of what could generally be considered indicators of ill-being such as stress, anxiety, depression, and physical injury (e.g., Ginsborg, Spahn, & Williamon, 2012). Although researchers have recently employed positive psychological frameworks to provide useful accounts of musicians' well-being (Araújo et al., 2017; Ascenso, Perkins, & Williamon, 2018; Ascenso, Williamon, & Perkins, 2017), relatively few studies reported in the literature have focused on identifying elements that can contribute to whether a student thrives in their learning environment. While it is certainly important to reveal the problems students face, it could also be beneficial to investigate adaptive constructs of well-being and to try to identify the various influences that could correspond with such constructs. Doing so could help to inform approaches that students, teachers, and administrators could take to optimize student health in university music studies.

Subjective Vitality

Subjective vitality is a construct proposed by Ryan and Frederick (1997) that is hypothesized to represent "…one's conscious experience of possessing energy and aliveness" (p. 530). A humanistic notion influenced by earlier work on self-actualization (Rogers, 1963) and self-determination (Deci & Ryan, 1985), subjective vitality is impacted by both psychological and physical factors and, to some degree, is a consequence of an individual's internal appraisal of themselves as a self-regulating, competent, and autonomous being. As an energetic state, subjective vitality is not meant to be synonymous with well-being or simply a positive feeling (Ryan & Frederick, 1997). One can be in a serene, low-energy state that would not be characteristic of subjective vitality and yet possess excellent well-being. In addition, the

energetic experience characteristic of subjective vitality is qualitatively different than that of high energy states that are negatively valenced, such as those found in anger, anxiety, and mania. In contrast to subjective vitality, specifically, well-being is more generally considered as a holistic state and has been theorized in many ways by many scholars as encompassing several collections of psychological, social, and physical indicators (e.g., Dodge, Daly, Huyton, & Sanders, 2012; Seligman, 2011). We have delimited this investigation to a single, adaptive facet of well-being, subjective vitality.

Ryan and Frederick (1997) conducted a series of studies to explore how subjective vitality could be related to overall health and well-being. The studies were conducted with samples of college students as well as both healthy and ill (e.g., chronic pain sufferers) adults. A synthesis of their findings indicates that subjective vitality was correlated with several important indicators of well- and ill-being. For example, those reporting greater degrees of subjective vitality also tended to report (a) better global self-esteem, (b) more personal agency, (c) more concern for intrinsically-defined success, and (d) greater tendencies towards positive mood. In contrast, those reporting relatively less subjective vitality also tended to report (a) greater feelings of anxiety and depression, (b) an external locus of control, (c) greater perceived pain, and (d) more concern for extrinsically-defined success. Although subjective vitality seems to be a pithy indicator of psychological thriving, it has not yet been explored in any depth within music education contexts.

Ryan and Deci (2016) suggest that vitality is particularly vulnerable when individuals perceive their actions to be driven by environmental stressors such as control and/or pressure, as opposed to intrinsic sources of motivation. This is consistent with the work of other researchers who have found significant associations between stress and a variety of well-being measures (e.g., Schneiderman, Ironson, & Siegel, 2005). Schneiderman et al.'s review of literature on this topic suggests that situational work-place stressors (i.e., time pressure, perceived threat, perceived lack of control) can work synergistically to negatively impact physical and mental manifestations of well-being. However, they also found that coping resources in the form of situational social supports can serve to mitigate the negative effects of stress. Comparable findings have been reported within university-level learning environments; for example, D'Angelo and Wierzbicki (2003) found that students' experiences of stress in the form of situational daily hassles were predictive of the degree of depression and/or anxiety they reported.

Regression analyses revealed that perceptions of time pressure, romantic relationship problems, annoyances, and social mistreatment were each positively associated with reports of depression, whereas perceptions of time pressure, academic alienation, annoyances, social mistreatment, and friendship problems were each predictive of reports of anxiety (D'Angelo & Wierzbicki, 2003). Similarly, Schiffrin and Nelson (2010) found an inverse relationship between stress and university-level students' reports of happiness. They found a relatively strong relationship between stress and measures that assessed participants' relatively recent experiences of happiness (e.g., state-like measures) as compared to those intended to capture relatively long-term global assessments (e.g., trait-like measures).

A combinatorial impact of stressors upon well-being documented by Scheiderman et al. (2005) is consistent with the diathesis-stress hypothesis (Monroe & Simons, 1991), which suggests that personal vulnerabilities and situational factors can interact to exacerbate an individual's response to stress. For example, Flett, Hewitt, Blankstein, and Mosher (1995) investigated how university-level students' perfectionist tendencies could moderate the relationship between their perceived stress and symptoms of depression. Their findings were consistent with a diathesis-stress model in that the positive relationship between stress and depressive symptoms was stronger for those who reported relatively stronger perfectionistic self-standards as compared to those who reported relatively weaker perfectionist tendencies. In contrast, other researchers have shown how certain personal resources and situational factors could serve to protect or buffer against the effects of stress on well-being (Cohen & Wilson, 1985). Wills (1986) found that behavioral and cognitive coping techniques as well as the presence of adult support moderated a positive relationship between stress and substance abuse among junior high school students. Similarly, Chao (2011) found that the use of problem-focused as opposed to avoidant-coping techniques, and the presence of social support, moderated the negative relationship between stress and a positive indicator of psychological well-being among university-level students. However, potential moderators of the relationship between stress and subjective vitality have yet to be explored.

