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Musical Activity and Well-being: A New Quantitative Measurement Instrument

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Abstract

A relationship between participation in musical activity and well-being has frequently been observed in recent research reports. Of these, some propose various well-being-related correlates of musical participation, but the varying samples and foci leave researchers without a reasoned appraisal of these correlates or a data-driven categorization of them. To address this lacuna, the current research reviewed of existing literature, identifying 562 benefits of well-being benefits perceived to be associated with musical participation. These items were used as the basis for developing a new quantitative measure to evaluate the perceived benefits of well-being arising from music participation. Principal axis factor analysis of data using this new, 36-item measure identified five discrete dimensions: mood and coping, esteem and worth, socialization, cognition, and self-actualization. The development of this well-being measure addresses a gap in the research and provides a tool for future research concerning musical participation.

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Key words: well-being, music-making, qualitative meta-analysis, music, participation

Music has been associated with therapeutic, medical, and curative powers throughout history and across numerous disciplines (MacDonald, Kreutz, & Mitchell, 2012). Investigating the link between music, health, and well-being[1] has become a topical concern (MacDonald, 2013) as people search for a range of approaches to addressing quality of life from socio-emotional to medical perspectives. A recent surge in research attention shows there is a growing acceptance that participation in music, and the arts broadly, can benefit people's well-being and health (Clift, 2012a; Clift, Hancox, Staricoff, & Whitmore, 2008; MacDonald, 2013; MacDonald et al., 2012; Skingley et al., 2011). Thus, there has been a growth of musical activities, yet the espoused well-being and/or health benefits have not been categorized in any systematic or comprehensive manner. In a context where many consider the value of participating in the arts as self-evident and simply disregard the need for systematic investigation into the topic (Skingley et al. (2011), one particular challenge for researchers is to identify the specific benefits that diverse forms of musical engagement may afford. Anecdotal enthusiasm from participants regarding positive correlates of musical activity is evident in reports, but since much prior work is limited to single case-studies, the literature lacks objective evidence.

The goal of the current study was to provide an assessment of the existing literature, and, in turn, use this as foundational material to develop an explicit measure of the potential well-being correlates of musical participation. To address this aim, we used a three-stage research process. First, we summarize the results of a literature review concerning the possible well-being correlates of participation in music. Second, we present a scale to measure these, and third, an empirical study of this scale to test its viability.

Literature Review

In line with the mini-review method (Griffiths, 2002), we took a systematic approach to review relevant studies (see similar approaches taken by, e.g., Schäfer, Sedlmeier, Städtler, & Huron, 2013; Skingley & Vella-Burrows, 2010). Internet keyword searches (e.g., combining "music," "singing," and "instruments" with "well-being," "health," and "quality of life") identified pertinent literature for review. The following inclusion criteria were employed: full text availability in English; quantitative and qualitative empirical research studies or reviews; and work published since 1996, in order to focus on digitally accessible data. Additional publications, not originally identified in the searches, were included as a consequence of being referenced in the papers reviewed and otherwise meeting the inclusion criteria. This resulted in the identification of 202 published works (listed in the Appendix).

A previous systematic review of health and well-being correlates of singing (see Clift, Hancox, Staricoff, et al., 2008) had revealed that studies concerning music and well-being vary with regard to method, focus, and sample characteristics. This led the authors to conclude that a coherent quantitative synthesis was not possible (see Clift & Hancox, 2010, p. 80). In light of this finding, we propose that a critical assessment of identified works is possible when adopting a qualitative meta-analysis process (e.g., Finfgeld, 2003; Levine & Land, 2016; Timulak, 2009), because it allows an overview of studies with differing research questions and methods (Levine & Land, 2016; Timulak, 2009).

