A Model of Targeted Transition Planning for Adolescents who are Deaf or Hard of Hearing

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Abstract

Transition from secondary school to postschool life, education, and employment can be difficult for young people who are deaf or hard of hearing (DHH). This population's postschool outcomes, particularly in employment, continue to lag behind those of the general population. The transition education, planning, and practices that these students experience while at secondary school are important to their achievement of optimal postschool outcomes. This paper examines recent literature relating to the postschool transition of young people who are DHH, including studies that have investigated specific transition practices and student characteristics and their associations with positive postschool outcomes. Taking into consideration evidence-based best practices for students with disability in general and students who are DHH in particular, the authors propose a model of targeted transition planning and practice for adolescents who are DHH.

Leaving secondary school and transitioning to a more adult stage of life can be a difficult period for many adolescents, but for adolescents who are deaf or hard of hearing (DHH) this transition may be additionally challenging and, indeed, daunting. Communication difficulties and the developmental gaps in academic and social areas that can accompany them increase the challenges DHH youth face at this time. Studies have reported that secondary students and their parents experience worry and apprehension about the transition from school to future life and about the barriers to postsecondary education and employment the young people may face because of their deafness (Jamieson, Zaidman-Zait, & Poon, 2011; Punch, Creed, & Hyde, 2006). Targeted transition education, planning, and supports are crucial for this population to achieve the best possible postschool outcomes and opportunities to lead satisfying and productive lives.

There are several reasons why a focus is needed on improving transition for DHH secondary school students. Despite some advances, mainly in postsecondary education enrolment rates, postschool outcomes of people who are DHH continue to lag behind those of the general population. In the USA, Australia, and many European countries, recent studies show that rates of unemployment and underemployment are higher and levels of earnings lower for DHH people (see Punch, 2016 for a review). People who are DHH are likely to face structural, social and attitudinal barriers in the workplace, as well as experiencing higher levels of fatigue and psychological stress than workers without hearing loss (Jahncke & Halin, 2012; Nachtegaal et al., 2012; Punch, 2016). During their primary and secondary schooling, children who are DHH are provided with supports and accommodations on the initiative of their schools and parents; after leaving school, this no longer automatically happens (Luckner, 2012). Young people must have the skills and confidence to advocate on their behalf to

access supports or accommodations in postsecondary education and the workplace. In addition, DHH students whose challenges are compounded by factors such as additional disability or difficult family background have an even greater need for optimal, targeted transition planning and supports.

Transition and adolescents with disability

Unlike the USA and some other countries, Australia has no legislation that mandates the provision of transition services, or the development of individualised transition plans, for secondary students with disability (O'Neill et al., 2016). In the UK, the Education Act 1996 requires schools to work with students with special educational needs to develop transition plans annually from Year 9. In the USA, transition planning and the delivery of transition services for students with disability have been mandated in legislation since the passage of the *Individuals with Disabilities Education Act* (IDEA) in 1990; subsequent amendments to the Act have adjusted and strengthened requirements for transition services. Under IDEA, schools are required to incorporate transition plans with measurable goals into students' Individualised Education Plans (IEPs) beginning no later than age 16 (although many individual states mandate a younger age). The Act further requires that this process be based on the individual student's needs, strengths, preferences, and interests (Test, 2012).

Over the last three decades, a great deal of research has been conducted, mainly in North America, on the effectiveness of transition practices to enhance postschool outcomes of young people with disability. In a seminal work, Kohler (1996) developed a taxonomy of transition practices, which Kohler and her colleagues have since developed further (Kohler et al., 2017; Kohler & Field, 2003; Kohler et al., 2016). The taxonomy's practices are organised into five categories. Table 1 provides

the transition taxonomy categories and examples of practices in each category. The taxonomy has become a widely used framework for transition programming, and its practices have been investigated in myriad research studies, with many of the practices found to be strong in-school predictors of positive postschool outcomes for students with a range of disabilities (Beamish et al., 2012; Mazzotti et al., 2016; Test et al., 2009).

