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Implications for Practice From a Mixed Methods Study**

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Career barriers perceived by hard-of-hearing adolescents: Implications for practice from a mixed methods study

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Abstract

This study incorporated both quantitative and qualitative methods to examine the perception of career barriers by hard-of-hearing high school students being educated in regular classes with itinerant teacher support. Sixty-five students in Years 10, 11, and 12 completed a questionnaire about potential general and hearing-related barriers, and 12 of these respondents were subsequently interviewed. Findings indicated that other people's lack of understanding of their hearing loss constituted the greatest potential barrier to adolescents' educational and career goals. Students anticipated several other barriers in the form of functional hearing-related difficulties. Most students showed little awareness of helpful strategies or job accommodations and some had prematurely foreclosed on career choices. Implications for practice are outlined and recommendations for teachers and career counsellors are made.

The transition from school to work can be difficult to negotiate for any young person, particularly within the current labour market conditions that have accompanied the major social and economic changes experienced by advanced industrial nations in recent decades (Patton, 2000; Vondracek & Porfeli, 2003). Deaf and hard of hearing students face additional challenges in their career development and school-to-work transition. On leaving high school, these young people can no longer rely on support services provided on the initiative of parents or educators but must be responsible themselves for identifying their needs and appropriate accommodations and requesting services (English, 1997; Luckner, 2002). In addition, they are likely to encounter environmental and attitudinal barriers that can impede their achievement of educational and career outcomes (Punch, Hyde, & Creed, 2004). For these reasons, the career barriers construct, which has emerged with the recent increasing interest in contextualism (emphasising the importance of contextual and environmental factors such as gender, race and ethnicity, disability or health status, and socioeconomic status) in the career development field, has a particular relevance to young people who are deaf or hard of hearing.

In most English-speaking countries, a majority of children with significant permanent hearing loss are currently educated in regular classes with the support of itinerant teachers of the deaf. In Australia, an estimated 84% of all deaf and hard of hearing children are educated in this way. These students have levels of hearing loss ranging from mild to profound, primarily communicate orally, use their amplified residual hearing supplemented by speechreading, and may be functionally defined as hard of hearing (Hyde & Power, 2003). While the term *hard of hearing* has often been used to describe people with less than severe hearing loss, its definition is being increasingly adopted to include people with all degrees of hearing loss whose communication mode is primarily oral-aural and who effectively use their residual hearing supplemented by speechreading and assistive hearing devices (Israelite, Ower, & Goldstein, 2002; Laszlo, 1994; Warick, 1994). It is this definition of the term that is adopted in this article. While differing in their needs from deaf students

who utilize a sign language, these young people face difficulties not faced by their normally-hearing peers. In this study, we sought to investigate how these students perceived potential career barriers in order to identify ways in which teachers and career counsellors could best serve this population of students.

Career barriers

Few people make their career choices under optimal conditions. Various factors such as economic difficulties, lack of family support, and educational limitations can circumscribe one's career goals and constitute barriers to career choices and development (Lent, Brown, & Hackett, 2002).

Swanson and Woitke (1997) define career barriers as "events or conditions, within the person or in his or her environment, that make career progress difficult" (p. 434). Social Cognitive Career Theory proposes that personal and, in particular, environmental barriers can mediate the relationship between interests and career goals and behaviours and lead individuals to compromise their goals (Lent & Brown, 1996; Lent, Brown, & Hackett, 1994; Lent et al., 2002). Lent and his colleagues asserted that "people are less likely to translate their career interests into goals, and their goals into actions, when they perceive their efforts to be impeded by adverse environmental factors (e.g., insurmountable barriers or inadequate support systems)" (Lent, Brown, & Hackett, 2000, p. 38). McWhirter (1997) pointed out the influence of perceived barriers on critical decisions faced by adolescents about whether to complete high school or pursue postsecondary education. In addition, the perception of career barriers may cause an anxious, unconfident approach to the career decision-making process (Luzzo & Hutcheson, 1996). Thus, perceived career barriers can constitute a crucial element in adolescents' career development.

In her theory of circumscription and compromise, Gottfredson (1981; 2002) defined compromise as the relinquishing of most-preferred career alternatives for less attractive but seemingly more accessible ones. She described two forms of compromise: anticipatory compromise, which occurs when "people begin to moderate their hopes (assessments of

compatibility) with their perceptions of reality (assessments of accessibility)”, and experiential compromise, which takes place when “individuals meet a barrier in implementing their most-preferred choices” (2002, p. 101). Gottfredson accorded the perception of barriers a role equal in prominence to the reality of barriers in producing compromise behaviour. Similarly, other writers have stressed that perceived barriers may be as influential on career behaviour as actual barriers (Paa & McWhirter, 2000; Swanson & Gore, 2000; Swanson & Woitke, 1997).

