Critical Review:
What Barriers Exist When Transitioning to Work or Post-Secondary Education Following High School?

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It is recognized that teenagers and young adults with hearing loss face challenges when transitioning to work or post-secondary education (Warick, 1994). In order to best support the transition process one needs to understand and know what barriers are being faced. The aim of this paper is to investigate what possible factors may limit the transition of today's youth towards successful integration within the workforce or in post secondary education. Overall, the studies provided a description of some of the physical and perceptual barriers experienced by hearing impaired youth. Investigating this question will help inform further research and clinical practice towards developing strategies and support services.

Introduction

Hearing loss (HL) is an invisible disability (Brookhouser, 1996). As such, people with HL tend to be treated and viewed the same as the normal hearing population (Warick, 1994). However, hearing loss impacts the way one connects and communicates with other people and the world around them. Therefore, due to the nature of the disability, individuals with HL encounter different experiences than the normal hearing population (Warick, 1994). This raises a particular dilemma for teenagers and young adults with HL.

In the current educational context, youth with various degrees of HL (i.e. mild to profound) and are also oral communicators, are being taught in regular classes (Punch, Creed, & Hyde, 2005). This means they rely on their residual hearing supplemented with speech reading and possibly hearing instruments, while at the same time learning with their normal hearing peers (Punch, Creed, & Hyde, 2005). As previously stated, despite being in the same environment people with hearing loss may encounter the experience differently. This especially holds true for those being mainstreamed in school. From kindergarten to high school some school boards, government run agencies, clinicians, and parents ensure to the best of the their ability that students with hearing loss have accessibility to support services. This can include providing an itinerant teacher, personal FM (frequency modulated) system, and access to a speech language pathologist, tutoring services, and note takers (Warick, 1994). However, when leaving high school, one can no longer rely on the support services that they previously had access to because these services specifically target students who are in grade twelve or below (Warick, 1994). As one with hearing loss transitions to either the workforce or post-secondary education (PSE) the responsibility for indentifying their needs and seeking proper support is placed on them. This can be viewed as a potential barrier in the transitioning process.

For the purpose of this review a barrier is defined as events or conditions within the person or his/her environment that makes progression difficult (Punch & Hyde, 2006)

For young people with a hearing impairment, the recognized difficulties with communication combined with possible physical and perceptual barriers may form a potential hindrance on successful outcomes in either an educational or vocational setting (Punch, Hyde, Creed, 2004). Examining existing barriers constitutes an important area that needs to be explored and addressed further. In doing so it has the potential to assist today's hearing impaired youth as they transition from high school to the next step in their life.

Objectives

The primary objective of this paper is to investigate what possible difficulties youth with hearing loss may encounter as they transition from secondary education to either the workforce or post secondary education.

Methods

Search Strategy

Computerized databases, including Google Scholar, PubMed, SCOPUS, and ERIC were searched using the following keyword search strategy: [(hearing loss) AND (transition) or (barriers) AND (school) OR (education) OR (student)] OR [(hearing loss) AND (youth) OR (barriers) AND (career) OR (work) OR (employment)]

Reference lists in selected journal articles were also examined for any additional relevant articles.

Selection Criteria

Studies selected for the inclusion in this critical review were North American, Eastern European, and Australian findings. This criterion was used because relevant information from a cultural context was desired. Additionally, articles that specifically discussed difficulties or barriers were examined.

Data Collection

Results of the literature search yielded the following types of articles congruent with the aforementioned selection criteria: (3) survey based (2) qualitative

Results

HIGH SCHOOL vs. POST-SECONDARY EDUCATION

Warick (1994) created a large-scale survey to question Canadian youth about their current educational experiences, in relation to their hearing loss. For the purpose of this study, the target population was defined as being between the ages of thirteen and twenty-five, have hearing loss, and rely on oral means of communication.

The survey was developed in consultation with members of the Canadian Hard of Hearing Association (CHHA), a national consumer group. The completed survey was then field tested and distributed nationally through CHHA's magazine, *Listen*. CHHA associates also handed out the survey countrywide. After approximately a year and half, 290 replies across nine provinces were collected. The sample consisted of 172 high school students, 67 students in PSE, 9 employed, 13 did not indicate their current situation, and 29 were in grade school. While a great deal of time was given to answer and collect the survey one must question how representative the survey is from a national standpoint. Closer examination reveals that Ontario and British Columbia each represented 20% of the responses. Where less than 1% of responses can be associated to experiences in Manitoba. Recognizing that educational programs are provincially funded one must acknowledge that the experiences within an educational context may differ due to reduced financial support at a provincial level. Therefore, some school across country may have received less funding for services.

