
A Comparative Study on the Attitudes and Uses of Music by Adults with Visual Impairments and Those Who Are Sighted

Hye Young Park, Hyun Ju Chong, and Soo Ji Kim

Structured abstract: *Introduction:* This study investigated attitudes (intrapersonal, interpersonal, and communal) toward, and uses of, music among people with visual impairments compared with those who are sighted to investigate the potential of music as a means of communication and social expression. *Method:* A total of 137 participants (63 visually impaired, 74 sighted) were recruited from six cities in South Korea. Participants, aged 20 to 39 years, were asked to complete a 30-question survey on music attitudes and use, which was distributed (electronically, by post, by telephone, and in person) between June 2013 and February 2014. *Results:* The response rate was 87%. Attitudes toward music showed that visually impaired participants demonstrated significantly higher (more positive) values than sighted participants on interpersonal and communal survey dimensions ($p < .05$). The groups demonstrated similar results regarding intrapersonal attitudes, which received the highest scores of all three categories. Visually impaired participants mainly accessed music from home via portable devices or computers, whereas sighted participants used music most frequently at their homes or in cars. The most significant difference between groups was that music was involved in the majority of leisure time for visually impaired participants, but not for sighted participants. *Discussion:* Higher attitude scores in the intrapersonal category from both groups imply an important role of music, with its emotional and affective aspects, in self-expression. Findings indicated that visually impaired participants utilized music mainly for self-amusement despite perceiving it as an interpersonal and communal tool, most likely due to social restrictions. *Implications for practitioners:* The role of music in the lives of visually impaired individuals could be expanded to provide more group opportunities, hands-on experiences, enjoyable outdoor activities, and psychosocial coping strategies. Group music programs should be considered in order to expand interpersonal and communal experiences for both visually impaired and sighted individuals.

Individuals who are visually impaired have the same needs as people with typical vision to become functional members of society (Tuttle & Tuttle, 2004). Despite this need, visual impairment may lead to limited social interactions, including isolation during free time, less variability in daily activities, and higher dependency on others (Jessup, Cornell, & Bundy, 2010). Consequently, the out-of-home activities of visually impaired individuals tend to be planned rather than spontaneous (Kroksmark & Nordell, 2001; Wolffe & Sacks, 1997). A number of studies have reported that young visually impaired adults are at greater risk of becoming even more socially isolated the longer they are outside their confined community (Gold, Shaw, & Wolffe, 2010; Kirchner, McBroom, Nelson, & Graves, 1992; Wagner, Newman, Cameto, Garza, & Levine, 2005; Wolffe & Sacks, 1997).

To compensate for their limited social opportunities, visually impaired individuals often turn to technology, such as Internet-based venues, for social interaction. Online venues enable visually impaired people to communicate with others, including sighted peers, in an environment that does not rely upon the use or interpretation of nonverbal cues and in which their impairment is not obvious to others (Kendrick, 2007).

Young visually impaired adults rely heavily on online resources to communicate with others (Gold et al., 2010), and prefer auditory mediums, including listening to music or the radio, compared to vision-based mediums (Wolffe & Sacks, 1997). Despite the advantages of Internet accessibility and home-based leisure activities, such social interactions in virtual

space limit “real” experiences in social contexts and result in a lack of interpersonal social skills among people with visual impairments.

As an auditory medium, music could play a vital role in the lives of individuals with visual impairments. In addition, music is an ideal medium for visually impaired people because of its availability and practicality in terms of personal use (Rostohar, 2006). Visually impaired individuals are more comfortable with, and dependent upon, auditory feedback (Molloy-Daugherty, 2013). Visually impaired persons rely on their auditory senses to understand their environment and others’ emotions (Kim, 2009). As such, music may be a useful tool for visually impaired individuals to use to interact with others (Coddington, 2000) and to increase their interpersonal and group interactions (Ham & Kim, 2004).

According to the North, Hargreaves, and Hargreaves (2004) study with sighted adults regarding how music is used in social and interpersonal contexts, the majority of participants (45.3%) utilized music most often in the presence of other people, compared to 26.3% of participants who reported engaging with music most often by themselves. This research suggests that recent technological changes (for instance, the Internet), make it easier for people to access music; as a result, music is now more likely to be experienced in the company of others. Many studies have documented that music gives individuals a sense of belonging within a community and that it promotes feelings of interpersonal attachment (DeNora, 2000; Halnon, 2004; Morgan, MacDonald, & Pitts, 2014; Snell & Hodgetts, 2007; Waldon, 2001).