Initially, the career barriers construct was applied specifically to the career choice process of women and ethnic minorities, and several studies have investigated career barriers among these populations (e.g., Luzzo, 1995; Luzzo & Hutcheson, 1996; Luzzo & McWhirter, 2001; McWhirter, 1997; Swanson & Tokar, 1991; Swanson & Woitke, 1997). In addition, studies have examined barriers in relation to other career development variables such as career maturity and career decision-making self-efficacy. For example, in a study involving Australian final year high school students, Creed, Patton, and Bartrum (2004) found mixed relationships between perceived career barriers, gender, and career development variables including career decision-making self-efficacy and career indecision. Luzzo (1996) found a significant, negative relationship between the perception of career barriers and career decision-making self-efficacy among a sample of U.S. university undergraduates; thus, students who anticipated more career barriers displayed less confidence in their ability to make career plans and decisions.

The career barriers construct appears to be particularly relevant to people with a hearing loss. The functional effects of hearing loss and other people’s negative attitudes have created career barriers for many people who are deaf or hard of hearing (Punch et al., 2004; Stika, 1997). Further, the effects of their hearing loss may be perceived by young people, and by important others such as parents, teachers, and potential employers, as a limitation to the accessibility of many occupations (Weisel & Cinamon, 2005). Although job accommodations may resolve some difficulties in the workplace for people with disabilities (Szymanski, Hershenson, Enright, & Ettinger, 1996), ignorance of the possibility of job accommodations and the rights of workers to access them may

lead students to be adversely affected by a perception of barriers associated with their disability. Studies on the career development of adolescents with hearing loss have largely focused on students attending special schools or special education units within regular schools and who primarily use a sign language. Studies reporting the career development of students in fully mainstreamed settings with itinerant teacher support are few, and have not focused on perceived career barriers. (For a detailed review of career development studies for deaf and hard of hearing adolescents, see Punch et al., 2004.)

The data reported here constitute one aspect of a larger study investigating the career development of hard of hearing students in Years 10, 11, and 12 in two states of Australia. Punch, Hyde, and Creed (2005) reported the associations found among several career development variables, including career maturity, career indecision, career decision-making self-efficacy, and perceptions of career barriers. Perceived hearing-related barriers were found to be associated with lower scores on career maturity subscales (career exploration and career planning) for the hard of hearing students. Punch and Hyde (2005) reported on students' social participation and ways in which the study's qualitative findings shed light onto the students' social participation and social self-concepts and how these interacted with their career expectations and aspirations.

This article expands on the participants' perceptions of career barriers, reporting and discussing both the quantitative and qualitative results and addressing the following research questions:

- What barriers to their educational and career goals or advancement are perceived by hard of hearing adolescents?
- Do adolescents perceive their hearing loss as a potential barrier?
- If so, which aspects or consequences of their hearing loss do they most perceive as barriers, and does this perception lead them to limit or compromise their vocational goals?

Method

A mixed methods approach in which one method is used to further explore and expand the findings of another was used for the study. The combination of quantitative and qualitative approaches is

used in this way to maximize the complementary strengths and minimize the weaknesses of quantitative or qualitative approaches used alone (Creswell, 2003; Tashakkori & Teddlie, 1998). A quantitative phase collected and analysed data through a survey instrument with a sample of students attending schools throughout the states of New South Wales and Queensland, Australia. In a subsequent qualitative phase, in-depth interviews were conducted with a subsample of the survey respondents in order to extend the quantitative findings by clarifying the nature of the perceived barriers and exploring their influence on students' career aspirations and behaviours.

Participants

For the quantitative phase of the study, the sample consisted of 65 students who had bilateral, sensorineural hearing losses. Five of these students (8%) had a hearing loss classified, according to Australian Hearing (2004) categories¹, as mild, 13 (20%) were classified as moderate, 24 (37%) as moderately severe, 10 (15%) as severe and 13 (20%) as profound. Fifty-five students (85%) made use of hearing aids, 8 (12%) had received a cochlear implant, and 19 (29%) sometimes used an FM system in addition to hearing aids. There were 36 (55%) females and 29 (45%) males, with a mean age of 16.58 years ($SD = .88$; range = 14.8-18.3). Twenty-three students (35%) were attending Grade 10, 21 (32%) Grade 11, and 21 (32%) Grade 12. Thirty-one students (47.7%) reported having part-time work experience.

Twelve of the students who had completed questionnaires, six males and six females, were subsequently interviewed. A range of levels of hearing loss was represented in the group, with three students having a moderate loss, four a moderately severe loss, three a severe loss, and two a profound hearing loss. Of these two, one had a cochlear implant. All interviewees were hearing aid users (including the implanted student, who used a hearing aid in the non-implanted ear).

