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Examining The Relationship Between Mental Health Professionals Knowledge And Beliefs As Predictors Of Attitudes Toward The Deaf

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**EXAMINING THE RELATIONSHIP BETWEEN MENTAL HEALTH
PROFESSIONALS KNOWLEDGE AND BELIEFS AS PREDICTORS OF ATTITUDES
TOWARD THE DEAF**

by

PEARL MOORE WEISS

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

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DOCTOR OF PHILOSOPHY

2016

MAJOR: COUNSELING

Approved By:

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DEDICATION

Thou art the God that doest wonders...Psalms 77:14

This work is dedicated to the glorious wonder of Jesus Christ, the Lord.

It is also dedicated to my teachers, students, and colleagues
who taught me much about deafness.

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CHAPTER 1: INTRODUCTION

Scope of the Problem

The study of attitudes towards individuals with disabilities has been of interest to researchers for years. Attitude research is important because “negative attitudes can be invisible barriers which reduce potential opportunities and prevent individuals from engaging in society” (Goreczny, Bender, Caruso, & Feinstein, 2011, p. 1596). Some research on attitudes towards people who are deaf found that most hearing people have negative perceptions and stereotypical attitudes regarding people who are deaf or hard of hearing (Berkay, Gardner, & Smith, 1995; Nikolarazi & Makri, 2004). These negative attitudes often attribute stereotype characteristics based on misconceptions and lack of fundamental knowledge about deaf culture, communication and language, and intelligence (Dickert, 1988; Vernon & Leigh, 2007). The collateral effects associated with attitudinal barriers, lack of knowledge, and biased beliefs can affect individuals who are deaf employment status, social relationships, educational opportunities, and access to mental health and health care services (Barnett, 2002; Ebert & Heckerling, 1995; Harmer, 1999; Hergenrather & Rhodes, 2007; Ralston, Zazove, & Gorenflo, 1996; Steinberg, Barnett, Meador, Wiggins, & Zazove, 2006; Zahn & Kelly, 1995).

Heterogeneity among the deaf population is an important factor to consider. For purposes of the current research study, the conventional use of the upper case letter “D” refers to the culturally Deaf, a group of individuals who typically share common beliefs, language, and values. However, not all individuals with a hearing loss identify with or are considered part of the Deaf cultural minority. The lower case “d” denotes individuals with continuum of auditory loss and may include individuals who are deaf, hard of hearing, and late or sudden deafened (Harmer, 1999; Vernon & Leigh, 2007). The combined use in this study will appear as D/deaf.

Historically, literature on deafness revealed that several terms used to refer to deaf individuals may be problematic or confusing. For example, the term “hearing impaired,” used frequently in the past, may be considered pejorative and suggest impairment or pathology (National Association of the Deaf, NAD, 2014; Scheier, 2008). Other descriptions, such as hearing loss, deaf, and hard of hearing, are used to describe individuals with various levels of audiological hearing loss.

Attitudes are learned dispositions directing feelings, thoughts and actions developed from beliefs people hold about the object of the attitude (Fishbein & Ajzen, 1975). The three components directing the dispositions represent the affective, cognitive, and behavioral components of attitudes. Moreover, attitudes represent evaluative judgments and may reflect “a disposition to respond [or behave] favorably or unfavorably” toward individuals who are D/deaf influenced by knowledge deficits (Ajzen, 1989, p241). Demographic variables, such as age, gender, education, socioeconomic status, and experience, also may influence mental health professional attitudes toward persons who are D/deaf as well as individuals with disabilities (deLaat, Freriksen & Vervloed, 2013; Hillerbrand, 1988; Tervo, Azuma, Palmer & Redinius, 2002).

Despite legal provisions, such as Americans with Disability Act (ADA, 1990) and the Rehabilitation Act of 1973, attitudinal barriers are “believed to be the most covert and most difficult to overcome” (Coryell, Holcomb, & Scherer, 1992, p. 299). Deaf individuals often report negative experiences with the hearing world, (DeVinney & Murphy, 2002; Iezzoni, O’Day, Killeen, & Harker, 2004; Steinberg et al., 2006), as well as disparities in treatment (e.g., inadequate access to services, language and communication barriers) and lack of knowledge regarding the

needs of individuals who are D/deaf (Barnett, 2002; Cabral, Muhr, & Savageau, 2013; Feldman & Gunn, 2007; Steinberg, Wiggins, Barmada, & Sullivan, 2002; Witte & Kuzel, 2000).

The problem may be particularly acute and exacerbated among hearing mental health professionals who work with clients' who are D/deaf. Several prior studies reported limited or poor knowledge related to individuals who are D/deaf regarding communication and language (Ebert & Heckerling, 1995; Fellingner, Holzinger, & Pollard, 2012; Hoang, LaHousse, Nakaji, & Sadler, 2011; Ralston, Zazove, & Gorenflo, 1996; Steinberg, Sullivan, & Loew, 1998), being aware of the dynamics and issues associated with D/deaf culture (Bat-Chava, Deignan, & Martin, 2002), and understanding perspectives of mental health and health care professionals about disability and deafness (Barnett, 2002; Vernon & Leigh, 2007). Few mental health and health care workers have had contact or experience with individuals who are D/deaf, which may reinforce negative attitudes further (Fusick, 2008; Harmer, 1991; Heller, 1987; Lass, Carlin, Woodford, Campanelli-Humphreys, Judy, Hushion-Stemple & Boggs, 1986).

Ethical and accreditation standards delineated by the Council of Accreditation of Counseling and Related Educational Programs (CACREP, 2001) and professional standards of the American Psychological Association, (APA, 2003) and the National Association of School Psychologists, (NASP, 2010) have established clear guidelines for providing competent services to all clients, including individuals who are deaf and hard of hearing. For example, NASP Principles for Professional Ethics stresses that psychologists should:

... recognize the strengths and limitations of training and experiences, only engaging in practices for which they are qualified... [and that they are] obligated to pursue knowledge and understanding of diverse cultural, linguistics and experiential backgrounds of students, families, and other clients (p. 6).

Similarly, the American Counseling Association's (ACA, 2014) Code of Ethics Preamble statement urges members to adhere to "honoring diversity and embracing a multicultural approach...and practicing in a competent and ethnical manner" (p. 3).

Moreover, research supports the notion that hearing mental health practitioners who work with people with disabilities, including individuals who are D/deaf, typically lack the required training, credentials, or knowledge, and thus, are not immune from negative stereotypes and perceptions about these individuals (Goreczny, Bender, Caruso, & Feinstein, 2011; Hunt & Hunt, 2007; Tervo, et al., 2002; Vernon & Leigh, 2007). Mental health professionals who hold negative attitudes toward individuals who are D/deaf tend to place emphasis on the hearing loss and subsequently perceive them as disabled, impaired, or handicapped. Further, negative attitudes of mental health professionals' are not phenomena peculiar to individuals with hearing losses, but affect a broad array of individuals with disabilities. For example, while blindness is viewed as more debilitating than deafness (Owoeye, Ologe, & Akande (2007), individuals with severe mental illness and cognitive deficits are more stigmatized than people with physical disabilities (Karnilowicz, Sparrow, & Shinkfield, 1994; Scior, 2011).

Negative attitudes and misconceptions towards individuals who are D/deaf among hearing mental health professionals is substantial. Biased behaviors may act as invisible barriers impeding the success of persons who are D/deaf as well as individuals with other disabilities (Chubon, 1982; Goreczny et al., 2011; Schroedel & Schiff, 1972) that can affect the delivery of services in broad areas of social, educational, and mental health.

Prior Research: Attitudes and Deafness

Research has investigated attitudes and perceptions among the general population toward people with disabilities (Hergenrather & Rhodes, 2007; Scior, 2011). However, previous research

also suggest that health care professionals (e.g., physicians, nurses, occupational/physical therapists; Goreczny, Bender, Caruso, Feinstein, 2011; Olinger, Dancer, & Patterson, 1991; Ralston, Zazove, & Gorenflo, 1996) and mental health professionals (e.g., psychologists, counselors, rehabilitation counselors) have negative and stereotyped attitudes similar to the general public (French, 1994; Tervo, Palmer, & Redinius, 2004). For example, lack of knowledge about D/deaf literacy rates, writing skills, and use of English as a second language may result in misconceptions about overall functioning and capabilities of individuals who are D/deaf (Dickert, 1988; Gunther, Gulati, & King, 1997; McEwen & Anton-Culver, 1988; Steinberg, Barnett, Meador, Wiggins, & Zazove, 2006). Although research results are inconsistent, some findings suggested that health care professionals' negative attitudes and behaviors toward people with disabilities are primary reasons why individuals with disabilities do not seek health care services (Tervo et al., 2002; 2004). For example, a study by Tervo, et al. (2004), used the Scale of Attitudes Toward Disabled Persons (SADP), measured medical students' attitudes entering the health care field. The study findings revealed first year medical students had "poorer attitudes toward people with disabilities than norms on SADP" (p. 1541).

Prior research that investigated attitudes of mental health and health care workers towards individuals who are D/deaf yielded variable results influenced by factors such as contact with persons who are D/deaf, knowledge or awareness, and experience with individuals who are D/deaf. For example, Cooper, Rose, and Mason (2003) investigated the relationship between mental health providers' attitudes and the amount of contact with individuals who were D/deaf, using the Attitudes Toward Deaf People Scale (Cooper et al., 2004). Findings suggested the extent of contact was associated with more positive attitudes toward D/deaf individuals who were of "equal or

higher social status” (p.388). Additionally, participants with training in deafness had attitudes that were more positive toward persons who were D/deaf.

Similarly, Dickert (1988) examined bias among mental health providers’ evaluation of patients who were D/deaf in state mental institutions. Attitudes, level of professional training, and type of treatment were studied. Cowen’s Attitude to Deafness Scale (1967) was the measure used to assess attitudes toward deafness. Results indicated that mental health professionals who worked in specialized units for psychiatric D/deaf patients had more positive attitudes towards patients who were D/deaf than those working with the general patient population. However, the Dickert study revealed treatment bias toward patients who were D/deaf. Mental health workers evaluated patients with hearing loss with more severe mental illness, needed greater supervision, and were in greater need of medication more severely. Moreover, negative evaluations and perceived stigma toward individuals wearing hearing aids (i.e., the hearing aid effect) associated with rater appraisals of intelligence, achievement, and personality have also been reported (Blood, Blood, & Danhauser, 1978).

Further, Kiger (1997) investigated the structure of attitudes toward people who were D/deaf and the influence of affect, cognition, and stereotyping on their attitudes. According to the researcher, attitudes toward individuals who are D/deaf by hearing people were influenced by prior experiences, including contact or interactions. While Kiger reported overall respondents’ feelings toward persons’ who are D/deaf were positive, contacts with individuals with hearing loss were infrequent and attitudes shaped by cultural imagery, especially media representations.

Ebert and Heckerling (1995) assessed the relationship between physicians’ communication and their existing practices with D/deaf patients examined knowledge, practice, and beliefs about individuals who are D/deaf. Physicians’ were surveyed regarding prior contacts with D/deaf

patients in and out of the medical setting, as well as their knowledge and beliefs about methods of communication (e.g., sign language, writing, lip-reading or speech reading, and use of interpreters). Findings from this study revealed past contact with people who are D/deaf, perceptions that communication by signing was best for patients who are D/deaf, and knowledge about the inefficiency of lipreading were predictors of the use of sign language interpreters by physicians. While the majority of physicians thought that American Sign Language (ASL) interpreters provided the best outcomes for their patients, few incorporated them in their practices. Most physicians (55%) were concerned about additional time, effort, and costs associated with providing services to patients who were D/deaf (Ebert & Heckerling, 1995). In an earlier study, Maher (1984) surveyed mental health clinicians' (e.g., psychologists, psychiatrists, counselors, social workers) use of interpreters in therapy with clients who were D/deaf. Results indicated that more than half of the clinicians had never used an interpreter and 40% reported they would not be willing to use an interpreter citing reluctance of having a third party in therapy.

Statement of the Problem

Historically, a pervasive lack of cultural understanding of deafness exists among most mental health and medical health care professionals in the provision of services to clients who are D/deaf (Filer & Filer, 2000; Harmer, 1999; Vernon & Leigh, 2007). Research suggest that few hearing practitioners have special clinical training, cultural competence, and skills to communicate effectively with D/deaf clients or patients (Adib-Hajbaghery & Rezaei-Shahsavarloo, 2015; Barnett, 2002; Bat-Chava, Deignan, & Martin, 2002; Filer & Filer, 2000; Ralston, Zazove, & Gorenflo, 1995; Williams & Abeles, 2004).

Hearing loss is one of the most prevalent conditions in the United States affecting 12.7% of Americans influenced by factors including aging and noise exposure (Agrawal, Platz &

Niparko, 2008; Lin, Niparko, & Ferrucci, 2011). Although, the prevalence of individuals with hearing loss varies based on indicators such as definition and data collection methods, estimates range between 30 million for individuals 12 and older with a bilateral hearing loss (Lin, et al., 2011) to 36 million for people who report “some degree of hearing loss” (National Institute on Deafness and Other Communication Disorders [NIDCD], 2010). Moreover, according to NIDCD, 2 to 3 out of every 1000 children in the United States are born deaf or hard of hearing (www.nidcd.nih.gov/health/statistics/quick.htm, 2010). Further, the individuals with hearing loss is expected to increase due to several factors including aging population, exposure to hazardous noise, and ototoxic chemicals (Agrawal, Platz, & Niparko, 2008). Based on projections about hearing loss, mental health professionals are expected to encounter more individuals with hearing loss and need to possess basic knowledge about this underserved population (Iezzoni, O’Day, Killeen, & Harker, 2004; Ross & Feller, 2005).

Barriers: Knowledge/Training

Barriers to effective mental health services for clients who are D/deaf are associated with a lack of competent clinicians trained to provide services (Fusick, 2008; Steinberg, 1991; Vernon & Leigh, 2007; Williams & Abeles, 2004). Moreover, survey research suggested that the majority of therapists lacked a focus on deafness in their formal training (Bat-Chava, Deignan, & Martin, 2002; Heller, 1997; Levine, 1974) and generally were unfamiliar with the cultural aspects of deafness. Tervo and Palmer (2004) cited a number of factors that could influence health professional attitudes toward people with disabilities, including age, gender, work experience, level of education, and discipline. For example, researchers examined attitudes of first year medical students toward individuals with disabilities. Gender disparities were revealed between first year male medical students who were at higher risk of having negative attitudes

toward persons with disabilities than female medical students. Further, the study suggest that medical students with a background in disabilities were more comfortable and had positive attitudes in “challenging situations”. For purposes of this study, mental health professionals will refer to counselors and psychologists.

Purpose of the Study

The purpose of this study was designed to explore the relationship between the attitudes of mental professionals toward individuals who are D/deaf and the salience of knowledge and beliefs as predictors in attitudes toward individuals who are D/deaf. Information from this study may be useful to increase the efficacy of mental health professionals’ knowledge, improve attitudes toward individuals who are D/deaf, and result in better mental health outcomes.

Research Questions and Hypothesis

1. To what extent are mental health professionals’ attitudes related to knowledge about individuals who are D/deaf?

H₁: Mental health professionals reported level of knowledge about deafness will significantly predict attitudes towards individuals who are D/deaf.

2. To what extent do beliefs about the capabilities of individuals who are D/deaf, influence mental health professionals’ attitudes toward individuals who are D/deaf?

H₂: Mental health professionals who reported less favorable beliefs about the capabilities of individuals who are D/deaf will report less favorable attitudes towards individuals who are D/deaf.

3. To what extent does mental health professionals’ demographic variables relate to knowledge, beliefs, and the prediction of attitudes toward individuals who are D/deaf?

H₃: Mental health professionals’ education/training and experience are statistically related to their knowledge, attitudes, and beliefs toward individuals who are D/deaf.

