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### **Social Support, Social Companionship, and Social Distress in Young Adults with Cochlear Implants**

Arta Ljubanovic

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**SOCIAL SUPPORT, SOCIAL COMPANIONSHIP, AND SOCIAL DISTRESS IN  
YOUNG ADULTS WITH COCHLEAR IMPLANTS**

**By**

**ARTA LJUBANOVIC**

**A capstone research project submitted to the Graduate Faculty in Audiology in partial  
fulfillment of the requirements for the degree of Doctor of Audiology,**

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**This manuscript has been read and accepted for the  
Graduate Faculty in Audiology in satisfaction of the  
capstone research requirement for the degree of Au.D.**

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## ABSTRACT

Social Support, Social Companionship, and Social Distress in Young Adults with Cochlear Implants

By

Arta Ljubanovic

Advisor: Carol Silverman, Ph.D., M.P.H

Research has shown that social support has a positive impact on mental health and decreases levels of stress in young adults with normal-hearing sensitivity. Social relationships are one psychological construct that has not been previously studied in young adults with cochlear implants. In light of the importance of social support in the overall well-being of an individual and the lack of research on this topic in individuals with cochlear implants, the study purpose is to examine social relationships in young adults with cochlear implants and to determine the presence of any significant differences in social relationships between the group with cochlear implants and the group with normal-hearing sensitivity. The NIH Toolbox Social Relationship Assessment Battery (Cyranowski et al., 2013) was developed to assess various aspects of social relationships including social support, companionship, and social distress. This questionnaire was administered to young adults (between the ages of 18 and 30) with cochlear implants and young adults without hearing difficulty. The results indicate that young adults with cochlear implants generally do not differ in their perception of social support, social companionship, and social distress in comparison to their peers that do not experience hearing difficulty. Despite the fact that not all individuals with cochlear implants communicate verbally, the ability to create and maintain social relationships is similar in individuals with and without cochlear implants.

**Key Words:** cochlear implant, social relationships, young adults

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## INTRODUCTION

Numerous studies have examined, in adults with cochlear implants, specific psychological constructs such as depression (Knutson et al., 2006; Mo et al., 2005; Olze et al., 2011; Summerfield & Marshall, 1995); anxiety and stress (Knutson et al., 2006; Mo et al., 2005; Olze et al., 2011); social isolation (Hallberg et al., 2005; Mo et al., 2005); self-esteem (Hinderink et al., 2000; Straatman et al., 2014); social interaction (Knutson et al., 2006; Hinderink et al., 2000; Straatman et al., 2014). Social relationships are one psychological construct that has not been previously studied in young adults with cochlear implants.

The results of a meta-analytic review of 148 independent studies (across 308,849 adults) on social relationships and mortality risk indicate that individuals' experiences with social relationships can significantly reduce the risk of mortality (Holt-Lunstad et al., 2010). This was evidenced by an odds ratio of 1.5 (95% of 1.42 to 1.59) for mortality, consistent with 50% increase in risk of mortality with weaker social relationships based on a complex measure of social relationships. The construct of social relationships was operationally defined using multidimensional measures of social integration that included more than one type of social relationship measurement (network based inventories, marital status, among other measures). Research findings also show that social support has a positive impact on mental health and decreases levels of stress in young adults with normal-hearing sensitivity (Bovier et al., 2004; Kafetsios & Sideridis, 2006).

Goh et al. (2016) observed the social participation of young adults with cochlear implants (N = 25) using a questionnaire on education, employment, and identification with the hearing and deaf communities. A satisfaction of life scale and the Hearing Participation Scale also were administered (developed by Hawthorne & Hogan, 2002). The Hearing Participation

Scale (HPS) is an 11-item questionnaire that examines self-esteem and social and hearing handicap; a higher score on the HPS indicates higher self-esteem and lower social and hearing handicap. The results revealed that twenty of the twenty-five participants identified strongly with the hearing community. The findings also revealed that strong association with the hearing community was directly related to a higher HPS score.