¹ Australian Hearing, a national organisation providing government-funded audiological services and hearing aids to Australians up to the age of 21, uses the following categories: mild 21-45dB, moderate 46-60 dB, moderately severe 61-75 dB, severe 76-90 dB and profound >90 dB (pure-tone average of the better ear across the frequencies 250 to 4,000 Hz.)

Measures

Perceived Career Barriers and Hearing-related Barriers. All students completed a perception of career barriers scale which was a compilation of two scales taken from the literature, the 24-item Perception of Barriers scale designed for use with high school students (McWhirter, 1997) and the 32-item scale for use with university students (Luzzo & McWhirter, 2001). These scales were originally developed to investigate the career development of women and people of diverse ethnic backgrounds. Because gender and ethnicity were not the main focus of the current study, all questions addressing ethnic and gender discrimination were removed, apart from two gender items, “my gender will be a problem”, and “people’s attitudes about my gender will be a problem”, and two ethnic background items, “my ethnic background will be a problem” and “people’s attitudes about my ethnic background will be a problem.” The resultant scale contained 13 items, with the stem of “How much do you think that these things will be a problem or barrier in following your educational and career goals?” The list of 13 general career barriers can be seen in Table 2.

To tap into potential barriers specific to young people with a hearing loss, six hearing-related items were added to the scale. The choice of these items was suggested by the literature and by data from preliminary interviews conducted with Year 12 and first-year university students with hearing loss. Potential barriers that emerged from these interviews were: using the telephone; talking to and listening to new people; working in groups or teams; and people not understanding the young person’s hearing loss. Following the format of the items on gender and ethnicity in the general career barriers scale, two of the added items about hearing loss were “my hearing loss will be a problem” and “people’s attitudes about my hearing loss will be a problem.” The six hearing-related barrier items are also listed in Table 2.

To ensure the questionnaire’s readability, modifications were made to some items, without altering their original meaning, after the questionnaire was pilot-tested with Grade 10 and 11 students and checked by an experienced teacher of the deaf. A 4-item response format, with end-markers of *strongly agree/agree/disagree/strongly disagree*, was used. Lower scores indicate more

barriers. The possible range of scores was 13-52 for the general career barriers and 6-24 for the hearing-related career barriers. A Cronbach's alpha reliability coefficient of .87 for a sample of 1,159 high school students was reported for the McWhirter (1997) scale, and of .90 for a sample of 286 first-year university students for the Luzzo and McWhirter (2001) modified scale. In the present study, the internal reliability coefficient for the 13-item career barriers scale was .82; for the 6-item hearing-related barriers scale it was .84.

Demographic information. Students were asked to complete a section providing information on their age, gender, use of assistive hearing devices, hearing loss level, school achievement level, whether they had paid work experience, and their parents' occupations. For hearing loss level, respondents were given the five categories (mild, moderate, moderately severe, severe, profound) used by Australian Hearing. It was considered that students of this age would be familiar with their reported level of hearing loss, or could request this information from their itinerant support teacher or parent. For school achievement level, respondents were asked to report their typical academic achievement across school subjects, in terms of grades from A to E (or equivalent according to their state's educational reporting system).

Procedure

Itinerant support teachers identified a possible 126 students meeting the study's criteria at 110 schools throughout the states of New South Wales and Queensland. After permission to approach these students was granted by the schools' principals, copies of the survey instrument, along with information letters and consent forms for parents and students, were mailed to the support teachers, who were asked to give them to their students during their next support visit. Students were asked to complete their survey at school or at home, then return it in a pre-paid return-address envelope that was provided. Five to seven weeks after distributing the surveys, follow-up telephone calls were made to the teachers whose students had not returned surveys. Sixty-seven questionnaires were

returned. Two of these were incomplete and could not be included in the analysis. Thus, the sample consisted of 65 students, with a successful return rate of 51.6%.

For the in-depth interviews, sampling was purposeful, in keeping with the aims and qualitative approach of this phase of the study (Patton, 2002). A range of year levels was sought, although more students in Years 11 and 12 than in Year 10 were approached on the basis that they were likely to have given more consideration to their vocational future and be better able to articulate their thoughts. Potential interviewees were approached through their itinerant teachers, after permission was granted by their school's principal. If they were agreeable to participate in the interview, information letters and consent forms were sent to them and their parents. All interviews were conducted by the first author. The length of the interviews varied from 40 minutes to one hour. The interviews were semi-structured, incorporating an initial list of questions serving as a guideline only, allowing unanticipated information to emerge. Interviews were audio-taped and later transcribed verbatim for analysis.

Quantitative Results

Table 1 reports summary data and bivariate correlations for the variables perceptions of career barriers, hearing-related barriers, age, gender, work experience, parents' occupational level, school achievement, and hearing loss level. Perception of career barriers was significantly associated with hearing-related barriers and school achievement, such that students who reported more career barriers also reported more hearing-related barriers and lower levels of self-reported school achievement. Perception of hearing-related barriers was further significantly associated with age and hearing loss level, such that students who reported more hearing-related barriers reported more career barriers and greater hearing loss, and were older.