Results indicated that the most popular service used by the high school students was itinerant teachers. This was indicated by 55% of the participants. Almost half of the 172 high school students used FM systems and a tutor either separately or congruently. Other forms of supports used but to a lesser degree include, the use of a note taker, speech language pathologist, oral and signing interpreters, and electronic note taking. Again, a national description of the results are questionable as the resources cited above may not have been available to all students across Canada and thus the amount of use of such services may have been higher had it been available to them.

Interestingly, when comparing services used by those in PSE differences were observed. First and foremost, itinerant teachers, the most common form of support used by high school students is a service that is not available in a university or college setting. This leads to one of the first observed barriers, the lack of consistency with regards to services available. As previously stated it can be inferred that funding is a barrier to the successful integration of students with hearing loss. While high schools are provincially run, post secondary institutions in Canada are privately run. Thus, available financial supports towards such services as itinerant teachers are limited as one progress in education level. However, it was indicated that a disability service provider was available in some universities and colleges. The issue is whether these providers are as educated in the realm of hearing loss as an itinerant teacher would be. If not, a different degree and form of support would be provided.

Another observed difference between those in high school and those who were furthering their education was the use of a speech-language pathologist (SLP). Thirty percent of high school students regularly saw an SLP while only seven percent of those in PSE were seeing an SLP. One must consider if the difference in use of supports during this transition is due to student's preferences, a lack of resources, or if there is minimal information being given with regards to services or supports available, this constitutes as another potential barrier.

A longitudinal study would have been favorable when making the above comparisons. As this studies design limits ones ability to make any assumptions with regards to correlations of services used before and after high school.

One comparison, which demonstrates a continuation of difficulty during the transition process, is ongoing issues in school. Over 90% in both groups reported difficulties in class. The most common issue was hearing lecturers particularly when they did not face the student. Emphasis on difficulty was placed when the students had a new or substitute lecturer because they had to learn to speechread a new person. Failing to accommodate the students was also reported as it was stated that some dealt with lecturers who refused to wear FM systems.

Lecturers were not the only complaint within the realm of the classroom. Participants also stated that they had difficulty hearing classmates and staff. This was predominantly difficult during group discussions. Furthermore, an identified problem area for the participants was listening to slide shows, films that were not captioned, and tape-recorders.

While these results are somewhat outdated the above issues expressed could easily be difficulties that exist in the classroom today. While some of the findings did suggest that some students with hearing loss are coping well in both high school and PSE settings, over all the participants are encountering difficulties associated with their hearing loss.

CAREER BARRIERS

Punch, Creed, and Hyde (2006) examined perceived career barriers of 65 high school students with various degrees of hearing loss. They contended that examining career-associated barriers is an important construct within the realm of hearing loss. Furthermore, it was argued that hearing related barriers may establish an anxious and unconfident approach in the decision making process. Thus, barriers can play a key role in career development.

Participants in this study each completed modified versions of McWhirter's (1997) Perceptions of Barriers scale and a 32-item unnamed scale created by Luzzo and McWhirter (2001). Unfortunately, both questionnaires were designed with the intention of examining the career development of women and people of diverse ethnic backgrounds, not individuals with hearing loss. In an attempt to correct for this bias the researchers eliminated ethnic and gender oriented questions. Furthermore, to make the questionnaire more representative for the hearing impaired, 6 hearing-related items were added to the scale. These items were designed based on previous literature and discussions with people with hearing loss. It was determined the internal reliability coefficient for the now 13-item career barriers scale was .82, and the 6-item hearing-related barriers scale was .84. Thus, one can argue the operational definition of barrier for the purpose of this study is a good representation for the population.

Of the original 65 participants, 12 were later given an in-depth semi-structured interview. When seeking participants to be interviewed a focus was placed on grade 11 and 12 students as it was felt that they would have been more likely to give thought towards their future after high school. However, the researchers did not indicate why the 12 students who were interviewed were selected or if they were the only ones willing to participate in this second component of the study. This leads one to question if themes found during interviews are truly representative of the original 65 students.