Works Reporting Music and Well-Being Correlates

The first author reviewed the 202 works, with the second author sampling 33% of the material to validate the selection process (agreement rate = 97%). Data concerning well-being correlates were interpreted broadly, such that while some of the studies listed statistical correlates (e.g., Pearson's *r* values, factor loadings) or experimental manipulations involving music and well-being, we also included other evidence concerning benefits, motivations, reasons, and/or perceived consequences/outcomes of music. Ninety-seven of the 202 works (48.0%) included data concerning a benefit, consequence, participation reason, and/or theme related to well-being. Most of these works that did report on music participation and well-being concerned making music (68 studies or 73.1%; see Table 1); and, when defining the type of music-making undertaken, more than half of the studies concerned singing (54.4%, see Table 1). Considering the studies that involved mixed types of music activity (i.e., singing alongside other music activities), it is clear that the present body of research is heavily skewed towards data concerning singing.

-Insert Table 1 about here-

Items for Scale Development

Schäfer et al. (2013, p. 5) identified over 500 proposed functions of music, and aimed to create "the most comprehensive list yet of potential music-related functions," via an "aggregate list of all the questions and statements encountered in the reviewed research." In a process similar to that applied by Schäfer et al. (2013), we recorded any benefit, consequence, participation reason, and/or theme related to well-being that was found in the 202 studies. An inclusive approach was taken, such that each item mentioned was

treated as a distinct data point (Timulak, 2009). For example, questionnaire items were recorded individually, as were qualitative themes/quotes.

While the individual correlates identified in the different publications varied in number and phrasing, the works tended to cluster specific items into categories. Thus, in addition to a number of specific outcomes associated with music participation, several common groupings were also identified (with varying frequency). Similar to research concerning the uses and functions of music in everyday life (see, e.g., Schäfer et al., 2013), these dimensions included social, emotion, cognitive, and arousal-based benefits. Additionally, category labels pertaining to physical health, identity, self-improvement, quality of life, and music appreciation were also frequently used (Habron, Butterly, Gordon, & Roebuck, 2013).

This investigation revealed that many previous studies have highlighted positive relationships between music participation, health, and well-being by addressing social, emotional, cognitive, physical health, musicianship, spiritual, and life satisfaction benefits. Illustrative examples of social benefits include networking, socializing, and nurturing friendships (e.g., Adams, 2000; Bungay & Skingley, 2008; Cavitt, 2005; Coffman, 2008; Eley & Gorman, 2010; Hillman, 2002; Jutras, 2011; Lehmberg & Fung, 2010; Livesey, Morrison, Clift, & Camic, 2012; McQueen, Hallam, Creech, & Varvarigou, 2013; Pavlakou, 2009; Rohwer, 2012; Saarikallio, 2012). More broadly, the benefit of feeling connected to and involved in a community—which also includes producing a sense of community—has also been noted frequently (e.g., Adderley, Kennedy, & Berz, 2003; Bailey & Davidson, 2005; Cohen, 2007; Creech et al., 2013; Dingle, Brander, Ballantyne, & Baker, 2012; Gembris, 2012; Jutras, 2011; Kennedy, 2002; Lally, 2009; Livesey et al., 2012; Michalos, 2005; von Lob, Camic, & Clift, 2010).

Emotional benefits repeatedly highlighted in previous research include the use of music for mood regulation (e.g., Judd & Pooley, 2014; Laukka, 2007; Livesey et al., 2012; Schäfer et al., 2013) and producing positive emotions such as feeling uplifted (e.g., Bailey & Davidson, 2005; Bungay & Skingley, 2008; Coffman, 2008; Hallam, Creech, Varvarigou, & McQueen, 2012a; Hays & Minichiello, 2005; Jacob, Guptill, & Sumsion, 2009; Judd & Pooley, 2014; Livesey et al., 2012; Sixsmith & Gibson, 2007; Tonneijck, Kinébanian, & Josephsson, 2008). Stress release and relaxation have also been commonly reported (e.g., Cavitt, 2005; Clift, Hancox, Morrison, et al., 2008; Jutras, 2006, 2011; Lehmberg & Fung, 2010; Michalos, 2005; Sheldon, 1998). Moreover, individuals have included both processing and expressing emotions as a perceived benefit to their music participation (e.g, Bailey & Davidson, 2005; Hays, 2005; Schäfer & Sedlmeier, 2009; Schäfer, Tipandjan, & Sedlmeier, 2012).

