Vocational Rehabilitation: Educational Audiologists' Knowledge, Attitudes, and Referral Practice Patterns

John J. Whicker[1], Faith Thomas[2], Kayla R. Currier Kipping[2], Kandace T. Jones[2], Brenda K. Smith[3] and Karen Muñoz[1]

[1]Department of Communicative Disorders and Deaf Education, Utah State University, Logan UT
[2]Department of Special Education and Rehabilitation, Utah State University, Logan UT
[3]Center for Persons with Disabilities, Utah State University, Logan UT

Corresponding author:
John J. Whicker
jj.whicker@aggiemail.usu.edu
2620 Old Main Hill
Logan, UT 84322
435-797-9234

ABSTRACT

This study explored educational audiologists' knowledge, attitudes, and referral practice patterns regarding vocational rehabilitation for transitioning adolescents with hearing loss. Educational audiologists across the United States were recruited to take part in an online, cross-sectional survey. Responses were analyzed for 81 respondents. Findings indicate that educational audiologists value vocational rehabilitation as important for their transitioning students; however, educational audiologists' knowledge about vocational rehabilitation may be limited, which may perpetuate student and family misconceptions about vocational rehabilitation. Suggestions for improvement are discussed.

Despite the normal distribution of intelligence and aptitudes, young adults with hearing loss may experience more difficulty transitioning from school to adulthood, receive less post-secondary education, and have a higher rate of unemployment when compared to typically hearing peers (Punch, Hyde, & Creed, 2004). In a recent national outcomes study, Garberoglio, Cawthon, and Sales (2017) reported that individuals who are deaf or hard-of-hearing (DHH) generally achieve lower levels of education compared to typically hearing cohorts, with only 18% of individuals who are DHH attaining a baccalaureate degree compared to 33% of hearing individuals. Attainment of higher education is especially lower among individuals who are DHH with other disabilities (Garberoglio et al., 2017). In 2016, only 48% of individuals who are DHH were employed, compared to 72% of hearing individuals; individuals who are DHH with other disabilities showed the lowest rate of employment (Garberoglio, Cawthon, & Bond, 2016). Employment has been linked to increased quality of life for individuals with varying disabilities (Rueda, Raboud, Mustard, et al., 2011; Beyer, Brown, Akandi, & Rapley, 2010). Thus, how transitioning young adults with hearing loss are supported as they find and maintain integrated employment has implications for their quality of life following their transition to adulthood.

Some studies have explored the career development of students with hearing loss to understand why a poor association between employment and hearing loss exists. For example, the extent to which students perceive their hearing loss as a communicative barrier and social restriction can influence how likely they are to explore ambitious career options (Punch, Creed, and Hyde, 2005; Punch & Hyde, 2005). In a sample of students using visual language as a primary mode of communication (N=53), 77% did not achieve a passing grade on the Transition Competency Battery (TCB; Bullis & Reiman, 1992), indicating that students demonstrated limited attainment of employment skills (e.g., job-seeking, social-interpersonal skills) and independent living skills (e.g., money management, community awareness; Luft & Huff, 2011).

Finally (and as alluded to by Garberoglio and associates (2017)), research suggests that the association between hearing loss and unemployment is accentuated for females, those with comorbid disabilities, those who had hearing loss at a younger age, and those who achieved lower levels of education (Moore, 2002; Hogan, O'Loughlin, Davis, & Kendig, 2009). Findings from these studies suggest that many transitioning adolescents with hearing loss may not be receiving evidence-based transition services. Transition services are evidence-based when they adhere to quality research indicators (e.g., career awareness, social skills, parent involvement; see Mazzotti, Rowe, Sinclair, et al., 2016) in efforts to aid youth in successfully exiting high school and transitioning to post-secondary education or work settings that match the students' strengths, interests, preferences, and needs (National Technical Assistance on Transition, 2017). Although speculative, there is a possibility that students may lack confidence in taking the necessary steps to achieve competitive, fulfilling employment.