Results from the questionnaires indicated that a perception of career barriers is significantly ($p < .001$) associated with the perception of hearing-related barriers. This suggests students who perceive more career barriers also perceive that they struggle as a result of their hearing loss. In an attempt to further investigate this relationship items from the aforementioned scales were recoded so that response of strongly agree meant a barrier existed and strongly disagree inferred no barrier was present. Using this strategy revealed that "people not understanding my hearing loss" (68%), "using the phone" (51%), and "my hearing loss" (48%) were the most frequent hearing related barriers reported. While "talking/listening to new people" (34%), "people's attitudes about hearing loss" (34%), and "having to work in groups" (25%) were the least frequently reported hearing-related barriers. However, one needs to consider that these results are based on responses of high school students and they may not be aware of the importance of teamwork, attitudes, and communicating with new people in both the workforce and PSE.

The semi-structured interviews offered an opportunity to discuss ways in which the students perceived potential barriers, how they felt about them, and ways in which their perception of the barrier influences their career choices. Responses varied, however, the barrier most frequently mentioned by students were related to their hearing loss and to a large extent were related to the hearing-related barriers that had been in the questionnaire. Unfortunately, the researchers did not indicate the type of analysis they used when examining the interviews. One may assume that grounded theory was used as they discussed recurrent themes.

Several students discussed struggling with people's attitudes and people not understanding hearing loss. It was expressed that they were concerned about leaving a relatively supportive high school environment where people knew about their hearing loss. Furthermore, participants consistently mentioned their concern that people do not understand the functional effects of hearing loss. One person stated, *" people think because I can hear a little bit I should be able to hear, like, everything they say, every word, but I might miss some and then they might not want to repeat it, you know."* (pp.229). This perceived barrier does reflect earlier findings as "people not understanding" was the most frequent item selected in the hearing-related barriers scale.

Working in groups was also a perceived challenge, more specifically when trying to follow a conversation. The need to incorporate active speechreading made discussion fatiguing, difficult, and not enjoyable. This barrier impacts both formal (i.e. meetings) and informal (i.e. social gatherings) aspects of a vocational setting. While there are technological and communicative strategies that can be used to compensate for the difficulties few participants were aware of them.

Finally, students indicated that they had ruled out some career choices because of their hearing loss. However, several participants did not research their field of interest nor were they told about workplace accommodations. Therefore not being properly educated about career options is relation to their hearing is a barrier faced by students with hearing loss.

Overall, the findings indicate that hearing-related barriers in association to career development are present. Although the sample size was relatively small the aim of the qualitative portion was not to generalize but to support earlier findings. This was clearly done as students discussed attitudinal, physical, and environmental barriers that they felt limited their ability to successfully transition to any career of their choice.

UNIVERSITY BARRIERS

Hyde and his colleges (2009) reported the experiences of students with various degrees of hearing loss that attended Queensland University over the past twenty years. The key variable in this sample is that during these twenty years the university offered a support program specifically tailored for students with hearing loss. This is an important component as few universities offer such services. While the main focus of this study is to evaluate the supports offered, the researchers recognized that examining supports is important because of the functional, environmental, and attitudinal barriers faced by students with hearing loss. As such, Hyde et al. (2009) also examined barriers. For the purpose of this paper only this component of the study will be discussed.

The university reported that 262 students with hearing loss attended the institution in the past twenty years. The sample for this study consisted of 72 participants, 70% of which graduated within the last five years. This means 190 students may not feel adequately represented by the findings, and thus caution is taken when generalizing results. Participants received a survey that consisted of both forced-choice and open-ended questions. The latter specifically questioned the primary challenges from their time in university.

Results from the open-ended questions revealed students encountered difficulties in the classroom. In particular, a pattern of frustration towards the attitudes and behaviours of professors was expressed. The issues arose when dealing with foreign accents, speaking indistinctly, not using a microphone, speaking while walking around the room or writing on the board, and professors not repeating other student's responses or questions. One student stated, "*Hearing in a large lecture theatre. Some lecturers spoke indistinctly and in spite of sitting close to the front and with aids it was difficult to hear. Sometimes when showing slides there would be no light on his/her face so it was difficult to lip-read."(*pp.92) Furthermore, one student even felt difficulties with professors were so great that (s)he had to learn the material independently.