Cognitive benefits have included thinking about self-esteem, self-worth, and identity (e.g., Bailey & Davidson, 2002, 2003; Bonde, 2014; Cavitt, 2005; Clift, Hancox, Morrison, et al., 2008; Coffman, 2008; Forssén, 2007; Hallam, Creech, Varvarigou, & McQueen, 2012b; Kennedy, 2002; Lally, 2009; Livesey et al., 2012; Saarikallio, 2012; Silber, 2005). Other benefits to cognitive processing make reference to memory, concentration, and intellectual stimulation (e.g., Coffman, 2008; Creech et al., 2013; Gick, 2011; Hays, 2005; Southcott, 2009). Outcomes concerning creativity and imagination have also been frequently expressed (e.g., Bruhn, 2002; Coffman, 2008; Jutras, 2006, 2011; Kokotsaki & Hallam, 2011; Lehmberg & Fung, 2010; Michalos, 2005).

Physical health benefits have included general perceived outcomes such as feeling healthier and avoiding illness (e.g., Coffman, 2008; Gembris, 2012; Hillman, 2002; McQueen et al., 2013; Michalos, 2005; Rohwer, 2013). Additionally, perceived improvements to specific types of functioning have been noted, such as motor coordination (e.g., Bungay &

Skingley, 2008; Jutras, 2011), the immune system (e.g., Gick, 2011; Livesey et al., 2012), muscle tone (e.g., Lehmberg & Fung, 2010), flexibility and posture (e.g., Coffman, 2008; Lally, 2009; Livesey et al., 2012) and breathing (e.g., Clift & Hancox, 2001; Engen, 2005; Hallam et al., 2012b; Lord et al., 2010; Tonneijck et al., 2008).

Music-specific observations have focused on musicianship: most notably regarding learning, maintaining, and improving musical skills (e.g., Coffman & Adamek, 1999; Dingle et al., 2012; Gridley, Astbury, Sharples, & Aguirre, 2011; McQueen et al., 2013). More obviously, outcomes concerning learning and being exposed to new music have also been noted (e.g., Hays, 2005; Shansky, 2010) along with the opportunity to make music and perform (e.g., Hills & Argyle, 1998; Pavlakou, 2009; Pitts, 2004; Rohwer & Rohwer, 2009).

Some work has also considered perceived spiritual benefits of music involvement. Music participation can facilitate spiritual experiences and transcendent feelings (e.g., Beck, Cesario, Yousefi, & Enamoto, 2000; Bonde, 2014; Clift & Hancox, 2001; Kokotsaki & Hallam, 2007; Tonneijck et al., 2008). These perceived benefits may be religious in nature (e.g., Adams, 2000; Livesey et al., 2012; Rohwer, 2010) or more broadly relate to experiencing something “deep and meaningful” (e.g., Beck et al., 2000), meditation (Bonde, 2013), a peak experience (Cohen, 2007), or an aesthetic experience of beauty (e.g., Laukka, 2007; Livesey et al., 2012; Sheldon, 1998).

Other reported benefits concern perceptions of improved life satisfaction and quality of life (e.g., Clift et al., 2010; Douglas, 2011; Gembris, 2012). Items referring to one’s quality of life, and well-being in particular, were not always labeled in the same way. In some cases, life satisfaction or quality of life was used (e.g., Clift, Hancox, Morrison, et al., 2008; Douglas, 2011; Gembris, 2008), while in other research phrasing included feelings of satisfaction or a satisfying experience (e.g., Kennedy, 2002; Lehmberg & Fung, 2010;