Hoffman et al. (2015) conducted a longitudinal study on the effect of cochlear implantation on children's social skills, as measured with The Behavioral Assessment Scale for Children and the Social Skills Rating System. The participants included 132 parents of children with cochlear implants and 67 parents of children with normal-hearing sensitivity. Questionnaires were administered three times over a five-year period. The children were between the ages of 5 and 9 years at the beginning of the study. The results of the study indicated that children with cochlear implants were consistently delayed in social competence in comparison with children with normal-hearing sensitivity

The NIH Toolbox Social Relationship Assessment Battery (Cyranowski et al., 2013) was developed to assess various aspects of social relationships including social support, companionship, and social distress. Social support is defined as the availability of aid given in times of need by individuals. The two types of social support examined are emotional support and instrumental support. Emotional support is the accessibility of individuals who are able to listen to an individual's issues with empathy and care. Instrumental support is the perceived availability of individuals to help in the completion of daily tasks if necessary. The two components of companionship examined are friendship and loneliness. Friendship is defined as the availability of acquaintances and loneliness is defined as the subjective feeling of social isolation. Social distress is defined as the degree to which an individual identifies his or her daily

social interactions as negative. The two components of social distress that are assessed include perceived hostility (the degree to which an individual believes people argue with or criticize him or her) and perceived rejection (the degree to which an individual believes people do not like him or her).

Cyranowski et al. (2013) evaluated the reliability and concurrent validity of the NIH Toolbox Social Relationship Assessment Battery. The results revealed high internal reliability (Cronbach's Alpha of 0.93 or higher) for all scales. Concurrent validity was measured using three validation instruments: the Interpersonal Support Evaluation List (ISEL) (Cohen, Mermelstein, Kamarck, & Hoberman, 1985), the Revised University of California Los Angeles Loneliness Scale (R-UCLA) (Russell, Peplau, & Cutrona, 1980), and the Negative Interaction Scale (NIS) (Krause, 1995). The Toolbox and the three validation instruments were administered to 692 participants. The results of post-hoc concurrent validity testing revealed high correlations between the NIH Toolbox Social Relationship Scales and the three validation instruments used in the study (Pearson correlation coefficient of 0.70 or higher).

In light of the importance of social support in the overall well-being of an individual and the lack of research on this topic in individuals with cochlear implants, the study purpose is as follows: to examine social relationships in young adults with cochlear implants and to determine the presence of any significant differences in social relationships between the group with cochlear implants and the group with normal-hearing sensitivity.

## METHODS

### *Design*

This is an observational, case-control study.

### *Participants*

The study was approved by the Institutional Review Boards of The New York Eye and Ear Infirmary of Mount Sinai and City University of New York. The participants (males and females, age between 18 and 30 years) were comprised of two groups: individuals with a cochlear implant(s) and individuals without hearing difficulty. Participants with cochlear implants (monaural or binaural) were recruited from the pool of eligible participants who were implanted at The New York Eye Ear Infirmary of Mount Sinai, New York, NY. They were eligible for study inclusion if a cochlear implant(s) had been worn for at least two years. The database of patients meeting the inclusion criteria comprised 115 potential participants. Individuals were not eligible for the study if they were outside the age range of 18 and 30 years of age and had worn a cochlear implant for less than two years.

Participants without hearing difficulty were recruited from flyers (see recruitment flyer in Appendix A) that were posted on bulletin boards at the Graduate Center of the City University of New York, New York, NY. Participants without hearing difficulty group were eligible for study inclusion if they had never worn hearing aid(s) or cochlear implant(s) or other hearing assistive devices. Participants were not eligible for the study if they were outside the age range of 18 and 30 years of age and if they wore hearing aids or cochlear implants.

### *Test Materials*

The study was conducted using brief self-report scales from the NIH Toolbox Social Relationship Assessment Battery (Cyranowski et al., 2013) (see Appendix B). The scales

examine social support (both emotional and instrumental,) companionship (friendship, loneliness), and social distress (perceived rejection and perceived hostility). The social support scale includes 16 items, the companionship scale includes 13 items, and the social distress scale includes 16 items. Scoring on the items ranges from 1 to 5, with 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Usually, and 5 = Always. A high score on the social support scale indicates greater perceived emotional and instrumental support; a high score on the companionship scale indicates greater availability of companions and less perceived loneliness; and a high score on the social distress scale indicates greater perceived rejection and hostility.

In addition to the NIH Toolbox Social Relationship Assessment Battery, another questionnaire was administered to both groups. The additional questionnaire (see Appendix C) administered to the group with implants contained queries on age of implantation (right only, left only, or binaural), communication method (verbal only, sign language only, or a combination of both), and demographic information (gender, age, ethnicity, marital status, employment status, academic status, educational background, and living situation including number of children and number of housemates). The questionnaire administered to the group without hearing difficulty contained queries on demographic information.