Poor room acoustics were also mentioned. It was specifically mentioned to be a barrier during tutorials with the combination of classroom noise, chatter, and group discussion occurring at once.

Finally, a barrier that was discussed that no other research has previously mentioned is the idea of social experiences. Numerous participants commented that social aspects of university life, such as being in a group, comprised a great deal of difficulty. As a result, feelings of isolation were frequently described. One person wrote, *"Greatest challenge was mixing with peers-other students-trying not to remain isolated-this was always the challenge. You learn a lot from others and the sharing...These were hard times."* (pp. 93) Additionally, participants discussed difficulties socializing in noisy environments, such as meal hall. While it is difficult to generalize findings the fact is that despite offering a tailored support program for individuals with hearing loss, the students at the university still had challenges transitioning from high school.

Discussion

Based on the Experimental Design Decision Tree the level of evidence of all three studies are a 4. While the discussed research does not allow one to make a compelling argument with regards to the findings, one may argue that because the basis of this research is primarily qualitative in nature the goal is not to provide concrete results. Rather this is an opportunity to begin understanding the challenges experienced by young adults with hearing loss, specifically as they leave high school and transition to the next chapter in their life.

The transition from school to work or higher education can be difficult to negotiate for any young person.

However, students with hearing loss face additional difficulties. The above findings clearly demonstrate that these individuals experience a large spectrum of challenges, perceptually and physically. As such, encountered environmental and attitudinal barriers can impede their success.

Attitudes, accommodations, and accessibility appear to be three main barriers that students in the above studies discussed. With respect to attitudes, students encountered or feared they would encounter hostile and negative attitudes from lecturers, staff, students, and employers. They believed that these individuals lacked an understanding and knowledge with regards to the functional effects of hearing loss. They also feared the number of incidents they would encounter with new people who would not take into account the implications of their hearing loss. This concern reflects the reality they will face as they transition from high school. As their status changes they will no longer be provided with the same support as in secondary education, therefore they need to advocate for themselves.

Many students described difficulties with following conversations in groups and in difficult listening situations. The need to speechread to supplement hearing often made conversations hard and not enjoyable. Participants expressed feelings of frustration and described "giving up" on the task. Furthermore, some students ruled out careers of interest because they felt employers would not be accommodating. It is important to recognize that many of these participants did not explore work options in the field of their interest. It appears that they were unaware of the ways in which workplace accommodations sometimes can decrease the hearing difficulties they may encounter.

Consideration is rarely given that students with HL are being deprived of access to the full spectrum of PSE or work life. Isolation or not successfully transitioning may be key factors in academic or career achievement. While there are further strategies that can be used in difficult situations, participants frequently seemed unaware of them or did not have financial access to them. For instance, in the first study the most commonly used resource in high school, an itinerant teacher, was not even available for PSE students. If access to the devices and strategies that assist in this area are limited then students with hearing loss are at a disadvantage in comparison to their normal hearing peers.

More information is needed in order to truly be aware of the barriers encountered when transitioning from high school. There is no available research that specifically examines the barriers youth with hearing loss encounter during this period in their life. The examined articles that this paper discussed did provide some information. However, more research needs to be done. It is recommended that a more up to date profile of Canadian hearing-impaired youth be completed and due to the fiscal lay out of the country each province should be examined. Finally, to get an accurate description of the transition process a longitudinal study is desirable. Nonetheless, the information gained thus far can lead clinicians towards accommodating youth as they leave high school and begin a new journey in life.

Clinical Implications/Recommendations

The discussed results provided a wealth of information that can guide people linked to hearing loss (i.e. teachers and audiologists). It is within our scope of practice to provide the information that will support and manage the barriers they may face. Below are some measures professionals can consider when dealing with the described population.

- Design and implementation of career and education oriented aural rehabilitation group sessions.
- Providing strategies and skills in effectively expressing needs, communicating assertively, problem solving, and negotiating.
- Help in learning when and how to disclose their hearing loss. This may be an important part of self-advocacy training.
- Provide information on assistive listening devices, responsibilities of the workplace and PSE to provide reasonable accommodations.

Finally, it is recognized that a focus on potential difficulties involves the risk that the individuals becomes discouraged. Therefore, one should also encourage their belief in their ability to succeed.

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