Stress, Perfectionism, Adaptability, and Peer Influences Among University-level Musicians

Although the presence of mental distress among university-level musicians is well-documented (e.g., Ginsborg, Spahn, & Williamon, 2012) and some of the features of the typical music learning environment that may contribute to this phenomenon have been proposed (e.g.,

Perkins et al., 2017), the psychosocial correlates of such experiences are less clearly understood. Stress is a particularly common source of psychological grief for university-level music students (Ginsborg et al., 2012; Orzel, 2010). In a relatively early study, Land (1979) found that students at the Manhattan School of Music often experienced anger, depression, and anxiety, while Dews and Williams' (1989) survey of undergraduate and graduate music students in the US revealed stress to be their most troubling issue. More recent studies of university music students in Germany (Spahn, Strukely, & Lehmann, 2004), Turkey (Demirbatir, Bayram, & Bilgel, 2012), and the United States (Wristen, 2013) have demonstrated that reports of stress or various symptoms of distress (e.g., anxiety, depression) may be similar or greater than those working in other disciplines. Hildebrandt, Nübling, and Candia (2012) examined changes in mental health across the first-year of study for university music majors in Switzerland and found significant increases in reports of fatigue, performance anxiety, and depression over time. Overall, research suggests that university music students experience substantial mental distress, that the nature of university music studies may contribute to generalized stress, and that this may be consistent across global regions and cultures.

One construct that has emerged as a potential negative influence upon the well-being of musicians is perfectionism (Dews & Williams, 1989; Mor, Day, Flett, & Hewitt, 1995; Stoeber & Eismann, 2007). Hewitt and Flett (1991) describe three dimensions of perfectionism—self-oriented perfectionism, other-oriented perfectionism, and socially-prescribed perfectionism—and suggest that each dimension has a unique association with a variety of psychological outcomes (e.g., behavior, motivation, well-being). For example, other-oriented perfectionist tendencies are interpersonal and can lead someone to be hypercritical of those around them and develop anti-social tendencies, whereas socially-prescribed perfectionist tendencies tend to manifest as a compulsive need to satisfy others' standards and can lead to a variety of negative psychological outcomes (e.g., learned helplessness, anxiety, hopelessness) (Cox, Enns, & Clara, 2002; Hewitt & Flett, 1991). Findings regarding self-oriented perfectionism are less straightforward. Self-oriented perfectionism is characterized by holding exceedingly high standards as well as a compulsive striving for self-improvement and has been found to be associated with both positive (e.g., achievement, productivity) and negative (e.g., obsessiveness, performance anxiety) outcomes (e.g., Hewitt & Flett, 1991; Mor et al., 1995).

Diaz (2018) investigated several dimensions of perfectionist tendencies by surveying 263 undergraduate and graduate musicians from 14 universities in the US. Diaz found that self-oriented and socially-prescribed perfectionist tendencies were positively related to performance anxiety (i.e., maladaptive effects), whereas other-oriented perfectionist tendencies were negatively related to performance anxiety (i.e., adaptive effects). Working with a different population and from a different theoretical framework, Linnett (2016) investigated perfectionist strivings and perfectionist concerns among amateur and professional musicians. Perfectionist concerns are typically conceived as maladaptive and are characterized as extreme concerns for external evaluation, mistakes, and criticism (Stoeber & Otto, 2006). Perfectionist strivings can reflect high self-referential personal standards (Stoeber & Otto, 2006) and thus correspond to the kind of self-oriented perfectionism defined by Hewitt and Flett (1991). Although they can manifest in either a maladaptive or adaptive manner, some literature points to their positive outcomes (e.g., Stoeber & Eismann, 2007). Linnett (2016) found positive relationships between perfectionist concerns and burnout among both groups of musicians, indicating that those reporting a greater degree of perfectionist concern tended to also report more burnout. A weak negative relationship was found between perfectionist strivings and burnout among the amateur musicians, suggesting an adaptive function of perfectionist strivings for this group. When it comes to professional musicians (Linnett, 2016) or professional musicians in training (e.g., Diaz, 2018), the literature suggests that these particular manifestations of perfectionism may have either a negative impact or no impact on well-being outcomes, however. Araújo et al. (2017) found that while undergraduate and graduate conservatoire students tend to have average levels of perfectionist concerns and doubts, they report relatively strong perfectionist striving tendencies that appear to be more prominent than those displayed by younger musicians studied by Stoeber and Eismann (2007). Given the relatively high levels of perfectionistic strivings found among university-level music students (Araújo et al., 2017) and the mixed findings discussed above, more research is necessary to determine the influence of self-oriented perfectionist tendencies and/or perfectionist strivings on well-being in this population.

