

Adjustment and Other Factors Related to High School Aged Students Identified as Hearing Impaired

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ABSTRACT

Healthy social, emotional and cognitive development of deaf children depends upon complex interactions between the many individual and environmental factors associated with deafness. Deaf children and adolescents have been reported to possess greater rates of mental health problems than hearing children and adolescents. Dysfunction in one or more systems impacts the other systems in the child's life. Dysfunction increases the risk for maladjustment and poor mental and emotional health. Deaf youth are at greater risk for disruption in interactions between the child and their environment and therefore are also at greater risk for social and emotional problems. Data from the National Longitudinal Study of Adolescent to Adult was used to gain a better understanding of deaf student's feelings of acceptance at school, reported positive feelings, academic grades and future plans. Twelve deaf students were included in a total of 456 youth participants from across the county. No significant differences were found between the two groups.

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1. INTRODUCTION

Understanding and expressing emotion influences the way people interact with each other. Emotions play an important role in everyday life. The simplest thing such as a smile can be interpreted in multiple different ways: is it a joyful smile, a sarcastic smile, or an evil smile? Dyck and Denver [1] argue that children who are born with a hearing impairment may experience a delay in acquiring theory of mind, while Hughes and Leekam [2] suggest that theory of mind development most likely results from children's complex social interactions through various types of social experiences. Peterson, O'Reilly, and Wellman [3] note that theory of mind for all children, regardless of hearing abilities, is refined through one's continued experiences of childhood and adolescence.

Further research by Peterson, Slaughter, Moore, and Wellman [4] suggests that one's development of theory of mind was related to their social skills when interacting with peers. Dyck and Denver [1] noted, "early studies indicated that deaf children make more errors in recognizing facial expressions of emotions than do hearing children". Being unable to recognize facial expressions can affect "social competence, peer-rated popularity, and academic achievement" [5]. Later research provides ancillary evidence that deaf and hard-of-hearing children experience social difficulties through adolescence are less likely to be popular among their nondisabled peers [4].

To further amplify this problem, deaf children are frequently isolated from their hearing peers in the educational system [6]. This is most likely to maximize the benefit from the tools available to deaf children and incorporate sign language into the learning process. Due to the passing of PL 94-142, there has been an

increase in the need to place hard-of-hearing children in the least restrictive environment and integrate them with typically hearing peers [7].

Holt [8] found that the type of educational placement for children with a hearing impairment was correlated to that child's academic achievement. Unfortunately, this integration has also been correlated with social difficulties, including rejection by normal peers and a lack of social interaction in the educational setting [9]. In order to address the aforementioned issues, a frequent practice is the placement of hearing impaired students in an inclusive classroom. The basic goals consist of improving deaf children's intellectual development and social development as well as acquiring communication and language skills to better adapt to their surroundings [7]. Despite these attempts however, deficits may persist and warrant further attention. The integration has affected students with hearing impairments and deafness who display persistent difficulties when placed in inclusive educational programs [7].

Still, other research has found that students placed in more intensive (i.e., special schools) settings for education may experience the poorest academic and social outcomes [10]. Earlier research by Antia, Jones, Luckner, Kreimeyer, and Reed [11] supports this notion; the researchers found that hard-of-hearing students educated in a general education setting had ratings of similar academic and social skills proficiency as their non-disabled peers. The ratings in the latter study were completed by teachers and hard-of-hearing students. Similarly, research conducted by Wolters, Knoors, Cillessen, and Verhoeven [12] found that deaf students educated in inclusive classrooms were more socially adjusted than deaf students educated in special education settings. Interestingly, the researchers found that deaf girls used appropriate social skills to compensate for poorer communication skills than did deaf boys, while deaf boys were found to have lower social acceptance [12].

An important question to ask is what other difference exists between hearing impaired children and typical children other than hearing ability? The field of hearing impairments and deafness has made advancements as cochlear implants have become increasingly popular for use as the technology continues to advance. Further, many children who receive the implant are more easily able to attend regular school with minimal assistance [5]. However, Dammeyer [13] noted that psychosocial difficulties may persist, even with the support of cochlear implants and language-based interactions. Beyond elementary and secondary educational programming, a diagnosis of deaf or hard-of-hearing in adulthood has been associated with social-emotional dysfunction at rates dissimilar of typically hearing individuals in clinical populations. In particular, notable variations were found across psychiatric disorders, such as bipolar disorders, impulse control disorders, anxiety disorders, attention-deficit/hyperactivity disorder, and substance use disorders [14].