Need for the Study

A study of this nature is important for several reasons. First, the influence that mental health practitioners have relative to providing services to individuals with disabilities in general, and individuals who are D/deaf, specifically, is significant. Historically, individuals with hearing loss are at greater risk of adverse outcomes based on negative attitudes, reflected in beliefs, and lack of knowledge, which are significant barriers in delivery of service. Further, an extensive body of research exists investigating the damaging effects of negative attitudes toward individuals with disabilities, which promote invisible barriers. These barriers extend also to individuals with hearing loss compounded by factors associated with language and poor communication, misconceptions about intelligence, and cultural competence about deafness.

Second, mental health practitioners, who for the most part are hearing, play pivotal roles in delivery of services to clients who are D/deaf. A significant barrier in providing mental health service for D/deaf individuals is training, cultural competence, and basic knowledge about deafness. The salience of knowledge as well as beliefs may play a significant role in the development of negative attitudes toward persons who are D/deaf. This study may be useful in improved outcomes for clients who are D/deaf by examining the relationship between attitudes, knowledge, and beliefs of mental health professionals'. Moreover, this research may contribute to a gap in the literature that has not explored mental health clinicians' knowledge, beliefs, and attitudes toward individuals who are D/deaf. This study may also provide a platform for initiating discussion about attitudes toward deafness and the need to include deafness in psychology and counseling curricula. Increasing knowledge and awareness about the capabilities of individuals who are D/deaf could influence attitudes of future practitioners enrolled in counseling and psychology programs.

Assumptions

The assumptions evidenced in the literature on attitudes towards individuals who are D/deaf provide a framework that supports the hypotheses that a fundamental lack of knowledge, inadequate formal training in deafness, and inexperience with deafness create significant barriers for the D/deaf population. Moreover, it is assumed that training curricular programs needed to acquire knowledge and cultural competency to work with individuals, contribute to the scarcity of qualified mental health professionals. Lack of appropriate training and experience may lead to clinician bias that can substantially affect mental health outcomes for individuals who are D/deaf. Further, disparities in vocational placement programs, educational opportunities, and mental health treatment may result from inadequate training and preparation among mental health professionals in providing services to clientele who are D/deaf.

Limitations

Limitations of this study include the use of self-report measures, and thus, the accuracy of the responses, i.e., response bias that may be subject to extraneous factors beyond the control of this study. It is possible that some participants may have misrepresented their attitudes and beliefs, i.e., social desirability bias based on tendency to respond to perceived socially appropriate responses. Moreover, mental health professionals may have overestimated or underestimated their knowledge about deafness. Additionally, potential bias from differential selection of participants, inability to manipulate independent variables, and lack of randomization may threaten internal validity and limit generalization of results.

Definitions of Terms

- **Hearing impaired** refers to individuals with a broad continuum of auditory impairments (e.g., deaf, hard of hearing, deafened) ranging from mild to severe. The term used

frequently, particularly in past literature, may be viewed as pejorative or offensive by the culturally Deaf community and implies substandard, damaged, or that something needs to be fixed (National Association of the Deaf, NAD, 2014; Scheier, 2008).

- **Lowercase “d”** refers to audiological impairment or loss and includes a broad spectrum of hearing losses from mild to profound. The term deaf also refers to individuals who are unable to hear speech or spoken language without the use of hearing aid or amplification (NIDCD, 2010).
- **Uppercase “D”** refers to a cultural community with its own values and language whose identity is a distinct cultural group.
- **Degree of hearing loss** refers to the severity of the loss assessed by the intensity or loudness of sound and the various frequencies measure in decibels (dB; Audiology Information Series, American Speech and Hearing Association, ASHA, 2011).

<u>Degree of Hearing Loss</u>	<u>Hearing Loss Range (dB)</u>
Normal	-10 to 15
Slight	16 to 25
Mild	26 to 40
Moderate	41 to 55
Moderately Severe	56 to 70
Severe	71 to 90
Profound	91+

- **Type of hearing loss** refers to the location of damage to the hearing structure:
 - (a) **Conductive loss** occurs when sound is not conducted or carried to the outer ear canal to the tiny bones (ossicles) of the middle ear (ASHA, 1997-2014). Conductive hearing loss usually involves a reduction in sound level or the ability to hear faint sounds that can be treated medically. Causes commonly related to conductive losses include excessive cerumen (earwax), punctured eardrum, and ear infections.

(b) **Sensorineural loss** occurs when there is damage to the pathway from the inner ear hair cells (cilia) to the auditory nerve and brain (ASHA, 1997-2014). Sensorineural loss typically involves a decrease in perception of higher frequency sounds that can affect speech discrimination. Head trauma, aging, toxic drugs, and exposure to loud noise are possible causes associated with sensorineural hearing loss. Generally, sensorineural hearing loss is the most common type of permanent loss with possible causes associated with head trauma, aging, toxic drugs, and exposure to loud noise (ASHA, 1997-2014).

(c) **Mixed hearing loss** is a combination of conductive and sensorineural hearing loss and involves damage to the “outer or middle ear and in the inner ear (cochlea) or auditory nerve” (ASHA, 1997-2014).

- **Prelingual** hearing loss occurs prior to the development of speech and language, approximately age 3. This type of hearing loss may be significant particularly for children as the metric is 9 out of every 10 children born deaf are born to hearing parents (ASHA, 1997- 2014; NIDCD.nih.gov, 2010).
- **Postlingual** hearing loss occurs after development of speech and language, i.e., acquired deafness, and may include terms such as late deafened adults, adventitious deafness, postvocational, and sudden deafness and progressive hearing loss (Aguayo & Coady, 2001; Kampe & Smith, 1999).
- **American Sign Language (ASL or Ameslan)** is the dominant language and preferred mode of communicated used culturally to identity with the Deaf community. ASL has unique syntactical and grammatical structure that does not translate word for word into the English language.

- **Contact Sign Language or Pidgin Signed English** is a combination of ASL and English grammatical structure (Gunther & Gulati, 1997).
- **Attitude** is a multidimensional construct consisting of three components: the *affective* component includes feelings or emotions that involve an evaluation or judgment toward a particular group, such as people who are D/deaf; the *cognitive* component includes a set of beliefs and thoughts toward a specific group; and the *behavioral* element includes the actions or behavior toward a particular group (Bernstein, Roy, Srull, & Wickens, 1991). Attitudes in this study represent a predisposition by mental health professionals in their judgment, feelings, beliefs and thoughts, and actions or behavior toward individuals who are D/deaf stemming from a lack of fundamental knowledge about capabilities or intelligence, language and communication, and social norms.
- **Beliefs** are interrelated to attitudes and represent the cognitive component that results from misconceptions, stereotypes, and biases that may be associated with faulty or erroneous information, knowledge and experience, and views toward particular groups, such as persons who are D/deaf. Lack of knowledge may contribute to attitude formation that may be expressed through negative or positive attitudes via behaviors, thoughts, and feelings.
- **Stereotypes** involve impressions and false assumptions that attribute the same characteristics to all of members of a particular group such as the people who are D/deaf (Bernstein, et al, 1991; Hunt & Hunt, 2004).
- **Knowledge** involves the acquisition of information, skill and competency, and awareness acquired through education, training, exposure or experience. Knowledge interacts with beliefs and may influence the formation of attitudes by mental health professionals toward individuals who are D/deaf.

- **Self-efficacy** refers to a person's judgment, i.e., beliefs about one's competency to perform a particular task and the capacity to learn or successfully enact specific behaviors or tasks (Bandura, 1977, 1986). Efficacy beliefs involve an evaluative component and are thought to mediate skill, past or future performance, and is major determinant in influencing behavior (actions), individual choice, and perseverance to the task

Summary

Chapter 1 focused on the research associated with barriers that individuals who are D/deaf encounter in accessing services from mental health professionals. Specifically, barriers related to attitudes about persons who are D/deaf stemming from a fundamental lack of knowledge, biased beliefs about intelligence, and stereotypes about the behavior of persons who are D/deaf. Moreover, interactions between mental health professionals and individuals who are D/deaf, is affected by language and communication, limited understanding of the cultural needs of the Deaf community, and poorer mental health outcomes for the D/deaf population.

Chapter 2 presents a review of relevant literature including historical background, theoretical framework, mental health professionals' attitudes toward disabilities and deafness, perspectives on deafness, and barriers that affect outcomes for clients who are D/deaf. The methods that will be used to collect the data needed to address the research questions and test associated hypotheses will be included in the third chapter. Chapter 4 presents the results of the data analysis that answers the research question and conclusions and recommendations are included in Chapter 5.

CHAPTER 2: LITERATURE REVIEW

Introduction

Social psychologists have studied attitudes in efforts to help explain thoughts, feelings, and actions toward other people. “Attitudes are important because they shape people perceptions of the social and physical world and influence overt behaviors” (Albarracin, Wang, Li, & Noguchi, (2008, p19). An extensive body of research literature exists on attitude and attitude formation toward individuals who are marginalized and comprise group membership based on race and ethnicity (Betancourt, 2006; Betancourt, Green, Carrillo, & Ananeth-Firemphonng, 2003; vanRyn), disability (Goreczny, Bender, Caruso, & Feinstein, 2011), elderly and geriatric (Fitzgerald, Wray, Halter, Williams, & Supiano, 2003; Gatz & Pearson, 1988) and socioeconomic status and poverty (Cozzarelli, Wilkinson, & Tagler, 2001; Hillerbrand, 1988; Wen, Hudak, & Hwang, 2007). Negative perceptions toward the poor have been associated with negative attributions and causal beliefs about poverty, i.e., assessing individual blame or personal responsibility for being poor (Wear & Kuczewski, 2008). In one study, physicians’ perceptions, beliefs, and attitudes were examined as ‘determinants’ in stereotypes and attributions of poverty toward disadvantaged patients. Results suggest some physicians have a negative image of indigent patients, tend to blame the poor, have lower expectations, and have less motivation to work with poor patients (Willems, Swinnen, & DeMaeseneer, 2005). In a study related to homeless patients, Fine (2013) compared negative attitudes toward homeless individuals among emergency room faculty and residents. Findings indicated more prevalent negative attitudes exist among faculty than students and suggest that faculty role modeling may have a harmful influence on beliefs of medical students. Finally, Wen, et al., (2007), reported that homeless and lower social class individuals described disparaged

feelings such as unwelcomed and dehumanized during emergency room interactions with health care providers.

Hillerbrand (1988) examined the notion of social class in diagnostic attribution among counseling files from a university counseling center associated with upper, middle, and lower class groups. The counseling center psychologists' diagnosis, treatment, and outcome measures suggest that lower class clients were perceived as more dysfunctional, made less progress in therapy, and presented with more vocational problems. Findings appear to support earlier research on psychiatric data collected on children of blue-collar workers who were divided into two groups based on the father's occupational status, i.e., skilled or unskilled. Children in the unskilled group were diagnosed with a "significantly higher incidence of personality and borderline states" and were reported as having more problems in the school setting (McDermott, Harrison, Schragar, & Wilson, 1965, p.508).

Attitudes and biases have also been examined across varied settings and disciplines including higher education (Miller, Miller, & Stull, 2007; Rao, 2002; Zhang, Landmark, Reber, Hsu, Kwok, & Benz, 2010), mental health (Cooper, Rose, & Mason, 2003; French, 1994; Panayiotopoulos, Pavlakis, & Apostolou, 2013), health care (Harmer, 1999, Ralston, Zazove, & Gorenflo, 1996; Tervo, et al., 2004; Uysal, Albayrak, Koculu, Kan, & Aydin, 2014), and employment (Burke, Bezyak, Fraser, & Pete, 2013). For example, in the area of higher education, one study explored faculty attitudes relevant to providing instructional accommodations for students with learning disabilities. Results suggest faculty members' beliefs were associated with the "helpfulness" of the accommodation as well as perceived need in providing instructional accommodations to students (Bourke, Strehorn, & Silver, 2000).

Theoretical Framework: Self-Efficacy Beliefs

The theoretical perspective of self-efficacy is a principal component of Bandura's (1986) social learning theory (SLT) which explains behavior based on triadic causation reciprocal model in which the determinants of behavior, environment, and cognition exert bidirectional influences on each other. Self-efficacy provides a useful framework in understanding how a person's self-efficacy might affect knowledge, beliefs, and attitudes toward individuals who are D/deaf. Self-efficacy refers to a person's judgment, i.e., belief about one's competency or capabilities to perform a particular task and the capacity to learn or successfully enact specific behaviors or tasks (Bandura, 1977, 1982). Efficacy beliefs are thought to mediate skill, past or future performance, and is major determinant in influencing actions, individual choice, and perseverance to the task (Bandura, 1977, 1982; Gist & Mitchell, 1992). Moreover, the malleability or plasticity of self-efficacy suggests that efficacy judgments or evaluations are not fixed but dynamic in nature and change over time as new learning (knowledge) and mastery experiences are acquired.

Self-efficacy has been shown to play a predictive role in performance and may help explain the relationship between knowledge, beliefs, and attitudes of mental health professionals toward individuals who are D/deaf (Bandura, 1986). Additional factors such as experience, learning and training, personal knowledge, skills, and stress may also influence self-efficacy. In one study, communication skills training shown a positive effect on clinicians' evaluation of their ability to perform a specific communication task, i.e., self-efficacy (Ammentorp, Sabroe, Kofoed, & Mainz 2007). Further, self-efficacy judgments may also influence individuals' thought and emotional reactions (Pajares, 1996). For example, mental health professionals with positive self-efficacy beliefs, have confidence in their ability to perform a behavior, that is, judgment of their skills and knowledge needed to work and communicate with individuals who are D/deaf, strengthen their

likelihood of perseverance in difficult or challenging situations. They may be more willing to work with interpreters, interact with clients who are D/deaf, utilize assistive technology (videophones, TDD) and feel less anxious about interactions with clients with hearing losses (Velonaki, Kampouroglou, Velonaki, Diamakopoulou, Sourtzi, & Kalokerinou, 2015).

Conversely, mental health clinicians with poor self-efficacy beliefs will avoid the task, i.e., interactions with clients who are D/deaf, are unlikely to persist in a difficult situation, e.g., invest in additional time, reluctant to engage with clients with a hearing loss, provide interpreters, and have less confidence about their ability to relate with clients who are D/deaf. Thus, individuals with poor self-efficacy, (i.e., beliefs), limited knowledge and skill deficits, may feel threatened, anxious, unprepared, and provide suboptimal service to individuals who are D/deaf. Specifically, in the care of persons who are D/deaf, mental health and medical health practitioners who are uncertain (low self-efficacy) about their ability to communicate with patients and clients who are D/deaf, may have overlooked or misdiagnosed patients (Dickert, 1988; Freeman, 1989; Glickman, 2007; Pollard, 1994).

The efficacy of communication between the mental health provider and patient is an important clinical skill in assessing patient symptoms, problems and concerns, and providing optimal outcomes for individuals who are D/deaf (McKee, 2011; Sadler et al., 2001; Steinberg, Wiggins, Barmada, & Sullivan, 2002; Stewart, 1995; Williams, Weinman, & Dale, 1998).

Attitudes – Definition

The complexity of operationally defining the construct of attitude is suggested by multiple definitions in literature. The concept of attitude as defined by Triandis, (1971) is a multidimensional concept consisting of three components: affective, behavior, and cognition. The *affective* section includes feelings and emotions that involve an evaluation or judgment toward objects or a particular

group; the *behavioral* element is associated with a person's actual or intended behavior toward the object, that is people who are D/deaf; and the *cognitive* component refers to a person's beliefs toward a specific group, such as collectively, the D/deaf community or individuals with disabilities (Bernstein, et al., 1991). Attitudes also reflect a predisposition to respond to cognitive, emotional, or behavioral experiences in stereotypical ways that develop from beliefs people hold about the object of the attitude, e.g., individuals who are D/deaf or individuals with disabilities (Fishbein & Ajzen, 1975; Hunt & Hunt, 2000). Finally, attitudes are malleable and may be influenced by variables such as age, gender, education, experience, culture, and self-esteem (deLaat, Freriksen, & Vervloed, 2013; Gist, 1992; Scior, 2011).