In contrast to perfectionist tendencies that could lead to negative biases, doubts, and rigidity of thought and behavior, an adaptable mindset could equip students to deal with the novel types of setbacks that can emerge during their studies. Adaptability—a construct that has been studied in educational psychology literature and seems to be closely related to coping—is

defined as “appropriate cognitive, behavioral, and/or affective adjustment in the face of uncertainty and novelty” (Martin, Nejad, Colmar, & Liem, 2013, p. 728). At school, uncertainty and novelty present immense challenges to adolescents, and adaptability has been shown as a trait that helps to mitigate these challenges (Martin et al., 2013; Martin, Durksen, Williamson, Kiss, & Ginns, 2016). In university music programs, some of the causes of stress described earlier such as adjusting to new academic standards, uncertainty about a future career, and having to respond to harsh criticism are characterized by uncertainty and novelty, so adaptability is a plausible trait that may mitigate this stress. Burland’s (2005) longitudinal study of undergraduate music students revealed that the coping strategies students possessed were critical determinants of whether they were able to negotiate negative psychological experiences (e.g., performance anxiety, insecurity, rejection). The coping strategies helped students be more adaptable to the challenges they met during their studies and contributed to whether they went on to become professional musicians. University-level music students who tend to employ problem-focused coping strategies, reframe negative outcomes, and manage their negative emotions may be more adept at adjusting to the various demands that arise during their music studies. This ability, in turn, seems to contribute to their optimal development. More research is needed that directly probes whether a students’ ability to adapt to the challenges found in university music settings could serve to mitigate the stressors in their environment and be predictive of their well-being.

University-level musicians may also be able to increase their well-being by drawing support from the social networks they develop during their studies, which can include the influence of their peers. The participants in the above-mentioned study by Perkins et al. (2017) reported that relationships and social networks served as environmental enablers of health and well-being. This was especially the case if they perceived the competitive pressures in their environment as minimal. Schneider and Chesky (2011) investigated the effects of social support in a study of music and non-music students at the University of North Texas. Music majors reported receiving less social support from significant others than non-music majors. However, the participants reported that social support could serve as a psychological coping resource and a weak, but significant positive relationship was found between reports of the amount of support participants received from friends and perceptions of how well they could control their anxiety. Burland and Pitts (2007) investigated the impact of an intervention program designed to help

first-year university music students develop study skills. The researchers found that establishing a learning network could be valuable for supporting students' confidence and helping them cope with the pressures of university music study. Burland and Pitts' (2007) findings highlight how being a part of communal experience and maintaining effective working relationships with peers and staff can be important for student motivation, whereas feeling a lack of fit or belongingness in an institution can lead to feelings of insecurity.

Taking a different approach, Zander, Voltmer, and Spahn (2010) investigated the effectiveness of a compulsory health program for students during their first two years of study at the University of Music in Freiburg, Germany. The music students receiving the compulsory program were compared to medical students who received no specific health intervention. The program was designed as a preventative intervention for both physical and mental health issues. The facilitator of the program worked to build personal relationships with each participant so as to impress upon them that she was invested in supporting their well-being. Participants were also assigned to peer work groups to discuss coping strategies, reduce the sense of competitiveness in the environment, and increase students' likelihood of positive socialization. The program had an observable impact on psychological outcomes but not physical outcomes. After two years, reductions were found in the music students' reports of an array of psychological problems (e.g., lack of self-confidence, inefficient learning, fear of failure, concentration problems) but not the medical students' reports. It appears that adaptive social relationships can be helpful for increasing a sense of well-being.

Aims of the Present Study

The research on music students' wellbeing suggests that they are likely to experience high degrees of stress (e.g., Orzel, 2010) and as well as other detrimental psychological issues (e.g., Spahn et al., 2004). It is also likely that these experiences may be due, in part, to the challenging nature of their music learning environments and the sorts of dispositions they may develop in response to their environment, such as perfectionist tendencies (e.g., Perkins et al., 2017). In addition, research both in music education (e.g., Burland, 2005; Schneider & Chesky, 2011) and outside music education (e.g., Schiffrin & Nelson, 2010) suggests that stress may have a negative impact on well-being outcomes such as subjective vitality (e.g., D'Angelo & Wierzbicki, 2003) as well as other psychosocial traits (e.g., Hildebrandt et al., 2012) that, in turn, may impact vitality. Moreover, studies involving other student populations indicate that self-

oriented perfectionism (Flett et al., 1995), coping, and social support (Chao, 2011; Wills, 1986) can moderate the link between stress and mental well-being. Given the literature reviewed above, we developed an empirically-derived, conceptual model describing the role that perfectionism, adaptability, and the peer relationships experienced by university-level students during the course, or as a result, of their music studies may play in moderating the relationship between their general experiences of stress and psychological well-being (see Figure 1). Further, we aimed to extend the typical approach taken in previous research, which is often to emphasize indicators of ill-being when investigating musician health. Instead, we chose to study a construct that represents human thriving, the specific phenomenological experience of aliveness and energy captured by Ryan and Frederick's (1997) construct, subjective vitality, which they found to be associated with a range of other psychological indicators of well-being such as self-esteem, intrinsic motivation, and positive mood.