(Table 1 about here)

To examine perceptions of career barriers and hearing-related barriers in more detail, the items from these two scales were recoded so that responses of *strongly agree* and *agree* for an item were coded as being a barrier, and responses of *strongly disagree* and *disagree* for an item were coded as not being a barrier. Table 2 reports these results as frequencies. It can be seen from Table 2 that “study difficulties” (reported by 51% of students as a barrier), “lack of confidence” (49%), “money difficulties” (45%), and “having to work while studying” (42%) were the most frequent career barriers reported, while gender, ethnicity- and family-related barriers were the least frequently reported. “People not understanding my hearing loss” (68%), “using the phone” (51%) and “my hearing loss” (48%) were the most frequent hearing-related barriers reported. “Having to work in groups” was the least frequently reported hearing-related barrier, although this was still a concern for 25% of students.

(Table 2 about here)

Qualitative results

The qualitative results extended and elucidated the quantitative findings by revealing ways in which students perceived potential barriers, how they felt about them, and ways in which their perceptions of barriers influenced their career choice and decision-making. A question asking interviewees what they would most like to be doing when they were about 25, and then asking if there was anything that might hold them back from achieving that goal, was designed to elicit views about potential barriers. Responses to the first part of the question varied widely, as some students had few goals and little idea of what they would like to be doing in the future, while others had goals, some tentative and some more definite. A small number of students mentioned general potential barriers. Several interviewees saw not being accepted into their course of choice and the cost of further study as possible impediments to their futures. One girl talked about her need to maintain motivation and avoid procrastination in order to achieve her goals. However, the barriers

mentioned most often by the students were related to their hearing loss, and generally fell under the categories of hearing-related barriers that had been included in the survey.

People's attitudes and people not understanding

The quantitative findings about “people not understanding” and “people's attitudes” towards their hearing loss were reflected in the interview data, from which some patterns of responses about this issue emerged. Students expressed trepidation about leaving the relatively supportive school environment, where people knew about their hearing loss. As Allison² explained:

Like, the school knows about it, they don't really care that I have a hearing impairment.... Sometimes I think, what will they [people at work] say about my hearing impairment, will they reject me, how will they feel, stuff like that... Yeah, what other people will think of my hearing impairment.

However, most interviewees did not appear to be concerned about encountering hostile, negative or discriminatory attitudes in the workplace. Jane considered the possibility, but seemed unconcerned, believing that she would simply find another job: “People might discriminate against it [her hearing loss] or something. But, you know, it's not really my problem because I can always find somewhere else.”

More often, participants spoke about people at work not understanding the functional effects of their hearing loss and expressed their concerns about people's potential responses. Chris explained:

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.

Similarly, David worried that, in the workplace,

they probably wouldn't have any people around with the same situation as me...they wouldn't be used to the idea of having to look at the face and stuff when they're telling me stuff.

These findings reflect, and may explain, the quantitative findings that indicated a greater concern with “people not understanding” than with “people's attitudes.” It appears from the interview results that these young people were not expecting to encounter major negative attitudes

² Pseudonyms have been used to protect confidentiality

or outright discrimination in response to their hearing loss; rather, they were uneasy about the potentially frequent, relatively minor incidents they might face because the people with whom they would need to interact would lack understanding about their hearing loss.

Using the telephone

In the quantitative findings, 51% of survey respondents agreed that “not being able to hear well on the phone” would be a barrier. The interview data reflected this finding, with at least half of the students reporting a concern about using the telephone. Often they mentioned that they had few problems when talking to certain people, such as their friends, but difficulties with people they knew less well, and this translated into a concern about the need to use the phone in a work situation. However, one girl had devised a way to deal with the problem at her job in a restaurant:

At work the phones are real quiet and there's this huge background noise. But that doesn't matter because we worked a way around that. I don't answer the phone, everyone else does. So if the phone's ringing beside me, I'm like, could someone get the phone for me? And they'll understand.

It was apparent that some of the interviewees had little knowledge of the range of technical devices that might improve their ability to hear on the telephone, although a small number said that they did use a telecoil switch on their hearing aid or a volume-control telephone. Among the students in this group, only one student, who had a profound hearing loss, used a TTY and the telephone relay service.

Working in groups

Many of the interviewees described difficulties they had in following conversations among groups of friends. The need to watch each speaker's face in order to supplement audition with lip-reading made group conversations difficult and often not enjoyable. Only a few participants said they had thought about how they might manage in group situations - both informal, such as social interactions, and formal, such as meetings - in work settings. One student commented:

I could get used to it, I could just tell people to talk one by one rather than having everyone talking on top of each other. Cos that's what I do now with my mates and stuff, when they're all talking and I tell them to shut up when I'm trying to listen to one of them.