For purposes of the current study, attitudes represent a predisposition by mental health professionals (i.e., psychologists and counselors) to evaluate or judge, behave, and react in a particular way toward people who are D/deaf. Further, attitudes interact with beliefs, may play a mediating role in feelings and behavior, and include a person's experiences or contact with individuals who are D/deaf, their views about the capabilities of people who are D/deaf, and knowledge about deafness. Additionally, it is assumed that attitudes are malleable or susceptible to change based on such variables as education and training, learning and acquisition of skills, competency, experience and/or exposure/contact, gender, age, and race/ethnicity.

Disabilities

Individuals with disabilities comprise a large percentage of US society. According to the United States Census Bureau, there were about 56.7 million individuals with disabilities in the United States in 2010 or 18.7 percent of the "civilian noninstitutionalized population" (www.census.gov/prod/2012pubs/p70-131.pdf). The American Disability Act (ADA, 1990) defines disability as a "physical, mental or emotional impairment that substantially limits one of

more major life activities” (www.ada.gov/cguide.htm). Many of the “limits” are manifested as barriers encountered by individuals with disabilities that are influenced by societal perceptions and attitudes of mental health and health care professionals, employers, and educators (Antonak & Livneh, 2000; Burke, Bezyak, Fraser, & Pete, 2013; Iezzoni, 2011).

Attitudes Toward Disabilities

Individuals with disabilities in general, represent a significant body of research describing the historical and pervasive effect of discrimination, stereotypes, negative beliefs and attitudes (Gething, 1992; Goreczny, et al., 2011; Scior, 2011; Tervo, Palmer, & Redinus, 2004). Although, ADA addressed many structural barriers such as physical and technological accommodations for individuals with disabilities including persons who are D/deaf, attitudinal barriers remain more persistent and difficult to overcome (Coryell, 1992; Hunt & Hunt, 2004). Attitudinal barriers are often invisible but pervasive across broad social areas of functioning including employment (Berry & Meyers, 1995; McFarlin, Song, & Sonntag, 1991), health care (Iezzoni, 2011; Paris, 1993; Shakespeare, Iezzoni, & Groce, 2009), mental health services, and education (Bourke, et al., 2000; Rao, 2002; Zhang, et al., 2010). For example, in one study related to employment, researchers examined attitudes toward individuals with disabilities and levels of discomfort interacting in the workplace. Findings indicated negative responses included potential *contact* with disabled coworkers and potential *discomfort* with disabled coworkers (Berry & Meyers, 1995).

Additionally, misperceptions held by employers contribute to barriers resulting in lower employment levels and hiring of individuals with disabilities. According to U.S. Census Bureau (2010), 41.1% of individuals with disabilities, aged 21-64 were employed compared to 79.1% of people in same age group without disabilities (www.census.gov/prod/2012pubs/p70-131.pdf).

Further, Amir, Strauser, & Chan (2009) identified numerous negative perceptions held by many employers toward individuals with disabilities including:

(a) require extra time to learn new tasks; (b) require job accommodations, e.g., special equipment, facility modifications, work schedule adjustments; (c) difficulty getting work completed and needing help from others to finish the job; (d) coworker discomfort working with people with disabilities; and (e) tendency to call in sick more often than other workers due to health or personal problems.

Finally, in one study, individuals with disabilities reported more negative work experiences in the form of overt and subtle discrimination and procedural injustice, (i.e., how disability, race/ethnicity, age, etc., affected procedures used to make decisions about pay or promotion) than nondisabled workers (Snyder, Carmichael, Blackwell, Cleveland, & Thornton, 2009).

Mental Health Professionals' Attitudes Toward Disabilities

Although research documents negative attitudes and behavior among the general population (ten Klooster, Dannenberg, Taal, Burger, & Rasker, 2009), similar attitudes have been reported among both health care professionals and mental health professionals (Tervo et al., 2002, 2004; Williams, & Abeles, 2000). For example, research regarding attitudes of health professionals' toward individuals with disabilities suggests that healthcare provider's attitudes were analogous to the general public (Brillhart, Jay, & Wyers, 1991). In addition, French (1994) reported comparable findings of health professionals' attitudes toward people with disabilities were similar to the general public. In a study that examined health care professionals' attitudes toward people with disabilities, health care professional students' attitudes were less positive than general population norms with nurses reporting the least positive opinions (Tervo, Palmer, & Redinius, 2004).

Negative attitudes and stigma has also been studied associated with the capabilities of individuals with disabilities. In a study that examined trainee and practicing health professionals' attitudes toward individuals with visible physical disabilities, the presence of a wheelchair

influenced the judgments about social, psychological adjustment and general competence of the job applicants who were disabled (Gething, 1992). Specific to mental health professionals, in one study, clinical psychologists rated characteristics such as effectiveness, safety, desirability, and similarity among three clinical targets: moderate depression, borderline features, and schizophrenia. Negative appraisals were found for persons with borderline features and schizophrenia persons, e.g., ineffective, undesirable, and dissimilar to the rater (psychologist). Borderline and schizophrenia persons were rated as “most undesirable” by 42% and 34%, respectively; borderline features were considered most “dangerous” by 22% of the psychologists surveyed (Servais & Saunders, 2007).

Finally, researchers have also studied the disability-specific effect associated with differences in attitudes based on type of disability (Bachman, Vedrani, Drainoni, Tobias, & Maisels, 2006; Karnilowicz, Sparrow, & Shinkfield, 1994). deLaat et al., (2013), reported more positive attitudes toward visible disabilities such as deaf, blind, and physical disabilities than individuals with intellectual disabilities and severe mental problems such as schizophrenia. In contrast, a study that explored final year medical students’ perspectives of blindness, deafness, and deaf-blindness, the medical students considered blindness more debilitating than deafness (Owoeye, Ologe, & Akande, 2007).

Historical Background - Deaf

The D/deaf community has encountered multiple barriers relevant to access to appropriate mental health services including lack of knowledge, negative attitudes, and misunderstandings by the general public as well as by mental health professionals (Dickert, 1988; Filer & Filer, 2000; Heller, 1987). Lack of basic knowledge and skills have been associated with practitioners' beliefs, psychological misdiagnosis, and disparities in services to clients who are D/deaf (Landsberger & Diaz, 2010; Levine, 1981; McEntee, 1993; Ralston, Zazove, & Gorenflo, 1996; Vernon & Leigh, 2007). Moreover, in health care, physicians have similar misconceptions about individuals who are D/deaf as laypersons in areas related to communication abilities, intelligence, language, and other issues (Freeman, 1989; Harmer, 1999; Iezzoni, et al., 2004). Also, the scarcity of specialized professionals who possess knowledge and skill about deafness reduces the standard of care for the D/deaf population (Heller, 1987; Landsberger, Sajid, Schmelkin, Diaz, & Weiler, 2013; McEntee, 1993; Pollard, 1994; Steinberg, 1991). Vernon & Leigh (2007) suggest that the "deaf mentally ill are the most neglected segment of mentally ill in the United States" (p.374) stemming in part from lack of special clinical training including appropriate communication skills, awareness about D/deaf culture, and basic knowledge of deafness (Bat-Chava, Deignan, & Martin, 2002; Gunther, Gulati, & King, 1997; Heller, 1987; Lass et al., 1986; Steinberg, 1991).

The legal rights of individuals who are D/deaf paralleled the civil rights movement for other minority and marginalized groups. In the 1950's, most adult mentally D/deaf patients were hospitalized in state psychiatric institutions and integrated with hearing patients staffed by practitioners who typically had minimal knowledge of sign language, lacked awareness of D/deaf cultural norms, and held misconceptions about mentally ill D/deaf (Olinger, Dancer, & Patterson, 1991; Pollard, 2007; Vernon & Leigh, 2007). Deficits in cultural norms and social nuances in the

D/deaf community were associated with communication barriers, including limited use of English, visual and nonverbal expressions such as facial expression, gestures, and eye gaze that could be misinterpreted or misdiagnosed as psychotic or low functioning (Glickman, 2007; Levine, 1981; Peters, 2007; Williams & Abeles, 2004).

Between the 1970s and the 1990s, legislative actions provided some safeguards and rights through laws such as the Rehabilitation Act of 1973 and the American with Disability Act (ADA) of 1990. The Rehabilitation Act of 1973 prohibited discrimination against individuals with disabilities in programs conducted by the federal government including employment, contractors, and financial assistance, but provided no protections from the private sector (Tucker, 1997). The ADA, under Title I, II, and III, mandated that employers provide reasonable accommodations for employees or applicants who are D/deaf, accessible programs and services to deaf and hard of hearing to “ensure that communication with people with communication disabilities is equally as effective as communication with people without disabilities” (www.ada.gov/effective-comm.htm). Program and services including private, state and local health care facilities, (e.g., hospitals, doctor and dentist offices, service agencies, and pharmacies) were required to comply with the provision of auxiliary aids such as interpreters, access to technology such as videophones, access to hearing aid compatible phones, and telecommunications relay service (www.ada/gpv/effective-comm.htm).

Mental Health Professionals Attitudes Toward the D/deaf

Communication, Misconception and Attitudes

Individuals who are D/deaf have significant barriers accessing health care and mental health service and are at increased vulnerability associated with limitations in communication, knowledge deficits relevant to cultural awareness, and attitudes toward D/deaf (Barnett, 2002; Lieu, Sadler, Fullerton, & Stohlmann, 2007; Henwood & Pope-Davis, 1994; McEwen, 1988; Steinberg,

Barnett, Meador, Wiggins, & Zazove, 2006). Moreover, persons who are D/deaf often report mistrust of hearing professionals, isolation, and insensitive treatment (DeVinney & Murphy, 2002; Cabral, Muhr, & Savageau, 2013; O'Hearn, 2006; Phillips, 1996; Steinberg, et al., 2002; Ubido, Huntington, & Warburton, 2002). For example, in one study, Steinberg, Loew, and Sullivan (1998) interviewed 54 deaf adults about their knowledge, attitudes, and beliefs about mental illness and mental health services. Findings revealed concerns related to communication barriers and unfamiliarity with deafness including fear of being misunderstood in acute emergency room situations, risk of being medicated and hospitalized, and a reliance on hearing professionals' authority.

McEntee (1993) studied accessibility of mental health services and crisis intervention among the D/deaf population in Rhode Island. Service providers at agencies were asked about the number of clients they serve who are D/deaf and the accessibility of services to individuals with hearing loss (e.g., interpreters, TDD/TTY; Telecommunication Devices for the Deaf/Teletypewriter). Results revealed that while 72% of respondents served clients who are D/deaf, only 25% used certified interpreters and further, only 39% provided assistive technology such as TDD/TTY to their clients.

Furthermore, Iezzoni et al., (2004) examined the perceptions of health care experiences among 26 deaf and hard of hearing individuals using group interviews format. Results indicated misconceptions associated with effective communication methods including note writing, lip-reading, and knowledge about differences in ASL and English. For example, ASL structurally differs from English and does not translate word for word into spoken English. Moreover, respondents reported physicians' lacked respect for their intelligence, held negative views of

patients who are D/deaf based on limited English, and failed to understand their responsibility in providing interpreters.

Relevant to use of interpreters, Maher (1984) surveyed clinicians (e.g., counselors, psychologists, psychiatrists, psychiatric social workers) related to use of interpreters with clients who are D/deaf in therapy. Finding revealed more than half, (55%), of clinicians reported they had never used an interpreter, and 40% stated they were unwilling to use interpreters, indicating reluctance to introduce a third party into therapy. Findings appear to support a previously cited study that assessed physicians' knowledge and beliefs related to communication practices with D/deaf patients. Sixty-three percent of the physicians knew sign language interpreters should be used, but only 22% used sign language interpreters and tended to utilize methods such as writing notes or lipreading (Ebert & Heckerling, 1995).

Disparities in Treatment – Deaf versus Hearing Individuals

Historically, psychology, education, and other disciplines have linked deafness and spoken language ability to low intelligence, psychotics, and schizophrenia that has resulted in inaccurate diagnostic assessments, fewer treatment options, and poorer client outcomes (Harmer, Pollard, 1994; Landsberger & Diaz, 2010). For example, Pollard (1994) examined public mental health case records of 544 (0.64%) deaf and hard of hearing (DHH) patients from 84,437 public patient case records. Findings suggested disparities in community mental health settings among DHH patients who typically received “fewer clinical services, more continuing treatment, and case management services” (p.147). Pollard suggests that clinicians lack of expertise in assessing DHH clients accounted for variance between the deaf and hearing populations, a finding supported by other researchers (Landsberger & Diaz 2010).

Additionally, Diaz and Landsberger (2010) compared the use of seclusion and restraint with psychiatric D/deaf patients and hearing patients. Seclusion and restraint rates were significantly higher for patients who were D/deaf during hospitalization than hearing patients, 43% versus 12%. In addition, patients who were D/deaf were more likely to be diagnosed with impulse control that may have contributed to higher rates. Findings are similar to a study that investigated rates of seclusion and restraint in a state hospital setting that also found significantly higher frequency rates for deaf and hard of hearing groups than for hearing groups (Hartman & Blalock, 2011).

Low literacy rates and low levels of English proficiency may also contribute to misconceptions regarding the general intellectual capability of individuals who are D/deaf (Meador & Zazove, 2005; Pollard & Barnett, 2009; Ross & Feller, 2005; Steinberg et al. 1998). Poor educational opportunities also affect low literacy rates with median reading level of D/deaf individuals at approximately fourth to sixth grade level (Barnett, 1999; McEwen & Anton-Culver, 1988). Moreover, approximately 90% to 95% of children who are D/deaf have hearing parents. Most hearing parents lack the ability to adequately communicate in ASL with their D/deaf child, which may adversely affect family dynamics including emotional development and social relationships (Harmer, 1999; Sheppard & Badger, 2010).

Perspectives on Deafness: Medical/Disability/Pathology vs. Cultural/Social

Cultural perspectives or beliefs about disability on the part of mental health professionals and health care professionals may also contribute to negative attitudes toward individuals with disabilities including the D/deaf population. Negative attitudes are embedded into beliefs and may affect counseling, psychological, and medical professionals' patterns of behavior toward individuals who are D/deaf and result in suboptimal outcomes (Enns, et al., 2010; Ebert &

Heckerling, 1995; Harmer, 1999). Typically, there are two dominant perspectives or models associated with disability and deafness: medical/pathological model versus social or cultural model.

Medical/Pathology/Disability Model

Historically, individuals with physical and mental disabilities have been viewed through the lens of a medical model designated by labels and categories of functioning. Labeling of mental or physical disabilities categories contributes to stigma, stereotypes, and misconceptions, often resulting in unequal treatment and discrimination (Gross & Hahn, 2004). The medical/disability model assumes that disability lies within the individual without considering the relationship between the individual and the social environment (Marks, 1997). Moreover, the medical/disability model endorses an attitude that focuses on pathology and assumes a worldview of paternalism toward individuals with disabilities in general, and individuals who are D/deaf specifically (Harmer, 1999; Peters, 2007). Although this view is less widespread, it is an insidious perspective that typically views deafness as a handicap or disabling condition that required professionals to solve or “cure” the problem of being D/deaf (Lane, 1988). For example, the misnomer, “psychology of the deaf” has been broadly applied to the D/deaf community. Lane (1988) suggests the term represents “paternalistic stereotypes” of people who are D/deaf based on perceived incompetence resulting from flawed research, lack of knowledge and cultural competence, and limited experience with the D/deaf community.

The medical model viewpoint is also associated with hearing professionals who have limited knowledge and minimal contact or experience with individuals who are D/deaf that may foster misconceptions, stigma, and stereotypes about D/deaf individuals (Blood, 1997; Dickert, 1988; Lass, et al., 1986; Nikolarazi & Makri, 2004; Olinger, Dancer, & Patterson, 1991).