The conceptual model presented in Figure 1 illustrates direct relationships between perfectionism, adaptability, and peer relationships and vitality as well as the possibility that each predictor variable could moderate the relationship between stress and vitality. We proposed that self-oriented perfectionism would aggravate a negative relationship between stress and subjective vitality, rendering it more severe. By contrast, adaptability and quality of peer relationships would mitigate the negative relationship between stress and subjective vitality, rendering it less severe. The specific hypotheses we tested were as follows:

1. Participants' general reports of stress would be negatively associated with their reports of subjective vitality.
2. Regarding constructs relevant to participants' music studies: self-oriented perfectionism would be negatively associated with students' sense of vitality, whereas students' adaptability and the quality of their peer relationships would be positively associated with vitality.
3. Students' self-oriented perfectionism would moderate the relationships between students' perceived stress and sense of vitality such that the negative relationship between students' perceived stress and sense of vitality would be stronger for those with relatively stronger perfectionist tendencies.
4. Students' adaptability and quality of peer relationships would each moderate the relationships between students' perceived stress and sense of vitality, such that the

negative relationship between students' perceived stress and sense of vitality would be relatively weaker for those who reported being more adaptable and having higher quality peer relationships.

Method

Participants

The participants in this study were 293 undergraduate and graduate music majors from two university schools of music in the Midwestern United States and Australia and one conservatorium in Australia. Sixty-three percent of the volunteers were female and 37% were male, and their average age was 21.83 years (*SD* = 4.31, Range = 31). Participants' areas of studies were varied, with most indicating music education or music performance as their area of emphasis and others pursuing a general degree in music, a performer's certificate, or musicology. Most of the participants were instrumentalists (83%) while only 17% indicated voice as their major instrument and one participant indicated conducting as their area of specialization. The participants' reports of number of semesters completed in university music study varied widely, ranging from 1 to 30, with 25th percentile, median, and 75th percentile values of 2, 4, and 8 respectively. The participants also reported a wide range of years of formal music lessons, with an average of 11.52 years (*SD* = 4.77, Range = 25). All participants provided informed consent.

Procedure

The data for this study were collected via an online questionnaire. An email consisting of a cover letter explaining the project and a link to the online questionnaire was sent to all students pursuing music degrees at each of the three institutions. A reminder email was sent one week after the initial mailing. The survey described in the current study was the third of four disseminated to the same population as part of an ongoing multi-phase, longitudinal study of university-level music students. Although 293 students responded to our questionnaire, not all students completed all items for all measures. As such, the *N* varies to some degree across the analyses conducted. The procedures were approved by the relevant university human research ethics advisory panel.

Measures

Subjective Vitality. Participants' sense of vitality was measured using Ryan and Frederick's (1997) seven-item subjective vitality scale. Participants were presented with the prompt, "Please rate the following statements about yourself:" followed by these seven items: "I

have energy and spirit", "Sometimes I feel so alive I just want to burst", "I feel alive and vital", "I don't feel very energetic" (reverse scored), "I look forward to each new day", "I nearly always feel alert and awake", and "I feel energized". The participants responded to all items for this measure using a Likert-type scale anchored by the statements "1-Strongly Disagree" and "7-Strongly Agree". Exploratory factor analyses indicated that the seven subjective vitality items loaded onto a single factor and Cronbach's alpha for the items was very good (.89). Participants' vitality scores were constructed by averaging their responses to the seven items, yielding a possible range of scores from 1 to 7, with lower scales indicating less vitality and vice versa.

Stress. Participants' perceptions of stress were measured using a set of items adapted from the short-form Depression, Anxiety, and Stress Scale (DASS; Antony, Bieling, Cox, Enns, & Swinson, 1998). The adapted stress scale consisted of five of the seven items of the DASS short-form stress scale; we eliminated the remaining two, on the grounds of redundancy, for the sake of brevity. The items, preceded by the prompt "Please rate the following statement about your well-being in the past week:", addressed a variety of typical stress responses (i.e., "I found it hard to wind down", "I tended to over-react to situations", "I was intolerant of anything that kept me from getting on with what I was doing", "I found myself getting upset rather easily", "I felt that I was using a lot of nervous energy"). As with the vitality measure, the participants responded to all items using a Likert-type scale anchored by the statements "1-Strongly Disagree" and "7-Strongly Agree". Exploratory factor analyses indicated that the five items loaded onto a single factor and Cronbach's alpha for the items was good (.86). Participants' stress scores were constructed by averaging their responses to the five items, yielding a possible range of scores from 1 to 7, with lower scales indicating less stress and vice versa.

Self-Oriented Perfectionism. The degree to which participants approach their music studies with self-oriented perfectionist tendencies was measured via items from Cox, Enns, and Clara's (2002) Short-form Multidimensional Perfectionism Scale. We adapted four of the five items of Cox et al.'s self-oriented perfectionism measure for our purposes by inserting a reference to music in two of the items. The four items emphasized extreme personal standards for achievement (i.e., "One of my goals is to be perfect at playing music", "I strive to be as perfect as I can be", "With respect to music, I am perfectionistic in setting goals", "I set very high standards for myself with respect to playing music"). All items were preceded by the prompt "Please rate the following statements about playing music:". As with the previous two

measures described, the participants responded to all items using a Likert-type scale anchored by the statements "1-Strongly Disagree" and "7-Strongly Agree". Exploratory factor analyses indicated that the four items produced a clear single-factor structure and Cronbach's alpha for the self-oriented sub-scale was good (.80). Participants' self-oriented perfectionism scores were constructed by averaging their responses to the four items, yielding a possible range of scores from 1 to 7, with lower scales indicating less perfectionist tendencies and vice versa.