McQueen et al., 2013; Tonneijck et al., 2008). Moreover, well-being was sometimes referenced directly, albeit again in different ways, including mental well-being/health (e.g., Dabback, 2009; Hills & Argyle, 1998; Jutras, 2011), personal or overall well-being (e.g., Hays, 2005; Michalos, 2005) and general well-being (e.g., Lord et al., 2010), emotional well-being (e.g., Coffman, 2008; Michalos, 2005), and psychological well-being (e.g., Lehmberg & Fung, 2010; Tsugawa, 2009). In addition to these broader concepts, there is also evidence that musical involvement defines how one lives one's life (e.g., Hays, 2005; Murcia, Kreutz, Clift, & Bongard, 2010), provides an enriching experience (e.g., Tonneijck et al., 2008; Tsugawa, 2009), adds meaning/purpose to life (e.g., Coffman, 2008; Livesey et al., 2012; Pothoulaki, MacDonald, & Flowers, 2012; Sheldon, 1998; Southcott, 2009), and promotes feelings of vitality and rejuvenation (e.g., Creech et al., 2013; Forssén, 2007; Gembris, 2012; Pothoulaki et al., 2012; Varvarigou, Hallam, Creech, & McQueen, 2012). As Gembris (2012, p. 377) asserted, "benefits from music-making like vitality, happiness, and connectedness to other people are among the most important goals in human life … [and] musical activities can make a significant contribution to the quality of life, regardless of musical genre or skills."

The recurrent appearance of a small number of items suggests that it may be possible to identify core concerns in the existing research and develop a means of measuring these all within a single instrument. However, it is important to remember that the research is limited in a number of important ways. For example, some of the relevant work was focused on one particular dimension or another (e.g., social or physical health), was conducted with a specific population (e.g., elderly, persons with dementia, professional musicians, etc.), and/or focused on a specific type of musical participation (e.g., singing, community band, etc.), such that the findings may not generalize to other possible correlates of other musical activities carried out by other people. Moreover, relevant work

has adopted a variety of methods, both quantitative and qualitative. As a result, the results are largely presented independently from other work (with Clift et al.'s, 2008, extensive systematic review of singing research is a notable exception), and often the studies make use of researcher-developed and defined categorizations. Additionally, it is important to note that potentially relevant music therapy literature may be missing as a result of how the targeted review was conducted.

Thus, while the musical correlates of well-being have received considerable recent research attention, there has been no empirical attempt to categorize these correlates. In fact, while some of the work made use of measures of various forms of possible positive outcomes (e.g., Ballantyne, Ballantyne, & Packer, 2014; Hallam et al., 2012b), these have tended to be ad hoc and extremely specific rather than comprehensive or empirically based.

Consequently, there is no comprehensive measure (or immediately obvious basis for one) that addresses the various perceived well-being benefits resulting from musical participation. Further, there has not been a large-scale study to consider the broad range of perceived benefits of music participation with singers and instrumentalists within the same research design. Therefore, the second part of the current research addressed this research gap. Specifically, the items identified in the existing research literature served as the starting point for development of a new comprehensive measure that addresses the various potential psychological correlates of music participation, thereby grounding the measure in that earlier work.

Measure Creation

Item Identification and Reduction

In accordance with Schäfer et al. (2013), the first step towards developing a measure involved assembling a list of the reported correlates of musical participation addressed in previous work. As a result of the literature review above, a total of 2,075 items were identified from the 97 works reviewed that provided correlate data. Via discussion with an independent impartial judge, the first author reviewed this master list in order to eliminate redundant and duplicate items. Likewise, similar and analogous items were combined into single items. After this elimination stage, the list contained a total of 562 distinct items.

With such a large number of items, another reduction stage was needed in order to create a manageable measure for pilot testing. Many of the items came from qualitative data, and because there is no single accepted approach to analyze large qualitative datasets (Namey, Guest, Thairu, & Johnson, 2008; Stanton, Sinar, Balzer, & Smith, 2002), a panel of experts was employed (as proposed by, Morey, 2003) to consider the face and content validity of the items (Dunn, Bouffard, & Rogers, 1999; Morey, 2003; Stanton et al., 2002). The panel consisted of four well-qualified judges who were familiar with the subject matter (Dunn et al., 1999; Morey, 2003): specifically, the panel included a practicing music therapist (with extensive observation experience), a psychology of music researcher (who has conducted extensive research in singing and well-being, publishing peer-reviewed papers in this field), an ethnomusicologist (with extensive participant observation and other ethnomusicology expertise), and a musicologist (possessing performance and critical music skills).