Table 1 about here

Transition and adolescents who are DHH

Fewer studies have investigated transition and postschool outcomes specifically with students who are DHH. However, in the last decade, a series of nine studies examining the relationship between several transition-related variables and postschool outcomes for young people who are DHH in the USA has been conducted (Cawthon, Caemmerer, et al., 2015; Cawthon, Garberoglio, et al., 2015; Cawthon, Wendel, et al., 2016; Garberoglio, Cawthon, & Bond, 2014; Garberoglio et al., 2015; Garberoglio et al., 2017; Garberoglio, Schoffstall, et al., 2014; Newman et al., 2017; Schoffstall et al., 2016). The studies all used data from the National Longitudinal Transition Study-2 (NLTS2), a large-scale US study that collected extensive data on more than 11,000 students with disability over 10 years beginning when students were aged 13 to 16 and ending when they were aged 22 to 25. Thus, postschool outcomes from up to eight years after leaving school were collected (Newman et al., 2011). The nine studies extracted data on students who were DHH (numbers ranged from 440 to 950 across the studies) and conducted rigorous analyses using methods including logistic regression analysis, structural equation modelling, and propensity score analysis to determine in-school predictors of postschool outcomes.

Most of these studies used the same seven postschool outcomes as dependant variables, grouped into three categories: 1) postsecondary education (having attended postsecondary education, having graduated from postsecondary education); 2) employment (having ever worked for pay, hourly wage, and job satisfaction and advancement); and 3) general life outcomes (independent living and self-beliefs). Each study examined specific in-school factors as independent variables. The first study investigated the relationship between English literacy levels in high school and the seven postschool outcomes (Garberoglio, Cawthon, & Bond, 2014). Findings indicated that although literacy levels predicted general life outcomes and postsecondary enrolment, they did not predict postsecondary education completion or employment outcomes. The authors concluded that literacy levels may play a less significant role than generally thought and that other factors may be stronger contributors to success in postsecondary education and employment for DHH individuals. In a further study, Cawthon, Caemmerer, et al. (2015) found that social skills strongly predicted graduation from postsecondary education, and suggested that such skills are important for DHH students' self-advocacy and for managing the complex dynamics of the college and university environment.

Another study explored the role of self-beliefs in predicting postschool outcomes for DHH young people (Garberoglio, Schoffstall, et al., 2014). The self-beliefs measured were grouped into three categories: 1) self-concept, including academic and social, 2) self-determination, using some subscales of the ARC's Self-Determination scale (Wehmeyer & Kelchner, 1995) and 3) self-expectations of achieving postsecondary education, employment, and independent living. Some of the self-determination subscales showed an association with postsecondary enrolment and hourly wages earned, and some expectations were associated with postsecondary

enrolment. However, after other variables were included in the regression analysis, self-beliefs did not appear to be comprehensive predictors of postschool outcomes.

A further study investigated the role of self-determination and autonomy in achieving employment outcomes (Garberoglio et al., 2017). Autonomous behaviours at school included students leading their IEP meetings, making long-range career plans, getting involved in school-based and career-related activities, and conducting independent job-seeking. The researchers also examined the role of parent expectations as antecedents to adolescents' autonomous behaviours and found that parents' expectations had a significant positive effect on students' level of autonomy. Students' level of autonomy was predictive of positive employment attainments in 'sustainable employment,' that is, in employment that provides opportunities of earning higher wages and job advancement over time. The authors suggested that this is particularly important in light of the fact that transition focus for students with disability can often be on simply getting a job, possibly a minimum wage job, rather than on aiming to equip students for work likely to offer opportunities for advancement.

Findings from a study examining the role of parent involvement and parent expectations on postschool outcomes indicated that parent expectations were an important predictor across the three postschool outcome domains (Cawthon, Garberoglio, et al., 2015). Unexpectedly, parent involvement did not significantly affect any of the postschool outcomes. However, the parent involvement data collected in the NLTS2 focused on academic involvement and communication with school staff in general, rather than participation specifically in students' transition planning.

Another area that has been proposed to be particularly beneficial to DHH individuals, including adolescents, is internet-based communication (Barak & Sadovsky, 2008; Maiorana-Basas & Pagliaro, 2014). One of the studies using the NLTS2 data explored the relationship between internet-based communication (primarily email and chatrooms) and the postschool outcomes of DHH young people (Garberoglio et al., 2015). It found that the level of computer-based communication in high school was not a comprehensive predictor of successful life attainments for deaf young adults.

Two studies investigated the effects of the specific types of courses DHH students took in high school. Cawthon, Wendel, et al. (2016) examined intensive vocational course-taking and its relation to postschool employment outcomes and found no significant effects of the course-taking on later employment outcomes. Newman et al. (2017) investigated the effects of taking two types of courses – academic and career and technical education (CTE) – on enrolment in three types of postsecondary settings: 2-year or community college, 4-year college or university, and CTE schools. The proportion of academic courses taken predicted students' enrolment in postsecondary education. The proportion of CTE courses taken was not related to enrolment in postsecondary education, including CTE programs. The authors suggested that a lack of preparation and content knowledge may affect the academic outcomes and choice of courses of DHH secondary students, and advised that 'secondary transition planning staff both encourage DHH students who have a goal of future postsecondary attendance to take a rigorous, academically focused high school curriculum and provide these students with the supports to complete these courses' (p.181).