### *Procedures*

Surveys were mailed to the group with cochlear implants. They were mailed with prepaid, addressed return envelopes for the completed questionnaires and for the consent forms (separate envelopes to maintain anonymity). As stated in the flyers posted on the bulletin boards, participants in the group without hearing difficulty could obtain the questionnaire/survey from the Office of the Doctoral Program in Audiology in room 7107 at the Graduate Center, CUNY,

complete the form anonymously, and then submit the completed form to a locked box in the same office. Thus, participation did not involve any face-to-face or telephone contact.

### *Statistical Analyses*

Individual scores for each scale in the NIH toolbox battery were summed across items in the scale and then divided by the number of completed items. The NIH toolbox battery data and data relating to demographics and communication were entered into STATA (College Station, TX) for statistical analysis. Summary statistical analyses were obtained for the group without hearing difficulty and the scale scores for each patient with a cochlear implant were compared with the normative data.

## RESULTS

Five users of cochlear implants (four female and one male) and twenty-two individuals without hearing difficulty (twenty-one females and one male), ranging in age from 18 to 30 years, participated in this study. The response rate of the participants with cochlear implants group was 4%.

In the group without hearing difficulty ( $n = 22$ ), the mean age (SD) was 24.4 years (2.06) and the 90% range was 22-27. Table 1 shows the demographic and socioeconomic characteristics of this group. As can be seen from this table, nearly all of the participants were female; the vast majority were white non-Hispanic, single, unemployed, full-time students. All participants were college graduates, and most were pursuing graduate degrees or already had a graduate degree. Approximately half of the participants were living at home, whereas the other half were living in a non-dormitory residence with roommates.

**Table 1.** Demographic and socioeconomic characteristics for the group without hearing difficulty.

Characteristic	Frequency
Gender	
Male	1
Female	21
Ethnicity	
African American	1
Asian	2
White Non-Hispanic	18
Declined to Respond	1
Marital status	
Single	18
Married/living with partner	3
Declined to respond	1
Employment status	
Employed part-time	7
Not employed	15
Academic status	
Full-time student	19
Not currently a student	3

Highest level of education completed	
College graduate	2
Some post college	13
Advanced degree	7
Residential status	
Living with parents/relatives	10
Living with roommates in a dormitory	1
Living in a non-dormitory residence with roommates	11

As can be seen from Table 2, which shows the demographic and socioeconomic characteristics of the group with cochlear implants, the ages in this group ranged from 18-36; 4 of the 5 were females, and the majority were white non-Hispanic with the remainder being Asian in ethnicity. Three of the five participants were unemployed and the remaining two were employed full-time. The majority of the participants were full-time students; the remainder of the participants were not currently students at the time of the study. All of the participants were high school graduates with the exception of one participant, and one participant was a college graduate. All of the participants were living with their parents.

**Table 2.** Descriptive characteristics of the group with cochlear implants.

Subject	Age	Sex	Ethnicity	Marital status	Employment status	Academic status	Highest level of education	Living status
CI1	30	F	Asian	Single	Not employed	Not currently a student	High school diploma	Living with parents
CI2	18	F	Asian	Single	Not employed	Full-time student	High school diploma	Living with parents
CI3	23	F	White non-Hispanic	Single	Employed full-time	Not currently a student	College graduate	Living with parents
CI4	20	F	White non-Hispanic	Single	Not employed	Full-time student	Some high school	Living with parents
CI5	26	M	White non-Hispanic	Single	Employed full-time	Full-time student	Some college	Living with parents

Method of communication, social relationships, cochlear-implant status (monaural or binaural), and years of cochlear-implant use are exhibited in Table 3. Inspection of this table reveals that the primary method of communication for the participants with cochlear implants was verbal communication, whereas the remainder of the participants communicated using sign language. The participants with cochlear implants mostly communicated with individuals with normal-hearing sensitivity. Three of the participants were binaurally implanted and the remaining two were monaurally implanted. Number of years of cochlear implant use ranged from 9 to 19.