Cultural/Social Model

In contrast to the medical/pathology viewpoint, the cultural or social perspective represents a shift in the disability movement that focuses on ecological or environmental influences, i.e., disabling social environment rather than deficits or impairments within the individual as the primary problem encountered by individuals with disabilities (Gross & Hahn, 2004). The cultural model posit that the D/deaf community represents a cohesive group with a unique history, cultural norms and shared values, beliefs, and linguistic distinction (Padden & Humphries, 1988; Lane, 1992; Pollard, 1996). The D/deaf community has endorsed the cultural perspective of deafness which seeks to dispel issues associated with pathology such as use of the term hearing impaired that may be viewed as pejorative or offensive by many in the D/deaf community.

Heterogeneity within the Deaf Community

The D/deaf community represents a cohesive group of individuals with common beliefs and cultural norms, but is also characterized by heterogeneous factors such as age of onset, degree and type of hearing loss, education, primary mode of communication, social and family dynamics, as well as ethnicity and race. Moreover, members who identify with culturally Deaf (upper case “D”) will primarily use American Sign Language (ASL) to communicate, although other persons who are D/deaf may communicate using other modes of language (e.g., Pidgin Signed English - PSE), interpreters, and written notes. Conversely, some individuals who are deaf (lower case “d”) may use lipreading (speechreading), residual hearing, or assistive listening devices (e.g., hearing aids). For example, individuals who experienced hearing loss in adulthood, i.e., acquired loss (deafened) typically identify with hearing world and were socialized as a hearing person (Aguayo & Coady, 2001). Additionally, the within group differences, i.e., ethnic and racial subgroups, may have divergent beliefs and values that influence language preferences based on regional and social

differences. For example, Harmer (1993) suggested that D/deaf women of color have the most difficulty accessing health care due to lower education status, income, as well as cross-cultural differences associated with language and value system. Moreover, minority D/deaf women may face additional challenges related with the nexus of culture and racial identities (e.g., D/deaf, African American D/deaf) family support systems, and access to information (Corbett, 2003). Understanding the differences among individuals who are D/deaf such as educational level, SES, and family dynamics, can help mental health professionals better understand the individual client who is D/deaf.

Knowledge Contribution to Attitudes

Knowledge is fundamental to providing accepted standards of care to individuals with disabilities, including persons who are D/deaf and hard of hearing (Strike, Skovholt, & Hummel, 2004). Moreover, knowledge provides a foundation that can help both mental health professionals and health care providers better understand the linguistic, cultural, and communication barriers that may result in suboptimal outcomes for clients who are D/deaf (Iezzoni, O'Day, Killeen, & Harker, 2004; Steinberg, Wiggins, Barmada, & Sullivan, 2002). For example, relative to outcomes for clients who are D/deaf, Landsberger & Diaz (2010) compared inpatient diagnostic and clinical treatment of D/deaf and hard of hearing psychiatric adults with hearing adults. Findings revealed significant differences in the proportion of D/deaf diagnosed with psychotic disorder not otherwise specified, (NOS; 38% versus 3%). The researchers suggested the diagnostic disproportions may be due to the clinicians' difficulty in accurate assessments of patients who are D/deaf, discomfort working with patients who are D/deaf, and lack of experience resulting in the tendency to 'lump' these patients into NOS category. Longer hospitalizations were also reported for patients who are D/deaf than patients with no hearing difficulty, (i.e., 17 months' verses ten months, respectively).

In a recent study that examined nurses' knowledge, attitudes, and practices toward people who are D/deaf, researchers examined several variables including previous contact, education, practices, feelings and self-efficacy care for patients who are D/deaf, knowledge, attitudes and interests in learning about people who are D/deaf. Findings revealed an overall lack of knowledge and education about people who are D/deaf people, education showed a positive correlation with knowledge, and that self-efficacy positively correlated with contact with patients who are D/deaf (Velonaki et al, 2015).

Glickman (2007) also described assessment problems, i.e., "mental status examination" among D/deaf individuals with severe language deprivation and the diagnosis of thought disorders. Glickman posited that inaccurate assessment and diagnosis may be associated with cultural differences and severe language deprivation in symptom presentation of hallucinations, delusions, and disorganized thought disorders among individuals who are D/deaf.

For purposes of this study, knowledge is defined as the acquisition of factual information, skills, competency and awareness acquired through education and training, experience and/or exposure through contact with individuals who are D/deaf.

Professional Training Contribution to Attitudes

Mental health practitioners play a vital role in the provision of counseling and psychological services to individuals who are D/deaf. However, they often function at a significant disadvantage due to a lack of specific training and knowledge to work with persons who are D/deaf (Bat-Chava, Deignan, & Martin, 2002; Hoang, et al., 2011; Leigh, Corbett, Gutman, & Morere, 1996; Nagakura, Schneider, Morris, Lafferty, & Palmer, 2014). Survey research suggests that the majority of therapists (85%) did not have a focus on deafness in their formal training to attain levels of competency (Barnett, 2002; Halgin & McEntee, 1986; Heller, 1997). For example, one

study examined 303 professionals' (e.g., teachers, special educators, physicians, and rehabilitation counselors) knowledge of deafness and their exposure to hearing loss. Participants were asked to respond to topics including prevalence, causes of deafness, communication, and assistive hearing devices. Results indicated deficits in knowledge and exposure to hearing loss with average correct response of 73.8% on informational items. Rehabilitation professionals reported the lowest percentage of correct responses at 60.8%. Moreover, only 58.4% of the respondents reported academic exposure to hearing loss in their professional training (Lass, et al., 1986).

In an earlier study, that suggest problems persist in deafness training, Levine (1974) surveyed 178 "psychologists" working with D/deaf individuals on variables such as background, orientation, preparation, and test instruments used in providing services for individuals who are D/deaf. The respondents' degrees included psychology, 55% (educational clinical and school psychology); special education, 12%; guidance/counseling, 10%, and audiology/speech and hearing, 10%. The findings revealed substantial knowledge and skill deficits: (a) 65% of respondents reported no experience with deafness prior to working with current population; (b) 50% reported no ability to use sign language; (c) and 83% reported "on-the-job" learning as their only preparation for psychological work with the deaf.

Inadequate Curricular Preparation

Research literature in mental health and health care also suggest that that most medical and nursing schools, psychology, counseling, and rehabilitation programs have not sufficiently address issues associated with communication, cultural competency, beliefs and attitudes toward deafness in their training curricula (Adib-Hajbaghery & Rezaei-Shahsavarloo, 2015; Barnett, 2002; Bat-Chava et al. 2002; Iezzoni et al., 2004; Lock, 2003; Ralston & Zazove, 1996). Barnett (2002) posited that medical schools and residency curricula do not adequately teach the necessary

communication skills to work with individuals with hearing loss. For example, in the area of health related professionals, one study investigated pharmacy practices communications with patients who are D/deaf and the pharmacists' knowledge of their legal responsibility regarding provisions of accessibility. Findings suggest that accessibility to interpreters was a major barrier in patient communication and the use of written material was "frequently" the mode used to communicate with patients with hearing loss. Further, none of the pharmacists believed they were legally obligated to provide and pay for an interpreter (Ferguson & Shan, 2015).

Additionally, Bat-Chava, et al., (2002) study of rehabilitation counselors' knowledge of hearing loss, assistive technology, and curricula of rehabilitation programs suggest that many graduate programs did not prepare rehabilitation counselors with competent skills needed to work with clients who are hard of hearing or late deafened. For instance, understanding the important distinction between deaf, hard of hearing, and deafened individuals, will affect their primary methods of communication, i.e., use of speech and oral language, residual hearing, and use assistive technology (e.g., hearing aids).

Inadequate training is also associated with inappropriate assessments and clinician bias that may affect mental health outcomes for individuals who are D/deaf (Glickman, 2007; Steinberg, 1991, 2006). To illustrate, several studies have investigated the notion of diagnostic overshadowing among mental health professionals relevant to psychiatric diagnoses such as autism spectrum disorders, intellectual disabilities, and hearing impaired (Goldsmith & Schloss, 1986; Jopp & Keys, 2001; Szymanski, Brice, Lam, & Hotto, 2012). According to Jopp & Keys, diagnostic overshadowing is a:

...robust bias negative affecting the accuracy of the clinicians' judgment about concomitant mental illness in persons with mental retardation and mental illness. Moreover, diagnostic overshadowing is a common clinician bias in which the

tendency to overlook accompanying psychopathology may affect decisions and treatment (p. 416-417).

As noted, this phenomenon has also been observed among children who are D/deaf and have multiple or secondary clinical disorders including learning disabilities and autism spectrum disorders. Goldsmith and Schloss' study suggest that school psychologists who provide different diagnostic ratings in the primary diagnosis of profound deafness were "less likely to provide therapeutic interventions, more likely to recommend general curriculum interventions, and less likely to recommend a change in the educational programs for D/deaf students as a consequence of the behavioral reaction" (1986, p.288).

Additionally, related to the knowledge, training, cultural and communication issues, Hoang et al., (2011) studied physicians and medical students' perceptions related to patients who are D/deaf, cultural competence, and interpreter use. The study assessed knowledge of D/deaf cultural competency in a medical setting among students trained to care for patients who are D/deaf patients (e.g., ASL classes, summer residential program at Gallaudet University, and medical rounds with patients who are D/deaf). Results from the study revealed that medical students who received training in D/deaf culture and ASL scored significantly higher on knowledge about the Deaf community than medical students and physicians who received no training.

In the mental health field, related to curricula and training, researchers assessed deafness awareness training (i.e., cultural competence among recent genetic counseling graduates and its impact of knowledge deafness, culture, and attitudes toward people who are D/deaf). Participants included genetic counselors who graduated within the last five years. Results revealed that approximately one-fourth of the counselors reported no D/deaf awareness training, more than half reported "limited training", and one-third responded that D/deaf awareness training was "insufficient". Moreover, scores on knowledge, attitudes toward people who are D/deaf, and

D/deaf culture did not differ significantly between students who received training from students who had not received training, and suggest that students may not have received “adequate” D/deaf awareness training (Nagakura et al., 2015).

Summary

This chapter discussed the pivotal role of mental health professionals and the importance of knowledge and professional training in the development of negative attitudes towards individuals who are D/deaf. In addition, understanding the historical and past treatment of the collective D/deaf community in the mental health field could increase trust and help promote positive attitudes toward individuals who are D/deaf. Mental health professionals’ lack of competency in knowledge, skill, and experience with the persons who are D/deaf can be addressed in training curricula, residency, and internship programs. Finally, skilled and trained professionals could reduce misperceptions and negative attitudes, and result in outcomes that are more positive for individuals who are D/deaf.

CHAPTER 3: DESIGN AND METHODOLOGY

Introduction

The purpose of this study was to examine the relationship between mental health professionals' knowledge and beliefs as predictors of attitudes toward individuals who are D/deaf. Personal and professional demographic variables were also investigated as contributing factors relevant to attitudes toward individuals who are D/deaf. Chapter III delineates methods, procedures, participants, data analysis, and discussion.

Research Design

Based on the nature of the research proposal, a nonexperimental, correlational research design was used for this study. This type of research design is appropriate when examining data for relationships among variables at a point in time without any interventions or treatment to the participants. This method uses surveys (i.e., questionnaires, interviews) to gather information from a group of people to describe and summarize some aspects or characteristics relevant to their abilities, opinions or beliefs, and knowledge (Fraenkel & Wallen, 2009). The use of surveys is applicable and supports the study's purpose in examining the relationship between attitudes of mental health professionals' knowledge and beliefs toward individuals who are D/deaf that could provide future research direction.

Participants

Sample participants were selected from faculty, staff, and students at Wayne State University who met the inclusion criteria for participation of active mental health professionals practicing in the state of Michigan. Participants were selected using purposive sampling, i.e., a deliberate effort to include unique characteristics of the participants, e.g., their knowledge and experience as mental health professionals (Kerlinger & Lee, 2000).

Sample size

A power analysis using G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) was used to determine the appropriate sample size for the study. For a multiple linear regression analysis with five predictor variables, with an alpha level of .05 and an effect size of .15, a sample of 92 participants was needed to obtain a power of .80. Additional participants could increase the power of the statistical analysis to make a correct decision on the hypotheses. Figure 1 presents a graph of the power analysis.

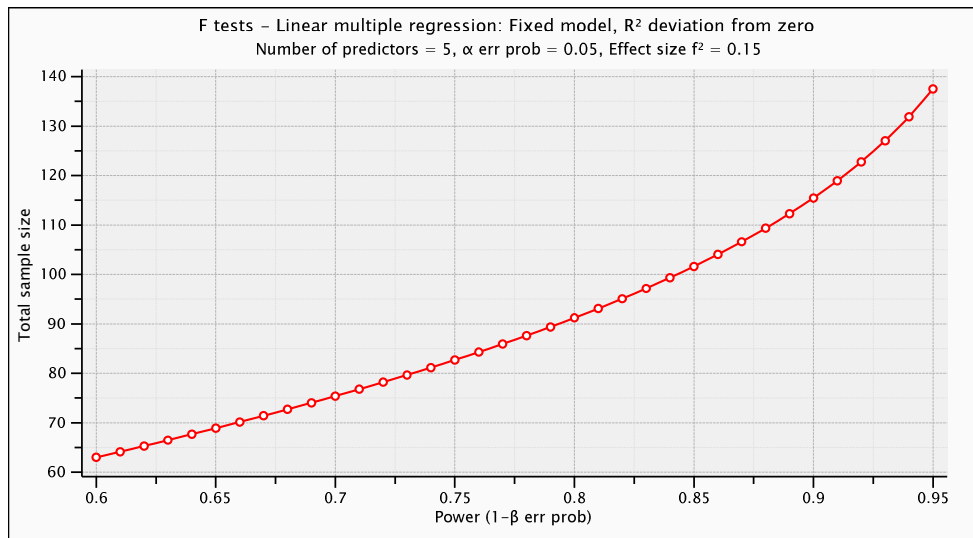


Figure 1: Power Analysis

Instruments

The survey consisted of four parts including a demographic questionnaire, Attitudes toward Deafness Scale, Opinions about Deaf People Scale, and Knowledge of Deaf and Cultural Competency survey (See Appendix A).

The first section included demographic information designed to determine what variables may influence respondents answers or opinions relevant to age, gender, ethnicity/race, training or education, and professional discipline (i.e., counselor or psychologist), interactions with people

who are D/deaf and the relationship to attitudes toward individuals who are D/deaf. The items on this scale were answered using either a forced choice or fill-in-the-blank responses.

The second part included the “Attitudes toward Deafness Scale (ATDS)”, developed by Cooper et al. (2003), and was used to assess attitudes toward individuals who are D/deaf. The ATDS has been previously used to assess knowledge and attitudes of recent genetic counselor graduates, attitudes of genetic counselors, and nurses’ attitudes toward people who are D/deaf (Enns et al., 2010; Nagakura et al., 2014, Velonaki, et al., 2015). The ATDS scale is a 22-item measure that appraises equality, ability, cultural and linguistic areas associated with attitudes. The scale was designed for use with service professionals who work with individuals who are D/deaf and includes 8 positive statements (3, 8, 10, 11, 13, 19, 20, 22) and 14 negative statements (1, 2, 4, 5, 6, 7, 9, 12, 14, 15, 16, 17, 18, 21). The 22 items reflected a single construct. Participants rated the items using a six-point Likert scale with items rated from 1 for strongly disagree and 6 for strongly agree. Prior to summing the responses to obtain a total score, the negative statements were reverse scored to reflect a positive attitude. Total scores could range from 22 to 132, with higher scores indicating more positive attitudes toward individuals who are D/deaf.

Internal reliability was determined using Cronbach’s alpha coefficients. Cooper et al. (2004) obtained an alpha coefficient of .71, considered adequate for the study. Relevant to ATDS validity, Cooper et al. (2004) asserted:

Concurrent validity was difficult to establish because existing measures would not be appropriate to serve as an external criterion as...they were either outdated or not designed and developed for the measurement of attitudes toward deafness. *Content* validity of the measure provided a well-balanced range of statements pertinent to the attitude construct. Content validity is supported by the internal reliability of the measure (p. 388).

ATDS granted permission to use the scale on April 17, 2015 via e-mail.