It is clear that this student was drawing on his prior knowledge and experiences to attempt to devise possible solutions to a potential workplace problem, but his suggestion is likely to be inappropriate. "Just telling" people at work may not produce the required effect, especially if telling them to "shut up"! There are strategies, both technological and communication, which can be used to good effect in such situations, but they are ones of which these students appeared to have no knowledge.

Study difficulties

Students were asked if they thought their hearing loss affected their academic work and if this might impede their future achievement. Some participants said that they did not think so. Several students thought that their hearing loss had some effect academically but they were able to compensate through extra study or receiving help. Several students mentioned the additional help they received from itinerant support teachers or other school personnel. For Rebecca, leaving the high school where she had received almost daily help from a teacher's aide, as well as regular assistance from her itinerant teacher, the thought of starting university was daunting:

If people didn't know I was deaf, that might affect my grades because, you know, if I didn't get the help beforehand then I would be completely lost. Because, you know, with all that many students at university, and out in the workforce, it would be completely different. Because I've always known people here who know that I'm deaf and know that they should be talking clearly...and leaving all those teachers at school, and you have to get used to new people at university, and the new help that it's offering, and, you know, that can be daunting sometimes...I want the best help, so that I can achieve at university like I have at school with the help of the teacher's aide.

Some of the participants had fewer aspirations to achieve academically and appeared unconcerned about this issue. Overall, many of the students interviewed were aware that their hearing loss had some effect on their academic achievement, tried to compensate, and did not see it as a significant career barrier.

Circumscription and compromise of career aspirations

Some of the students interviewed said that they had ruled out a career in which they had an interest because of their hearing loss. One student, Beth, had ruled out teaching as a career:

because that would mean having to speak in front of the classroom and, you know, sometimes a kid will be standing at the back and saying something and I know that I might miss that. So it's kind of...I thought that I couldn't be a teacher then.

Beth also worried about "interaction with people, I didn't really want to do a job that has too much, but then you can't avoid it, so I'm just kind of letting it go." Matthew had a global sense of being limited by his hearing loss:

I'm undecided because there's so many things that I can't really decide on because of my hearing difficulties, I might not be able to do the job, because I've got bad hearing so it sort of narrows down the choice of jobs.

Several students had not investigated the possibility of successfully working in the occupations which interested them. They appeared to know little about the ways in which workplace accommodations sometimes can decrease hearing-related difficulties, and they had no exposure to deaf or hard of hearing adults as career role models. Rather, they had given up their most-preferred options and circumscribed (Gottfredson, 1981) their choices, perhaps prematurely.

Work experience

Only three of the interview participants had ongoing part-time jobs. In talking about their experiences at work, these students revealed the effect such work experiences had on their occupational aspirations, perceptions of career barriers, and confidence about working.

It appears that the students' work experience gave them some practice in dealing with their hearing limitations in the workplace and, for some, led to the development of useful insights and strategies. Nicole, waiting on tables in a restaurant, had worked out ways of managing her hearing limitations with customers:

I just repeat things when I'm taking orders, and if they're going, no, then I go, I'm sorry, what was it and they repeat it. And I get them to point to which one they're saying so I can actually read it, and yeah, just little things like that, I kind of work my way around it.

Her employer and the other staff members were also helpful and accommodating of her hearing loss at this restaurant. However, in an earlier job in a fast food outlet, Nicole had a different experience. Despite having told her supervisor about her hearing loss, there were occasions when she misheard his instructions and he became angry. Eventually she left the job:

Even though I'd explained to him, he was very ignorant about it, and I didn't like it at all so, I was like, it's your problem, I'll go find another job, you know...if you won't think about it properly then it doesn't bother me, you can go find someone else to work for you!

Allison also had difficulties with the staff in her work in a nursing home:

They [other staff members] get a bit irritated when I don't hear them when they're talking to me, and I have to make them repeat the whole thing again, and so that's when they stop talking to me because they realise I'm hearing-impaired, and they, yeah, they get a bit irritated by me.

Her strategy for dealing with this was to "just try to look at them when they're around me, so that I can know when they're talking to me or not." It is clear from these examples that these young people's strategies for dealing with the interaction difficulties they face are limited. There is much to admire in Allison's patient persistence and Nicole's spirited self-assurance. However, additional strategies and skills, particularly in effectively expressing their needs, communicating assertively, problem-solving and negotiating, would be beneficial to them in dealing with these types of situations.

