

# PERCEIVED HOLISTIC HEALTH EFFECTS OF THREE LEVELS OF MUSIC PARTICIPATION

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## 1. INTRODUCTION

In previous research, with members of 2 choirs for homeless and disadvantaged singers with little or no music training (Bailey & Davidson, 2002; Bailey, 2002), interpretative phenomenological analysis (IPA) of in-depth semi-structured interviews indicated that group singing positively affected emotional, social, cognitive and physical processes. As well, comments from several participants suggested that many of the positive effects of group singing did not occur while listening to music.

Recent physiological studies have utilized measurements of salivary immunoglobulin A (sIgA) and cortisol to investigate the effects of active and passive participation in music. IgA is an endocrine defense against bacterial infection in the upper respiratory tract (Tomasi, 1972). Increases in levels of sIgA have been associated with pleasurable social (Miletic et al., 1996) and emotional events (Dillon et al., 1985). Cortisol is a measure of stress (Kirschbaum & Hellhammer, 1994). Increases in cortisol levels have been associated with unpleasant and stressful activities (Buchanan et al., 1999).

In an investigation with a professional chorale, Beck et al. (1999) found a significant increase in sIgA between pre and post group singing following 2 practices and a performance. Additionally, cortisol significantly decreased after practices but significantly increased following the performance. In research with members of an amateur choir, Kreutz et al. (2003) found a significant increase in sIgA between pre and post group singing but not pre and post group listening, and a significant decrease in cortisol between pre and post group listening but not pre and post group singing. In a study with undergraduates, Kuhn (2002) found that sIgA levels were significantly increased following an active group music activity which involved singing and playing percussion instruments than listening to a live musical performance in a group.

While the results of the above studies suggest positive effects for both group singing and group listening, there is considerable ambiguity surrounding differences and similarities in the effects of active and passive participation in music. One drawback of the Kreutz et al. and Kuhn studies was the artificiality of the listening conditions. An additional issue, not addressed in the above, is differences between social and segregated listening. Research with adolescents suggests that the majority of the time spent listening to music occurs in isolation (Larsen & Kubey, 1983). Although there appears to be no comparable adult data, it appears that much adult listening also occurs in seclusion. Bull (2000) has proposed that the personal stereo is often used to avoid unwanted affiliation and to escape the realities and responsibilities of everyday life. Therefore,

isolated listening may be more beneficial than social listening.

A survey was designed to determine differences in participants' perceived holistic health effects of differing levels of music participation, including: (1) group singing, (2) isolated listening and (3) group listening.

## 2. METHOD

Members of 3 choirs participated in the survey. In order to determine perceptions of the general population rather than those of musicians, amateur choirs in which the majority had low levels of music training were targeted.

The members of the 3 choirs were asked to participate in a survey investigating effects of experiences with music. In order to camouflage the purpose of the study, the items related to the 3 levels of participation were interspersed among other items related to choir practices, performances, voice quality and conducting techniques. Items were completely randomized into two survey orders. Of the 100 items included in the survey, 72 items equally investigated the holistic health effects of the 3 participation categories. For example: (1) Singing in a choir usually improves my mood, (2) Listening to music alone usually improves my mood; and (3) Listening to music with others usually improves my mood. Because of the length of the survey, 3 items (1 from each category) were included twice as a check of concentration and consistency. There were an equal number of positively and negatively worded items. The items were classified under 6 dimensions of holistic health: emotional (6 items), physical (7 items), cognitive (5 items), spiritual (1 item), social (1 item), life-satisfaction (4 items). Participants were instructed to rate items using a 5-point rating scale.

## 3. RESULTS

A repeated measures ANOVA with one within-subjects factor (music participation) with three levels indicated that there was a significant difference between the overall means (mean of 23 items) of the three participation categories,  $F(2, 240) = 50.88, p < .001$ . Pairwise comparisons with a Bonferroni adjustment indicated that the mean of each participation level was significantly different from the others (all  $p$  values  $< .001$ ), providing evidence of an overall differential effect of type of participation with group singing being considered the most beneficial and group listening the least beneficial. On an item by item basis, group singing received the highest mean ratings for 16 of the 23 items and isolated listening received the highest mean ratings for 7 items.

Repeated measures ANOVA with one within-subjects factor (music participation) with three levels and one between-subjects factor was computed for: (1) years of group singing - 4 levels, (2) years of music lessons - 4 levels, (3) age - 3 levels, (4) education - 4 levels, and (5) gender). The results indicated that there were no significant interaction effects of level of music participation on the above variables suggesting that the effects of differing levels of music participation may be quite global.

#### 4. DISCUSSION

The differences in the ratings of the items of the 3 music involvement categories suggest that active participation in choral singing was more holistically beneficial than isolated or group listening. Also, isolated listening was perceived to be more holistically beneficial than social listening.

The physiological studies reviewed in the introduction consistently reported increases in sIgA in the active participation conditions. In Beck et al.'s (2000) work, increases in sIgA were detected even when self report measures indicated increased levels of stress in a performance condition. They assert that choral performance may be both an "anxious and highly stimulating experience that leads adaptively to levels of positive feelings and satisfaction" (p. 104). In the present study, many of the items which received the highest ratings in the group singing category were related to heightened arousal and items which received the highest ratings in the isolated listening category were related to stress reduction and restoration of a homeostatic state.

In this survey, although the holistic health effects of group listening were generally positive, they were weaker than those of isolated listening. Yet, in the Kreutz et al. study, cortisol was found to significantly decrease during group listening. However, in Kreutz et al., even though the listening condition was social, it was quite different from many social listening situations in everyday life, where mental engagement with the music must compete with background noise and conversational interruptions. Therefore, effects of group listening in many commonplace contexts may have fewer stress reduction properties than in the controlled group listening condition in Kreutz et al.

Similarities between the results of the physiological and psychological studies reported above suggest that different levels of music participation have differential effects which appear to be dependent on physical and social factors. As well, the results of these studies indicate that participants' perceptions can mirror physiological effects.

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