The large number of studies regarding sighted individuals' attitudes toward music have reported on the social uses, preferences, and influences of music (Adderley, Kennedy, & Berz, 2003; Boswell, 1991; Clingman & Vincent, 1993; Lacroix, 2002). The research findings focused on how individuals perceived music or music activities within their environment using binary approaches of positive or negative. Considering their limited social experiences due to vision loss, the attitudes of visually impaired individuals toward music could be formed differently according to the perceived needs in environmental contexts. Music attitudes held by the visually impaired group could be more sensitive to the location of the experience, including intrapersonal (Fleury & Lee, 2006), interpersonal (Kim, Wigram, & Gold, 2009), and communal experiences (Chong, Kim, & Kim, 2014). In fact, the functions of music range from intrapersonal relationships (for instance, emotional supports) to communal relationships (for example, feelings of bonding); therefore, music attitudes in visually impaired individuals are categorized in three domains: intrapersonal, interpersonal, and communal.

Although there have been studies on sighted individuals' attitudes toward, and uses of, music, there remains a lack of information regarding the attitudes and practices of visually impaired individuals. Understanding the role of music in the lives of those with visual impairments would provide insight into the behavioral influences of music for this growing population. Similarities between visually impaired and sighted individuals have focused on localization, spatial processing, mental imagery, and music perception

abilities (Eitan, Ornoy, & Granot, 2012). In terms of musical ability, some researchers argue that individuals with visual impairments are superior to those with typical vision (Gougoux et al., 2004; Hamilton, Pascual-Leone, & Schlaug, 2004) because of the former's potential for the compensatory use of other senses through cross-modal brain plasticity (Eitan et al., 2012). Others insist there is no inherent difference in musical ability between the two groups (Madsen & Darrow, 1989; Stankov & Spillsbury, 1978). This inconsistency suggests that any measurable difference may be connected to a demographic factor, such as an individual's age at the time of onset of the visual impairment, or level of education (Röder & Neville, 2003; Röder & Rösler, 2003; Thinus-Blanc & Gaunet, 1997).

Only a few studies have been carried out with visually impaired individuals to investigate their attitudes toward, and uses of, music. Because this group experiences severe limitations in psychosocial adaptation and engagement in many cultural privileges (Alma, Van der Mei, Groothoff, & Suurmeijer, 2012), it is important for psychosocial support programs to assist visually impaired people with integration into society (Verplanken, Meijnders, & Van de Wege, 1994). In order to achieve these support programs, more specific research incorporating music's socially adaptive capabilities for visually impaired individuals needs to be conducted.

The purpose of the study presented here was to investigate the attitudes toward, and uses of, music in a sample of visually impaired individuals and to compare these results with those from a sample of sighted individuals. This

comparison is important because social interaction and communication regularly take place and are necessary between the two groups. Therefore, it is important to understand how both groups perceive and utilize music.

The research questions included the following:

1. Is there any difference between adults with visual impairments and adults with typical vision in terms of their attitudes toward music?
2. Is there any difference between adults with visual impairments and adults with typical vision in terms of their use of music in their daily lives?

Method

PARTICIPANTS

Two population groups participated in this survey: one group of visually impaired adults and one group of sighted adults. To ensure the generalizability of the results, the authors used an area random sampling approach to select candidate respondents from the population. Recruitment was initially carried out from the Korea Blind Union (KBU), after which more participants were recruited from universities and community centers. Six regions were chosen, based on their having the largest visually impaired populations in Korea, and the KBU in each area was contacted to collect contact information from the candidates.

First, invitations were delivered to KBU branch personnel and other kinds of networks, including telephone voice mail, braille magazines, and websites. Forty visually impaired participants were recruited from KBU branch organizations

such as vocational training centers, rehabilitation agencies, and education and clinical centers. During this initial recruitment period, 64 sighted participants, such as KBU branch employees, volunteer workers in organizations for blind people, and family members of visually impaired persons, were recruited from identical areas. The recruitment of sighted persons was conducted through posting invitations on bulletin boards and uploading information about the study to website homepage notice boards.

Additional recruitment was performed to increase sample size and match the age ranges of the two groups, and this outreach included universities and community centers located in the aforementioned six regions. As a result, 14 visually impaired participants from 3 universities and 24 visually impaired participants from 5 community centers were recruited. The same number of sighted participants was recruited from the same universities and community centers in order to match their number (14 from three universities and 24 from 5 community centers) as closely as possible to the visually impaired participants. Because the recruitment of visually impaired participants was expected to be more difficult than that of those with typical vision, the visually impaired group was recruited first, followed by the sighted group.

To determine the visually impaired and sighted categories, in the first phase of recruitment each participant was asked if they had a “disabled person identification card” for their visual impairment, and only members of KBU were included for visually impaired recruitment. They were then categorized as either being blind or having low vision, according to the legal

Table 1
Demographic characteristics of participants (N = 137).

