

CULTURAL IDENTITY OF IMPLANTED YOUNG ADULTS IN COMPARISON TO DEAF AND HARD OF HEARING YOUNG ADULTS

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ABSTRACT

Introduction: Deaf sign language users view themselves as a cultural minority group, having their own language and community. Cochlear implants (CIs), which provide more accessibility to spoken language, have become a common mode of rehabilitation for deaf children, thus questioning their future identity. Research findings on cultural identity of CI users are inconsistent.

Purpose: To examine the cultural identity of adolescents and young adults who use CIs in comparison to that of deaf individuals without CIs, and hard of hearing (HH).

Method: 141 participants aged 16-22 completed a cultural identity questionnaire, based on the Deaf Identity Development Scale-Revised (DIDS-R) which includes four identities: deaf, hearing, bicultural and marginal. For the present study the bicultural identity was divided into two sub-scales: a deaf-dominant bicultural identity and a hearing-dominant bicultural identity. In addition, participants completed questionnaires relating to their competence in sign language, spoken language, and hearing. Participants' parents completed a questionnaire relating to their child's speech quality.

Results: CI users and HH participants demonstrated a bicultural-hearing identity, whereas deaf participants demonstrated bicultural-deaf and Deaf identities. Bicultural-deaf and Deaf identities correlated positively with manual competence, and negatively with spoken language. Bicultural-hearing and hearing identities correlated negatively with manual competence and positively with spoken language. Marginal identity correlated negatively with hearing competence and speech quality.

Conclusion: CI users develop a different cultural identity than their deaf peers without CIs. This might reflect on their future association in the Deaf community. Identity is closely related to communication abilities.

INTRODUCTION

Technological advances in rehabilitation of children and adults with severe to profound hearing loss (HL) question former cultural identities of this population (Leigh, 2009). The Deaf identity development model, created by Glickman & Carey (1993), demonstrates the role of various variables on identity development, among them severity of HL and mode of communication. Early implantation enables many cochlear implant (CI) users to develop adequate speech and language abilities (Spencer & Guo, 2013). These advances pose questions as to the cultural identity of implanted young

people when taking into account changes in language development following implantation.

One of the first studies that examined the identity of adolescents who use CIs was conducted by Wald & Knuston (2000). The authors compared cultural identity of deaf participants with CIs to that of deaf participants without CIs. 45 deaf participants with and without CIs, aged 12-18, completed the Deaf Identity Development Scale (DIDS) (Glickman & Carey, 1993). The implanted participants demonstrated a greater hearing identity compared to participants without CIs.

Also, Leigh, Maxwell-McCaw, Bat-Chava & Christiansen (2009) found a greater hearing acculturation among 28 implanted adolescents compared to 29 deaf adolescents without CIs. In another qualitative study including 11 implanted children and adolescents, the participants didn't identify with the Deaf culture (Punch & Hyde, 2011).

While the above studies indicated changes in identity among deaf individuals with CI, other studies showed different results. For example, in a qualitative study conducted in Sweden (Preisler, Tvingstedt & Ahlstrom, 2005), interviews with participants revealed that implanted participants aged 8.5-10.5 were well aware that they were still deaf.

It seems, thus, that CI users demonstrate a variety of identities. This trend was demonstrated in a qualitative study on 12 implanted adolescents conducted in Israel (Rich, Levinger, Werner & Adelman, 2013). Participants were asked to fill out open questions addressing identity. Identity of participants ranged from totally hearing to Deaf identity. Eight of the participants defined themselves as hard of hearing (HH). Six participants described a strong hearing self-perception. The authors suggested that some CI recipients have both hearing and HH identities, which are expressed according to the communicative situation.

Identity and Language

Most studies investigating cultural identity of people with HL addressed mode of communication as a variable influencing identity development (Bat-Chava, 2000; Most, Weisel & Blitzer, 2007). Findings revealed that people with Deaf identity use sign language while people with hearing identity use oral language. One of the few studies addressing the proficiency of participants in their preferred mode of communication as a variable influencing Deaf identity was the study of Boudreault (2006). Participants in this study completed a test of sign language grammar, in addition to completing an identity questionnaire. Findings revealed positive correlations of sign language proficiency with Deaf identity.

Purpose of Study

As presented above, adolescents with CIs demonstrate a range of identities, some of them expressing more than one definite identity. The aim of this study was to further examine the cultural identity of young people who use CIs in comparison to the cultural identity of deaf without CIs, and HH individuals. In addition, the present study investigates identity in relation to proficiency in sign language and oral language, hearing proficiency, and speech quality. The following questions were addressed:

1. How do deaf with CI, deaf without CIs and HH individuals identify themselves?
2. How are communicative variables related to the development of cultural identity of young deaf people?