Given the implications for how adolescents with hearing loss prepare for adulthood, consideration of the role of vocational rehabilitation (VR) in helping these individuals achieve integrated, competitive employment is warranted. The Individuals with Disabilities Education Act (IDEA, 2004) outlines that a student has gained integrated competitive employment when he or she (1) is compensated for their work at or above minimum wage, (2) is employed in a setting with other workers who do not have disabilities, (3) works an average of 20 hours or more per-week, and (4) has been employed for 90 days at any time in the last year. VR

is a federally-funded program to assist individuals with disabilities in finding and maintaining such integrated and competitive employment through a wide variety of services. Services are provided on a case-by-case basis; however, for individuals with hearing loss, VR services may include educational and vocational assessments, employment plans, career counseling, interpretation, vocational training, rehabilitative technology services (e.g., hearing aids), job development, job placement and follow-up, and post-employment services (Mascia & Mascia, 2008).

Research exploring the effects of VR services on employment for individuals with hearing loss is minimal; however, evidence suggests that individuals with hearing loss who receive VR services, including rehabilitative technology services, are more likely to achieve integrated employment status than those who do not receive services (Boutin & Wilson, 2009). In a national outcomes study exploring the effects of VR services on gainful employment for individuals with sensory/communicative disorders, physical disorders, and mental health disorders, 62% of individuals achieved gainful employment after receiving VR services (Dutta, Gervey, Chan, Chou, & Ditchman, 2008). In the same outcomes study, individuals with sensory/communicative disorders had the highest success rate (75%), with diagnostic and treatment services and rehabilitative technology services specifically contributing to the outcomes for this group.

Given the potential benefit of VR services for individuals with hearing loss, understanding how students are informed about VR services during transition from school to adulthood should be considered. As of 2012, a national study revealed only 4.6% of students with hearing loss were receiving transition services in school, and only 8% were receiving rehabilitation counseling (Gallaudet Research Institute, 2013). Although speculative, these small numbers were likely only reflective of transition-age students with an Individualized Education Program (IEP). By law, schools must include any agency that will pay for transition services in transition IEP meetings, beginning (in many states) at 14 years of age (IDEA, 2004). Although not all transition-age students with hearing loss have an IEP, many may still be eligible to receive VR services. Thus, without the IEP, it may be that many students with hearing loss are not directed to appropriate transition services and supports.

One area worth exploring is the role of educational audiologists, who can be instrumental in providing information and resources to students with hearing loss as they transition from school to work. To our knowledge, research exploring what educational audiologists know about VR services and how often VR is addressed with students with hearing loss has not been conducted. Such research can clarify existing gaps in what educational audiologists currently do in terms of referral practices and how such practices can be improved to benefit transitioning students with hearing loss. The purpose of this study was to explore educational audiologists' knowledge of, attitudes towards, and referral practice patterns for VR services for students with hearing loss.

METHOD

Respondents

This study employed a cross-sectional survey design. Cross-sectional designs are useful when gathering data from a group of individuals at a single point in time and eliminates the risk of losing data over time (Busk, 2005). Educational audiologists practicing in the United States and providing services to transitioning adolescents were notified of the opportunity to participate through a one-time email delivered through the Educational Audiology Association (EAA) list-serve, as well as through direct links posted four separate times to Facebook groups dedicated to audiologists with information targeting educational audiologists, specifically. Due to the potential overlap of sampling through the two recruiting methods, it is unclear how many educational audiologists were invited to participate, nor do we know the response rate for this survey. This study received ethical approval from the Utah State University Institutional Review Board.

Instrument

An unpiloted, 11-item survey was developed by the researchers to obtain demographic information, as well as to measure educational audiologists' knowledge of VR, attitudes toward VR, and referral practice patterns for VR. Questions primarily used a rating scale format to address how often participating educational audiologists engage in certain practices to connect transitioning students to VR services (Cronbach's $\alpha = 0.919$), and how much participating educational audiologists agree/disagree with statements regarding the role of VR services for individuals with hearing loss (Cronbach's $\alpha = 0.311$; see limitations in the discussion section of this paper). To elicit information about what educational audiologists know about VR, what they would like to know about VR, and what challenges educational audiologists face related to VR services, three open-ended questions were asked at the end of the survey. All data were collected and maintained in Qualtrics, a secure online data collection platform.