Characteristic	Category	VI (n = 63)	NV (n = 74)	χ^2 or <i>t</i>	<i>p</i>
		<i>n</i> (%) or <i>M</i> ± <i>SD</i>	<i>n</i> (%) or <i>M</i> ± <i>SD</i>		
Gender	Male	36	41	7.265	0.07
	Female	27	33		
Age	—	31.00 (6.96)	28.01 (5.68)	1.058	0.29
Music education	None	19	13	6.506	0.16
	Less than 1 year	26	27		
	1–3 years	7	16		
	More than 3 years	11	17		
Degree of vision ^a	Blindness	34	—	—	—
	Low vision	29	—		
Level of disability ^a	Severe (level 1~3)	51	—	—	—
	Moderate (level 4~6) ^b	12	—		
Age at onset ^a	Congenital	28	—	—	—
	Adventitious	35	—		

^a Only applicable to visually impaired participants; ^b “Severe” and “moderate” levels of disability were classified according to the Ministry of Health and Welfare of Korea criteria. Level 1: best-corrected visual acuity ≤ 0.02 ; level 2: best-corrected visual acuity ≤ 0.04 ; level 3: best-corrected visual acuity ≤ 0.08 ; level 4: best-corrected visual acuity ≤ 0.1 ; level 5: best-corrected visual acuity ≤ 0.2 ; level 6: visual acuity in the worse eye ≤ 0.02 .

VI = visually impaired; NV = no vision loss.

standards of the Ministry of Health and Welfare of Korea (2012). Questions on degree of vision, level of disability, and age at onset were also asked in the demographic questionnaires for the visually impaired group (see the footnote for Table 1 for the Korean legal standard of visual impairment).

A total of 180 surveys were distributed to both groups (78 visually impaired, 102 sighted); however, only 158 respondents (71 visually impaired, 87 sighted) returned questionnaires. The return rate represents 87%, and incomplete questionnaires were discarded (8 visually impaired, 13 sighted). Therefore, a final sample of 137 participants (63 visually impaired, 74 sighted) was included in this study. An effort was made to recruit a similar number of visually impaired and sighted partici-

pants from each age cohort and province of residence (Wolffe & Sacks, 1997). This effort was made to ensure sufficient numbers for intergroup comparisons. Participants who voluntarily completed and returned the surveys were considered to have given their implied consent for participation (Nguyen-Michel, Unger, & Spruijt-Metz, 2007; Unger et al., 2004).

The demographic characteristics of the final sample of participants were as follows; a total of 137 adults (60 women, 77 men, *M* age = 31.34 years, age range 20–39 years) were recruited (see Table 1 for these demographics). Participants from both groups who had received music education outside of mandatory school courses for less than one year came to 62% (*n* = 85). Chi-square tests and independent *t*-tests were used to analyze homogeneity between the two groups’ general characteristics (gender, age,

and music experience) and showed that there was no significant difference for any of the characteristics.

QUESTIONNAIRE

The 30-item questionnaire administered in this study was based on the literature regarding attitudes toward music among visually impaired and sighted people (Edwards & Edwards, 1971; Lim & Bak, 2013) and the use of music in everyday life (North et al., 2004). The questionnaire regarding attitudes consisted of three subcategories: intrapersonal, interpersonal, and communal. The intrapersonal category inquired about the participants' personal attitude toward music (for instance, as an emotional support or a hobby). The interpersonal and communal categories evaluated participants' music attitudes, including feelings of belonging or relationship building. The questionnaire regarding use of music included places, device, and genres.

To test validity and appropriateness, three experts were asked to review a questionnaire for the pilot test. They included a professor of music therapy with over 15 years of experience in teaching and research in this field; a music professor with over 10 years of experience teaching and researching music education and who was also visually impaired; and a social worker with over 15 years of experience working with and developing programs for populations with visual impairments. After reviewing the questionnaire, the experts advised that three questions be added to the attitude questionnaire (one for each category) and that two questions, regarding favorite mood of music and the proportion of daily leisure time spent on it, be added to the music use question-

naire. Then, the revised questionnaire was pilot-tested with a total of 10 individuals (5 sighted adults and 5 visually impaired adults) who were not included in the final study. The participants in the pilot study were asked to fill out the questionnaire, and any questions they found difficult to answer were either removed or altered, resulting in a total of 30 questions. The reliability of the questions was determined by Cronbach's alpha at .86 for attitudes toward music and .83 for use of music, exceeding the conventional threshold of 0.7. The final format is described in the next three paragraphs.

Questions 1 through 15 (see Table 2) were related to the individuals' attitudes toward music. Questions 1 through 5 referred to personal attitudes (for instance, "Music helps me express my thoughts and emotions"), questions 6 through 10 referred to interpersonal attitudes (for instance, "Music is the best tool for empathizing with others"), and questions 11 through 15 referred to communal attitudes (for instance, "Music helps me feel a sense of belonging toward my community"). A 5-point Likert scale was used to reply to the questions relating to attitudes toward music, in which the ratings ranged from 1 (highly disagree) to 5 (strongly agree).