The judges were provided with clear and precise directions (Hardesty & Bearden, 2004) concerning their task. In particular, they were provided with information concerning the purpose of the new measure (Delgado-Rico, Carretero-Dios, & Ruch, 2012; Morey, 2003) as follows:

> The purpose of this scale is to have participants report on the well-being benefits they perceive as resulting from their voluntary participation in musical activities. Importantly, these perceived benefits are considered to be applicable to any individual participant involved in a musical activity, regardless of: (a) musical training/experience level, (b) musical activity (i.e., a vocal /instrumental /therapy group, etc.), (c) demographic characteristics (age, gender, geographic location), and (d) frequency/length of participation.

The panel members were asked to "read each item and rate how well you think it addresses the definition of the measure." They were prompted to answer the question, "how representative of the definition (i.e., how relevant) for the scale is this item?" using a five-point Likert scale where 1 represented *Not at all representative/relevant (poor match)* and 5 represented *Extremely representative/relevant (Excellent match)*. Each judge independently rated the list of 562 items. The four judges' ratings were compiled, and the mean rating was computed for each item. In order to be retained in the measure, an item was required to produce a mean rating of at least 3.75, such that at least three of the four judges needed to rate the item as a 4 or 5 on the five-point scale. In turn, 40 distinct items were retained for the measure that was tested in part 3 of the present research (see Table 2).

Questionnaire Development

The questionnaire phase of the research had two goals, namely: 1) to identify how people perceived the reduced list of items as grouping together, and 2) to determine which perceived correlates of music participation were experienced most commonly by the respondents, and whether this varied as a function of the type of music participation.

Establishing this information allows the questionnaire to be used by future research as an overarching measure of the perceived benefits of music participation.

With regard to the first goal, the review of the literature had demonstrated that although there was some commonality to the items considered, there was no comprehensive or established structure concerning these already in the literature. Thus, while commonalities were found, our research question was: what are the factors or dimensions of the perceived benefits of music participation for well-being?

Regarding the second goal, we were interested in whether people experience certain factors more or less frequently than others. Moreover, does the experience of these factors vary as a function of participant gender and/or the type of music participation? Previous research has indicated observable gender roles in musical behavior, preferences, and beliefs (see review by Dibben, 2002). For instance, research has identified gender stereotyping of musical instruments and singing (e.g., Conway, 2000; Harrison, 2007; O'Neill, 1997). Consequently, it is possible that individuals' subjective experiences of voluntary musical participation might differ by gender and type of participation.

Method

The measure included the 40 items retained from the prior panel stage. All items were phrased so that they addressed the individual's personal experience (e.g., "It gives me..." and "I do not…"). As prior research has criticized use of only positively worded items (e.g., Clift & Hancox, 2010), half of the items were quasi-randomly selected and reworded, such that they required reverse coding. Instructions asked participants (selected as those who actively engaged in music participation) to "consider the benefits to your well-being

that result from your participation in music" and consequently to rate how strongly they agreed with each stated item on a seven-point Likert scale (1 = *not at all*, 7 = *fully agree*).

In total, 207 individuals completed the 40-item questionnaire online. Participants ranged from 18 to 72 years old (M = 32.95, Mdn = 30, SD = 13.40) and 66.70% were female. We specifically sought to obtain a sample of people who participated in music as vocalists and instrumentalists. While people may be involved in multiple musical activities, 65.20% identified themselves as primarily instrumentalists, while 34.80% identified themselves as primarily singers. Participation in the study was voluntary: individuals were recruited through the researchers' extensive networks of Australian musicians (including professional and amateur performers, music therapists, and music teachers).

Results

To investigate the underlying structure of the measure, the 40 items were entered into a Principal Axis Factor analysis with promax rotation. The KMO value was .905, Bartlett's Test was significant ($p < .001$), all MSA values were above .74 (with most above .90), and all items demonstrated reasonable communality values. After visual inspection of the scree plot and evaluation of the eigenvalues and factor loadings, five meaningful factors were retained accounting for 50.90% of the total variance (see details in Table 2). Specifically, the first factor was labeled "mood and coping," and includes 11 items concerning feeling uplifted, feeling better, and relieving stress/tension. The second factor, labeled "esteem and worth," includes 11 items concerning feeling positive about life, a sense of belonging, and an increase in self-esteem. "Socializing," factor 3, concerned perceived benefits such as making friends, bonding with other people, and connecting with a community (five items). Factor 4 concerned cognitive processes, and included five items

addressing thinking and processing, and so it was labeled "cognitive." The fifth factor, "self-actualization" included four items reflecting self-improvement. Based on the results of the principal axis factor analysis, four of the forty items were removed, as they did not feature in the five-factor model. This results in a revised measure with 36 items that includes five subscales, labeled as per the factors.