The third section of the survey included the “Opinions about Deaf People Scale” (ODP) developed by Berkay, et al. (1995). This scale was designed to measure hearing adults’ beliefs or opinions about the capabilities D/deaf adults. Prior use of ODP scales has been used to measure beliefs about D/deaf capabilities of Greece residents among deaf and hearing adults (Nikolarazi & Makri, 2004/2005) and to assess attitudes of university students toward deafness pre and post ASL intervention (Cagle, 2013). Research has suggested that some hearing individuals have negative opinions about D/deaf individuals’ intelligence based on misconceptions about communication and language, perspectives about deafness, and lack of knowledge about D/deaf cultural issues (Iezzoni et al., 2004; Pollard, 1994; Ralston & Zazove, 1995; Steinberg, 1998; Steinberg et al., 2006).

The ODP is a 20-item scale comprised of 10 negative and 10 positive statements regarding the capabilities of people who are D/deaf on topics related to intelligence, employment, independent living skills, and communication. Responses to statements were scored on a 1 to 4 Likert scale, with 1 indicating strongly agree and 4 indicating strongly disagree for the positive items and reversed for the negative items. The scores are summed, with possible scores ranging from 20 to 80. Lower scores on this scale suggest positive attitudes regarding the abilities of adults who are D/deaf, with higher scores implying negative attitudes about the abilities of D/deaf adults. Total scores less than 40 tend to reflect equal capability attitudes, while scores equal to and greater than 40 tend to indicate unequal capability attitudes about adults who are deaf. For the current study, the scale responses range from “strongly agree to strongly disagree.” The ODP scale coefficient alpha was calculated at .82 and correlated with Cowen’s Attitude toward Deafness scale (ATD, 1967) at .75 ($p < .001$) in support of construct validity (Berkay et al., 1995). Sage

Publications granted permission to use the ODP scales on 11/12/2014 through email correspondence.

The fourth section measure “Knowledge of Deaf Cultural Competency” (KDCC) was based on a survey developed by Hoang et al. (2011) for use with physicians and medical students. The survey developed from a need to train medical students in ASL and D/deaf culture who would “demonstrate greater knowledge of deaf culture and deaf patients” (p. 176). According to Hoang, et al:

...over the two-year training program, selected medical fellows completed six quarters of ASL classes and one summer at Gallaudet University residential ASL/deaf culture immersion program. Students also practiced their ASL skills, interacted with the Deaf community, e.g., provided informational workshops on health issues, completed mandatory research projects, and completed fourth year rotations interacting with the Deaf community.

For use in the present study, the survey was adapted for use with mental health professionals (i.e., counselors and psychologists). The survey includes 6 multiple-choice questions and 28 true or false questions with an “I don’t know” option. The questions addressed:

(1) commonly held misperceptions of deafness and deaf culture, (2) common difficulties experienced by deaf patients in the clinical settings, (3) errors commonly made when providers work with interpreters in the clinical setting, and (4) participants’ prior exposure to the community (p. 176).

Each true and false item had one correct response, with some multiple choice items having two or three correct answers. The “I don’t know” responses on the true/false questions were coded as incorrect. A binary coding system to indicate 1 = correct, 0 = incorrect was used on all items. The correct responses were counted to create a total score, with possible scores ranging from 0 to 39, with higher scores indicating greater knowledge.

The “Knowledge of Deaf Cultural Competency” was previously used to assess D/deaf awareness training among recent genetic counseling graduates relevant to knowledge and training

(Nagakura, Schneider, Morris, Lafferty, & Palmer, 2014). Permission to use and modify the survey was granted via phone on 12/10/2014 by Sadler, one of the investigators.

Variables

Knowledge of D/deaf culture, beliefs about adult D/deaf persons' capabilities, and participant demographics were used as independent variables in this study. The attitude scores of the mental health professionals toward individuals who are D/deaf was the dependent variable.

Data Collection Procedures

Prior to conducting the present study, the Institutional Review Board (IRB) at Wayne State University approved the study. The researcher contacted departments at Wayne State University including counseling education, psychology clinic, counseling and psychological Services (CAPS), educational psychology, and advising, to recruit potential participants for the study. Participants were eligible to participate in the study if they were actively practicing mental health professionals in the state of Michigan.

Eligible participants were contacted through clinical directors, instructors, or advisors in their respective departments. The first page of the survey was an informational page that described the purpose of the study, selection process, assurances of anonymity, and the voluntary nature of participation. In addition, contact information for the principal investigator and chair of the WSU IRB were provided. After reading the information sheet, the participant consented to participate by completing the survey. The participants then completed the survey. All information was anonymous, with survey responses accessible only by the principal investigator. The researcher collected the returned surveys from the respective directors, advisors, or instructors from each departmental office.

Data Analysis

Data collected from the surveys were entered in an Excel data file for analyses. After reviewing the data, the file was exported into SPSS ver. 23 for analysis. The data were cleaned to remove any partially completed surveys. Cronbach alpha coefficients were obtained for the Attitudes toward Deafness Scale, the Opinions about Deaf People Scale, and Assessing Knowledge of Deaf Cultural Competency Scale.

The demographic items on the survey were analyzed using frequency distributions and measures of central tendency and dispersion. Preliminary analysis provided baseline data for the scaled variables (attitudes toward deafness, opinions about deaf people, and knowledge of D/deaf culture competency). The research questions were addressed using inferential statistical analyses. Research question 1 and 2 were tested using Pearson product moment correlations, while research question 3 was tested using stepwise multiple linear regression analysis. All decisions on the statistical significance of the findings were made using a criterion alpha level of .05. Table 1 presented the statistical analyses used to test each of the research questions and associated hypotheses.

Table 1

Statistical Analysis

Research Question/Hypotheses	Variables	Statistical Analysis
1. To what extent does knowledge influence mental health professionals' attitudes toward individuals who are D/deaf? H ₁ : Mental health professionals reported level of knowledge about deafness will significantly predict attitudes toward individuals who are D/deaf.	<ul style="list-style-type: none"> • Attitudes toward deafness • Knowledge of D/deaf cultural competency 	Pearson product moment correlations were used to determine the strength and direction of the relationship between attitudes toward deafness and knowledge of D/deaf cultural competency.

Research Question/Hypotheses	Variables	Statistical Analysis
H ₀₁ : There is no statistical difference between mental health professionals' reported level of knowledge and attitudes toward individuals who are D/deaf?		
2. To what extent do beliefs about D/deaf capabilities influence mental health professionals' attitudes toward individuals who are D/deaf?	<ul style="list-style-type: none"> Attitudes toward individuals who are D/deaf Beliefs about individuals who are D/deaf. 	Pearson product moment correlations were used to determine the strength and direction of the relationship between attitudes toward deafness and beliefs about individuals who are D/deaf.
H ₂ : Mental health professionals' who reported less favorable beliefs about the capabilities of individuals who are D/deaf, will report less favorable attitudes towards individuals who are D/deaf.		
H ₀₂ : Mental health professionals' who reported beliefs as less favorable about the capabilities of individuals who are D/deaf will not statistically differ in their attitudes toward individuals who are D/deaf.		
3. To what extent does mental health professionals' demographics relate to knowledge, beliefs, and the prediction of attitudes toward individuals who are D/deaf?	<p>Dependent Variables</p> <ul style="list-style-type: none"> Attitudes toward deafness Beliefs about individuals who are D/deaf. Knowledge of D/deaf cultural competency 	Separate stepwise multiple linear regression analyses were used to determine which of the independent variables can be used to predict or explain attitudes toward deafness, beliefs about individuals who are D/deaf, and knowledge of D/deaf cultural competency.
H ₃ : Mental health professionals' education/training and experience are statistically related to their knowledge, attitudes, and opinions toward individuals who are D/deaf.	<p>Independent Variables</p> <ul style="list-style-type: none"> Age Gender Ethnicity/race Education Professional discipline Training Experience/contact with individuals who are D/deaf 	For the independent variables that are categorical (ethnicity, education, profession, etc.), dummy coding will be used to allow their use in the stepwise multiple linear regression analysis.
H ₀₃ : Mental health professionals' education/training and experience are not statistically related to their knowledge, attitudes, and beliefs toward individuals who are D/deaf.		

Summary

This chapter included a description of the methodological procedures, research questions and hypotheses, statistical design, data collection and overview of the demographic variables. A

description of the ATD, OPD, and, KDCC instruments were presented and included a discussion of the validity and reliability information.

CHAPTER 4: RESULTS OF THE DATA ANALYSIS

Introduction

This chapter presents the results of the data analyses that were used to provide a description of the sample and address the research questions proposed in this study. This chapter is divided into three sections. The first section provides the demographics to develop a profile of the participants using frequency distribution, measures of central tendency, and dispersion. The second section uses measures of central tendency and dispersion to provide a description of the scaled variables. Inferential statistical analyses were used in the third section to address the research questions.

The principal purpose of the study was to examine the relationship between mental health professionals' knowledge and beliefs as predictors of attitudes toward individuals who are D/deaf by practicing mental health professionals. The study also examined demographic data as predictors of attitudes toward individuals who are D/deaf.

A total of 150 surveys were distributed to mental health professionals comprised of staff, faculty, and graduate students at Wayne State University. A total of 89 surveys were returned, and 65 were used in the final analyses. The participants were recruited from the psychology department, counseling education, counseling and psychology services (CAPS), advising, and educational psychology. As the study focused on mental health professionals, (i.e., only psychologists and counselors) were included in the study. Twenty-four participants were excluded because surveys were incomplete or they did not meet the criteria for inclusion in the present study.

Description of the Sample

The participants completed the demographic section on the survey. The participants were asked to indicate their age, gender, and ethnicity/race on the survey. Their responses were summarized using frequency distributions. Table 2 presents results of this analysis.

Table 2

Frequency Distributions – Mental Health Professionals’ Age, Gender, and Ethnicity/Race of Participants (N = 65)

Age, Gender, and Ethnicity of Participants	Number	Percent
Age		
25 to 34	41	63.1
35 to 54	18	27.7
55 to 64	4	6.1
65 to 74	2	3.1
Gender		
Male	12	18.5
Female	53	81.5
Ethnicity/Race		
African American	13	20.0
Caucasian	50	76.9
Asian	2	3.1

The participants’ ages ranged from 25 to 75 years of age. The majority of the mental health professionals (n = 41, 63.1%) were aged 25 to 34 years. Eighteen respondents (27.7%) indicated their age as 35 to 54 years, 4 (6.1%) were aged 55 to 64 years, and 2 (3.1%) reported their age as 65 to 74 years.

The majority of the participants (n = 53, 81.5%) reported their gender as female, with 12 (18.5%) indicating their gender as male. More than three-fourths of the mental health professionals reported their ethnicity/race as Caucasian (n = 50, 76.9%), with 13 (20%) clinicians reporting their ethnicity/race as African American. Two (3.8%) mental health professionals indicated Asian. No other ethnicities or racial categories were identified.

The mental health professionals were asked to indicate their hearing (audiological level) status. Their responses were summarized using frequency distributions. Table 3 presents the results of this analysis.

Table 3

Frequency Distributions – Hearing Status of Mental Health Professionals (N=65)

Hearing Status of Participants	Number	Percent
Hearing Status		
Hearing	64	98.5
Hard of Hearing	1	1.5
Total	65	100.0

The majority of the participants (n = 64, 98.5 %) indicated their hearing status (audiological level) as hearing, with 1 individual (1.5 %) reporting their hearing status as hard of hearing. No participants indicated deaf as their hearing status.

The mental health clinicians were asked to indicate their professional discipline and educational level. As some respondents may have provided two responses regarding their professional discipline, the number of responses exceeded the number of participants. Their responses are summarized using frequency distributions. Table 4 presents results of this analysis.

Table 4

Frequency Distributions – Professional Discipline and Educational Level (N = 65)

Professional Discipline and Educational Level	Number	Percent
Professional Discipline		
Psychology		
Education/Clinical	24	36.9
Marriage and Family	0	0.0
Cognitive/Social	1	1.5
Other - School	11	16.9
Counseling		
Rehabilitation /community	4	6.2
School/Community	23	35.4
Other	3	4.6
Educational Level		
Doctorate	8	12.3
Specialist	4	6.2
Masters	53	81.5

Twenty-four participants (36.9 %) reported their professional discipline in the field of educational or clinical psychology, with 11 (16.9%) indicating their discipline as other (school) psychology. One clinician (1.5%) responded to cognitive/social as the discipline area. Four professionals (6.2%) indicated rehabilitation counseling as their discipline, 23 (35.4%) of the respondents reported their field in school and/or community counseling, and 3 (4.6%) reported “other” and as their discipline. No responses were indicated for marriage and family discipline. The majority of the mental health professionals reported completion of a masters’ level degree 53 (81.5%), while 4 (6.2%) earned a specialist degree, and 8 (12.3%) had attained a doctorate degree.

The participants provided their years of experience in the mental health field. Their responses were summarized using descriptive statistics. Table 5 presents results of this analysis.

Table 5

Descriptive Statistics: Years of Experience in Mental Health Field

Number	Mean	SD	Median	Range	
				Minimum	Maximum
61	7.49	8.91	4.00	1	38

Missing 4

The participants had been practicing in the mental health field for a mean of 7.49 (SD = 8.91) years, with a median of 4.00 years. The range of experience was from 1 to 38 years. Four participants did not provide a response to this question.

The participants were asked about their specialized training courses and prior experience/contact related to individuals who are D/deaf. Their responses were summarized using descriptive statistics. Table 6 presents results of this analysis.

Table 6

Frequency Distributions – Mental Health Professionals’ Specialized Training Courses, and Prior Experience/Contact working with D/deaf (N=65)

Specialized Training Courses and Experience/Contact	Number	Percent
Course		
American Sign Language	10	15.4
D/deaf Culture	2	3.1
None	53	81.5
Total	65	100.0
Prior Experience/Contact Working with D/deaf		
Yes – prior experience/contact	18	27.7
No – prior experience/ contact	47	72.3
Total	65	100.0

The majority of mental health professionals (n = 53, 81.5%) reported no specialized training courses related to individuals who are D/deaf. Another 10 (15.4%) indicated a specialized training course in American Sign Language, while only 2 (3.1%) clinicians reported a specialized

training course in D/deaf Culture. Nearly three-fourths of the participants (n= 47, 72.3%) reported no prior experience/contact working with clients who are D/deaf while 18 (27.7%) responded that they had some prior contact with D/deaf individuals during their work experience.

The mental health practitioners were asked to indicate their method of communication with clients who are D/deaf and use of a sign language interpreter in their work setting. The participants were also asked to indicate all methods of communication they used with their clients who were D/deaf. As many of the participants indicated two or more ways, the number of responses exceeded the number of respondents. Their responses were summarized using frequency distributions for presentation in Table 7.

Table 7

Frequency Distribution - Method of Communication Used by Mental Health Professionals and Interpreter Use in the Work Setting (N = 65)

Method of Communication and Use of Sign Language Interpreter in the Work Setting.	Number	Percent
Method of Communication		
Speech/oral	39	60.0
Deaf lip-read	9	13.8
Certified Interpreter	12	18.5
Written Notes	27	41.5
Gestures	22	33.8
ASL	4	6.2
Family/friends	7	10.8
Other	4	6.2
Use of Sign Language Interpreter in the Work Setting		
Yes	6	9.3
No	50	76.9
Sometimes	9	13.8
Total	65	100.0

In response to method of communication used with clients who are D/deaf, the most frequent method used by mental health practitioners (n = 39, 60.0%) was speech or oral (spoken) communication, while 27 (41.5%) relied on the use of written notes as the method used to

communicate with D/deaf clients. Another 22 (33.8%) reported use of gestures, while only 12 (18.5%) indicated the use of a certified interpreter as a method of communication, and 9 (13.8%) relied on the use of lip-reading skills of individuals who are D/deaf. Use of family/friends as interpreter was reported by 7 (10.8%), while participants use of American Sign Language (n = 4, 6.2%) and “other” (n= 4, 6.2%) were similarly identified as method of communication used. Among the respondents who provided comments to other: “not encountered, never had deaf client, no experience with deaf, and not had deaf client yet”.