Questions 16 through 25 (see Table 3) were related to how the individuals used and integrated music into their daily lives. The questions pertaining to the participants' use of music were comprised of degree of use, way of use, preference, and so on. Participants answered yes or no and then indicated degree from a scale of 1 through 4.

The final five questions related to individual characteristics such as gender; age;

Table 2
Comparison of participants' attitudes toward music.

Category	Item	Survey question	VI (<i>n</i> = 63)	NV (<i>n</i> = 74)	<i>t</i>
			<i>M</i> ± <i>SD</i>	<i>M</i> ± <i>SD</i>	
Intrapersonal attitude	1	Music helps me express my thoughts and emotions.	3.735 ± .1.00	3.704 ± 1.12	-.175
	2	Music comforts me during emotional hardships (anger, sadness, depression, etc.).	3.886 ± 0.97	3.812 ± 1.04	
	3	Musical activity is the easiest form of daily leisure.	3.660 ± 0.93	3.562 ± 1.06	
	4	Music is the most aesthetically pleasing form of art.	3.811 ± 1.07	3.694 ± 1.20	
	5	Music is the best means for expressing imagery compared to our other senses (sight, smell, taste, etc.).	3.792 ± 1.13	3.783 ± 1.21	
Interpersonal attitude	6	Music is the best tool for empathizing with others.	3.641 ± 0.98	3.187 ± 1.37	1.742*
	7	Music helps me create a closer relationship with others.	3.603 ± 1.04	3.162 ± 1.34	
	8	Music effectively shows my positive personality.	3.584 ± 1.04	3.062 ± 1.18	
	9	Music is the best tool for communication.	3.018 ± 1.20	2.937 ± 1.38	
	10	Music is best enjoyed as a group rather than alone.	3.981 ± 1.04	3.375 ± 0.80	
Communal attitude	11	Music helps me to adapt to my community.	3.679 ± 1.03	3.062 ± 1.28	1.198*
	12	Music helps me feel a sense of belonging toward my community.	4.094 ± 0.92	3.562 ± 1.03	
	13	Music is the best tool for communal unification.	3.679 ± 0.99	3.125 ± 1.20	
	14	Music gives me a sense of being by having a particular role in the group.	3.924 ± 0.91	3.562 ± 1.09	
	15	Music gives me a sense of leadership.	3.792 ± 1.19	3.559 ± 0.96	
Total			3.676 ± 0.615	3.448 ± 0.643	2.111*

**p* < .05; VI = visually impaired; NV = no vision loss.

music experience; and additional disability, if any.

PROCEDURES

The questionnaire was delivered in the manner that was most convenient for each

participant, including electronic mail, post, telephone, and in person, between June 2013 and February 2014. The questionnaire and instructions for completing it were transcribed into braille for the participants who were blind and large

Table 3
Comparison of participants' use of music.

Item	Survey question	Question response	VI (n = 63)	NV (n = 74)	χ^2
			n(%)	n(%)	
16	Enjoyment of music	Y/N	45/18	54/20	.841
17	Instrumental playing	Y/N	26/37	35/39	.479
18	Length of music experience per day	Never	3 (4.8)	2 (2.7)	.113
		Less than 1 hour	38 (59.3)	43 (58.2)	
		1 hour to 2 hours	5 (7.9)	15 (20.3)	
		More than 2 hours	17 (27.0)	14 (18.9)	
19	Main device of musical activities	Radio	15 (23.8)	8 (10.8)	.016*
		TV	2 (3.2)	7 (9.5)	
		Computer	21 (33.3)	15 (20.3)	
		Portable device	25 (39.7)	44 (59.5)	
20	Person to enjoy with	On my own	55 (87.3)	43 (58.1)	.002*
		Members of my family	2 (3.2)	8 (10.8)	
		Friends	4 (6.3)	17 (23.0)	
		Work colleagues	2 (3.2)	6 (8.1)	
21	Place to enjoy music in	At home	54 (85.7)	43 (58.1)	.002*
		Car/bus/train	4 (6.3)	24 (32.4)	
		Workplace	2 (3.2)	3 (4.1)	
		Concert	3 (4.8)	4 (5.4)	
22	Favorite musical activity	Listening	21 (33.3)	42 (56.8)	.011*
		Singing	30 (47.6)	19 (25.7)	
		Playing	10 (15.9)	13 (17.6)	
		Creating	2 (3.2)	0 (0.0)	
23	Favorite genre	Classical	8 (12.7)	13 (17.6)	.151
		Popular music	38 (60.3)	49 (66.2)	
		Religious music	11 (17.5)	11 (14.9)	
		Korean traditional music	6 (9.5)	1 (1.4)	
24	Favorite mood of music	Speedy and rhythmic	23 (36.5)	30 (40.5)	.104
		Slow and lyrical	31 (49.2)	32 (43.2)	
		Light and bright	7 (11.1)	3 (4.1)	
		Heavy and dark	2 (3.2)	9 (12.2)	
25	Portion of daily leisure	Less than 10%	3 (4.8)	13 (17.6)	.002*
		10%–40%	19 (30.2)	33 (44.6)	
		40%–70%	25 (39.7)	23 (31.1)	
		More than 70%	16 (25.4)	5 (6.8)	