METHOD

Participants

141 young adults, between the ages of 16 and 22 years, participated in the study. All participants had pre-lingual sensory-neural severe to profound HL. They had no known additional impairments. 53 participants were males (37.6% of cohort) and 88 were females (62.4%). 36 participants (25.5%) had hearing levels better than 90dBHL and used hearing aids. They were considered HH. 105 participants (74.5%) had hearing levels of 90 dB or worse, 74 of them used CIs. 47 participants were implanted after the age of 6 and 26 were implanted up to 6 years of age. The remaining 31 did not have CI, and only 22 used hearing aids but partially during the day. Most of the participants were mainstreamed in regular high-schools (60.3%), 45 (31.9%) participants studied in inclusion classes in regular schools, and nine participants (6.4%) attended schools for the deaf. 103 participants (73%) used oral communication, and 37 participants (26.3%) used sign language. 27 participants had parents with HL.

Instruments

Deaf identity development scale

The cultural identity questionnaire was based on the Deaf Identity Development Scale Revised (DIDS-R) (Colangelo-Fischer & McWhirter, 2001). The original questionnaire contained four identities and was previously translated into Hebrew by Most et al. (2007). For the purpose of the present study five sub-scales were created: hearing, Deaf, bicultural-hearing, bicultural-deaf, and marginal identities.

The revised version was completed by 41 adolescents and young adults with severe to profound HL in a pilot study. Following this pilot the final questionnaire included 41 items, yielding a 10-item hearing identity subscale (Cronbach alpha = .72), an 11-item Deaf identity subscale (Cronbach alpha = .84), a 5-item bicultural-hearing subscale (Cronbach alpha = .62), a 5-item bicultural-deaf subscale (Cronbach alpha = .90), and a 10-item marginal subscale (Cronbach alpha = .86). Each item is rated on a Likert-type scale ranging from *Totally disagree* (1) to *Totally agree* (5). Scores for each subscale were the sum of the scale divided by its number of items, with higher scores indicating stronger identity.

Oral and manual proficiencies

This questionnaire was developed for the present study, partially based on questionnaires developed for young children (O'Donoghue, Nikolapuolos, Archbold & Tait., 1999). It includes 13 items relating to participants' ability to produce and understand oral and sign language. The questionnaire was distributed on a pilot study to the same cohort previously mentioned. The final version included two subscales: an 8-item oral proficiency subscale ("when I

talk on the telephone I can be easily understood") (Cronbach alpha = .80) and a 5-item manual proficiency subscale ("I produce sign language very well") (Cronbach alpha = .93). Each item is rated on a Likert-type scale ranging from *Totally disagree* (1) to *Totally agree* (6), with higher scores indicating better proficiency (after reversing the relevant items).

Hearing proficiency

This questionnaire is based on The Abbreviated Profile of Hearing Aid Benefit (APHAB) (Cox & Alexander, 1995). The original Questionnaire includes four subscales: ease of communication (EC), background noise (BN), reverberation (RV), and aversiveness. For the purpose of the present study only the first three subscales were included, yielding an 18-item scale divided equally to three 6-item subscales. The questionnaire was translated into Hebrew by the first author. It was distributed on a pilot study to the same cohort previously mentioned. In the present study reliabilities (Cronbach alphas) were .79 for the EC subscale, .69 for the BN subscale, and .79 for the RV subscale. Reliability for the entire questionnaire was .80. Each item is rated on a Likert-type scale ranging from *Totally disagree* (1) to *Totally agree* (7), with higher scores indicating better hearing proficiency (after reversing the relevant items).

Speech quality

This questionnaire was developed for the present study, partially based on questionnaires developed for young children (O'Donoghue et al., 1999). It includes four items relating to intelligibility of speech: 1. "The intensity of my child's speech resembles speech intensity of hearing people", 2. "The rhythm of my child's speech resembles speech rhythm of hearing people", 3. "My child's voice resembles the voice of hearing people", and 4. "My child's speech is clear to all people". Reliability for the questionnaire was .95. Each item is rated on a Likert-type scale ranging from *Totally disagree* (1) to *Totally agree* (6), with higher scores indicating better speech quality.

Procedure

Participants were recruited from data bases of the Ministry of Education and the Ministry of Social Affairs in Israel after obtaining permission from these ministries. Letters of agreement were sent to 414 adolescents and young adults (or parents of adolescents under the age of 18), along with study questionnaires. Participants completed demographic, identity, oral, manual and hearing proficiency questionnaires. Parents completed the speech quality questionnaire. 141 viable questionnaires were returned.

RESULTS

The following scores were calculated for each participant: five identity scores (hearing, Deaf, bicultural-hearing, bicultural-deaf and marginal), an oral proficiency score, a manual proficiency score, four hearing proficiency scores (EC, BN, RV, and a total score), and a speech quality score. .

Cultural identity

The first question of the study was how do deaf and HH individuals identify themselves. In order to answer the first study question, a two-way analysis of variance (ANOVA) was performed among the three study groups: deaf with CI, deaf without CIs and HH. As seen in table1, a significant difference was found between deaf without CI to CI users in all identities, except the marginal identity. Deaf without CI demonstrated greater bicultural-deaf and Deaf identities in comparison to CI users, and a weaker bicultural-hearing identity. No significant differences were found between CI users and HH participants, except a greater bicultural-deaf identity among CI users.