More than three-fourths of mental health professionals (n = 50, 76.9%) indicated they did not use a sign language interpreter in the working setting. While 6 (9.2%) reported use of an interpreter in the work setting, 9 (13.8%) clinicians indicated they used interpreters “sometimes” in the work setting.

The mental health professionals were also asked to provide additional information about their primary work setting, accessibility to technology, and confidence or efficacy in their ability to diagnose and meet the treatment needs of individuals who are D/deaf. Their responses were summarized using frequency distribution analysis presented in Table 8.

Table 8

Frequency Distributions - Mental Health Professionals' Primary Work Setting, Deaf Access to Technology in the Work Setting, and Confidence Level (N = 65)

Primary Work Setting , D/deaf Access to Technology, and Confidence Level	Number	Percent
Primary Work Setting		
Medical/Clinical	25	38.5
Rehabilitation Agency	3	4.6
College or University	22	33.8
Private Practice	2	3.1
Residential Treatment	1	1.5
Deaf Service Agency	0	0.0
Other	12	18.5
Total	65	100.0
Deaf Access to Technology (TDD/TYY, video phone, relay)		
No – Access	48	75.0
Yes – Access	16	25.0
Total	64	100.0
Missing 1		
Confidence of ability to diagnose D/deaf clients		
Very confident	2	3.1
Somewhat confident	19	29.2
Not confident	44	67.7
Total	65	100.0

The largest number of mental health professionals (n = 25, 38.5%) reported their primary work setting as medical/clinical. The second most frequent response (n=22, 33.5%) was a college or university setting, with another 12 (18.5%) indicated “other”. Rehabilitation agency (n = 3, 4.6%), private practice (n = 2, 3.1%), and residential treatment (n = 1, 1.5%) comprised the remaining participants’ responses. No response to deaf service agency was reported.

In response to access to technology for clients who are D/deaf, almost three-fourths of the participants indicated no accessibility (n = 48, 73.8%) while 16 (24.6%) reported access to technology for individuals who are D/deaf. One (1.5%) response was missing.

In another question, the mental health providers were asked to respond to self-efficacy or confidence in their ability to successfully diagnose and/or meet the treatment needs of clients who

are D/deaf. The largest percentage of clinicians (67.7%, $n = 44$) indicated they were “not confident” in their ability to successfully diagnose or meet the treatment needs of individuals who are D/deaf. Another 19 (29.2%) reported “somewhat confident” in their ability to work successfully with their clients, while only 2 (3.1%) mental health clinicians indicated they were “very confident” in the ability to meet the mental health needs of individuals who are D/deaf.

Scaled Variables

The Attitudes to Deafness Scale (ATD), Opinions about Deaf People Scale (ODP), and Assessing Knowledge of Deaf Cultural Competency (KDCC) were scored according to instructions from the developers of each respective instrument. Table 9 presents the descriptive statistics that were used to provide baseline information on the three scales.

Table 9

Descriptive Statistics - Scaled Variables

Scale	N	Mean	SD	Median	Range	
					Minimum	Maximum
Attitudes Toward Deafness	65	4.23	.54	4.27	2.82	5.18
Opinions About Deaf People	65	3.63	.33	3.75	2.35	4.00
Knowledge of D/deaf cultural competency	65	18.40	4.94	19.00	4.00	28.00

The mean score for the Attitudes toward Deafness scale was 4.23 ($SD=.54$), with a median score of 4.27. The scores ranged from 2.82 to 5.18 with higher scores suggesting more positive attitudes toward individuals who are D/deaf.

The mean score for the Opinions about Deaf People scale was 3.63 ($SD=.33$) with a median score of 3.75. The scores ranged from 2.35 to 4.00 with higher scores indicating more positive perceptions or beliefs about the capability of individuals who are D/deaf.

The mean score for the Knowledge of Deaf Cultural Competency scale was 18.40 with a median score of 19.00 (SD = 4.94). Higher scores indicated greater knowledge about individuals who are D/deaf and increased competence to deal with issues associated with D/deaf culture.

Research Questions

Three research questions were developed for this study. Each of the questions was addressed using inferential statistical analyses. All decisions on the statistical significance were made using an alpha level of .05.

Research Question 1. To what extent are mental health professional's attitudes related to knowledge about individuals who are D/deaf?

Pearson product moment was used to determine the extent to which mental health professional attitudes was related to their knowledge about individuals' who are D/deaf. The results of this analysis are presented in Table 10.

Table 10

Pearson Product Moment Correlations – Mental Health Professionals' Attitudes Toward D/deaf and Knowledge of D/deaf Cultural Competency (N=65)

	R	P
Attitudes Towards D/deaf and Knowledge of D/deaf Cultural Competency	.09	.213

The correlation between mental health professionals' attitudes toward individuals who are D/deaf and knowledge was not statistically significant ($r = .09$, $p = .213$). The positive direction of the relationship indicated that participants who had more positive attitudes toward D/deaf were more likely to have greater knowledge of D/deaf cultural competency, although the relationship was not statistically significant.

Research Question 2. To what extent do beliefs about the capabilities of individuals who are D/deaf, influence mental health professionals' attitudes toward individuals who are D/deaf?

Pearson product moment was used to determine the extent to which mental health professionals' beliefs about the capabilities of individuals was related to their attitudes toward clients who are D/deaf. The results of the analysis are presented in Table 11.

Table 11

Pearson Product Moment Correlations – Mental Health Professionals' Beliefs About D/deaf Capabilities and Attitudes Toward individuals who are D/deaf (N=65)

	R	P
Beliefs about D/deaf Capabilities And Attitudes Toward individuals who are D/deaf	.04	.737

The relationship between mental health professionals' beliefs about the capabilities of individuals who are D/deaf and attitudes was not statistically significant ($r = .04$, $p = .737$). Mental health professionals who had higher beliefs about D/deaf capabilities were more likely to have positive attitudes regarding clients who were D/deaf, although the relationship was not statistically significant.

Research Question 3. To what extent do mental health professionals' demographic variables significantly relate to knowledge, beliefs, and prediction of attitudes toward individuals who are D/deaf?

The relationship between mental health professionals' demographic variables and knowledge, beliefs, and the prediction of attitudes toward individuals who are D/deaf were tested. Separate stepwise multiple linear regression analyses were used to determine which of the independent variables could be used to predict or explain attitudes towards individuals who are

D/deaf, beliefs about capabilities of D/deaf, and knowledge of D/deaf cultural competency. The independent variables used included age, gender, ethnicity/race, educational level, professional discipline, training, and experience. Based on results of these analyses, none of independent variables entered into the regression equations using attitudes toward individuals who are D/deaf and beliefs about capabilities of individuals who are D/Deaf. However, when knowledge of D/deaf cultural competency was used as the dependent variable, three independent variables entered the stepwise multiple linear regression equation. Table 12 presents results of this analysis.

Table 12

Stepwise Multiple Linear Regression Analysis – Knowledge of D/deaf Cultural Competency

Predictor Variable	Constant	b-Weight	β-Weight	ΔR ²	t-Value	Sig
Included Variables						
Counseling-School & Community	24.47	-2.95	-.29	.10	-2.55	.013
African American		-3.41	-.28	.08	-2.47	.016
Specialized training course		-1.63	-.24	.06	-2.17	.034
Excluded Variables						
Age of respondent			.01		.06	.951
Gender of respondent			.03		.28	.784
Caucasian			.21		.74	.464
Asian			-.08		-.74	.464
Psychology – Educ or Clinical			.10		.69	.490
Psychology – Cognitive/Social			.01		.10	.922
Counseling – Rehab/Community			-.04		-.30	.764
Educational level			-.09		-.77	.444
Years in mental health			-.01		-.09	.928
Multiple R	.49					
Multiple R ²	.24					
F Ratio	6.36					
DF	3, 61					
Sig	.001					

Three independent variables, professional discipline identified as school and community counseling, being African American, and taking a specialized course, entered the stepwise multiple

linear regression equation, accounting for 24% of the variance in knowledge of D/deaf cultural competency, $R^2 = .24$, $F(3, 61) = 6.36$, $p = .001$. Professional discipline school and community counseling entered the stepwise multiple linear regression equation first, explaining 10% of the variance in knowledge of D/deaf cultural competency, $\beta = -.29$, $t = -2.55$, $p = .013$. The negative relationship between the independent and dependent variables indicated that participants who identified their professional discipline as school and community counseling tended to have lower scores on knowledge of D/deaf cultural competency. Being African American entered the stepwise multiple linear regression equation, explaining an additional 8% of the variance in knowledge of D/deaf cultural competency, $\beta = -.28$, $t = -2.47$, $p = .016$. Being African American was negatively related to knowledge of D/deaf cultural competency, indicating that African Americans in this study, tended to have lower scores on knowledge of D/deaf cultural competency. Completing a specialized training course explained 6% of the variance in knowledge of D/deaf cultural competency, $\beta = -.24$, $t = -2.17$, $p = .034$. The negative relationship between completing a specialized training course and knowledge of D/deaf cultural competency indicated that participants who had taken a course in ASL or a course in D/deaf culture were more likely to have higher scores on knowledge of D/deaf cultural competency. The remaining predictor variables did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of knowledge of D/deaf cultural competency.

Summary

The results of the statistical analyses that were used to describe the sample and address the research questions have been presented in this chapter. Conclusions and recommendations based on these findings are presented in Chapter 5.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents a brief summary of literature, methods used, and a discussion of the study findings. A discussion of the limitations, implications and recommendations for future research are included in the conclusion. Variances in demographic information were also examined as predictors of attitudes toward clients who are D/deaf (i.e., hard of hearing, deaf, or culturally Deaf).

Summary

This study was designed to examine the relationship between mental health professionals' knowledge and beliefs, as predictors of attitudes toward individuals who are D/deaf. Historically, individuals who are D/deaf encountered substantial numbers of barriers in the accessibility of mental health services. Research suggested that these barriers resulted in disparities related to treatment across broad domains, including mental health (Dickert, 1988; Lass, et al., 1986; Landsberger & Diaz, 2010; Pollard, 1994; Maher, 1984; Steinberg, et al., 1998; 1991). Although legal mandates in the Americans with Disabilities Act (ADA, 1990, 1997) addressed structural barriers through provisions of "reasonable accommodations," challenges remain associated with factors related to linguistics and communication, misconceptions about deafness, and knowledge of cultural competence. Moreover, clients who are D/deaf often are stereotyped by negative perceptions based on practitioners' attitudes, beliefs, and lack of cultural knowledge. Deficits in knowledge have been associated with misdiagnosis, biases, and suboptimal treatment, often resulting in poorer outcomes for individuals who are D/deaf (Glickman, 2007; Landsberger & Diaz, 2010; Lass, et al., 1986; Steinberg, et al., 2002).

Mental health professionals play pivotal roles in providing services to clients who are D/deaf. Based on projections about hearing loss, these professionals can expect to encounter a greater number of individuals with varying degrees of hearing loss due to an aging population, noise exposure, and the effects of ototoxic drugs (Agrawal, Platz, & Niparko, 2008; Iezzoni, 2004). As such, mental health professionals need to have special clinical training, skills, and cultural knowledge to assess client symptoms accurately, offer treatment options, and provide better outcomes for individuals who are D/deaf.

Moreover, ethical standards delineated by professional organizations, (e.g., American Psychological Association [APA; 2010], National Association of School Psychologists [NASP; 2010], American Counseling Association [ACA, 2014], and Certified Rehabilitation Counselors [CRC, 2010]), emphasize the principles and ethical responsibilities incumbent on mental health practitioners to provide services within “boundaries of competence based on their education, training, supervised experience, state and national professional experience credentials, and experience” (ACA, Section C2a., 2014 p.8). Furthermore, mental health professionals are obligated to acquire the knowledge, training and skills necessary to provide services to clients, students, and individuals who are D/deaf. To that end, increased training in preparatory programs that emphasize deafness in psychology and counseling curricula may reduce inequities in the provision of mental health services to clients who are D/deaf (Barnett, 2002; Bat-Chava, et al., 2002, Levine, 1974).

In this study, Bandura’s self-efficacy theory (1982, 1977) provided a useful theoretical framework for understanding how an individual’s beliefs or confidence may influence the ability to perform specific tasks. Efficacy beliefs are thought to mediate skill, as well as future and past performance, and can be a major determinant influencing action, choice, and perseverance to task

(Bandura, 1977, 1982; Gist & Mitchell, 1992). Moreover, the malleability or plasticity of self-efficacy suggest that efficacy judgments are dynamic in nature and change as new learning (knowledge) and experiences are acquired. Experience, education, skills, and stress also may influence self-efficacy. Thus, mental health practitioners who are uncertain about their ability to communicate with clients who are D/deaf are likely to avoid the task (e.g., reluctant to engage; Velonaki et. al (2015) and abbreviate the office visit. They may be less willing to provide interpreters, and may overlook or misdiagnose clients who are D/deaf (Dickert, 1988; Glickman, 2007; Landsberger, Sajid, Schmelkin, Diaz, & Weiler, 2013). Conversely, high levels of efficacy could increase the likelihood that mental health practitioners may feel more confident and be more willing to work with interpreters, feel less anxious interacting with clients who are D/deaf, and provide technology needed to increase accessibility to individuals with hearing loss.

Methods

A nonexperimental, correlational research design was used in this study. The methods used surveys to collect data from 65 participants who met inclusion criteria of mental health professionals from staff, faculty, and student populations at a large Midwestern university. The instruments used to collect data and address the research questions included the Attitudes to Deafness Scale (ADS, Cooper, Rose, & Mason, 2004), Opinions About Deaf People Scale (ODP, Berkay, Gardner, & Smith, 1994), Assessing Knowledge of Deaf Cultural Competency (KDCC, Hoang, LaHousse, Nakaji, & Sadler, 2011), and a demographic questionnaire.

Participants in the Study

A total of 65 mental health professionals participated in the study. The age ranged from 25 to 75 years with the largest group between 25 to 34 years ($n = 41, 63.1\%$) with the second largest group aged 35 to 54 years ($n = 18, 27.7\%$). The majority of the participants reported their gender

as female. The largest group of mental health professionals indicated their race/ethnicity as Caucasian, with the second largest group responded to African American as their ethnicity/race. The majority of participants self-reported no hearing loss. The professional discipline of the largest group of respondents was educational/clinical psychology followed by school/community counseling, with other/school psychology the third most frequent professional discipline. The data describing the participants' educational level revealed that the highest number of participants had completed a masters' degree (n=53, 81.5%) with 8 (12%) indicating doctorate attainment. The mental health professionals reported a mean of 7.49 (SD=8.91) number of years practicing in the mental health field.

When asked about participation in specialized training courses related to D/deaf, most of the mental health professionals reported no specialized training courses taken. Similarly, most participants reported no prior experience/contact working with individuals who are D/deaf. Participants were also asked to indicate their primary method of communication with individuals who are D/deaf. Speech/oral methods represented the most used method, followed by written notes, and gestures. Only 4 (6.2%) participants reported use of ASL. In response to the use of sign language interpreters in the work setting, the largest number of participants (n=50, 76%) reported they did not use sign language interpreters to communicate with the clients who are D/deaf. Previous studies reported similar findings (Ebert & Heckerling, 1995; Levine, 1974; Maher, 1984).

Data about primary work setting indicated the highest number of mental health practitioners worked in medical/clinical settings with college/university as the second highest ranked group. The participants also were asked to indicate if individuals who were D/deaf had accessibility to technology (e.g., TDD, TTY, video phones, relay systems) in their work settings.

The largest percentage of respondents (n = 48, 75%) indicated no accessible technology was available to persons who are D/deaf in the work setting.

Mental health professionals were asked to respond to confidence in their ability to successfully diagnose and/or meet the treatment needs of clients who are D/deaf. The majority indicated they were “not confident” (n = 44, 67.7%) and were substantially less likely to meet the needs of individuals who were D/deaf. Another 19 (29.2%) participants reported they were “somewhat confident,” with only 3.1% (n=2) indicating they were “very confident.”