**Table 3.** Communicative and cochlear implant characteristics in the group with cochlear implants.

<b>CI participant</b>	<b>Method(s) of communication</b>	<b>Primary method of communication</b>	<b>Primary social relationships</b>	<b>Monaural or binaural implant(s)</b>	<b>Number of years of cochlear implant use</b>
CI1	Sign language plus verbal communication	Sign language	Most are deaf and communicate using sign language	Binaural	9
CI2	Verbal communication	Verbal communication	Most are normal-hearing and communicate using speech	Monaural	14
CI3	Verbal communication plus cued speech	Verbal communication	Most are normal-hearing and communicate using speech	Monaural	19
CI4	Sign language plus verbal communication	Sign language	Most are normal-hearing and communicate using speech	Binaural	10
CI5	Verbal communication	Verbal communication	Most are normal-	Binaural	11

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hearing and  
communicate  
using speech

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*Social Support*

The social support scale consists of two subscales: emotional support and instrumental support. The maximum possible score for the subscales was 40. A high score on the social support scale indicates greater perceived emotional and instrumental support. Table 4 displays measures of central tendency and variability for the emotional support and instrumental support subscales in the group without hearing difficulty. The scores in the table below indicate that on average, the group without hearing difficulty felt they have high levels of emotional support, but only fair levels of instrumental support.

**Table 4.** Social support statistics of group without hearing difficulty.

Measure	Emotional support scale	Instrumental support scale
Mean	36.6	27.3
SD	3.0	7.9
90% range	32-40	18-37

Table 5 displays scores for the six subscales for each participant in the group with cochlear implants. For both the emotional support and instrumental support subscales, four

**Table 5.** Total scores for all subscales in the group with cochlear implants.

CI Participant	Emotional support scale score	Instrumental support scale score	Friendship scale score	Loneliness scale score	Perceived rejection scale score	Perceived hostility scale score
CI1	27	34	29	9	14	20
CI2	32	30	26	15	24	17

CI3	39	22	30	11	9	13
CI4	36	32	12	9	10	9
CI5	40	40	40	5	8	11

of the five participants with cochlear implants fell within the 90% ranges for the group without hearing difficulty. The score for one participant with a cochlear implant, CI1, fell below the 90% ranges of the group without hearing difficulty in the emotional support subscale, suggesting that the individual experiences less emotional support than the group without hearing difficulty. For the instrumental support subscale, one participant with cochlear implants, CI5, fell above the 90% ranges for the group without hearing difficulty, suggesting that the individual experiences more instrumental support than the group without hearing difficulty.

### *Social Companionship*

The social companionship scale consisted of two subscales: friendship and loneliness. The maximum possible score for the friendship subscale was 40, with a high score indicating greater availability of companions. The maximum possible score for the loneliness subscale was 25, with a high score indicating greater perceived loneliness. Table 6 displays measures of central tendency and variability for the friendship and loneliness subscales in the group without hearing difficulty. The mean scores in this table indicate that the group without difficulty felt that they had good availability of companions and low levels of perceived loneliness.

**Table 6.** Social companionship statistics of group without hearing difficulty.

<b>Statistic</b>	<b>Friendship scale</b>	<b>Loneliness scale</b>
Mean	32.6	10.2
SD	4.1	2.6
90% range	26-39	5-14

As can be seen from the scores in Table 5, three of the participants with cochlear implants fell within the 90% ranges of the group without hearing difficulty for the friendship subscale. One participant with a cochlear implant, CI4, fell below the 90% range of the group without hearing difficulty, and one participant with a cochlear implant, CI5, fell just above the 90% range for the group without hearing difficulty. These results suggest that one participant with cochlear implants (CI4) experienced less availability of companions than the group without hearing difficulty, and one participant with a cochlear implant (CI5) experienced greater availability of companions than the group without hearing difficulty. For the loneliness subscale, the scores of four of the five participants with cochlear implants fell within the 90% range of the group without hearing difficulty. One participant with a cochlear implant, CI2, fell above the 90% range for the group without hearing difficulty, indicating that this participant is subjectively lonelier than the participants in the group without hearing difficulty.

#### *Social Distress*

The social distress scale consisted of two subscales: perceived rejection and perceived hostility. The maximum possible score on each subscale was 40; a high score indicated greater perceived rejection and hostility. Table 7 displays measures of central tendency and variability for the perceived rejection and perceived hostility subscales in the group without hearing

difficulty. The results of the table below indicate the group without hearing difficulty felt low levels of perceived rejection and perceived hostility.