Adaptability. The measure of adaptability consisted of the three items from Martin et al.'s (2016) scale, which was originally used in a study regarding the efficacy of a museum science education program. The three items emphasize the participants' ability to manage their cognitive, behavioral, and affective response to uncertain situations they encounter during their music studies (i.e., "When faced with a new or uncertain situation, I am able to adjust my thinking or attitude to help me through", "To assist me in a new or uncertain situation, I am to change the way I do things", "I am able to control my emotions (e.g., fear, excitement) to help me deal with new or uncertain situations and tasks"). We adapted the scale such that participants first read the following prompt, "Think about yourself as a music student and rate yourself on the following scales:" and then responded to all items using a Likert-type scale anchored by the statements "1-Strongly Disagree" and "7-Strongly Agree". Exploratory factor analysis showed that the three items loaded strongly onto a single factor and the Cronbach's alpha for the three items was good (.86). Participants' adaptability scores were constructed by averaging their responses to the three items, yielding a possible range of scores from 1 to 7, with lower scales indicating less adaptability and vice versa.

Peer Relationships. The quality of the participants' peer relationships was measured using an adaptation of Martin, Papworth, Ginns, and Liem's (2014) scale, which was originally designed to assess relationships among same- and opposite-sex peers. Two of the four items in this scale were altered from their original wording to refer specifically to music. The scale was also adapted such that participants were prompted first to "Think about your peers who are also studying music at university" and then answer items pertaining to their music student peers using a Likert-type scale anchored by the statements "1-Strongly Disagree" and "7-Strongly Agree". The items were: "I get along with other music students", "I am liked by other music students at this university", "Other students are interested in me, what I do, and what I think", and "I like other students at this university". Exploratory factor analyses indicated that the items produced a

clear single-factor structure and the Cronbach's alpha was good (.86). Participants' quality of peer relationships scores were constructed by averaging their responses to the four items, yielding a possible range of scores from 1 to 7, with lower scales indicating lower quality peer relationships and vice versa.

Results

Descriptive statistics for all variables are presented in Table 1. Given that the possible range of scores is 1 to 7 and the midpoint is 4, the means for vitality, self-oriented perfectionism, adaptability, and peer relationships are somewhat high, being above the mid-point of the scale. As such, the participants reported, on average, a relatively strong sense of vitality, strong perfectionist strivings, and relatively high quality peer relationships. In contrast, the mean for stress is somewhat low, being below the midpoint of the scale, indicating that, on average, the participants are not reporting a great deal of stress. The standard deviation values indicate similar degrees of variability for all scales and skewness and kurtosis values suggested relatively normal distributions of scores.

Pearson correlations among all variable pairs are displayed in Table 2. Significant relationships ($p < .001$) were found for seven of the ten variable pairings. Significant positive correlations were found among the pairings of subjective vitality, adaptability, and quality of peer relationships ($r = .32$ to $.50$). In contrast, significant negative correlations were found between stress and each of the following variables: subjective vitality ($r = -.41$), adaptability ($r = -.42$), and quality of peer relationships ($r = -.30$). Self-oriented perfectionism was positively correlated with stress ($r = .21$), but not significantly related to subjective vitality, adaptability, or quality of peer relationship.

Three regression models were estimated to address the central hypotheses pertaining to participants' reports of subjective vitality (see Table 2). All predictor variables were mean-centered for these analyses. Our first model estimated the simple effect of stress on vitality (Table 2, Model A). As predicted, stress was negatively associated with vitality with an adjusted R^2 value suggesting that 18% of the variance in vitality could be explained by participants' stress ratings. Hypothesis 1 was therefore supported.

The direct effects of self-oriented perfectionism, adaptability, and quality of peer relationships were added as additional predictor variables in Model B. Stress and adaptability were significant effects, whereas the effect of peer relationships approached significance with a *p*

value of .0585. However, the effect of self-oriented perfectionism was negligent with a non-significant coefficient near zero. Adaptability and quality of peer relationship were positively related to subjective vitality, with the standardized beta coefficients indicating that adaptability was the stronger of the two effects. Stress remained a negative predictor of subjective vitality, though the magnitude of the effect in Model B was weaker than in Model A. The adjusted R^2 value for Model B indicates that 32% of the variation in subjective vitality was explained. A model comparison test indicated that Model B explained a significantly larger proportion of variance than Model A, $F(3, 263) = 19.45$, $p < .001$. Thus, hypothesis 2 was partially supported.

Hypotheses predicting that self-oriented perfectionism, adaptability, and quality of peer relationships would moderate the relationship between stress and subjective vitality were assessed by including interaction terms in Model C. None of the interaction terms was significant in Model C, nor was there any significant increase in the proportion of variance explained in Model C when compared to Model B; thus, hypotheses 3 and 4 were not supported.