Table 1. Analysis of variance between study groups

Variable	Deaf with CI (n = 74)		Deaf without CI (n = 31)		HH (n = 36)		F	Comparison between two deaf groups t	Comparison between CI users to HH t
	M	SD	M	SD	M	SD			
Deaf identity	2.00	.64	2.31	.63	2.15	.67	2.55	-2.22*	-1.07
Hearing identity	2.44	.62	2.15	.66	2.44	.89	2.02	2.05*	-.06
Marginal identity	2.05	.68	1.99	.61	2.16	.69	.77	.14	-1.13
Bi-cultural deaf identity	2.45	1.13	3.55	1.09	2.00	.95	17.93***	-4.72***	2.04*
Bi-cultural hearing identity	3.40	.79	2.98	.89	3.52	.93	3.76*	2.29*	-.73

* p < .05. *** p < .001

Communication abilities and identity

To address the relation between communication abilities and identity Pearson correlations were performed. As seen in table2, a significant negative correlation was found between bicultural-deaf and Deaf identities and oral proficiency, hearing proficiency, and speech quality. A significant positive correlation was found between these identities and manual proficiency. In addition, a significant positive correlation was found between bicultural-hearing identity and oral and hearing proficiencies, and speech quality. A significant negative correlation was found between this identity and manual proficiency. Hearing identity had a significant negative correlation with manual proficiency, and a significant positive correlation only with reverberation. The marginal identity had a significant negative correlation

with all subscales of hearing proficiency. No other significant correlations were found with this identity.

Table 2. Pearson correlations between identity and study variables

	Deaf identity	Hearing identity	Marginal identity	Bi-cultural deaf identity	Bi-cultural hearing identity
Deaf identity	1	.03	.33**	.52**	-.19*
Hearing identity	.03	1	.52**	-.33**	.42**
Marginal identity	.33**	.52**	1	-.03	.28**
Bi-cultural deaf identity	.52**	-.33**	-.030	1	-.55**
Bi-cultural hearing identity	-.19*	.42**	.28**	-.55**	1
Oral proficiency	-.39**	.22*	-.05	-.69**	.49**
Manual proficiency	.44**	-.37**	-.09	.84**	-.51**
Auditory proficiency	-.27**	.09	-.33**	-.51**	.40**
EC	-.41**	-.04	-.25**	-.46**	.53**
BN	-.13	.00	-.33**	-.30**	.27**
RV	-.13	.26**	.01	-.48**	.19*
Speech quality	-.31**	.08	-.06	-.50**	.48**

* P < 0.05 ** p < 0.01

DUSCUSSION

In the present study severity of HL didn't determine identity. Glickman & Carey (1993) described participants in their study with hearing identity as having a moderate HL, while participants with Deaf identity had profound to severe HL. Our findings challenge these previous findings. Significant differences were found between deaf participants without CI to CI users in all identities, except marginal identity. Thus, even though the two groups had similar levels of HL they developed a different cultural identity. The CI users had identities similar to the HH participants. Despite the difference in the severity of their HL these two groups developed a similar cultural identity. As Leigh stated (Leigh, 2009), technological advances in rehabilitation of HL has created changes in identities of deaf people. CI enables many children with severe and profound HL to develop better spoken language. Thus, CI becomes a major factor in identity development. Results regarding similar identity between CI users and HH reflect this notion.

Findings of correlation between communication abilities and identity reflect the importance of different communicative proficiencies on identity formation among individuals with HL. Not only mode of communication affects identity, but the amount to which an individual can participate effectively in natural communicative settings. In the case of hearing identity in the present study, no positive correlations were found between this identity and oral-hearing

proficiencies (except reverberation). On the other hand, a strong negative correlation was found between this identity and manual proficiency, meaning that people with a strong hearing identity were lacking knowledge in sign language. Thus, participants with a strong hearing identity couldn't communicate via sign language, but their oral abilities weren't good enough for allowing good functioning in different communicative situations. Despite their hearing identity they didn't have the ability to fully participate in the hearing society, but they didn't have the option of joining the Deaf community. Marginal identity had a negative correlation with hearing proficiency. This finding imposes the importance of hearing proficiency for optimal function in the hearing society. Participants who had high scores on the marginal identity couldn't be fully engaged in the hearing society, therefore not really belonging to the hearing world.

In the present study self-reported questionnaires were used in order to address communication proficiencies of participants. Future research should include other measurements, such as speech recordings and standardized language tests, to further explore influence of communication abilities on identity formation.

In Summary, the findings of the present study suggest that young people with CIs are closely identified with HH peers, despite audiological differences between them. They probably will not belong to the Deaf community. These changes in identity formation of deaf adolescents are closely connected to communication abilities.

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