**Table 7.** Social distress statistics of group without hearing difficulty.

<b>Measure</b>	<b>Perceived rejection scale</b>	<b>Perceived hostility scale</b>
Mean	15.4	14.9
SD	4.5	3.9
90% range	8-22	8-20

As indicated in Table 5, all of the perceived rejection scores for the participants with cochlear implants fell within the 90% range for the group without hearing difficulty. These results suggest that both the participants with cochlear implants and the participants without hearing difficulty do not perceive rejection from their companions. Similarly, for the perceived hostility subscale, all of the scores for the participants with cochlear implants fell within the 90% range for the group without hearing difficulty. These results suggest that both the participants with cochlear implants and the participants without hearing difficulty do not subjectively feel rejected by their companions.

## DISCUSSION

The purpose of this study was to examine social relationships in young adults with cochlear implants and to determine the presence of any significant differences in social relationships between the group of individuals with cochlear implants and the group of individuals without hearing difficulty. The secondary study purpose was to predict, in each group, social relationship performance based on the demographic variables.

### *Social Support*

In the NIH Toolbox, social support is defined as the availability of aid given in times of need by individuals. The two types of social support examined were emotional support and instrumental support. Emotional support is the accessibility of individuals who are able to listen to an individual's issues with empathy and care. Instrumental support is the perceived availability of individuals to help in the completion of daily tasks if necessary (Cyranowski et al., 2013). In the group of participants with cochlear implants, four of the five participants fell within the 90% ranges of the group of participants without hearing difficulty for social support scale. This indicates that the participants with cochlear implants feel similar levels of social support as the participants without hearing difficulty.

### *Social Companionship*

In the NIH Toolbox, two components of companionship were examined: friendship and loneliness. The NIH Toolbox defines friendship as the availability of acquaintances and loneliness as the subjective feeling of social isolation (Cyranowski et al., 2013). In the group of participants with cochlear implants, three of the five participants fell within the 90% range of the participants without hearing difficulty for the friendship subscale and four of the five participants fell within the 90% range for the loneliness subscale. These results suggest that the participants

with cochlear implants may have a different perception of their friendships than the participants without hearing difficulty.

### *Social Distress*

In the NIH Toolbox, social distress is defined as the degree an individual identifies his or her daily social interactions as negative. Two components of social distress that are tested in the NIH Toolbox include perceived hostility (the degree to which an individual believes people argue with or criticize him or her) and perceived rejection (the degree to which an individual believes people do not like him or her). In the group of participants with cochlear implants, all five of the participants fell within the 90% ranges of the participants without hearing difficulty for both subscales. The results suggest that the all of the participants in the study, persons with cochlear implants as well as individuals without hearing sensitivity, perceive low levels of perceived rejection and perceived hostility.

One participant in the group of participants with cochlear implants, CI5, fell above the 90% range of the participants without hearing difficulty in two of the six subscales tested: the instrumental support and friendship subscales. This participant may serve as outlier in the data. Although this participant does not differ from the other participants in years of cochlear implant use, primary method of communication, living situation, or educational status, the participant was the only male in the group of participants with cochlear implants. Overall, the group of the participants with cochlear implants had very similar scores to the group of participants without hearing difficulty on almost all subscales. The friendship subscale was the only subscale in which two of the five participants with cochlear implants fell outside of the 90% range of the participants without hearing difficulty. One participant fell below the 90% ranges and one participant fell above the 90% ranges, indicating that the findings for the participants with

cochlear implants may be more variable than the findings for the participants without hearing difficulty. These results may suggest that friendship is one important area that users of cochlear implants may differ from individuals without hearing difficulty.

A significant limitation of the study was the low response rate (4%) of the group of participants with cochlear implants. The low response rate resulted in a very small sample size of participants with cochlear implants, so this study sample cannot be considered as representative of the larger population of young adults with cochlear implants. Because of the very small sample size of young adults with cochlear implants, statistical analysis of differences in means or medians between the groups could not be accomplished. One reason for the low response rate was many of the envelopes were returned due to the address being incorrect, suggesting that many individuals moved after being implanted. Another reason for the low response rate may be the lack of incentive to participate in the study. Without an incentive, participants may not have felt motivated to complete the questionnaire, even though pre-stamped and pre-addressed envelopes were included with the survey.

Another limitation of the study was the homogeneity in characteristics of the group without hearing difficulty. This finding precluded statistical analysis of correlations, for the group with normal-hearing sensitivity, between the participant demographic characteristics and performance on the NIH Toolbox relating to social relationships.