Dedicated parents and families are paramount to the academic and social success of any student with deafness or hearing impairment, as the child's development is strongly correlated to the quality of parent-child interaction [5]. However, Shaver [10] cautioned that many parents "may not be familiar with some of the terminology and methodologies of deaf education". Thus, parents may need to be taught how to best support their child with hearing loss. Interestingly, if a parent or guardian has few or atypical interactions with their child, the child may develop in a way that may further distort that child's typical development. If a parent or guardian limits their interactions with their child and assumes the child does not understand, the child may have few opportunities to develop necessary skills of success in academic or vocational settings. However, this relationship is reciprocal as "a language delay in deaf children might influence the quality of social interactions with relatives and peers" [5].

Children with disabilities are sensitive to people's reactions toward them, which may inadvertently have an impact on children's self-perception [15]. The relationship between attitudes toward deaf students and demographic characteristics, such as age, sex, education, socioeconomic status, and personality traits, has also been investigated. However, research on bullying and cyber bullying has found mixed effects. One study suggests that both hard-of-hearing and hearing students experience similar types prevalence rates of these forms of aggression [16], while a later study found that hard-of-hearing students experience such aggression at a rate three times higher than students who are typically hearing [17]. It appears, however, that the more included individuals with hearing impairments are into general types of activities, the more positive attitudes they felt toward themselves and their peers [11].

Prior research has indicated that inclusive classrooms that include a traditional education teacher and a special education teacher can be beneficial to the learning processes of the entire class, not just those with disabilities [7],[15],[18]-[20]. Studies of social interaction training programs [7],[21], have attempted to increase the socialization of children hearing impairments, as well as those whom are typically hearing. It has been found that following interventions, typically hearing children interact less with their hearing impaired peers. Xie, Potmesil, and Peters [22] noted that social skill training assists hard-of-hearing children with the attainment and development of social skills, which are critical toward positive social-emotional adjustment and development.

The goal of the present study is to gain a better understanding of one's acceptance at school in relation to peer and adult interactions for students with hearing impairments. A further aim of this investigation is to gain a better understanding of these children's perceptions of acceptance by their family members.

2. RESEARCH METHOD

2.1. Participants

The participants for the current investigation were part of a national longitudinal study. Participants in the study ranged in age from 13 to 19 years of age ($M = 14.82$, $SD = 1.71$), including 7 (1.5%) students with hearing impairment and 449 (98.5%) students with typical hearing. Of the 456 total students, $n = 246$ were female and $n = 210$ were male. As typical with low-incidence disabilities, few students disclosed deafness within the survey ($n = 12$).

2.2. Instrumentation

The researchers in the study, The National Longitudinal Study of Adolescent to Adult Health [23], conducted four in-home interviews with participants. The study information can be located at <http://www.cpc.unc.edu/projects/addhealth>. The data corresponds to participants' economic, psychological, psychological, and social health. The information includes data in specific contexts including community, school, peer, and family situations.

Items used for the current investigation were items that included grades (GPA), the participant's plans regarding future college attendance, the participant's feelings, and the participant's level of feeling cared for and the participant's level of feeling accepted at school. The future plans factor items included the following items:

1. Want to go to college—H1EE1
2. Likely will attend college—H1EE2
3. The feeling factor items included items from Section 10 in which participants indicated how often was each of the following true during the last week?
4. You were bothered by things that usually don't bother you—H1FS1
5. You didn't feel like eating, your appetite was poor—H1FS2
6. You felt that you could not shake off the blues, even with help from family/friends—H1FS3
7. You felt that you were just as good as other people—H1FS4
8. You had trouble keeping your mind on what you were doing—H1FS5
9. You felt depressed—H1FS6
10. You felt that you were too tired to do things—H1FS7
11. You felt hopeful about the future—H1FS8
12. You thought your life had been a failure—H1FS9
13. You felt fearful—H1FS10
14. You were happy—H1FS11
15. You talked less than usual—H1FS12
16. You felt lonely—H1FS13
17. People were unfriendly to you—H1FS14
18. You enjoyed life—H1FS15
19. You felt sad—H1FS16
20. You felt that people disliked you—H1FS17
21. It was hard to get started doing things—H1FS18
22. You felt life was not worth living—H1FS19
23. The feeling cared for factor items included the following:
24. How much do you feel that adults care about you?—H1PR1
25. How much do you feel that your teachers care about you?—H1PR2
26. How much do you feel that your parents care about you?—H1PR3
27. How much do you feel that your friends care about you?—H1PR4
28. How much do you feel that people in your family understand you?—H1PR5
29. How much do you feel that you want to leave home?—H1PR6
30. How much do you feel that you and your family have fun together?—H1PR7
31. How much do you feel that your family pays attention to you?—H1PR8
32. Acceptance at School factor items included the following items:
33. You feel close to people at your school—H1ED19
34. You feel like you are part of your school—H1ED20
35. Students at your school are prejudiced—H1ED21