Analysis

Descriptive data analysis was completed using SPSS v 24, including measures of central tendency to identify variance in practice patterns. Cross-analysis using a one-way analysis of variance (ANOVA) was completed using an alpha level of .05 to determine if years in practice had a significant effect on educational audiologists' referral practice patterns to VR.

All written responses were reviewed separately by three of this study's authors and coded for emerging themes and subthemes. Following the separate analysis, the three authors met to discuss differences in findings and create a 100% consensus for the qualitative data (differences between researchers were primarily lexical in nature, and the consensus was regarding how themes and subthemes were worded). Apart from themes, based on the qualitative results exploring educational audiologists' knowledge about VR, the second author, a Transition Specialist with 20 years' experience, coded each of the responses according to their level of accuracy.

RESULTS

Responses to survey questions were not forced and many questions had a different number of responses. For the demographic and rating scale questions, data were completed and analyzed for 81 educational audiologists. For the open-ended responses, data were analyzed for 66 (*What do you know about Vocational Rehabilitation?*), 47 (*What do you want to know about Vocational Rehabilitation?*), and 58 (*What challenges have you/do you face regarding Vocational Rehabilitation services?*) educational audiologists. Demographic data can be viewed in Table 1. The average age of the respondents was 43 years (SD=10), with an average of 17 years (SD=11) working as an educational audiologist. The geographic representation of educational audiologists was well spread, with most respondents (55%, n=45) representing the Midwest and Western United States. Of the 81 educational audiologists, 75% (n=61) reported they routinely refer their transitioning students to VR.

Table 1. Demographics (N=81)

		%(n)	*M*(SD)
Age			
	25-35	32(26)	
	36-45	27(22)	
	46-55	22(18)	
	56-65	14(11)	
	PNA	5(4)	
			43(10)
Gender			
	Male	6(5)	
	Female	94(76)	
Race			
	White/Caucasian	93(75)	
	Hispanic/LatinX	4(3)	
	Black/African-American	1(1)	
	PNA/Other	2(2)	
Geographic Location			
	Midwest	28(23)	
	West	27(22)	
	Southeast	19(15)	
	Northeast	14(11)	
	Southwest	11(9)	
	PNA	1(1)	
Years in Practice			
	1-10	42(34)	
	11-20	20(16)	
	21-30	25(20)	
	31-40	12(10)	
	PNA	1(1)	
			17(11)
Refer Students to VR			
	Yes	75(61)	
	No	25(20)	

PNA = Preferred not to answer; VR = Vocational Rehabilitation

Respondents indicated how often they complete certain referral practices using a rating scale ranging from 1 (Never) to 5 (Always). To observe the trend of interest (how many respondents complete certain referral practices most of the time) *often* or *always* were combined (see Table 2). A majority of respondents reported they often or always explain VR to transitioning students (67%, n=54) and their parents (55%, n=44), with a verbal explanation about VR to transitioning students (66%, n=54) and their parents (59%, n=48). Fewer reported they often or always provide written information about VR to transitioning students (40%, n=32) and their parents (36%, n=29). Only 28% (n=23) reported they often or always provided online resources regarding VR to transitioning students, and 28% (n=23) often or always followed-up with students after making a referral to VR services.

Respondents next indicated how much they agree or disagree with statements regarding the value of VR services for transitioning students with hearing loss on a rating-scale ranging from 1 (Strongly disagree) to 6 (Strongly agree). For reporting purposes, *strongly disagree, disagree,* and *somewhat disagree* were combined, as well as responses for *somewhat agree, agree,* and *strongly agree* (see Table 3). A majority of respondents agreed to some extent that informing transitioning students about VR is important (97%, n=79), connecting transitioning students with their local VR office is important (94%, n=76), VR services are beneficial to transitioning students with hearing loss (90%, n=73), transitioning students are generally receptive of VR referrals (80%, n=64), and respondents feel comfortable making VR referrals (77%, n=62). Additionally, a majority of respondents disagreed to some extent that students using a visual language as a primary mode of communication rarely need VR services to be successful (91%, n=74), and that students using listening and spoken language as a primary mode of communication rarely need VR services to be successful (88%, n=71).