Discussion

In this study, we sought to examine the roles that stress, self-oriented perfectionism, adaptability, and quality of peer relationships play in university-level musicians' experiences of subjective vitality. We developed an empirically-derived conceptual model specifying the relationships between of each of the above-mentioned variables and subjective vitality, as well as the moderating effects of self-oriented perfectionism, adaptability, and quality of peer relationships on the relationship between stress and subjective vitality. Our initial hypothesis regarding the negative impact of stress on subjective vitality was confirmed. Vitality is concerned with feeling "alive or invigorated" in response to certain circumstances, as opposed to feeling "dead" or "drained" (Ryan & Frederick, 1997, p. 530). Moreover, vitality is theorized to be particularly threatened under circumstances in which people feel controlled and pressured by external forces, as opposed to when their behavior is intentional or their activities undertaken for internal reasons (Ryan & Deci, 2016). Therefore, the negative association between stress and vitality is consistent with existing theory. This finding is also consistent with previous research that indicated that stress experienced during exams was associated with reduced positive affect and increased negative affect among music students (Bonneville-Roussy, Evans, Verner-Filion, Vallerand, & Bouffard, 2017).

Also confirmed were our hypotheses specifying that students' ability to adapt and the quality of their peer relationships would be positively associated with subjective vitality. Students who reported more adaptability and higher quality peer relationships also tended to report a stronger sense of vitality. Adaptability is a desirable quality for university-level music students to have. Students often have to deal with disruptions, novelty, and change during their studies, such as personal dilemmas in life, unpredictable practice and rehearsal schedules, *ad hoc* gigging, dealing with employment alongside study, managing the strain of particularly intense periods during which exams and ensemble performances coincide, and so on. It is reasonable to assume that the more flexible and resilient university students can be when faced with such challenges, the more likely they are to be successful and the less likely they are to experience psychological distress. The notion that successful students may be particularly adaptable to their surroundings is consistent with previous research with university music majors (Chesky & Hipple, 1997) as well as high school science students (Martin et al., 2016). The findings of research by Perkins et al. (2017) also support the suggestion that peer relationships contribute positively to well-being. For example, the participants in Schneider and Chesky's (2011) study believed that their social networks served as a helpful coping resource. Nevertheless, it is important to note that the coefficients yielded from the analyses, while encouraging, suggest that the magnitudes of these effects were not large. Moreover, the effect of peer relationships only approached statistical significance with a p value extremely close to the threshold of less than .05. However, given that correlates of psychological thriving among university-level music students have rarely been identified in the literature, these effects could be important early steps in a larger program of research that might ultimately lead to productive interventions for student well-being.

We failed to find any significant direct relationship between self-oriented perfectionism and vitality. Given the mixed findings with regard to similar constructs in previous music research (e.g., Diaz, 2018; Linnett, 2016), it could be that self-oriented perfectionism is less likely to be either adaptive or maladaptive for university musicians as compared to the general population. It is possible that for some students, self-oriented perfectionist tendencies could support an achievement-oriented disposition, as Stoeber and Otto (2006) suggest when describing perfectionist strivings, whereas for others it may lead to the more obsessive and self-doubt-ridden behavior more typically associated with socially-prescribed perfectionist

tendencies, as Diaz (2018) seems to have found. It may be that the relationship between self-oriented perfectionism and well-being could be mediated by some other psychosocial construct such as self-concept. For example, self-oriented perfectionism might lead to positive outcomes for those who have healthy self-concepts, whereas it could lead to negative outcomes for those with poor self-concepts. Investigating such mediation effects in future research endeavors could be useful for disentangling the relationships between dimensions of perfectionism and music student well-being.

Consistent with the diathesis-stress hypothesis (Monroe & Simons, 1991), our conceptual model also specified that self-oriented perfectionism would have an aggravating effect on the relationship between stress and vitality, whereas adaptability and quality of peer relationships would have a mitigating or buffering effect on the relationship between stress and vitality (Cohen & Wills, 1985). Despite the fact that we based these hypotheses on findings from previous research (Burland, 2005; Chao, 2011; Diaz, 2018; Flett et al., 1995; Perkins et al., 2017; Schneiderman et al., 2005; Zander et al., 2010), none of the moderating effects we tested was found to be statistically significant. One possible explanation is the conceptual distance between our operational definitions of stress and subjective vitality, on the one hand, and self-oriented perfectionism, adaptability, and quality of peer relationships, on the other. The former were defined quite broadly in regard to generalized experiences in the participants' lives overall, whereas the latter were defined more specifically to refer to experiences somewhat circumscribed by the contexts of their music studies. This conceptual mismatch may have attenuated any moderating effects. Researchers should explore these hypotheses with different operational definitions that align more closely in the future.

We did, however, find that self-oriented perfectionism, adaptability, and quality of peer relationships were related to stress. For example, the correlational analyses indicated that self-oriented perfectionism was positively related to stress, while adaptability and quality of peer relationships were negatively related to stress. Although the variables did not moderate the relationship between stress and vitality, these correlations do suggest there may be some potential, theoretical connection between each of the variables and well-being.