A more common experience of work for these young people was in family businesses. Five of the young people had some work experience, usually entailing office work, in the businesses of their parents or extended family members. It seemed that this provided an opportunity for paid work without the difficulties associated with competitively acquired employment, as these participants spoke of their concerns about jobs dealing with the public. For example, Matthew, who had worked in his aunt's business during the school holidays, said

I don't think I could get a job somewhere like, oh, in a shopping centre, at the checkout, because there might be some speaking and talking involved...I'm too afraid of that. I'd think I wouldn't be able to hear them and I'd make mistakes.

An important part of obtaining part-time work is the necessity to undergo job interviews.

Students who had worked outside of family businesses had been through interviews and had been faced with decisions about whether or when to disclose their hearing loss. One girl, who had a moderate loss, preferred not to disclose at interviews, and found that her recently acquired in-the-ear hearing aids facilitated that preference:

When I went for job interviews, several times they noticed my old ones and actually questioned it and I felt really uncomfortable, but when I got these new ones, they haven't even noticed them. It's not even a problem.

Two students described how they had mentioned their hearing loss at interviews. These two girls were confident communicators and were able to assure their interviewer of their ability to do the job. Nicole reported:

I told him at the interview and he said, okay, do you have problems, and I said, sometimes, but I can work my way around them. And I told him how I would and he's like, that's fine.

Other participants had less clear speech or more noticeable hearing aids, and would have found it harder not to reveal their hearing loss. These students had not experienced job interviews and so had not yet been in a situation of having to deal with this issue.

Overall, the findings indicated that paid work experience had given some of the students opportunities to grow in confidence and develop some strategies for dealing with difficulties arising from their hearing loss in the workplace, although these strategies were not always as useful as they could have been.

Discussion and implications for practice

The correlation results indicate that hearing-related barriers are associated with career barriers in general. Students with a higher perception of hearing-related barriers also reported higher career barriers. In addition, older students reported more hearing-related barriers. This may be

developmentally related, as students who are closer to leaving school may be more concerned about ways in which their hearing limitations could affect their post-school educational and career progress. The association of higher hearing loss levels with a higher perception of hearing-related barriers makes intuitive sense, as lower levels of functional hearing might be expected to translate to greater obstacles to be faced in post-school educational and occupational life.

Students who reported higher school achievement levels reported fewer career barriers. This association has been reported elsewhere for normally hearing adolescents (Gassin, Kelly, & Feldhusen, 1993), and may be because students who are more academically able tend to evaluate their ability more favourably, perceive a more optimistic future, and be better informed generally and about careers than students who achieve at lower levels.

The correlation results showed no gender effects on the perception of barriers. Some career studies have found differences for males and females, with females generally reporting a higher perception of barriers (e.g., Luzzo, 1995; Luzzo & McWhirter, 2001). However, other, more recent studies, suggest this difference may be disappearing, as seems to be the case with this group. Patton, Creed, and Watson's (2003) study of Australian and South African high school students found no effects for gender, socioeconomic status, grade, or work experience on levels of perceived career barriers. Similarly, the present study found that neither socioeconomic status as measured by parental occupation nor having paid work experience were associated with perception of barriers.

A large number (68%) of survey respondents reported that they considered "people not understanding my hearing loss" to be a potential barrier to achieving their educational or career outcomes. This barrier loomed larger than any other identified barrier, hearing-related or not. Consistent with the concept of the socially-constructed nature of disability (Hahn, 1993; Oliver, 1993; Siminski, 2003), more respondents saw people's lack of understanding of their hearing loss as a barrier (68%) than the hearing loss itself (48%). However, the item "people's attitudes to my hearing loss" was seen as less of a barrier (34%). The interpretation of these results was further explored with the interviewees in the qualitative stage of the project. "Not being able to hear well

on the phone” (51%) and “study difficulties” (51%) were the next most highly reported barriers. It is to be expected that both of these issues could constitute areas of concern for young people who have a hearing loss, and the interviews provided an opportunity to explore the meaning of these perceived barriers with a subsample of the survey respondents

The qualitative findings were effective in extending and elaborating on the quantitative findings about perceived barriers, particularly in relation to “people not understanding.” The interview data revealed students’ concerns about leaving the relatively supportive school environment and entering a larger world where people would not know them or understand their hearing loss. They worried about working with new people who would not take into account the implications of their hearing loss and about their ability to manage academically at university or technical college. These concerns reflect the reality the students will face as their status changes, on leaving school, from being a recipient of services provided on the initiative of parents and educators, to needing to advocate for themselves (English, 1997; Luckner, 2002; McLean, Osborne, McAuliffe, Housden, & Revens, 1999). This self-advocacy might involve identifying and explaining their needs in order to obtain services and supports in tertiary education settings, overcoming employer concerns about their hearing loss, explaining the need for and requesting accommodations in work settings, and more informal interactions such as explaining to co-workers that they need to be able to see their faces in order to lip-read. Help in learning when and how to disclose their hearing loss, in both work and social situations, could be an important part of self-advocacy training.