A one-way ANOVA was calculated to determine if educational audiologists' years in practice had a significant effect on whether they routinely referred students to VR, and no signficaint effect was found ($F[1,79]= .049$, $p = .825$). Additionally, a one-way ANOVA was calculated to determine if educational audiologists' years in practice had a signficant effect on whether they do certain practices to connect transitioning students to VR services, and no significant effect was found ($F[26,54] = 1.592$, $p = .075$). Thus, years in practice did not influence the referral practice patterns of educational audiologists.

Table 2. Referral practices

	%(n)				
How often do you . . .	Never	Seldom	Sometimes	Often	Always
Provide verbal information to transitioning students regarding VR	4(3)	9(7)	21(17)	38(31)	28(23)
Provide written information to transitioning students regarding VR	11(9)	20(16)	28(23)	21(17)	19(15)
Take time to explain what VR is to transitioning students	4(3)	10(8)	19(15)	35(28)	32(26)
Provide online resources to transitioning students regarding VR	15(12)	27(22)	30(24)	16(13)	12(10)
Follow up with students after referring them to VR	17(14)	19(15)	33(27)	22(18)	6(5)
Provide verbal information to transitioning students' parents regarding VR	7(6)	9(7)	24(19)	37(30)	22(18)
Provide written information to transitioning students' parents regarding VR	14(11)	24(19)	26(21)	21(17)	15(12)
Take time to explain what VR is to transitioning students' parents	10(8)	11(9)	25(20)	31(25)	24(19)

Table 3. Attitudes regarding vocational rehabilitation

	%(n)					
How much do you agree/disagree with the following statements?	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
VR services are beneficial to my transitioning students	4(3)	1(1)	5(4)	20(16)	44(36)	26(21)
Students who use spoken language rarely need VR services to be successful	20(16)	42(34)	26(21)	9(7)	4(3)	0(0)
Students who use visual language rarely need VR services to be successful	38(31)	48(39)	5(4)	5(4)	3(2)	1(1)
It is important to let my transitioning students know about VR service options	1(1)	0(0)	1(1)	7(6)	42(34)	48(39)
It is important to me to be connected with someone from my local VR offices	1(1)	3(2)	3(2)	17(14)	42(34)	35(28)
I am comfortable making referrals to VR	5(4)	9(7)	10(8)	15(12)	32(26)	30(24)
Generally, my students are receptive of VR referrals	1(1)	5(4)	14(11)	36(29)	35(28)	9(7)

Three open-response questions were used to elicit written responses regarding what educational audiologists know about VR, what they want to know about VR, and challenges they face when working with VR. The following is a qualitative description regarding each question.

What do you know about Vocational Rehabilitation?

Sixty-six educational audiologists (81%) responded to this question. One major theme emerged regarding the *knowledge type* pariticipants were reporting. Four subthemes emerged and indicated that, of those who responded, 85% (n=56) reported knowledge about general VR services, 38% (n=25) reported knowledge about eligibility criteria to receive VR services, 17% (n=11) reported specific knowledge regarding postsecondary educational services provided for by VR, and 6% (n=4) reported knowledge regarding transition procedure and wait-times. Some educational audiologists provided responses that illustrated knowledge in multiple knowledge type subthemes. These respondents were tallied in each knowledge type with which their response corresponded.

Responses were also coded to reflect the level of accuracy for each response, called knowledge level. Educational audiologists were categorized as having inaccurate knowledge (58%, n=38) (e.g., provided an inaccurate list of services, thought that services were only available after a transitioning student graduated or exited secondary school), limited knowledge (35%, n=23) (e.g., demonstrated knowledge about an aspect of VR but not all), or no knowledge (8%, n=5). No educational audiologists provided a full, accurate description of the scope and services of VR (see Table 4).

What do you want to know about Vocational Rehabilitation?

Forty-seven educational audiologists (58%) responded to this question, and two themes emerged related to the *structural* aspects of VR and the *procedural* aspects of VR. For *Structural,* three subthemes emerged indicating that respondents wanted more information regarding services, resources, and assessments (36%, n=17), eligibility and funding (17%, n=8), and staffing and training (6%, n=3). For *Procedural*, two subthemes emerged indicating that respondents wanted more information regarding the referral process or connecting with VR offices (34%, n=16), or general information about the process of obtaining VR services (15%, n=7). Nineteen percent (n=9) of the respondents reported they did not want to know anything more. Some respondents provided responses that illustrated desired knowledge in multiple themes. These respondents were tallied in each knowledge type with which their response corresponded (see Table 5).