Although not a pre-specified aim of this study, it is also interesting to consider the descriptive profile of the participants that emerged from our analyses. We base our interpretation of the descriptive analyses primarily on the position of the mean scores for each variable in

relation to the range of possible scores for each variable (i.e., 1-Strongly Disagree to 7-Strongly Agree). The mean for vitality was above the mid-point of the scale and the mean for stress was below the mid-point of the scale; thus, on average, participants reported feeling relatively vital and not extremely stressed. Although somewhat at odds with the results of previous research (Ginsborg et al., 2012; Hildebrandt et al., 2012; Orzel, 2010), this finding represents an encouraging trend in regard to student well-being. Also, the means for adaptability and quality of peer relationships were also higher than the mid-point on the scale; thus, participants reported being fairly adaptable and having relatively high quality peer relationship. These findings are also encouraging in that they suggest that students may have relatively abundant social (e.g., peers) and personal (e.g., adaptability) resources for dealing with stressors in their environment. Such resources have been shown to be important for university-level musicians in previous research (Burland, 2005; Burland & Pitts, 2007). For example, Chesky and Hipple (1997) surveyed undergraduate music and non-music majors at the University of North Texas to investigate whether music majors were relatively better or worse at adapting to the challenges of university studies. They found that music majors scored lower on measures of social-emotional difficulties (e.g., relationship problems, fear of failure, fear of rejection) and alcohol-related problems than non-music majors. They suggest that the ability to concentrate, as well as the studying and problem-solving habits that music students develop as part of their musical training, may be transferable to their university studies overall, enabling them to be more adept at meeting the new challenges they encounter. The participants in our study also reported a relatively strong sense of self-oriented perfectionism. Although it seemed to have no substantial impact on well-being in the current study, this is of some concern since self-oriented perfectionism has been found to be related to negative outcomes in other research (e.g., Diaz, 2018).

We also conducted exploratory analyses to determine whether the descriptive profile of the participants would vary according to self-reported sex. A series of *t*-tests revealed no significant mean differences between males and females on any of the variables included in this study. Similarly, we conducted an additional series of regression analyses to assess whether sex would serve as a significant covariate in any of the models tested in the current study. Sex was not a significant effect in any of the models.

Limitations

There are several limitations of this study that must be acknowledged. As with the majority of studies conducted on the well-being of performing artists, this research relied upon self-report methodology. Consequently, participants' reports may contain the kinds of biases typical in such designs (e.g., acquiescence, social desirability). Although it is encouraging that many of the findings of the current study are consistent with previous research using a range of methodologies, further research that is more objective (e.g., observational) and that could yield richer, more detailed data (e.g., qualitative case study) is necessary. In addition, the data for this study were gathered at a single point in time and it is important to recognize that any relationships found can only be interpreted as correlational and not causal. Longitudinal designs and/or more rigorous experimental approaches would be useful for developing a richer theoretical understanding of the mechanisms underlying the impact of psychosocial variables such as those included in the current study on vitality.

The generalizability of the findings of this study are also limited since the sample consisted of volunteers, comprising participants at only three relatively large university-level music programs. Although our sample was varied, it is likely that it is not entirely representative of the variety of university-level music students one could encounter. In addition, we conceived of this study as a broad examination of university-level music students, whereas future research should also be aimed at investigating the impact of students' personal background characteristics with more detail. For example, adjusting analyses for students' sex or degree program could reveal interesting results among other samples. Last, the measures we employed in this study demonstrated sound psychometric properties in regards to validity and reliability. However, many of the measures included adaptations made for this particular research and therefore the results yielded from the data may not easily be compared to findings from both previous and future research. For example, more findings could be accumulated, leading to more robust generalizations, if the full sets of items in the measures of stress and self-oriented perfection were employed, and if data regarding several dimensions of perfectionist tendencies (e.g., self-oriented, socially-prescribed, perfectionist strivings) were gathered and examined.

Implications for Teaching

The findings suggest that the experience of stress affects music students' mental health negatively, since it predicts a poorer sense of subjective vitality. However, both adaptability and quality of peer relationships were found to be associated with a greater sense of subjective

vitality, as well as lesser degrees of stress. Taken together, these findings suggest that it is important to consider how university-level music programs could be oriented to reduce stress while also strengthening students' ability to adapt to challenges and build social support networks. Providing resources in the form of curricular or co-curricular offerings that emphasize these issues could be useful for promoting student well-being. Developing programs with qualities similar to those described by Zander et al. (2010), providing ways for students to increase their adaptability to new stressors, such as systematic training in coping methods and relaxation techniques, and explicitly working to socialize students with others (faculty, support staff, and peers), would seem to be a productive way forward.

University-level music programs could also consider preparing students to use approaches to problem solving, such as seeking help, and methods for viewing unexpected failures and setbacks as opportunities to learn and grow. Unfortunately, researchers have found that students do not necessarily take responsibility for their individual health (Kreutz, Ginsborg, & Williamon, 2009) or know how to access the resources available to them (Perkins et al., 2017; Williamon & Thompson, 2006). Consequently, the effort to increase students' awareness of the existing campus resources and make explicit the channels available for accessing them could go a long way towards helping students who have trouble adapting to stressors. Similarly, it could be valuable to establish official peer mentoring programs so that students could form relationships with others who have been 'in their shoes'. Peer mentors could help students navigate the formal and informal challenges present of the music program and serve as confidants for discussing typical stressors such as performance evaluation, exams, study/practice maintenance, scheduling, burnout, etc. It would, of course, be very important to choose dedicated mentors and prepare them appropriately for engaging in productive interactions with their mentees.