The qualitative findings provided insight into the students’ perceptions of the inter-related concepts of the potential barriers “people not understanding my hearing loss” and “people’s attitudes about my hearing loss.” Although interview participants were concerned about people’s lack of understanding of their hearing loss, few expected to encounter outright discrimination or hostile, negative attitudes. It may be that they simply had no direct (instrumental) or indirect (associative) learning experiences surrounding this issue (Jackson & Nutini, 2002). Possibly, they had been protected from such experiences in their largely supportive home and school

environments, with parents and teachers advocating on their behalf. In the workplace or in other areas of their post-school lives, young people who are hard of hearing may experience discrimination and negative attitudes that they have not experienced before and may be unable to deal with successfully. Following their analysis of interviews with middle school students vulnerable to discrimination, Jackson and Nutini (2002) concluded that young people's ignorance of potential barriers such as discrimination could preclude the development of strategies that would help them to cope and persist when eventually faced with the unforeseen barriers.

Several students expressed the belief that, if they should encounter discrimination, negative attitudes or a reluctance to accommodate their hearing-related needs in a job, they could simply leave and get another job. This belief reflects a lack of understanding of the labour market and the world of adult work, and demonstrates the need for students to be assisted to find solutions other than "just leaving." Given that misunderstandings in the workplace are more likely to arise for people with hearing loss than for normally hearing individuals, it is critical for hard of hearing young people to develop skills, strategies and knowledge in the areas of assertive communication, problem-solving, and negotiation. This type of training could be incorporated into career education programmes or individual career counselling for this population. Savickas (1999) asserted that role rehearsal can provide students with vicarious preparation for, and practice at, solving problems that might occur at work, and suggested activities such as role-playing and discussion of case studies performed within a student-centred, problem-based learning approach. Participants could be involved in scaffolded experiences and role-plays, in which students were able to experience successful outcomes, thus benefiting from the personal performance achievements that can contribute to increased self-efficacy (Bandura, 1997). In addition, contact with or mentoring by hard of hearing adults who have overcome career barriers could be helpful and motivating for students in learning how to overcome potential barriers.

Some participants seemed unaware of any problems their hearing loss might pose for them in their vocational lives after leaving school; this lack of awareness may prove detrimental to these

students' future career paths. Researchers and theorists support the idea that people can benefit from a realistic anticipation of problems they may face. For example, in their theory of decision-making, Janis and Mann (1977) suggested that giving people realistic information about potential job stresses and challenges acts as an "emotional inoculation" (p. 155) which leads employees to be more persistent and less disillusioned when subsequently faced with difficulties.

Thus, hard of hearing students would benefit from career counselling or education interventions designed to discuss and address potential barriers. Counsellors or teachers could help students to identify potential career barriers, articulate their fears, and determine which barriers are more likely to be real. Of course, focussing on potential difficulties involves the risk of students becoming discouraged and should not occur without concurrently increasing their belief in their ability to deal with them. Students' self-efficacy needs to be increased through acquiring knowledge and training in strategies for overcoming future barriers. Interventions could include raising students' levels of self-efficacy by discussing ways in which they have succeeded in overcoming barriers in the past (Luzzo, 1996). Further, counsellors or educators could be a source of information to students about practical ways to overcome barriers, such as through the use of appropriate assistive devices, or could help students to access such information themselves. Finding reliable information about the increasing range of technical assistive devices available to people with hearing loss is often complicated and difficult, and students could benefit from training and resources that would develop their ability to track down such information. Another important role for teachers or guidance counsellors would involve educating students about the responsibilities of workplaces and postsecondary institutions to provide reasonable accommodations in response to the needs of their hard of hearing employees or students, as mandated by disability legislation (in Australia, the Disability Discrimination Act, 1992).

Some of the students had ruled out certain jobs or careers based on their concerns related to their hearing loss. They did not appear to have a realistic knowledge of the ways in which the effects of their hearing loss may be minimised or accommodated in work situations. For instance, one

interviewee had eliminated the option of a teaching career, without realising that many deaf and hard of hearing people have become successful teachers. While genuine barriers may exist to employment in some occupations for young people because of their hearing limitations, it is preferable for any circumscription or compromise of career aspirations to be based on informed awareness of the specific requirements of work roles and possibility of accommodations. It appears that hard of hearing adolescents need such information and, indeed, encouragement, to consider occupational areas they might otherwise rule out prematurely.