Table 4. What Educational Audiologists Know About Vocational Rehabilitation (N=66; 81%)

Knowledge Type	%(n)	*Example*
General Services	85(56)	"VR helps students with educational/vocational needs as well as help with some transportation/living costs if approved."
Eligibility	38(25)	"In our state, voc rehab provides specialized employment and education-related services and training to assist teens and adults with disabilities in becoming employed or retaining employment."
Educational Services	17(11)	"Provides assistance to students seeking higher education and written rehab plans or devices to help students succeed in their education."
Transition Procedure	6(4)	"It is hard to get services in a timely manner; usually a waiting list for the students."
Knowledge Level		
Inaccurate	58(38)	E.g., inaccurate list of services; thought that services were only available to already-transitioned adults
Limited	35(23)	E.g., demonstrated knowledge about some but not all aspects of VR
None	8(5)	"Not very much-I am not really sure what is even available in my county."

Table 5. What Educational Audiologists Want to Know About Vocational Rehabilitation (N=47; 58%)

Theme	%(n)	*Example*
Structural		
Services/resources/assessments	36(17)	"Exactly the process to be evaluated, who qualifies, how they can be invited to the IEP."
Eligibility/funding	17(8)	"My families are not interested in Voc Rehab because they feel like it's for "poor people" and only for "real deaf people". I'd like to become more familiar with their service criteria so I don't perpetuate misinformation."
Staffing/training	6(3)	"What is training of those that work with deaf and hard of hearing clients?"
Procedural		
Referral process/VR connection	34(16)	"I would like to know a contact at my local office."
General information	15(7)	"Better knowledge of how the process works and how I can further expedite the process for kids."
No knowledge needed	19(9)	"I don't really need anything, I pretty much know what voc rehab does in my county."

What challenges have you/do you experience regarding Vocational Rehabilitation services?

Fifty-eight educational audiologists (72%) responded to this question, and the same two themes emerged related to the *structural* aspects of VR and the *procedural* aspects of VR. For *Structural*, three subthemes emerged indicating that respondents were facing challenges related to eligibility and funding for their students (26%, n=15), staffing and training concerns (22%, n=13), and services, resources, and assessments used (9%, n=5). For *Procedural*, three subthemes emerged indicating challenges related to making referrals and connecting with VR offices (24%, n=14), adequate follow-through or follow-up from VR once making a referral (24%, n=14), and having access to general procedural information (5%, n=3). Nine percent (n=5) of the respondents indicated they faced no challenges regarding VR. Some respondents provided responses that illustrated challenges in multiple themes. These respondents were tallied in each knowledge type within which their response corresponded (see Table 6).

Discussion

The purpose of this study was to explore the knowledge, attitudes, and referral practice patterns of educational audiologists who work with transitioning adolescents with hearing loss. This study is the first to explore this topic. The results of this study can be used to improve the knowledge and referral practice patterns of educational audiologists, with the ultimate goal of ensuring that adolescents with hearing loss are adequately informed and connected with transition services provided by VR.

Overall, educational audiologists' attitudes regarding VR are positive, with a vast majority valuing VR services as important for their transitioning students. Despite this high value, referral practices are variable and likely imprecise. For example, while most audiologists provided verbal information to both students and parents regarding VR services, based on the qualitative data, the information provided appears to be incorrect or incomplete, as no respondents were able to provide a full, accurate description of the scope and services of VR. The authors note, however, that limitations exist in the current interpretation of this qualitative data, which are discussed further on.

Table 6. Educational Audiologists' Challenges Regarding Vocational Rehabilitation (N=58; 72%)

Theme	%(n)	*Example*
Structural		
Eligibility/funding	26(15)	"Sometimes our county VR doesn't have a lot of money to help students . . ."
Staffing/training	22(13)	"The office closest to my students is not as familiar as I would like with hearing services. I often have to refer my students to an office in a larger town (30 miles away) in order to obtain hearing services."
Services/resources/assessments	9(5)	"Need more info on their services."
Procedural		
Referrals/VR connection	24(14)	"In my position I also work with a large geographical area so there are different offices or individualized handling things so not always sure who to contact."
Follow-through/follow-up	24(14)	"Patients have reported difficulty obtaining services through state rehab services or that it took a really long time to get any support."
General information	5(3)	"Having up to date information."
No challenges	9(5)	"None really, I have a good relationship with the voc rehab people."