* $p < .05$; VI = visually impaired; NV = no vision loss.

print for those with low vision. For visually impaired participants, questionnaires were completed over the telephone or through hardcopy responses to braille formats of the questionnaires that were sent via post. The sighted participants were given identical questionnaires and directions in standard print. During the recruit-

ment period, the authors sent reminder letters three times to the recruited participants in order to increase the response rate. Data was collected in collaboration with community centers and KBU staff members. Out of 180 questionnaires that were sent, 158 were returned, resulting in an 87% return rate. After eliminating

incomplete, inappropriate, and inapplicable questionnaires, a total of 137 were used for analysis.

ANALYSIS

For data analysis, SPSS 21.0 was used to calculate descriptive statistics. The demographic characteristics of each group were analyzed using a chi-square test to determine the equivalence between groups. An independent *t*-test was used to analyze group differences regarding music attitudes. A one-way ANOVA test was conducted to examine the differences across the three categories (intrapersonal, interpersonal, and communal) for each group, visually impaired and sighted, respectively.

Results

ATTITUDES TOWARD MUSIC

Overall, the visually impaired participants had higher scores on all three categories compared to sighted participants in regard to attitudes toward music, although the scores for intrapersonal attitude were highest in both groups. Significant differences in attitudes toward music between visually impaired and sighted participants were shown via a *t*-test. For total score of attitudes toward music, the visually impaired participants demonstrated significantly higher (more positive) values than sighted participants ($t = 2.11, df = 135, p = .01$). In the interpersonal ($t = 1.74, df = 135, p = .04$) and communal ($t = 1.79, df = 135, p = .03$) categories, there were significant differences between the two groups, but in terms of intrapersonal attitude there was no significant difference between groups (see Table 2). The one-way ANOVA test found no difference ($F = 2.28, df = 2, p = .10$) among intrapersonal, interpersonal, and communal at-

titudes for the visually impaired participants, and the sighted participants showed significantly higher values in the intrapersonal domain than in the other two categories ($F = 7.05, df = 2, p < .001$).

USE OF MUSIC

An analysis of the results for the use of music between the groups found no difference in musical preference, number of instruments played (if any), amount of time spent accessing music each day, and genre of music. There was a significant difference ($p < .05$), however, regarding how and where both groups accessed music. The visually impaired participants reported that they most often used a computer (33%) and stayed at home (54%) to access music, whereas the sighted participants most often accessed music at home (43%) or in the car (32.4%). The preferred musical activity for the visually impaired participants was singing (47.6%), and the sighted participants preferred to listen to music (56.8%). The biggest difference was related to using music as a leisure activity. The visually impaired participants indicated they spent most of their daily leisure time involved with music. Table 3 shows the reported uses of music for both groups.

Discussion

This study uncovered the similarities and differences in attitudes toward, and uses of, music by visually impaired and sighted individuals. Similarities in music attitudes between the two groups confirm the function of music as emotional and internal fulfillment (MacDonald & Miell, 2002). In fact, emotional and affective aspects of music have been illustrated, including affective pleasure, aesthetic experience, and stress

relief (James, 2011; Radocy & Boyle, 1988). Considering the sensory limitations in those with visual impairments, music, which provides auditory and vibrotactile information, could provide inner satisfaction for this population.

Significant differences in the interpersonal and communal attitude categories may be because of the reliance that sighted individuals have on visual interaction cues (for instance, eye contact, gestures, body language, or facial expressions), which are not relied upon by visually impaired individuals to communicate with others. Understanding other people's gestures and comprehending their words and phrases that are heavily focused on visual imagery, and reading other nonverbal cues, can be a challenge for visually impaired persons (Robb, 2003). Their limited experience with these visual communication skills might decrease opportunities to experience interpersonal and communal dimensions compared to sighted individuals. The differences can also be seen in the highest scores obtained by each group. A sense of belonging (item 12, communal dimension) was the top answer for the visually impaired group, and emotional supports (item 2, intrapersonal dimension) was the highest response for the sighted group. Compared to other types of social group experiences, it can be assumed that music group experiences would be perceived as a positive environment for the visually impaired group.