Discussion of the Findings

Research Questions and Hypotheses

Three research questions were developed for this study. Each of the questions was addressed using inferential statistical analyses. All decisions on the statistical significance of the findings were based on a criterion alpha level of .05. The following research questions were examined:

The first research question examined to what extent did knowledge influence mental health professionals’ attitudes toward individuals who are D/deaf?

H₁: Mental health professionals reported level of knowledge about deafness will significantly predict attitudes toward individuals who are D/deaf.

Pearson product moment correlations were used to determine the strength and direction of the correlations between attitudes and knowledge of D/deaf culture competency. The correlation between mental health professionals’ attitudes toward individuals who are D/deaf and knowledge was not statistically significant. While the positive direction of the relationship indicated that participants who had more positive attitudes toward individuals who are D/deaf were more likely to have greater knowledge of D/deaf cultural competency, the correlation was not significant. This

finding is consistent with results from Cooper et al., (2003) study that also found no correlation between knowledge and attitude. However, the positive direction suggest that increased knowledge could be attained through specialized training based on responses associated with mental health professionals' low confidence in their ability to diagnose or meet the treatment needs of individuals who are D/deaf. Based on these findings, the null hypothesis was not rejected, indicating that knowledge was not related to mental health professionals' attitudes toward individuals who are D/deaf.

The second research question asked to what extent beliefs do about the capabilities of individuals who are D/deaf, influence mental health professionals' attitudes toward individuals who are D/deaf?

H₂: Mental health professions who reported less favorable beliefs about the capabilities of individuals who are D/deaf, will report less favorable attitudes toward individuals who are D/deaf.

Pearson product moment correlational analysis was used to determine the extent to which mental health professionals' beliefs about the capabilities of individuals who were D/deaf was related to their attitude towards individuals who were D/deaf. Based on findings, the correlation between mental health professionals' beliefs about the capabilities of individuals who are D/deaf and attitudes was not statistically significant. The positive direction of the relationship indicated that mental health professionals who had more positive beliefs about D/deaf capabilities were more likely to have positive attitudes regarding clients who are D/deaf, although the relationship was not statistically significant. Based on these finding, the null hypothesis was not rejected. In a previous study that explored beliefs about the capabilities of D/deaf among hearing and deaf adults residing in Greece, results also found positive beliefs about the capabilities among the participants

surveyed (Nikolarazi & Makri, 2004). In contrast, previous research among health care professionals, suggested less than positive views about the capabilities of individuals who are D/deaf. For example, Iezzoni et al. (2004) explored the concerns of participants who were D/deaf relevant to health care. Findings indicated individuals who were D/deaf perceived their doctors lacked respect for their intelligence and felt marginalized by their limited English proficiency (Iezzoni et al., 2004).

The third research question asked to what extent does mental health professionals' demographic variables significantly relate to knowledge, beliefs, and the prediction of attitudes towards individuals who are D/deaf.

H₃: Mental health professionals' education/training and experience are statistically related to their knowledge, attitudes, and opinions toward individuals who are D/deaf.

The relationship between mental health professionals' demographic variables and knowledge, beliefs, and the prediction of attitudes towards individuals who are D/deaf was tested using separate stepwise multiple linear regression analyses. The purpose of these analyses was to determine which of the independent variables could be used to predict or explain attitudes toward individuals who are D/deaf, beliefs about the capabilities of individuals who are D/deaf, and knowledge of D/deaf cultural competency. Based on results of these analyses, none of these independent variables entered into the regression equations using attitudes toward individuals who are D/deaf and beliefs about the capabilities of individuals who are D/deaf.

However, when knowledge of D/deaf cultural competency was used as the dependent variable, three independent variables (professional discipline as counseling school and community, ethnicity/race as African American, and taking a specialized course) entered the stepwise multiple linear regression equation. The negative relationship between knowledge of D/deaf culture and

professional discipline as school and community counseling indicated that participants who identified school and community counseling as their professional discipline tended to have lower scores on knowledge of D/deaf cultural competency.

While not specific to school and community counseling, previous researchers (Lass et al., 1986) survey of professionals' knowledge and exposure to hearing loss also found deficits in knowledge among professionals (i.e. teachers, special educators, physicians, and rehabilitation counselors). Counselors who identified their discipline as community may work in broader contexts and might encounter clientele across more wide-ranging settings that include clients who are D/deaf. Lack of knowledge and cultural competence could have collateral effects that may affect client-counselor working alliance. For example, counselors' need to understand that clients who are D/deaf seldom attend counseling due to language barriers and poor literacy skills, have difficulty communicating in group settings, and lack awareness of social nuances in nonverbal behavior such as eye gaze and proximity (Sheetz, 2004; Steinberg, 1991; & Williams & Abeles, 2004).

Relevant to school counselors, knowledge may be particularly important due to the heterogeneity within the population of students who are D/deaf and students with disabilities. Since the enactment of legislation such Public Law 94-142 (1975) and Individual Disability Education Act (IDEA; 2004), the role of school counselors has expanded with increased accountability to meet the diverse needs of students with disabilities, including students who are D/deaf (Dunn, 2002). Moreover, the American School Counseling Association (ASCA) identified responsibilities for school counselors working with students with disabilities that include providing appropriate services comparable with nondisabled students (Deck, Scarborough, & Estill, 1999).

In efforts to meet the increased responsibilities, school counselors need to possess the knowledge, skills, and competency specific to students who are D/deaf and other special populations. For example, due to the language and communication needs, D/deaf students frequently are excluded from participation in individual and group counseling, structured school activities (e.g., school assemblies), and other services that are often deferred to special educators. Moreover, school counselors who work with students who are D/deaf may not be cognizant of the distinct and unique needs of individuals within and among this population. For example, understanding the differences in cognitive, linguistic, and social behaviors, preferred communication modality (i.e., ASL, pidgin, oral), and assistive technology needs (e.g., hearing aids, FM systems) can reduce barriers and facilitate counselor-student relationships (Vess & Douglas, 1995).

Identification as African American also was negatively related to knowledge of D/deaf cultural competency, indicating that participants who were African Americans tended to have lower scores on knowledge of D/deaf cultural competency. However, study results should be interpreted with caution. The African American sample in the study was small, representing 20% percent (n=13) of study participants. A larger, more ethnically heterogeneous representative sample may have resulted in different findings for this group of participants. Additionally, no published studies were found that directly examined relationships between mental health professionals' knowledge of deafness and characteristics associated with ethnicity/race.

The negative relationship between completion of a specialized training course and knowledge of D/deaf cultural competency indicated that participants who had taken a course in ASL (n = 10, 15.4%) or Deaf culture (n = 2, 3.1%) were more likely to have higher scores on knowledge of D/deaf cultural competency. Lass, et al. (1986) also found that receiving inservice

training among rehabilitation counselors contributed to knowledge about hearing loss. Hoang et al. (2011) of medical students and medical faculty observed the salience of higher knowledge scores for participants who had taken specialized courses and training in ASL or Deaf culture in a previously cited study. The study included two groups of medical students and doctors; those who were participating in the Deaf Community Training (DCT) program through Gallaudet University and a control group of nonparticipants. The program provided training focusing on American Sign Language (ASL) classes, D/deaf culture immersion, research on deafness, and interactions with individuals who were D/deaf. Findings suggested that medical students and doctors who participated in the DCT training had greater knowledge of D/deaf culture and were more culturally competent than medical students and doctors who had not participated in the DCT program. In a study with contrasting results, Nagakura et al. (2015) did not find significance between D/deaf awareness training (DAT) and knowledge. Several differences are noteworthy. Nagakura, et al., investigated training among genetic counselors who had graduated from 26 graduate programs within 5 years of their study. Although the knowledge was similarly assessed using Hoang et al. (2011) knowledge of D/deaf cultural competency scale, (KDCC), DAT was more extensive than the current study's assessment of training. For example, topics included the rights of the D/deaf, culture and language of D/deaf, and communication between D/deaf and hearing individuals. Moreover, Nagakura et al. suggested that participants in the retrospective study, which measured recollection of training from 1-5 years after graduation, may have been subject to recall bias that could have influenced study results.

The remaining predictor variables did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of knowledge of D/deaf cultural competency. Based on these analyses, the null hypothesis was rejected as correlations

between knowledge and professional discipline of school and community counseling, identification as African American, and completion of specialized training course were statistically significant. These findings suggested that mental health professionals lacked knowledge in D/deaf cultural competence based on deficits in specialized training. Moreover, gaps in knowledge may be linked to deficits in preparation in counseling and psychology curricular preparation programs (Barnett, 2002; Bat-Chava, et al., 2002; Lass, et al., 1986). Previous research by Heller (1987) supported the finding that inadequacies in preparatory programs among a majority of therapists working with clients who were D/deaf did not focus on deafness. Further, in the present study, mental health professionals indicated a lack of confidence to meet the treatment needs of individuals who are D/deaf.

Implications of the Study

These findings have implications for mental health professionals, training curricula, and programs that prepare future psychologists and counselors, and other professionals who provide services to individuals who D/deaf. The present study demonstrated that a lack of knowledge among mental health professionals was correlated to specialized training in D/deaf culture and ASL. This finding may be associated with gaps in training and curricula preparation programs in counseling and psychology programs (Bat-Chava et al., 2002; Lass et al., 1986, Steinberg et al., 2006; Velonaki et al., 2015) and contributed to the shortage in competent and skilled mental health professionals. Some mental health disciplines (school and community counseling) tended to have lower knowledge scores of D/deaf cultural competency. Increased knowledge could be addressed through training curricula, preparation of graduates could be improved, and promote better outcomes for individuals who are D/deaf (Hoang et al., 2011; Lass et al., 1986). Professional development programs could address knowledge deficits in education curricular among future

mental health professionals to work with persons who are D/deaf. Programs that promote increased competence and skill could help reduce the shortage among practitioners who are qualified to work with this specialized population. Counseling and psychology training could augment curricular with research protocols that examine D/deaf culture, language and communication issues, and provide practicum and clinical (e.g., rotations) experiences as part of a diversity program.

This study also has implications for practicing mental health professionals, health care professionals, and preparatory programs/curricula to consider the effect of knowledge on the practice and delivery of services of future graduates. One potentially important finding in the current study was the lack of knowledge and insufficient specialized training among mental health professionals' working with individuals who are D/deaf. In the current investigation, more than 80% of the mental health professionals' had no prior training with in D/deaf culture or American Sign Language, a finding consistent with previous studies regarding specialized training (Lass, et al., 1986; Levine, 1974; Velonaki et al., 2015). While university counseling programs could provide courses for working with the D/deaf population, professional groups, such as the ACA, APA, NASP and, ASCA could provide inservice training or continuing education programs for professionals working in the field to improve their knowledge of deafness and provide strategies for working with these individuals.

Mental health professionals have an ethical responsibility to provide to meet the treatment needs of clients who are D/deaf based on knowledge and cultural competency. Moreover, they are likely to encounter a growing number of individuals who are D/deaf and need to be prepared to provide services to this traditionally underserved population. To address the shortage of mental health professionals who are competently trained to provide services to individuals who are D/deaf, a greater emphasis on research in deafness, knowledge, and social aspects could be

incorporated into curricula preparation as part of the graduate programs. For example, in health care, the Deaf Strong Hospital (DSH) Program at the University of Rochester, in Rochester, New York, implemented a role reversal exercise with first year medical students and volunteers who were D/deaf (Mathews et al., 2011). The DSH program was designed to help medical students experience the barriers that individuals who are D/deaf encounter in communication, access to medical care, and cultural competence. The DSH model has also been adapted as part of a diversity course at the Wegmans School of Pharmacy in Rochester, New York (Mathews et al., 2011).

Counseling and psychology programs could enhance D/deaf cultural knowledge by providing students with training opportunities to interact with D/deaf community through practicum and internship experiences (i.e., Gallaudet University summer immersion program, Hoang et al., 2011, residential schools for D/deaf, and D/deaf clubs). Although this study focused on mental health professionals working with individuals who are D/deaf, it may have broader research application that generalize to other professionals who are involved with underrepresented groups, including individuals with mental and physical disabilities, limited English speakers, and other culturally diverse populations. Other practitioners, including health care professionals (e.g., physicians, nurses, occupational therapists, pharmacists, and medical and nursing students), and mental health workers (e.g., social workers), could improve the quality of care with increased knowledge including specialized training and cultural competence of underserved subgroups (Adib-Hajbaghery & Rezaei-Shahsavarlo, 2014, Barnett, Steinberg, et al., 2006).

Limitations

There are several limitations to this study. First, the study was conducted with mental health professionals on an urban Midwestern university campus and the sample may not be representative or generalize to mental health professionals who are not associated with a university

or college. The mental health professionals included psychologists and counselors. The findings cannot be generalized to social workers, psychiatrists, psychiatric nurses, or other mental health therapists.

The response rate was 43.3%. Potential participants who did not respond to the survey may have had different experiences or time constraints than those who choose to participate. It would be difficult to determine if the responses from the nonparticipants would be similar or different. Another limitation was the inability to manipulate independent variables, lack of randomization that may have threatened internal validity and limited generalization of results.

Finally, the use of self-report survey measure was a limitation of the study. The participants in the study may not have accurately reported their responses, (i.e., response bias). Some participants may have misrepresented their attitudes and beliefs based on a tendency to provide socially desirable responses. To minimize this concern, participants were assured that their responses would be confidential and all data would be presented in aggregate, with no individual discernable in the final report.

Recommendations for Future Research

The results of this study have provided information regarding the knowledge and attitudes of mental health professionals regarding D/deaf individuals. Further research on ways to provide awareness and information to mental health therapists is needed that can assist the D/deaf community, as well as individuals with other types of disabilities.

- Replicate this study using quantitative research and a larger, more heterogeneous sample of mental health professionals to examine factors that contribute (e.g., training curricula, efficacy, effects of interventions on knowledge) to improving knowledge and awareness of the needs and culture of D/deaf individuals.

- Replicate the study, using other types of professionals (e.g., social workers, teachers, psychiatrists, psychiatric nurses, etc.) to determine if knowledge, D/deaf cultural competency, and attitudes toward D/deaf individuals differ among the different types of professionals.
- Use an experimental study to determine the effects of professional development programs on the attitudes and knowledge of mental health professionals regarding D/deaf individuals. This professional development program could include different strategies for communication, types of technological enhancements to improve interactions with D/deaf individuals, and treatment interventions to improve counseling and psychology outcomes.
- Conduct a longitudinal research study to determine the long-term effects of professional development on changes in knowledge and attitudes of mental health professionals regarding their work with D/deaf people in particular and individuals with disabilities in general.
- Conduct a study to determine the extent in which graduate preparatory training programs include deafness protocols in their curriculum.

Conclusions

The purpose of this study was to examine the relationship between mental health professionals' attitudes and the salience of knowledge and beliefs as predictors of attitudes toward individuals who are D/deaf. The principal outcome in this study provided evidence that mental health professionals' who had participated in specialized training had higher levels of knowledge of D/deaf cultural competence. These findings suggest that knowledge deficits may have been contributing to the shortage of mental health professionals who are competent to provide care for

individuals who are D/deaf. To address this shortage in qualified and skilled mental health practitioners, university-level training programs could focus on research in deafness, modifications in clinical practice and teaching, and develop more inclusive curricula to improve the quality of treatment outcomes for individuals who are D/deaf. For example, the training programs could include online webinars, continuing education, interactive workshops, and conferences that focus on deafness for mental health professionals (Lock, 2003; Mathews, 2011). Outreach programs, such as informational presentations to Deaf clubs and collaborative efforts with members of the D/deaf community could help prepare mental health professionals on topics relevant to D/deaf culture, communication and language, and the appropriate use of interpreters.

APPENDIX A**Surveys****Demographic Questionnaire****Professional Background**

- Please complete the survey to assist in understanding the experiences, training, and background of professionals responding to this survey about individuals who are deaf.