This investigation represents the first application of the NIH Toolbox to individuals with cochlear implants. The NIH Toolbox has been demonstrated to be a sensitive scale for assessing social relationships in individuals without cochlear implants. When the NIH Toolbox is administered on individuals with cochlear implants, it should be administered in conjunction with other questionnaires that assess quality of life in users of cochlear implants (e.g., the

Nijmegen cochlear implant questionnaire (developed by Hinderink, Krabbe, & Van Den Broek, 2000)) so that social relationships can be understood within the context of quality of life.

Future research should include replicating this study on a larger sample and with an incentive to participate in the study. The NIH Toolbox questionnaire also should be used in conjunction with another quality of life questionnaire. Perhaps the response rate in individuals with cochlear implants would increase if the group-administered questionnaire method rather than the mail questionnaire method is employed.

## **CONCLUSION**

The results of this study indicate that young adults with cochlear implants generally do not differ in their perception of social support, social companionship, and social distress in comparison to their peers that do not experience hearing difficulty. Despite the fact that not all individuals with cochlear implants communicate verbally, the ability to create and maintain social relationships is similar in individuals with and without cochlear implants.

## **Young Adult Participants for Research Study**

**The criteria for participation in the study are as follows:**

- **Your age is between 18 and 30 years**
- **You do not experience any hearing difficulty**
- **You do not wear hearing aid(s) or cochlear implant(s) or other hearing assistive devices**

**The study purpose is to examine social support, social companionship, and social distress in young adults with cochlear implants and in young adults without hearing difficulty.**

**Your involvement would consist of completing an anonymous survey (in any location you choose). We estimate that the survey will take about 30 minutes to complete. The survey will have questions relating to social support, social companionship, social distress, your age and gender and other socio-demographic variables. The results of this study may broaden the knowledge base on psycho-social function in young adults with deafness who use cochlear implants so that their psycho-social needs can be better met.**

**If you would like further information about the study, please contact Arta Ljubanovic (Co-Investigator and Research Coordinator) at [akovacevic@gradcenter.cuny.edu](mailto:akovacevic@gradcenter.cuny.edu).**

**If you wish to participate in the study, please pick up the packet with the survey, consent form, and envelopes in room 7107.**

## APPENDIX B: QUESTIONNAIRE FOR PARTICIPANTS WITHOUT HEARING

### DIFFICULTY

**Questionnaire: Please read each statement and then decide how much each applies to you in the past month. In the past month, please rate how often...**

<b>I have someone who understands my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone who will listen to me when I need to talk</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel there are people I can talk to if I am upset</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to talk with when I have a bad day</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone I trust to talk with about my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone I trust to talk with about my feelings</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I can get helpful advice from others when dealing with a problem</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to turn to for suggestions about how to deal with a problem</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Someone is around to make my meals if I am unable to do it myself</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to take me shopping if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to help me if I'm sick in bed</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to pick up medicine for me if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to take me to the doctor if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>There is someone around to help me if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always

<b>I can find someone to drive me places if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I can get help cleaning up around my home if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I get invited to go out and do things with other people</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have friends I get together with to relax</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>There are people around with whom to have fun</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I can find a friend when I need one</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel like I have lots of friends</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have friends who will have lunch with me when I want</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel close to my friends</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel like I'm part of a group of friends</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel alone and apart from others</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel left out</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel that I am no longer close to anyone</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel alone</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel lonely</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always

**In the past month, please rate how often people in your life...**

<b>Don't listen when I ask for help</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like my problems aren't that important</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Let me down when I am counting on them</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like they don't have time for me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like they don't want to hear about my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like they don't care about me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always

<b>Act like they can't be bothered by me or my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Avoid talking to me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Argue with me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Act in an angry way toward me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Criticize the way I do things</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Yell at me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Get mad at me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Blame me when things go wrong</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Act nasty to me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Tease me in a mean way</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always

**How old are you?** \_\_\_\_\_ years

**What is your gender?** Male \_\_\_\_\_ Female \_\_\_\_\_

**Which of the following best describes your ethnic background?**  
 African American  
 Asian  
 White Non-Hispanic  
 Hispanic/Latino  
 Other: \_\_\_\_\_

**Which of the following best describes your marital status?**  
 Single  
 Married or living with partner  
 Divorced or separated