It is understandable that visually impaired individuals would be more likely to be isolated from their communities, resulting in their seeking self-amusement for their leisure time. As the results from this study indicate, limitations in the use

of music, their preferences for where they use music, and the medium they use to access music should be reconsidered by music educators and service providers in order to broaden these experiences for visually impaired individuals. The widespread accessibility of personal tablets may facilitate intrapersonal use of music by visually impaired individuals; however, improving these individuals' person-to-person contact is important to quality of life.

According to the participants in this study, there is a narrow arena in which visually impaired individuals access and enjoy music because their disability may prevent them from engaging in other available musical experiences (for instance, traveling to and attending a concert). Moreover, musical learning and practice of musical activities typically rely to some extent upon the aid of sight, which strengthens the case for expanding program development to accommodate visually impaired individuals. A study by Hodges and Keller (1999) found that visually impaired individuals had the desire to integrate into society and wanted to participate in outdoor and social activities. For example, one of the interviewees answered, in respect to why she did not take part in many extracurricular activities, "I just don't like to go alone. Probably if I had a friend or someone with me, I would do something like that [attend concerts]."

LIMITATIONS

Limitations of the current study include its restricted number of sampling pools in six regions of Korea, which could have been expanded to more regions in the country or even to different countries. Although the six provinces used in this

study contained the highest population of registered visually impaired adults, additional studies are needed with larger sample sizes in order to better understand the perceptions and experiences of visually impaired individuals and music. The present study could also have been expanded to include adolescent or elderly populations.

Although the authors believed that representativeness of the visually impaired population could be achieved by the recruitment through KBU, the most representative organization for blind people in Korea, and they also expected that the recruited sighted participants could be matched to the demographic characteristics of the visually impaired group in terms of interests, lifestyles, ages, and geographic locations (Wolffe & Sacks, 1997), the fact that the authors focused on the equitability of the two groups, rather than the representativeness of the sighted population, might be considered a limitation. Even though the comparison of basic demographics did not reveal significant differences between the groups, masked underlying differences could exist. There are far more sighted than visually impaired people; thus, sampling processes directed at the sighted population could seem over-represented and could therefore limit the generalizability of the findings.

More research is needed in different contexts, preferably using various designs and methodologies related to music and people with visual impairments. In general, the authors suggest that future in-depth examinations (particularly in-depth qualitative research) of the music experiences of visually impaired individuals would be a helpful addition to the knowledge base. It is important to

realize that such research ultimately may yield instruments that could be used to improve the quality of life not only for visually impaired persons, but also for those who communicate with them and, consequently, for society as a whole.

Implications for practitioners

As seen in the results of this study, visually impaired participants acknowledged the important role of interpersonal and communal interaction. This importance is evidenced by the majority of visually impaired participants agreeing with the question, "Music is the best tool for communication." With many music activities available in general society for visually impaired individuals, along with schools promoting group cohesion through music-related activities, music can be seen as an important tool for visually impaired individuals to use to integrate into society.

More attention should be paid to encouraging visually impaired individuals to participate in music activities with other people, as supported by the current study's findings, which suggest that music can facilitate social connections, build mastery and competence, and provide solace in adversity (Werner & Smith, 2001). Visually impaired individuals should be given opportunities to take part in group music activities, such as choirs, vocal bands, wind ensembles, and karaoke. Furthermore, the various venues for music experiences in everyday life that are accessible and attainable for visually impaired individuals need to be more widely provided. Through active musical participation, visually impaired individuals can develop a sense of confidence and self-

esteem by experiencing the feeling of acceptance in groups, reducing stress, and being a part of a community, which may imply the importance of developing music programs for visually impaired adults to meet their psychosocial needs.

This study's results show that the groups shared similar responses relating to music's intrapersonal characteristics. This finding shows the personal importance of music to individuals regardless of their disability status. In order for music to become not just personal, but a means for visually impaired individuals to express themselves to others, it is necessary for facilities such as welfare centers and health organizations to provide structured opportunities for visually impaired individuals to interact and communicate with sighted individuals.