Finally, one study investigated the impact of high school extracurricular involvement on DHH young people's postschool outcomes (Schoffstall et al., 2016). Extracurricular activities included participation in leadership and community groups, religious youth groups, disability-related groups, sporting activities, and performing arts activities. The study's findings indicated that overall involvement in extracurricular activities predicted only one postschool outcome, independent living. However, participation in more than one extracurricular activity significantly predicted enrolment in postsecondary education.

The authors of all these studies utilising the NLTS2 dataset pointed out the limitations of their studies, in particular the fact that they were limited to the variables available in the dataset, and many deafness-related variables were not captured in the data. Nevertheless, the NLTS-2 dataset comprised a rich source of longitudinal data about the postschool transition of students with disability that provided a unique opportunity for secondary analysis for a large cohort of DHH young people. The studies' findings provide evidence for the importance of factors including social skills, self-determination, parent expectations, academically focussed curricula, and extra-curricular involvement to the postschool outcomes of young people who are DHH.

Other research that can usefully inform a transition model for DHH students involves reports about individual qualities that have been associated with success in postschool life for people who are DHH. These studies are few in number, generally qualitative, and report DHH adults' perceptions about the factors and personal qualities that have assisted them to succeed in postschool education and employment. In Germany, a study involving interviews with 32 DHH adults explored factors considered by these adults to have contributed to their postschool success (Hintermair

et al., 2018). 'Soft skills' including social competencies, self-discipline, and persistence were deemed to be the most important for success. Participants spoke about the necessity of self-knowledge, self-confidence, and an ability to communicate their hearing-related needs. Social support in their personal lives and supportive work colleagues and supervisors were also deemed important.

Similarly, an Australian study of 54 DHH university graduates found that persistence, self-advocacy skills, being proactive and open about hearing-related needs, and having supportive colleagues contributed to participants' success (Punch et al., 2007). Another study, involving 30 successful DHH adults (Jacobs et al., 2012), found that these adults used the same psychosocial skills as successful people with typical hearing, along with additional skills specific to identifying and managing hearing-related difficulties. These included refusing to accept other people's lowered expectations, being assertive when necessary, and informing others about their deafness-specific needs.

The findings from these studies about factors associated with postschool outcomes of DHH people, along with the body of evidence around successful in-school transition practices for students with disability, provide an understanding of the best ways to prepare and support DHH adolescents in their transition to postschool life. In general, DHH adolescents attending mainstream school settings are unlikely to receive specialised, deafness-specific transition instruction or planning. The few studies that have investigated the transition preparation of DHH secondary students have indicated a lack of deafness-specific transition preparation for these students and a lack of expertise in schools to address their transition needs in the USA (Luft, 2014; Luft et al., 2009; Luft & Huff, 2011), the UK (O'Brien, 2015), and Australia (Punch et al., 2006; Punch & Hyde, 2005). Much of this research indicates that these

adolescents tend to have low transition-related skills and knowledge, a lack of awareness of accommodations, strategies, or systems that could help them in postschool settings, and less paid work experience than their typically hearing peers (Luft, 2013; Luft & Huff, 2011; Punch et al., 2006; Punch & Hyde, 2005).

There is a clear need for secondary schools to provide DHH adolescents with targeted transition planning and supports that include issues related to their deafness. Generic career services or transition programs for students with typical hearing, or students with disability in general, are unlikely to be adequate for DHH students. Best practice and evidence from the body of disability transition research, findings of studies on DHH students' transition, and an understanding of the challenges facing DHH school-leavers can combine to inform the development of optimal transition programs for DHH students. In the next part of this paper, we propose a transition model for DHH adolescents developed from these knowledge sources.

Transition model for adolescents who are DHH

Central to this model is the provision of transition planning that is targeted to address the specific needs and challenges of adolescents who are DHH. The model assumes that student-focussed planning underpins all areas and students are actively involved in the planning process throughout (Kohler et al., 2017). As shown in Figure 1, the targeted planning covers six areas that are particularly important to DHH adolescents' transition.