Some incongruencies between the quantitative and qualitative data exist. For example, 77% of respondents agreed to some extent that they feel comfortable making VR referrals, however many wanted more information or faced challenges regarding having connections with VR offices. Thus, it is unclear exactly what "making referrals" means from the results of this study, given that many may consider simply talking about VR as making a referral, without providing contact or other information to help students connect with their specific local VR counselor who services individuals with hearing loss. This is a limitation that can be addressed in future studies.

Among individuals with hearing loss and their families, misconceptions may exist about VR and its scope of services. Fewer individuals who are hard-of-hearing take advantage of VR services compared to individuals with profound hearing loss or deafness (Moore, 2001). Some of the qualitative data from this study reflect why this may be. For example, one educational audiologist reported, "My families are not interested in Voc Rehab because they feel like it's for poor people and only for real deaf people".

Other misconceptions may exist among the educational audiologists. From the qualitative data, it is unclear how many understand that VR services are intended for individuals with disabilities, rather than the general population. Furthermore, several audiologists indicated in their open responses that they did not know that individuals can access VR services as early as 14 years of age, nor was there any indication that educational audiologists were supporting students to access pre-employment transition services provided by VR in their secondary settings.

Implications for Practice and Research

Given that educational audiologists report routinely referring students to VR, the number of educational audiologists who may be providing inaccurate or incomplete information may indicate that misconceptions regarding VR are being perpetuated, such that eligible students with hearing loss are not seeking the services from which they may benefit. Some suggestions to mitigate this are: (1) educational audiologists contact their local VR counselors via contact information provided on the agency website or through the local high schools; (2) once educational audiologists have made contact with their local VR counselors, they may also request pamphlets or other written material to share with students and their families regarding VR services, and seek to increase in collaborative work with VR counselors; (3) when contacting the local VR office, the educational audiologist can request the name of the VR counselor who specifically supports individuals with hearing loss, and (4) if the student has an Individualized Education Program (IEP), the educational audiologist can obtain written permission from the parents (or emancipated student) for a VR counselor to attend IEP meetings, explain their services, and be a part of the transition IEP team as they begin transition planning once the student turns 16 years of age (or, in many states, at the age of 14).

This study is not without limitations. The procedure for collecting data (online, cross-sectional survey) did not allow for follow-up questions when qualitative responses were unclear. It is possible that the 58% of respondents who provided inaccurate statements about VR could have provided more accurate statements with follow-up questioning regarding their responses. Additionally, this study did not explore how educational audiologists determine which students need VR referrals, as it may be that educational audiologists only make referrals on a case-by-case basis, which was not explored in this study. Finally, the instrument used in this study was not totally reliable, as the scale to measure what educational audiologists agree/disagree with regarding the role of VR for students with hearing loss had minimal internal consistency. Future studies could enhance the findings of this study by exploring specifically how and why educational audiologists make referrals to VR and what specific information they provide. Finally, future studies could explore how effective online resources and written information are in increasing student and family knowledge about VR, which is something this study did not explore.

CONCLUSIONS

The purpose of this study was to explore the knowledge, attitudes, and referral practice patterns of educational audiologists regarding VR. Findings from this study reveal that educational audiologists value VR services as important for their students; however, many educational audiologists may not be providing accurate information about VR and may perpetuate misconceptions which students and their families may have about VR services. Further research to understand educational audiologists' relationship with VR is recommended to improve post-secondary and employment outcomes for students with hearing loss.

Acknowledgements

The authors thank the Educational Audiology Association for helping distribute the survey used for this study. The authors also thank the many educational audiologists who participated in this study.

REFERENCES

Beyer, S., Brown, T., Akandi, R., & Rapley, M. (2010). A comparison of quality of life outcomes for people with intellectual disabilities in supported employment, day services, and employment enterprises. *Journal of Applied Research in Intellectual Disabilities*, 23, 290-295.