In terms of Lent, Brown, and Hackett's (1994, 2002) Social Cognitive Career Theory, some of the students interviewed were found to be ruling out potentially rewarding occupational possibilities on the basis of faulty outcome expectations or self-efficacy beliefs. Brown and Lent (1996) outlined a framework within which career counsellors can work with clients to identify foreclosed occupational choices, analyse perceptions of barriers, and modify self-efficacy beliefs. Emphasising the importance of going further than the consideration of possibilities generated by students' expressed or measured interests, these authors recommended that counsellors also explore those occupations which seem to be of lower interest in order to ascertain the client's underlying beliefs. They suggested two strategies that can facilitate this exploration. The first involves comparing discrepancies between scores from occupational aptitudes, values, and interest measures; the second involves using a modified vocational card sort procedure to identify inaccurate outcome expectations or self-efficacy beliefs. The counsellor can then work with the client to modify faulty perceptions. This can include analysing perceived barriers and helping the client to consider the likelihood of encountering potential barriers and to develop strategies to deal with barriers that are likely to eventuate. These strategies are particularly appropriate for use with students who have prematurely eliminated occupational choices based on concerns about their hearing loss. In addition, contact with deaf or hard of hearing models of achievement in various occupations is likely to effectively challenge students' self-imposed limitations and anticipatory compromise.

Thus, the study's findings suggest that hard of hearing high school students would benefit from a range of practices and interventions to prepare them for dealing with potential career barriers and to maximise their chances of a successful transition from school to their future occupational lives. Given Australia's world-leading level of placement of students with significant levels of hearing loss in regular classes with itinerant teacher support, it seems appropriate for transition training programs available to the reducing population of deaf and hard of hearing students in special education facilities to be extended to the growing numbers of these students in regular secondary school classes. As such, attempts should be made to accommodate the particular needs of hard of hearing students within new approaches to school-to-work or school-to-study transition programming for students in Australian regular schools (usually called Senior Education and Training Plans). The role of itinerant teachers in collaborating with class teachers, guidance counsellors, and parents to implement effective transition strategies is crucial, and assistance in the form of training and allocation of time and resources to facilitate this role needs to be provided.

This study used both quantitative and qualitative methods to explore the perception of career barriers by high school students who have significant permanent hearing loss. Although the number of students interviewed was small, this was in keeping with the aims of qualitative inquiry, which is conducted less for purposes of generalization than for developing insights and understandings based on groups of individuals in specific contexts (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Taylor & Bogdan, 1998). The qualitative data provided elaboration and clarification of the quantitative data and added depth and detail arising from the perspectives, thoughts and feelings shared by the interviewees. The integrated findings emphasised the importance of perceived career barriers to the career development of adolescents who are hard of hearing, and indicated that high school students anticipated barriers in the form of functional, practical difficulties and other people's reactions to and lack of understanding of their hearing loss. Further research is needed to determine if these perceived barriers are realised when young hard of hearing people are in the workforce. In addition, do they face other barriers which they had not

anticipated when at school? Some of the study's participants seemed unaware of potential difficulties they may face in the wider world in which they would no longer have the degree of protection and support from parents and the education system from which they had so far benefited. Further research could reveal the extent to which young people who are hard of hearing encounter unanticipated barriers to their educational or career achievement. In addition, research examining not only the barriers but also the supports that are most relevant for this population is warranted.

Table 1
Summary data and bivariate correlations; N = 65

Variables	<i>M</i>	<i>SD</i>	2	3	4	5	6	7	8
1. Perceptions of Career Barriers	38.62	4.83	.50***	-.13	.12	.05	-.06	-.29*	-.05
2. Hearing-related Barriers	15.82	3.12		-.25*	.09	.10	-.08	-.01	-.30*
3. Age					-.27*	.30*	.06	.06	-.08
4. Gender						.07	.22	.12	.27*
5. Work Experience							.14	-.02	-.01
6. Parental Occupation Level								-.37**	.22
7. School Achievement									-.07
8. Hearing Loss Level									-

Note: Gender coded as M=1, F=0; Work experience coded as Yes = 1, No = 0; Parental Occupation Level coded as 1 = unskilled, 2 = skilled, 3 = semi-professional, 4 = professional; School Achievement coded from 1 = highest to 5 = lowest.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Frequencies of individual items indicated as barriers from the Perceptions of Career Barriers scale and the Hearing-related Barriers scale (N = 65)

Item	Frequency	%
<i>Perceptions of Career Barriers</i>		
Study difficulties	33	51
Lack of confidence	32	49
Money difficulties	29	45
Having to work while studying	27	42
Not being smart enough	24	37
Not fitting in at college/university	22	34
Lack of support from friends	17	26
Lack of support from teachers	13	20
Family difficulties	8	12
People's attitudes about my gender	1	2
My ethnic background	1	2
People's attitudes about ethnic background	1	2
My gender	0	0
<i>Hearing-related Barriers</i>		
People not understanding my hearing loss	44	68
Using the phone	33	51
My hearing loss	31	48
Talking/listening to new people	24	37
People's attitudes about hearing loss	22	34
Having to work in groups	16	25

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