Figure 1 about here

Career awareness

Due to factors such as reduced incidental learning, many adolescents who are DHH have less awareness of the world of work and careers and lower levels of career decision-making competency than their peers with typical hearing (Luckner, 2012). It

is important for DHH adolescents' transition that there is a strong focus on career exploration and planning activities, as well as instruction in job search, job application, and job interview skills. These activities need to be targeted so that they include discussion and assessment of potential deafness-related barriers and, if necessary, interventions to raise students' self-efficacy about their ability to overcome barriers.

Meaningful work experience

Work experience is particularly important for DHH adolescents to increase their understanding of the world of work and develop work-related soft skills. The more postschool environments and experiences they are exposed to, the more they can develop such understanding and skills. Work experience is most meaningful and valuable when followed by reflection and discussion with a knowledgeable adult, such as a teacher of the deaf or a career counsellor who has an understanding of deafness-related issues. In this way students' learning from their work experience is maximised, they can explore potential solutions and strategies for any challenges they have encountered, and their career-related self-efficacy is enhanced (Punch et al., 2006).

Role models and mentoring

Having role models of DHH adults can provide many benefits to DHH children, including contributing to their self-esteem and sense of identity. Young people who are DHH can gain social capital through such role models and, particularly relevant to their transition needs, what has been termed *navigational capital* that can provide them with insights and skills about navigating barriers in the hearing world and can have a powerful effect on their postschool aspirations (Cawthon, Johnson, et al., 2016). For DHH adolescents who know few adults who are DHH, schools or families

should make deliberate efforts to instigate role model experiences through informal networks, online support groups, or organisations offering structured experiences for DHH adolescents.

Collaboration in-school and with external agencies

In-school collaboration between specialist teachers of the deaf and class teachers and career guidance personnel is an essential component of DHH adolescents' transition planning. Career personnel may have little knowledge of the issues and potential barriers that DHH school-leavers will face, or may have limited career expectations for these students. Teachers of the deaf have greater understanding of deafness-related issues and barriers, but are not trained in career guidance or counselling. Through collaboration and liaison, the knowledge and skill sets of these two groups of professionals can work together to implement effective transition strategies and supports for DHH students (Punch et al., 2006). In addition, collaboration between the school and agencies providing employment or other services, local employers, and disability offices in universities and vocational colleges contributes to the successful transition of these young people (Wilkens & Heheir, 2008).

Family engagement

Ideally, families will work with the school in their child's transition planning, bringing much of value to the process. They can share their knowledge and understanding of their child's aspirations, interests, strengths, and concerns about postschool life. The school can encourage parents to promote their adolescent's development of independence and self-determination (Luckner & Sebald, 2013). Families can encourage and assist their adolescents with visits to postsecondary colleges or universities. Family networks can be a particularly helpful source of work

experience for DHH adolescents, often providing an early experience of working without the necessity of undergoing interviews and explaining their hearing loss to strangers (Punch et al., 2006; Punch & Hyde, 2005). Facilitating family engagement involves empowering families to be fully involved in the transition planning process (Kohler et al., 2017).

Self-determination

Self-determination is defined as a combination of skills, knowledge, and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behaviour (Algozzine et al., 2001). Researchers have stressed the importance of the promotion of self-determination with students who are DHH (Luckner & Sebald, 2013; Sebald, 2013). Ideally, self-determination knowledge and skills are infused into the general curriculum, but they can be harder for students with disability and for students who are DHH to develop (Luckner & Sebald, 2013). Because of the major and multi-faceted role of self-determination, we further delineate five interrelated parts that are of particular importance to the transition of adolescents who are DHH, as shown in Figure 2.

Figure 2 about here

Decision-making and goal-setting

Self-determination involves self-awareness and includes skills in decision-making, problem-solving and goal-setting. In the context of postschool transition, DHH adolescents need to develop awareness of their strengths, interests, and preferences, and the skills to evaluate options, set appropriate goals, plan steps, and take follow-up action to achieve their goals.

Self-advocacy and self-disclosure

Skills related to self-advocacy are vital for DHH adolescents, who will need to advocate on their own behalf in order to obtain supports or accommodations in postsecondary education and the workplace (Luckner, 2012). An important part of self-advocacy is knowing how and when to disclose one's hearing loss. Many DHH students attending university do not disclose their hearing loss, or they disclose at enrollment but do not follow up and access the university's disability services; some will seek assistance only when they find they are struggling academically (Brett, 2010; Cawthon & Leppo, 2013). DHH adolescents may need specific instruction and support to manage the often complex processes and paperwork required in applying for disability services. In addition, young people need to make decisions about when and how to disclose their hearing loss in the job application process. Educators can help DHH adolescents prepare, with a focus on developing skills to explain any accommodations or supports they might need as well as strategies they use to address potential workplace difficulties. Developing a script, rehearsal, and role-play with educators can assist students in this process (Luckner, 2013). There are published resources available for instruction in self-advocacy for DHH secondary students (e.g., English, 2012; Price, 2014). These are most relevant to a US context, but can have useful application in Australia and the UK.