36. You are happy to be at your school—H1ED22
37. The teachers at your school treat students fairly—H1ED23
38. You feel safe in your school—H1ED24

2.3. Procedure

Researchers extracted data in the unrestricted data set for the analysis in the current investigation. The data obtained from the answers was uploaded into SPSS and grouped into factors. These factors included grades (GPA), the participant's plans regarding future college attendance, the participant's feelings, and the participant's level of feeling cared for and the participant's level of feeling accepted at school. Building these factors was possible by grouping questions from the interviews that gave similar responses. Each factor was constructed by taking the mean of the responses in the respective category.

3. RESULTS AND ANALYSIS

The current investigation analyzed the relationship between grades, feelings, plans for the future, feeling cared for, and acceptance at school. A reliability analysis of each factor indicated reasonably good Cronbach's α levels. These results are presented in Table 1.

Table 1. Reliability estimates for factors

Variable	α
Plans for the Future	0.855
Feelings	0.643
Feeling Cared For	0.640
Acceptance at School	0.590

An independent samples t-test across the two groups (hearing impaired or not hearing impaired) was conducted on each factor. The results reveal no significant results (Table 2).

Table 2. Analysis of Factors Across Groups

Factor	Hearing Impaired = 1	N	Mean	Std. Deviation	t
Plans for Future ¹	0	446	3.096	0.494	-0.103
	1	12	3.111	0.957	
Feelings	0	448	0.889	0.300	1.185
	1	13	0.789	0.333	
Feeling Cared For	0	446	3.798	0.517	0.902
	1	13	3.667	0.446	
Accepted at School	0	434	2.400	0.595	-0.559
	1	13	2.500	0.743	
GPA	0	433	2.242	0.757	-1.845
	1	13	2.635	0.754	

Note: The "1" indicate that an adjustment was made due to violation of homogeneity of variance prior to conducting the t test analysis.

While Table 2 reveals no significant differences between the two groups on any of the factors examined, it is interesting to note that the students representing the hearing impaired group have higher GPAs than students in the hearing group ($p = .066$). The lack of statistical significance at the $\alpha = .05$ level is likely due to the small sample size of the hearing impaired student group.

4. CONCLUSION

In opposition of the researchers' original hypotheses, the current investigation displayed that considerable differences did not exist between hearing impaired students and students with typical hearing when comparing their feelings of academic grades, feelings of acceptance, personal feelings, and school acceptance. These findings may suggest that large differences in adjustment do not exist between the two groups. There are other possibilities as well, which leads to the need for more extensive research and further investigation of deaf students.

Possible limitations may exist in the limited number of hearing impaired students who possessed valid data. Although, difficulties may exist in achieving valid data for hearing impaired youth due to its classification of low incidence disability affecting only a small portion of school-age students. Specific impairments in hearing were not reported by the investigators of the National Longitudinal Study of Adolescent to Adult Health. Furthermore, our data did not report where on the continuum of services the participants received their educational services.

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Karen Larwin, Ph.D. acquired her Ph.D. from Kent State University in Evaluation, Measurement, and Statistics in 2007. She currently serves as an Associate Professor at Youngstown State University. Dr. Larwin has participated as the evaluator on multiple federal and statewide grant supported projects over the past decade. Her primary teaching focus is in the area of research methods, quantitative methods, evaluation, and measurement. She is currently a Chair for the American Evaluation Association's Quantitative Methods: Theory and DesignTIG.