To check the reliability of each factor, the items that loaded onto each were entered into separate reliability analyses. Each of the five factors demonstrated good reliability, based on resulting Cronbach alpha values between .75 and .90 (see Table 2). Considering the demonstrated reliability, each factor has the potential to be treated as an individual subscale measure, subject to further work to validate these factors and subscale measures (by, for example, establishing test-retest reliability and similar psychometric properties). Dimension scores can be interpreted as representing the degree to which individuals (or samples, when analyzed collectively) are experiencing the different categories of well-being benefit. Thus, the results of the separate dimensions have the potential to be applied in a variety of music participation contexts, including community-based, therapeutic, and music education activities.

-Table 2 here –

Relative importance. In order to consider the relative importance of the identified factors for people participating in music activities, mean scores were produced for the participants. The ratings for the set of items principally loading onto each factor were averaged (Schäfer et al., 2013). A one-way repeated measures ANOVA compared the subscale means. The ANOVA was significant, $F(3, 715.86) = 5.37$, $p = .001$, $\eta_p^2 = .03$, and pairwise comparisons indicated that the esteem and worth benefits ($M = 5.91$, $SD = .07$)

were experienced significantly more than those concerning socializing (M = 5.65, SD = .07) or cognitive benefits (M = 5.71, SD = .07). Additionally, the self-actualization factor (M = 5.89, SD = .08) gave rise to a significantly higher rating than did both the socializing and cognitive factors.

Perceived benefit responses. A MANOVA was used to examine the effect of type of music participation and gender on the perceived benefit factor scores. Multivariate outliers were removed as the Mahalanobis distance exceeded the critical χ^2 value (for df = 5 at α = .001), although the remaining assumptions were met. The interaction between participation type and gender was nonsignificant, $F(5, 190) = 1.17$, $p = .33$, $\eta_p^2 = .03$. Additionally, the main effect for gender was nonsignificant, $F(5, 190) = 1.29$, $p = .27$, $\eta_p^2 = .03$, and the main effect for participation type was also nonsignificant, $F(5, 190) = 0.85$, $p = .52$, $\eta_p^2 = .02$. These nonsignificant results indicate the absence of any meaningful difference in the extent of perceived benefits based on whether the participants were instrumentalists or singers or as a function of gender.

General Discussion

The present research had two aims, namely to synthesize the current state of literature regarding music participation and well-being, and to produce a questionnaire measure of the subjective experience of the potential well-being benefits. First, we reviewed literature concerning the correlates of music participation that reflect various manifestations of well-being. From this literature survey, more than 500 potential benefits were identified. Following the reduction of the list via redundancy checks and evaluation by a panel of experts, a 40-item measure was established. Using questionnaire data concerning the frequency with which the potential benefits were experienced, a principal axis factor

analysis identified five dimensions of perceived well-being benefits pertaining to 36 items, encapsulated by five dimensions: mood and coping, esteem and worth, social, cognitive, and self-actualization.

Consequently, we have provided a comprehensive categorization of the perceived well-being benefits that may arise from music participation. Components inherent to the consideration of quality of life are present in more than one of the scale dimensions: the perceived benefits to one's well-being arising from music participation appear to be related to the notion of living a full, enriched life. In light of the current debate surrounding the imprecise definitions of health and well-being, these findings align with the view that well-being has an aspect of social capital embedded within it, for which a medical model of health does not account. The findings, then, are consistent with the WHO's broader, encompassing definition of health in that it is more than simply the narrowed perception of physical health. Moreover, this broader conceptualization of health/well-being is perhaps related to the literature matching the review criteria. For instance, clinical music therapy research conducted in hospitals may not have met the inclusion criteria for the present review, whereas community music therapy with a more social, community focus would have been more likely to meet the criteria (and thus represented). Additionally, future work could further interrogate the small amount of research regarding education/professional attempts to link music education to promoting long-term health and well-being.