Interpersonal skills

Interpersonal skills such as communication, social, and assertiveness skills are integral to successful self-advocacy and particularly important for success in navigating the postschool world, where DHH youth will interact with a wider range of people in a variety of new contexts and settings (Cawthon, Caemmerer, et al., 2015). Adolescents can benefit from specific instruction in communication skills such as

conversational repair strategies and a range of social skills including perspective-taking, emotional regulation, and conflict resolution (Duncan et al., 2014).

Hearing technology knowledge and management

For most people who are DHH, assistive technology is important for everyday functioning, and adolescents need to be fully proficient in maintaining and troubleshooting their hearing devices and equipment before they leave school (Duncan et al., 2014). They also need to develop proficiency in investigating potential technological devices or systems that might help them in challenging postschool settings. Being clear about their postschool goals will assist them to do this, and to gain the most useful advice from audiologists or agencies.

Knowledge of accommodations and legal rights

In their postschool life, DHH young people will need to recognise when they need help or support, and have some knowledge about the sorts of accommodations that might be available and helpful to them. Knowing about their legal rights – at the least, a basic knowledge that, under disability discrimination legislation, educators and employers are required to provide reasonable adjustments - can enhance their confidence in requesting accommodations and supports (Cawthon & Leppo, 2013).

Conclusion

This article has brought together findings from research on transition for young people with disability and for young people who are DHH in order to develop a model that can be useful for educators to best support and prepare DHH adolescents in their transition to postschool life. It is not suggested that it should be prescriptive or a 'one size fits all' model. DHH young people are heterogeneous, differing in many factors including their individual traits, needs, communication preferences, and family backgrounds. However, the model sets out the areas that are of particular importance

for DHH adolescents' transition, and can form the basis of a checklist for teachers and others involved in supporting the transition of these young people. A checklist based on the model is included in the Appendix.

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Appendix
Transition Checklist for Adolescents who are Deaf or Hard of Hearing

Career awareness	Developing	Satisfactory	Excellent
Career exploration and planning			
Job search, job application, and job interview skills			
Understanding of potential career barriers			
Ability to overcome barriers			
Meaningful work experience			
Work experience that reflects interests and abilities			
Follow-up reflection of work experience			
DHH role models and mentoring			
Formal contact with DHH adults			
Informal contact with DHH adults			
Collaboration: in-school and with external agencies			
Collaboration between teachers of the deaf and career personnel			
Established links with postsecondary education disability offices			
Established links with agencies and employment services			
Family engagement			
Parental involvement in transition planning			
Self-determination skills			
Self-awareness of strengths, interests, preferences			
Decision-making abilities			
Goal-setting and planning to attain goals			
Self-advocacy in explaining hearing loss			
Knowing when and how to disclose hearing loss			
Ability to request accommodations			
Assertiveness and negotiation skills			
Social and interpersonal skills			
Hearing technology knowledge and management			
Ability to manage personal hearing technology			
Awareness of potentially useful hearing technology and how to access it			

Knowledge of accommodations and legal rights			
Knowledge of possible accommodations in postsecondary education and employment			
Knowledge of legal rights in postsecondary education and employment			

Table 1

*Transition Taxonomy Categories and Practices**

Category	Practices include
Student-focused planning	Engaging in transition plan development, active participation by the student in the planning process
Student development	Focusing on employment skills development, structured work experience, career and vocational curricula, transition assessments, and self-determination skills development
Family engagement	Actively involving the family in transition planning, educating families about transition-related issues, and empowering families to participate
Interagency collaboration	Establishing strong links with employment services, local employers, and disability offices in universities and colleges
Program structure	Ensuring appropriate policy, philosophy, strategic planning, program evaluation, resource allocation, and human resource development

*Adapted from Kohler et al. (2017) and Kohler et al. (2016)

Figure 1

Transition Model for Adolescents Who Are Deaf or Hard of Hearing

Figure 2

Self-Determination in Transition for Adolescents Who Are Deaf or Hard of Hearing