- What is your age? 25-34 35-54 55-64 65-75
- Gender: Male Female
- Race/Ethnicity: African American Hispanic/Latino
Caucasian Other _____
Asian
- Hearing status: Hearing Deaf Hard of hearing
- What is your professional discipline?
Counseling: Rehabilitation/Community Other _____
 School and Community

Psychology: Clinical/Education Marriage and Family
 Cognitive and Social Other _____
- What is your highest degree?
 Doctorate Masters
 Specialist Other _____
- What is your specialized training in deafness?
 Course in ASL Course in Deaf Culture None
- Do you have prior experience or contact working with clients who are deaf?
 Yes No
- What is your primary practice or work setting?
 Rehabilitation Agency Medical/Clinical setting Other _____
 College or university Residential treatment
 Private practice Deaf Service Agency
- Total number of years in mental health _____ years
- How do you communicate with clients who are deaf?
 Speech/oral Written notes Family/friends
 Deaf lip-read Gestures Other _____
 Certified interpreter ASL

12. In your work setting, do you use a sign language interpreter?

Yes

No

Sometimes

13. In your work setting, do you have access to hearing aid compatible phones, video phone, relay services, or TDD/TTY (telecommunications device/teletypewriters)?

Yes

No

14. How confident are you that you can successfully diagnose and/or meet the treatment needs of the client who is D/deaf?

Very confident

Somewhat Confident

Not Confident

Attitudes to Deafness Scale

Please rate each of the following on a scale of 1-6.

1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree
4 = Somewhat Agree	5 = Agree	6 = Strongly Agree

- | | |
|--|-------------|
| 1. Deaf couples should receive genetic counseling to avoid having children . | 1 2 3 4 5 6 |
| 2. Deaf children should learn to speak to communicate with hearing parents. | 1 2 3 4 5 6 |
| 3. I would like to have deafer friends. | 1 2 3 4 5 6 |
| 4. Deaf schools and deaf clubs create deaf “ghettos.” | 1 2 3 4 5 6 |
| 5. Deaf people should learn speech rather than sign language. | 1 2 3 4 5 6 |
| 6. Deaf people are handicapped. | 1 2 3 4 5 6 |
| 7. More research should be done to find cures for deafness. | 1 2 3 4 5 6 |
| 8. Deaf children should be taught in sign language. | 1 2 3 4 5 6 |
| 9. Hearing children of deaf parents are at risk of emotional deprivation | 1 2 3 4 5 6 |
| 10. Deaf people are safe drivers. | 1 2 3 4 5 6 |
| 11. I would like to have more deaf colleagues. | 1 2 3 4 5 6 |
| 12. Deaf people should learn to lip-read. | 1 2 3 4 5 6 |
| 13. Interpreters should be available for deaf people at work | 1 2 3 4 5 6 |
| 14. Deaf people should automatically receive help in their home environment | 1 2 3 4 5 6 |
| 15. All deaf people should be offered corrective surgery. | 1 2 3 4 5 6 |
| 16. Training more professionals to work with deaf clients would be a waste of time | 1 2 3 4 5 6 |
| 17. Having a deaf colleague would cause problems in the workplace. | 1 2 3 4 5 6 |
| 18. Deaf people are physiologically impaired. | 1 2 3 4 5 6 |
| 19. Deaf people should not be viewed as “impaired”. | 1 2 3 4 5 6 |
| 20. I would like to see more deaf people at the clubs/societies I attend. | 1 2 3 4 5 6 |
| 21. Having a deaf friend would be difficult. | 1 2 3 4 5 6 |
| 22. Deaf people have their own culture. | 1 2 3 4 5 6 |

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Opinions About Deaf People Scale

Please rate each of the following on a scale from 1 to 4.

1 = Strongly Agree 2 = Agree 3 = Disagree 4 = Strongly Disagree

	Rating Scale
1. Smarter deaf people have better speech than deaf people who are less intelligent.	1 2 3 4
2. Deaf people drive just as safely as hearing people.	1 2 3 4
3. A deaf person can have the leadership abilities needed to run an organization.	1 2 3 4
4. It is unfair to limit deaf people to low-paying, unskilled jobs.	1 2 3 4
5. A deaf person could get a Ph.D. or a Masters' degree.	1 2 3 4
6. If a boss has a problem with a deaf employee, the boss should talk with the interpreter, rather than the deaf person.	1 2 3 4
7. A deaf person could be promoted to a management position.	1 2 3 4
8. An 18-year old deaf adult is capable of living alone and taking care of him/herself.	1 2 3 4
9. It is nearly impossible for a deaf person to keep up with a hearing person in school.	1 2 3 4
10. It can be frustrating to pay a visit to deaf people because they can't hear you knock at the front door.	1 2 3 4
11. Deaf people cost tax payers lots of money because they can't keep their jobs.	1 2 3 4
12. Deaf people should only work in jobs where they don't need to communicate with anyone.	1 2 3 4
13. It is a mistake to leave a baby alone with a deaf person, because he/she can't hear the baby cry.	1 2 3 4
14. Deaf adults must depend on their parents to make important decisions.	1 2 3 4
15. Signing (ASL) is not really a language because only simple thoughts can be communicated.	1 2 3 4
16. A deaf person could not go to a restaurant without a hearing person because he/she could not order food without assistance.	1 2 3 4
17. A deaf person can be an excellent writer.	1 2 3 4
18. Deaf people are as intelligent as hearing people.	1 2 3 4
19. If there was a fire, a deaf person could get out of a building safely without help just as easily as a hearing person could.	1 2 3 4
20. Deaf adults are able to communicate with their hearing children.	1 2 3 4

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Assessing Knowledge of Deaf Cultural Competency

Six-multiple choice and 28 true-false questions.

Item 1: a cochlear implant

- A. Will allow a deaf adult to immediately begin hearing and understanding oral conversations.
- B. Destroys any residual hearing loss.
- C. Corrects for any type of hearing loss.
- D. Is desired by at least 90% of deaf people
- E. Do not know.

Item 2: in a clinical setting, it is the right of the deaf patient.

- A. To express a preference for a particular interpreter.
- B. To be provided with an interpreter by the practitioner
- C. To determine how much personal information he/she wants to disclose in an interpreted situation.
- D. Do not know.

Item 3: the clinical setting has arranged for you to give a presentation on an important mental health topic with the assistance of an ASL interpreter. The audience, which consists mainly of deaf patients, are all socializing prior to the presentation. You are ready to begin your presentation. You should:

- A. Stand on stage and wait patiently for the audience to settle down.
- B. Flick the lights on and off several times in order to get the audience attention.
- C. Clap loudly.
- D. Ask the interpreter to sign that you ready to begin
- E. Do not know.

Item 4: in a consultation room, where would you suggest the client and interpreter to sit?

- A. Place the interpreter beside the patient. The client and the interpreter are facing the counselor/psychologist.
- B. Place the interpreter beside the counselor/psychologist. The counselor/psychologist and interpreter are facing the client.
- C. Place the interpreter at an equal distance between the provider and the patient.
- D. Do not know.

Item 5: You have a deaf couple who refuse to have their newborn baby's hearing tested. You should:

- A. Tell them this is required by law, and that it has to be done for their baby's benefit.
- B. Tell them it is their decision, but explain that this lack of knowledge will put their baby at risk.
- C. Accept their decision.
- D. Do not know.

Item 6: You are in the waiting area and you call for a client several times. Other clients point to a person reading a magazine and say, "She is deaf". You should:

- A. Approach the client and gently tap her on the shoulder.
- B. Approach the client and call their name louder.
- C. Approach the client, making small gestures in her field of vision to try to her attention.
- D. Do not know.

True – False Questions

Please circle correct response.

1. Only 30% of the English language can be accurately lipread (speechread). True False
2. You are running considerably behind schedule. Your deaf patient is waiting with his/her interpreter. The interpreter is ethically bound to wait with the client until you are ready to see them. True False
3. ASL is a pictorial language that produces a word-for-word translation of what is said in English. True False
4. The majority of hearing parents with deaf children never learn to sign. True False
5. When communicating with a deaf person through an interpreter, you should face the interpreter and explain to the interpreter what the patient needs to know. True False
6. Trying to help cure or fix your client's deafness should be your top priority. True False
7. Because deaf people rely upon printed forms of information, their literacy is equal to or better than the general public. True False
8. A good interpreter will be able to step out of his/her interpreting role in order to explain to the counselor/psychologist what the client is really trying to say. True False
9. When there is a dominant source of light, such as a window, your deaf client should be seated with his/her back to the light source and you should be facing the light source. True False
10. For an infant, there is very little that can be done to improve an infant's hearing due to its age. True False
11. When speaking to a deaf client through an interpreter you should speak each word very slowly, to allow the interpreter time to sign or fingerspell your words. True False
12. For most members of the Deaf community, English is their primary language. True False
13. When a deaf person becomes a client, the entire staff should be notified that the client is deaf. True False
14. When hiring an interpreter, the minimum time per session is two hours. True False
15. At the end of the counseling/psychology session, the interpreter should again review the information with the client. True False
16. Early in the conversation, your client mentions to you that he/she has Usher's syndrome. This information will influence how you communicate with him/her. True False
17. Deaf clients generally do not participate in support groups such as those that help patients' cope with disease or death. The main reason for this is due to the language barrier. True False

18. On average, deaf clients report that they are unable to convey adequate information to their counselors/psychologists. True False
19. Less than 50% of counselors/psychologists who have deaf clients use a certified interpreter. True False
20. Working with other minority and/or disabled population will adequately prepare a counselor/psychologist to work with the deaf. True False
21. Ninety percent of deaf people have hearing parents. True False
22. If a child is found to having a hearing loss, you should also recommend the child see an optometrist. True False
23. It is the clients' responsibility to schedule the interpreter if they think one will be needed. True False
24. You have complicated information to communicate to a deaf client, so it would be wise to tell the client to bring along a friend or family member to assist with the interpreting. True False
25. If the client requests an interpreter for a visit with their mental health provider, it is the patients' responsibility to pay for the interpreter. True False
26. If the deaf client requests an interpreter, you may ask a staff member, who has taken several semesters of ASL classes, to interpret during the consultation. True False
27. If you suspect a hearing loss in a child, you should advise parents to have the child's hearing rechecked during a routine visit with their pediatrician. True False
28. American Disabilities Act (ADA) requires an interpreter be present whether the patient wants one or not. True False

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APPENDIX B**RESEARCH INFORMATION SHEET**

Title of Study: *Examining the Relationship between Mental Health Professionals' Knowledge and Beliefs as Predictors of Attitudes Toward the Deaf*

Principal Investigator (PI): Pearl M. Weiss
Wayne State University
Theoretical and Behavioral Foundations
313-577-1721

Purpose:

You are being asked to be in a research study examining the relationship between knowledge, beliefs, and attitudes toward individuals who are deaf because you are a mental health professional. This study is being conducted at Wayne State University. The estimated number of study participants is approximately 125–150.

Study Procedures

If you agree to take part in the study, you will be asked to fill out a survey. All responses will be anonymous and contain no identifying information to ensure confidentiality of participants. The survey will ask you to provide demographic information, answer questions about knowledge of deaf culture, opinions about deaf individuals, and attitudes toward deaf people. If possible please respond to all questions. The one-time survey will take approximately 25-30 minutes to complete.

Benefits

As a participant in this research study, there will be no direct benefit for you. However, information from this study may benefit other people now or in the future.

Risks

There are no known risks at this time to participation in this study.

Costs

There will be no costs to you for participation in this research study.

Compensation

You will not be paid for taking part in this study.

Confidentiality:

All information collected about you during the course of this study will be kept without any identifiers.

Submission/Revision Date: [09/21/2015]
Protocol Version #: [1]

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Form Date: 04/2015

Voluntary Participation / Withdrawal:

Taking part in this study is voluntary. You may choose not to take part in this study. You are free to not answer any questions or withdraw at any time. Additionally, participation in this research is for active mental health professionals' practicing in the State of Michigan between the ages of 25-75. If you are not an active mental health professional practicing in the State of Michigan and/or between the ages of 25-75, please do not complete this survey.

Questions

If you have any questions about this study now or in the future, you may contact Pearl M. Weiss at the following phone number (248) 202-1155. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call the Wayne State Research Subject Advocate at (313) 577-1628 to discuss problems, obtain information, or offer input.

Consent to Participate in a Research Study

By completing the survey you are agreeing to participate in this study.

APPROVAL PERIOD

OCT 08 '15

SEP 22 '16

**WAYNE STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD**

Submission/Revision Date: [09/21/2015]
Protocol Version #: [1]

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Form Date: 04/2015

APPENDIX C

**WAYNE STATE
UNIVERSITY**

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Pearl Weiss
Theoretical & Behavior Foundations

From: Dr. Deborah Ellis or designee N. Nahan / 2.2
Chairperson, Behavioral Institutional Review Board (B3)

Date: September 23, 2015

RE: IRB #: 092515B3E
Protocol Title: Examining the Relationship Between Mental Health Professionals' Knowledge and Beliefs as Predictors of Attitudes Toward the Deaf
Funding Source:
Protocol #: 1509014317

Expiration Date: September 22, 2016

Risk Level / Category: Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* Category (#7)* by the Chairperson/designee for the Wayne State University Institutional Review Board (B3) for the period of 09/23/2015 through 09/22/2016. This approval does not replace any departmental or other approvals that may be required.

- Protocol Summary Form (revision received in the IRB office 09/23/15)
 - Dissertation - Research Protocol (received in the IRB office 09/23/15)
 - Medical records are not being accessed therefore HIPPA does not apply
 - A waiver of consent and waiver of written documentation of consent has been granted according to 45CFR 46 116(d) and 45CFR 46 117(c) and justification provided by the Principal Investigator in the Protocol Summary Form. This waiver satisfies: 1) risk is no more than minimal, data are survey responses with minimal risk content, 2) That the research involved no procedures for which written consent is normally required outside the research context, consent would not be required for these procedures outside the research context. 3) The consent process is appropriate, 4) An information sheet disclosing the required and appropriate additional elements of consent disclosure will be provided to participants.
 - Research Information Sheet (revision dated 09/21/2015)
 - Recruitment Email Script
 - Data Collection Tools (4): i) Demographic Questionnaire, ii) Attitude to Deafness Scale, iii) Opinion about Deaf People Scale, and iv) Assessing Knowledge of Deaf Cultural Competency
-

- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (<http://www.irb.wayne.edu/policies-human-research.php>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the IRB Administration Office must be contacted immediately.

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ABSTRACT**EXAMINING THE RELATIONSHIP BETWEEN MENTAL HEALTH PROFESSIONALS' KNOWLEDGE AND BELIEFS AS PREDICTORS OF ATTITUDES TOWARD THE DEAF**

by

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Individuals who are D/deaf experience significant barriers and disparities when accessing mental health services. Factors associated with improving knowledge and beliefs could reduce these disparities among mental health professionals by incorporating cultural competence during professional training, academic curricular, and internship programs. The purpose of this study was to examine the relationship between mental health professionals' knowledge and belief as predictors of attitudes toward individuals who are D/deaf. Variances in demographic data also were explored as predictors of attitudes regarding individuals who are D/deaf.

A nonexperimental, correlational research design was used for this study. The survey was completed by 65 mental health professionals. Pearson product moment correlations were used to determine the relationship between attitudes and knowledge of deaf cultural competency. No significant correlations were obtained, indicating that knowledge was not related to mental health professionals' attitudes toward the deaf. Mental health professionals' beliefs about the capabilities of individuals who were D/deaf was also not significantly related to attitudes toward individuals who were D/deaf. Relevant demographic variables were used in separate stepwise multiple linear

regression analyses, with knowledge, beliefs, and the prediction of attitudes towards individuals who were D/deaf used as the dependent variables. When knowledge was entered as the dependent variable, three independent variables entered the stepwise linear regression equation. The findings indicated that knowledge was related to specialized training and that most mental health professionals lacked adequate academic curricula preparation. Statistically significant relationships were also obtained on demographic variables related to ethnicity and professional discipline. Professionals who identified their discipline as community counseling reported lower scores on cultural knowledge. Recommendations for future research were offered.

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