**Which of the following describes your employment situation?**  
 Employed full-time  
 Employed part-time  
 Self-employed  
 Not employed

**Which of the following best describes your academic status?**  
 Full-time student  
 Part-time student  
 Not currently a student

**What is the highest level of education that you have completed?**  
 Some high school or less  
 High school/GED  
 Some college  
 Trade/technical school  
 College graduate  
 Some post college  
 Advanced degree

**Which of the following best describes your living situation?**  
 Live with parents or relatives  
 Live with roommates (not parents or relatives) in a dormitory  
 Live in a non-dormitory residence with roommates (not parents or relatives)  
 Live alone  
 Other (specify) \_\_\_\_\_

**Including yourself, how many people live with you?**

\_\_\_\_\_

**How many children do you have?**

\_\_\_\_\_

**APPENDIX C: QUESTIONNAIRE FOR PARTICIPANTS WITH COCHLEAR  
IMPLANTS**

**Questionnaire: Please read each statement and then decide how much each applies to you in the past month. In the past month, please rate how often...**

<b>I have someone who understands my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone who will listen to me when I need to talk</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel there are people I can talk to if I am upset</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to talk with when I have a bad day</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone I trust to talk with about my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone I trust to talk with about my feelings</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I can get helpful advice from others when dealing with a problem</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to turn to for suggestions about how to deal with a problem</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Someone is around to make my meals if I am unable to do it myself</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to take me shopping if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to help me if I'm sick in bed</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to pick up medicine for me if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have someone to take me to the doctor if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>There is someone around to help me if I</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always

need it

<b>I can find someone to drive me places if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I can get help cleaning up around my home if I need it</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I get invited to go out and do things with other people</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have friends I get together with to relax</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>There are people around with whom to have fun</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I can find a friend when I need one</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel like I have lots of friends</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I have friends who will have lunch with me when I want</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel close to my friends</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel like I'm part of a group of friends</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel alone and apart from others</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel left out</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel that I am no longer close to anyone</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel alone</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>I feel lonely</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always

**In the past month, please rate how often people in your life...**

<b>Don't listen when I ask for help</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like my problems aren't that important</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Let me down when I am counting on them</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like they don't have time for me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always
<b>Act like they don't want to hear about my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 – Always

<b>Act like they don't care about me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Act like they can't be bothered by me or my problems</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Avoid talking to me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Argue with me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Act in an angry way toward me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Criticize the way I do things</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Yell at me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Get mad at me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Blame me when things go wrong</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Act nasty to me</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always
<b>Tease me in a mean way</b>	1 - Never	2 - Rarely	3 - Sometimes	4 - Usually	5 - Always

<b>How old are you?</b>	_____ years of age
<b>What is your gender?</b>	Male _____ Female _____
<b>Which of the following best describes your ethnic background?</b>	African American Asian White Non-Hispanic Hispanic/Latino Other: _____
<b>Which of the following best describes your marital status?</b>	Single Married or living with partner Divorced or separated
<b>Which of the following describes your employment situation?</b>	Employed full-time Employed part-time Self-employed Not employed
<b>Which of the following best describes your academic status?</b>	Full-time student Part-time student Not currently a student
<b>What is the highest level of education that you have completed?</b>	Some high school or less High school/GED Some college Trade/technical school College graduate Some post college Advanced degree

**Which of the following best describes your living situation?**

Live with parents or relatives  
 Live with roommates (not parents or relatives) in a dormitory  
 Live in a non-dormitory residence with roommates (not parents or relatives)  
 Live alone  
 Other (specify) \_\_\_\_\_

**Including yourself, how many people live with you?** \_\_\_\_\_

**How many children do you have?** \_\_\_\_\_

**What method(s) of communication do you use? Circle all that apply:**

Sign language only  
 Sign language plus speech  
 Speech only

**What is your primary method(s) of communication? (Circle only 1)**

Sign language  
 Speech

**Which best describes your circle of friends?**

Most are normal-hearing and communicate using speech  
 Most of them are deaf and communicate using sign language  
 Most of them have cochlear implants or hearing aids  
 Other (please specify) \_\_\_\_\_

**In which ears do you a cochlear implant? (circle all that apply)**

Left                      Year of Implantation: \_\_\_\_\_  
 \_\_\_\_\_  
 Right                     Year of Implantation: \_\_\_\_\_  
 \_\_\_\_\_

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