Importantly, these dimensions (and this measure) specifically address *perceived* benefits rather than *actual* benefits. While this measure is effective in terms of measuring a person's subjective experience, it does not address, for example, actual physical health improvements. This explains why no distinct physical health-focused dimension is present. Moreover, as Gembris (2012, p. 375) stated, "usually, we do not pursue music for health

reasons as is the case with sports and gymnastics, but for its own sake." So, while music participation can result in benefits to one's physical health, this may not always be readily appreciated by participants, or necessarily valued highly as an outcome of musical activity. It also remains possible that any impact of music participation on physical health is associated more closely with certain types of activity or musicians than others: the present data cannot speak to this.

The experience of any of the five dimensions is not mutually exclusive. Any one individual may experience any or all of the five identified dimensions; and experiencing one dimension of well-being does not preclude experiencing another. It is likely that the experience of the perceived benefits overlaps, so that individuals participating in musical activity may not necessarily distinguish any particular correlate as different from a generalized sense of improved well-being.

These results have clear implications for the development of research that aims to assess well-being in the context of musical activity. The measure developed here can be used widely, as it is not specific to any particular type of music activity or participant. Moreover, it provides an overarching measure of perceived benefit, and also has the potential (pending appropriate validation work) to represent separate measures on each of five particular dimensions which cover the range of benefits as described in prior research. These findings and this tool, in turn, have implications for the facilitators of music activities, as well as to psychologists, music therapists, and medical professionals who make use of music in their practice and research. By defining the relationships between the types of benefits experienced via musical activity, the present findings help facilitators to make choices and, where necessary, changes to their practices to better promote desired outcomes. By understanding the different dimensions of well-being, practitioners may be

better able to elicit them, and could use the measure developed here to test the efficacy of this.

The present findings are not without limitations though. With the burgeoning interest in music and health, more work is being published that may address well-being correlates. It falls on future research to clearly delineate their methodologies and foci to better define their research questions and definitions of health and well-being. While we attempted to recruit those with a range of musical specialisms during the data collection phase of the present research, it should be recognized that music participation encompasses a large variety of sometimes less formal activities. Future research could involve additional (and more specific) types of music participation activities: in doing so, the perceived benefits of a wider range of different music activities could be compared. Such information, for instance, could be used to better tailor music opportunities to interested individuals. Moreover, cross-cultural work is needed to better understand any positive perceived correlates of music participation outside the countries represented in the present research, and the measure developed here could even be used to consider a broader range of arts and leisure activities, beyond music. Future research could make use of this tool to also understand how participants' motivations align with the benefits that they believe will arise from musical activity. For instance, such research may consider whether people's initial motivating reasons for participating map onto their perceived benefits, as well as whether both of these change via sustained involvement.

Conclusion

In summary, there is a growing interest worldwide in the connection between music, health, and well-being (Clift, 2012b), which has been accompanied by a recent increase in

research attention (MacDonald, 2013; MacDonald et al., 2012; Skingley et al., 2011). By performing a review of the prior research concerning music and well-being, the present work identified more than five hundred items related to well-being that have been investigated for their possible correlation with musical activity. From this large pool of potential benefits, we created a 36-item measure that minimizes redundancy. Factor analysis of participants' responses to these indicates that we can categorize the perceived well-being correlates of musical activity in terms of mood and coping, esteem and worth, socialization, cognition, and self-actualization. Importantly, the development of this measure addresses a gap in the research, and we hope that the use of this new tool will vivify future research concerning musical participation.