References

- Adderley, C., Kennedy, M., & Berz, W. (2003). "A home away from home": The world of the high school music classroom. *Journal of Research in Music Education, 51*(3), 190–205.
- Alma, M. A., Van der Mei, S. F., Groothoff, J. W., & Suurmeijer, T. P. (2012). Determinants of social participation of visually impaired older adults. *Quality of Life Research, 21*(1), 87–97.
- Boswell, J. (1991). Comparisons of attitudinal assessments in middle and junior high school general music. *Bulletin of the Council for Research in Music Education, 108*, 49–57.
- Chong, H. J., Kim, J., & Kim, S. J. (2014). The concept of arts-character education in arts education. *Journal of Educational Studies, 45*(1), 53–72.
- Clingman, A. E., & Vincent, D. R. (1993). Community music education study: Attitudes and preferences of Canadian registered music teachers. *Bulletin of the Council for Research in Music Education, 119*, 65–75.
- Codding, P. (2000). Music therapy literature and clinical application for blind and severely visually impaired persons: 1940–2000. In D. S. Smith (Ed.), *Effectiveness of music therapy procedures: Documentation of research and clinical practice* (pp. 159–198). Silver Spring, MD: American Music Therapy Association.
- DeNora, T. (2000). *Music in everyday life*. Cambridge, UK: Cambridge University.
- Edwards, J. S., & Edwards, M. C. (1971). A scale to measure attitudes toward music. *Journal of Research in Music Education, 19*, 228–233.
- Eitan, Z., Ornoy, E., & Granot, R. Y. (2012). Listening in the dark: Congenital and early blindness and cross-domain mappings in music. *Psychomusicology: Music, Mind, and Brain, 22*(1), 33–45.
- Fleury, J., & Lee, S. M. (2006). The social ecological model and physical activity in African American women. *American Journal of Community Psychology, 37*(1–2), 129–140.
- Gold, D., Shaw, A., & Wolffe, K. (2010). The social lives of Canadian youths with visual impairments. *Journal of Visual Impairment & Blindness, 104*(7), 431–443.
- Gougoux, F., Lepore, F., Lassonde, M., Voss, P., Zatorre, R. J., & Belin, P. (2004). Neuropsychology: Pitch discrimination in the early blind. *Nature, 430*(6997), 309.
- Halnon, K. B. (2004). Inside shock music carnival: Spectacle as contested terrain. *Critical Sociology, 30*(3), 743–779.
- Ham, D., & Kim, Y. (2004). A study on the recreation and leisure activities of the visually impaired students. *The Korean Journal of Visual Impairment & Blindness, 20*(1), 91–117.
- Hamilton, R. H., Pascual-Leone, A., & Schlaug, G. (2004). Absolute pitch in blind musicians. *Neuroreport, 15*(5), 803–806.
- Hodges, J. S., & Keller, M. J. (1999). Visually impaired students' perceptions of their social integration in college. *Journal of Visual Impairment & Blindness, 93*, 153–165.

- James, W. (2011). *The principles of psychology*. New York: Digireads. Original: James, W. (1890). *The principles of psychology* (2 vols.). New York: Henry Holt & Co.
- Jessup, G. M., Cornell, E., & Bundy, A. C. (2010). The treasure in leisure activities: Fostering resilience in young people who are blind. *Journal of Visual Impairment & Blindness*, 104(7), 419–430.
- Kendrick, D. (2007). Staying on course: Interviews with students who are blind. *AccessWorld*, 8(4). Retrieved from <http://afb.org/afbpres/pub.asp?DocIDaw080402>
- Kim, J., Wigram, T., & Gold, C. (2009). Emotional, motivational and interpersonal responsiveness of children with autism in improvisational music therapy. *Autism*, 13(4), 389–409.
- Kim, Y. (2009). Exploring the effects of a music activity program on enhancing the tonic and rhythmic discriminability of children with visual impairments. *The Journal of the Smeieccu*, 30(1), 85–104.
- Kirchner, C., McBroom, L., Nelson, K., & Graves, W. (1992). *Lifestyles of employed legally blind people: A study of expenditures and time use*. Mississippi State, MS: Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision.
- Krokmark, U., & Nordell, K. (2001). Adolescence: The age of opportunities and obstacles for students with low vision in Sweden. *Journal of Visual Impairment & Blindness*, 95, 213–220.
- Lacroix, S. E. (2002). *The effect of an integrated curriculum on fourth graders' achievement in and attitude toward music instruction*. Dissertation Abstracts International, 62(01), 0091A (UMI No. 3077998).
- Lim, H. J., & Bak, S. (2013). Study on variables which affect musical interest and aptitude of people with visual impairment: Based upon degree of disability and course level they belonged to at school. *The Korean Journal of Visual Impairment*, 29(3), 151–165.
- MacDonald, R. A., & Miell, D. (2002). Music for individuals with special needs: A catalyst for developments in identity, communication and musical ability. In R. MacDonald, D. J. Hargreaves, & D. Miell (Eds.), *Musical Identities* (pp. 163–178). Oxford, UK: Oxford University.
- Madsen, C. K., & Darrow, A. A. (1989). The relationship between music aptitude and sound conceptualization of the visually impaired. *Journal of Music Therapy*, 26(2), 71–78.
- Ministry of Health and Welfare of Korea. (2012). *The enforcement ordinance on the Disabled Person Welfare Law*. Retrieved from <http://www.mohw.go.kr>
- Molloy-Daugherty, D. (2013). *Rhythmic auditory-motor entrainment of gait patterns in adults with blindness or severe visual impairment* (Unpublished doctoral dissertation). Lawrence, KS: University of Kansas.
- Morgan, J. P., MacDonald, R. A., & Pitts, S. E. (2014). Caught between a scream and a hug: Women's perspectives on music listening and interaction with teenagers in the family unit. *Psychology of Music*, doi: 10.1177/0305735613517411
- Nguyen-Michel, S. T., Unger, J. B., & Spruijt-Metz, D. (2007). Dietary correlates of emotional eating in adolescence. *Appetite*, 49(2), 494–499.
- North, A. C., Hargreaves, D. J., & Hargreaves, J. J. (2004). Uses of music in everyday life. *Music Perception*, 22(1), 41–77.
- Radocy, R. E., & Boyle, J. D. (1988). *Psychological foundations of musical behavior*. Springfield, IL: Charles C Thomas.
- Robb, S. R. (2003). Music interventions and group participation skills of preschoolers with visual impairments: Raising questions about music, arousal, and attention. *Journal of Music Therapy*, 40, 266–282.
- Röder, B., & Neville, H. (2003). Developmental functional plasticity. *Handbook of Neuropsychology*, 9, 231–270.
- Röder, B., & Rösler, F. (2003). Memory for environmental sounds in sighted, congenitally blind and late blind adults: Evidence for cross-modal compensation. *International Journal of Psychophysiology*, 50(1), 27–39.