Conclusion

The challenges students encounter upon enrolling in a university-level music program are serious and multifaceted. The strain involved in transitioning to a new, more independent lifestyle combined with the stresses typically associated with the rigors of musical studies must be managed carefully if students are to maintain their well-being and be successful. In this study, we investigated the well-being of music students from an adaptive perspective using the construct of subjective vitality. We identified many interesting relationships between this well-

being outcome and stress, adaptability, and the quality of students' peer relationships. However, it is necessary to undertake more research aimed at identifying the resources students could draw upon to mitigate the effects of stress on their well-being. The social-emotional challenges of university music study are substantial, and much more work remains to be done to uncover the factors that could contribute to students' abilities to thrive.

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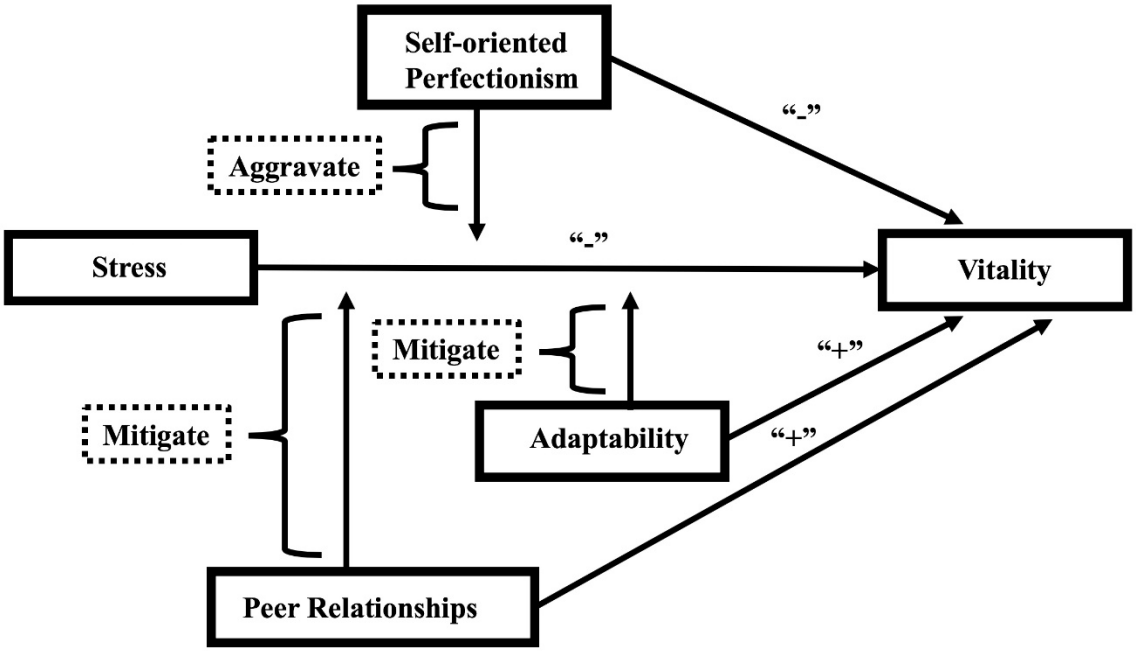

Figure 1. Conceptual model depicting moderation of the relationship between students' stress and well-being by perfectionist tendencies, adaptability, and quality of peer relationships.

Table 1

Descriptive Statistics for All Variables and Pearson Correlations for All Variable Pairs

						Pearson Correlations			
	α	*M*	*SD*	*Skew*	*Kurtosis*	1. Vitality	2. Stress	3. Self-Perfect.	4. Adaptability
1. Vitality	.89	4.76	1.14	-0.20	-0.35				
2. Stress	.86	3.05	1.49	0.53	-0.59	-0.41***			
3. Self-oriented Perfectionism	.80	5.17	1.27	-0.66	-0.05	-0.11	0.21***		
4. Adaptability	.86	5.43	1.12	-0.59	0.38	0.50***	-0.42***	-0.08	
5. Peer Relationship Quality	.86	5.62	1.06	-0.68	0.22	0.32***	-0.30***	-0.07	0.38***

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 2

Regression Models Predicting Subjective Vitality

	Model A			Model B			Model C		
	B	*se*	*β*	*B*	*se*	*β*	*B*	*se*	*β*
Intercept	4.72 [a]	.06		4.71[a]	.06		4.67 [a]	.07	
Stress	-.34 [a]	.04	-.43	-.18[a]	.05	-.23	-.20 [a]	.05	-.25
Self-oriented Perfectionism				-.02	.05	-.03	-.01	.05	-.01
Stress × Self-oriented Perfectionism							.04	.03	.06
Adaptability				.39[a]	.06	.38	.40 [a]	.06	.38
Stress × Adaptability							-.02	.03	-.02
Peer Relationship				.12[c]	.06	.11	.12 [d]	.06	.11
Stress × Peer Relationship							-.02	.04	-.02

Note. Model A: $F(1, 262) = 58.40$, $p < .001$, $R^2 = .18$; Model B: $F(4, 259) = 32.27$, $p < .001$, $R^2 = .32$; Model C: $F(4, 256) = 18.84$, $p < .001$, $R^2 = .32$

Note. a $p < .001$, b $p < .01$, c $p = .0585$, d $p = .0479$