Blalock, A.C., McDaniel, J.S., & Farber, E.W. (2002). Effect of employment on quality of life and psychological functioning in patients with HIV/AIDS. *Psychosomatics*, 43, 400-404.

Boutin, D., & Wilson, K. (2009). An analysis of vocational rehabilitation services for consumer with hearing impairments who received college or university training. *Rehabilitation Counseling Bulletin*, 52(3), 165-166.

Bullis, M., & Reiman, J. (1992). Development and preliminary psychometric properties of the Transition Competence Battery for deaf adolescents and young adults. *Exceptional Children*, 59(1), 12-26.

Busk, P.L. (2005). Cross-sectional Design. In B. Everitt & D.C. Howell (Eds.), *Encyclopedia of statistics in Behavioral Science*, (Vol.1) (pp.453-473). Chichester, UK: John Wiley & Sons.

Dutta, A., Gervey, R., Chan, F., Chou, C., & Ditchman, N. (2008). Vocational rehabilitation services and employment outcomes for people with disabilities: A United States study. *Journal of Occupational Rehabilitation*, doi: 10.1007/s10926-008-9154-z.

Gallaudet Research Institute (August 2013). Regional and national summary report of data from the 2011-12 annual survey of deaf and hard of hearing children and youth. Washington, DC: GRI, Gallaudet University.

Garberoglio, C.L., Cawthon, S., & Bond, M. (2016). *Deaf People and Employment in the United States: 2016*. Washington, DC: U.S. Department of Education, Office of Special Education Programs, National Deaf Center on Postsecondary Outcomes.

Garberoglio, C. L., Cawthon, S., & Sales, A. (2017). *Deaf People and Educational Attainment in the United States: 2017*. Washington, DC: U.S. Department of Education, Office of Special Education Programs, National Deaf Center on Postsecondary Outcomes.

Hogan A., O'Loughlin K., Davis A., & Kendig H. (2009). Hearing loss and paid employment: Australian population survey findings. *International Journal of Audiology*, 48(3), 117-122.

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004)

Luft, P., & Huff, K. (2011). How prepared are transition-age deaf and hard of hearing students for adult living? Results of the Transition Competence Battery. *American Annals of the Deaf*, 155(5), 569-579.

Mascia, N. & Mascia, J. (2008), Audiology on the job: The vocational rehabilitation and audiology partnership. *JADARA*, 41(2), 95-112.

Mazzotti, V.L., Rowe, D.A., Sinclair, J., Poppen, M., Woods, W.E., & Shearer, M.L. (2016). Predictors of post-school success: A systematic review of NLTS2 secondary analyses. *Career Development and Transition for Exceptional Individuals*, 39(4), 196-215.

Moore, C. (2001). Disparities in job placement outcomes among deaf, late-deafened, and hard-of-hearing consumers. *Rehabilitation Counseling Bulletin*, 44(3), 144-150.

Moore, C. (2002). Relationship of consumer characteristics and service provision to income of successfully rehabilitated individuals who are deaf. *Rehabilitation Counseling Bulletin*, 45(4), 233-239.

National Technical Assistance Center on Transition (2017). *Competitive Integrated Employment Toolkit*, R. Allison, J. Hyatt, K.A. Clark, & D.W. Test.

Punch, R., Creed, P., Hyde, M. (2005). Predicting career development in hard-of-hearing adolescents in Australia. *Journal of Deaf Studies and Deaf Education*, 10(2), 146-160.

Punch, R., & Hyde, M. (2005). The social participation and career decision-making of hard-of-hearing adolescents in regular classes. *Deafness and Education International*, 7(3), 122-138.

Punch, R., Hyde, M., & Creed, P. (2004). Issues in the school-to-work transition for hard of hearing adolescents. *American Annals of the Deaf*, 149(1), 28-38.

Rueda, S., Rabour, J., Mustard, C., Bayoumi, A., Lavis, J.N., & Rourke, S.B. (2011). Employment status is associated with both physical and mental health quality of life in people living with HIV. *AIDS Care*, 23(4), 435-443.