- Rostohar, J. W. (2006). *The effects of a multiphase music therapy intervention on the acquisition of social skills among pre-schoolers with visual impairments: Two case studies* (Unpublished doctoral dissertation). Kansas City, MO: University of Missouri.
- Snell, D., & Hodgetts, D. (2007). Heavy metal, identity and the social negotiation of a community of practice. *Journal of Community & Applied Social Psychology, 17*(6), 430–445. Retrieved from <http://dx.doi.org/10.1002/casp.943>
- Stankov, L., & Spillsbury, G. (1978). The comparative sensitiveness of blind and seeing persons. *Psychological Monographs, 25*, 148–158.
- Thinus-Blanc, C., & Gaunet, F. (1997). Representation of space in blind persons: Vision as a spatial sense? *Psychological Bulletin, 121*(1), 20–42.
- Tuttle, D. W., & Tuttle, N. R. (2004). *Self-esteem and adjusting with blindness: The process of responding to life's demands*. Springfield, IL: Charles C Thomas.
- Unger, J. B., Gallaher, P., Palmer, P. H., Baezconde-Garbanati, L., Trinidad, D. R., Cen, S., & Johnson, C. A. (2004). No news is bad news: Characteristics of adolescents who provide neither parental consent nor refusal for participation in school-based survey research. *Evaluation Review, 28*(1), 52–63.
- Verplanken, B., Meijnders, A., & Van de Wege, A. (1994). Emotion and cognition: Attitudes toward persons who are visually impaired. *Journal of Visual Impairment & Blindness, 88*, 504–511.
- Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005). *After high school: A first look at the postschool experiences of youth with disabilities: A report from the National Longitudinal Transition Study–2 (NLTS2)*. Menlo Park, CA: SRI International.
- Waldon, E. (2001). The effects of group music therapy on mood states and cohesiveness in adult oncology patients. *Journal of Music Therapy, 38*, 212–238.
- Werner, E. E., & Smith, R. S. (2001). *Journeys from childhood to midlife: Risk, resilience, and recovery*. Ithaca, NY: Cornell University Press.
- Wolffe, K., & Sacks, S. Z. (1997). The lifestyles of blind, low vision, and sighted youths: Emotion and cognition: Attitudes toward persons who are visually impaired: A quantitative comparison. *Journal of Visual Impairment & Blindness, 91*, 245–257.

Hye Young Park, Ph.D., KCMT, lecturer, Department of Music Therapy, Graduate School of Ewha Womans University, 52 Ewhayeodaegil, Seodaemun-gu, Seoul 120-750, Korea; e-mail: <legendphy@hanmail.net>. **Hyun Ju Chong, Ph.D.**, professor, Department of Music Therapy, Graduate School of Ewha Womans University, Seoul, Korea; e-mail: <hju@ewha.ac.kr>. **Soo Ji Kim, Ph.D., MT-BC**, professor, Division of Music Therapy Education, Graduate School of Education, Ewha Womans University, Seoul, Korea; e-mail: <specare@ewha.ac.kr>. Please address all correspondence to Dr. Kim.