Footnote

[1] An issue that plagues this area of research is the debate concerning the definitions of health and well-being (Clift & Hancox, 2010; MacDonald et al., 2012; Saarikallio, 2012; Skingley, Bungay, & Clift, 2011). The World Health Organization (WHO) provides the often-used definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity" (WHO, 1946). This definition of health makes it is clear that health is a multidimensional phenomenon—one that includes "biochemical, psycho-motor, cognitive, emotional, social, cultural (moral, spiritual, aesthetic)" aspects (Ansdell & Denora, 2012). Moreover, "it is possible to enjoy 'good health' according to some of these measures, while being 'ill' according to others. In short, there is no 'one form' of health" (Ansdell & Denora, 2012, p. 106). Our use of "well-being" in this paper aligns with the WHO's definition of health, as opposed to a more constricted medical model.

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Appendix

Note this list includes the 202 works that were reviewed. The asterisks denote works that presented material (be it a discussed benefit, motivation, reason, and/or perceived consequence/outcome, etc.) that we included as a correlate of well-being.

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Table 1.
Works Reporting on Correlates of Music Participation

	Correlate items included?		
Category	No	Yes	Total
Broad activity type			
Music making activities (involving at least voice and/or instruments)	62	68	130
Music listening	7	14	21
Leisure (e.g., participatory arts programs, attending cultural events)	9	2	11
Other (e.g., dancing, music therapy, composition, etc.)	13	13	26
Not clearly specified	14	0	14
Total	105	97	202
Type of music-making activity [a]			
Voice only	26	37	63
Instrument only	15	12	27
Mixed voice and instrument (or where the activity was broadly stated as music-making without further details)	7	12	19
Music making with additional activities in conjunction (such as activities that included making music in addition to therapy or dancing or listening)	19	7	26
Total	67	68	135

[a] Given the number of studies concerning music-making activities, we divided this category into four specific subgroupings.

Table 2.
Details of the Principal Axis Factor Analysis Concerning the Measure Items

	Factor[a]				
Item	1	2	3	4	5
I feel uplifted.	0.92				
It improves/ enhances my mood.	0.88				
It makes me feel better.	0.77				
It helps me cope with stresses and everyday problems.	0.71				
It relieves stress/tension.	0.70				
It helps my psychological well-being.	0.67				
It puts me on a high.	0.64				
It gives me a peak experience.	0.54				
It gives me a sense of inner contentment.	0.52				
It offers me spiritual growth and healing.	0.43			0.41	
It adds meaning/ purpose to my life.	0.42				
It does (not) help me feel more positive about life.		0.85			
It does (not) give me a sense of belonging.		0.70	0.37		
It does (not) give me happiness.		0.62			
It does (not) enhance my quality of life.		0.60			
It does (not) give me a sense of playing a valued and vital role within a community.		0.60			
It does (not) make me feel connected to others.		0.51	0.46		
I do (not) feel connected to my audience.		0.43			0.33
It does (not) help keep me healthy.		0.42			
It does (not) increase my self-esteem.		0.42			
It does (not) allow me to be creative.		0.40			0.31
It does (not) help me feel more positive about myself.	0.34	0.39			
I develop friendships.			0.84		
I develop bonds with other people.			0.80		

It provides a feeling of community.			0.74		
It connects me to the community.		0.30	0.71		
I have positive feelings about other people.			0.49		
It does (not) help me to think about who I am.				0.70	
It does (not) help me learn about myself.				0.63	
It does (not) help me better understand my thoughts and emotions.				0.62	
It allows me to communicate non-verbally.				0.43	
It does (not) help me with my memory recall.		0.31		0.33	
It does (not) push me to achieve my highest potential.					0.70
It does (not) give me a social group identity.			0.41		0.45
I do (not) experience self-improvement.					0.41
It does (not) generate/ increase my self confidence.					0.38
It encourages me to look after my physical health.					
It contributes/ improves my physical health.					
It does (not) improve my motor coordination.					
It gives me control over my life.					
Eigenvalue	13.02	3.14	1.92	1.44	0.84
% of variance	32.56	7.84	4.80	3.61	2.11
Cronbach's alpha	0.90	0.89	0.87	0.75	0.79

Note. Factor loadings < .30 are not shown.

[a] Factors 1-5 were labeled as “mood and coping,” “esteem and worth,” “socializing,” “cognitive,” and “self-actualization” respectively.