

ABSTRACT

A STUDY OF SELF-CONCEPT ISSUES IN HEARING CHILDREN
OF DEAF ADULTS (CODAS)

by

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ABSTRACT OF GRADUATE STUDENT RESEARCH

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Title: A STUDY OF SELF-CONCEPT ISSUES IN HEARING CHILDREN OF DEAF ADULTS (CODAS)

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Problem

Ninety percent of children born to Deaf parents are hearing. These children of deaf adults are referred to as CODAs. The small amount of current literature on CODAs suggests a struggle with issues of self-concept due to their unique experience. This study was designed to provide further research on this subject.

Method

For this study, 54 CODA participants were compared to 53 non-CODA participants. The 54 CODA participants in this study were volunteers from a CODA listserv and websites. The 53 non-CODAs were volunteers from Utah State University, Andrews University in Michigan, and a mental health center in Cody, Wyoming. Each participant completed the Tennessee Self-Concept Scale (TSCS) and a brief demographics questionnaire.

The *t* test of means, discriminant analysis, one-way ANOVA, and one-way MANOVA were used to test the TSCS total self-concept and six subscale scores (physical,

moral, personal, family, social, and academic) between the CODA and non-CODA groups. For the CODA participants, a one-way ANOVA was used to test the variables of birth order, education level, cultural identity, and role of primary interpreter against the TSCS. For CODAs, Chi-Square analysis was used to test for a relationship between birth order and primary interpreter, and then between parental communication mode and cultural identity.

Results

When CODAs and non-CODAs were matched on age and gender, no significant differences were found for total self-concept or on the six subscales. However, when matched on education level, a significant difference was found on the TSCS total score, with non-CODA males significantly scoring higher on self-concept than CODA males and females and non-CODA females ($p = .043$). There was also an interaction effect for CODA and non-CODA males with education level and the social subscale ($p = .019$). For CODAs, the variables of birth order, primary interpreter, and cultural identity showed no significant impact on the TSCS subscales.

A significant difference was shown for total self-concept ($p = .000$) and for the six subscales ($p = .001$) on education levels, showing that as education level increased, self-concept scores also increased.

A significant relationship was found that suggested that firstborns and only child were more likely to report performing the role as primary interpreter for parents and the last-born child as less likely ($p = .043$).

A significant relationship was also found that suggests CODAs who report their parental primary mode of communication as speaking/lip-reading more likely to report cultural identity with the Deaf culture. Also, CODAs reporting that their parental primary mode of communication was Sign Language were more likely to report cultural identity as Unique to CODA ($p = .001$).

Conclusions

A significant difference in self-concept was shown as non-CODA males significantly scored higher on self-concept than did CODA males and females and non-CODA females. An interaction effect was also shown for CODA and non-CODA males with education level and the social subscale. A significant increase in self-esteem was shown when education levels increased.

Regarding CODAs, the variables of birth order, primary interpreter, and cultural identity showed no significant impact on the TSCS subscales. Also for CODAs, firstborns and only child are more likely to be the parents' primary interpreters and the last-born child is less likely. CODAs with parents who communicate primarily in Sign Language show a significant increase in reporting cultural identity as Unique to CODA, whereas CODAs with parents who communicate primarily with speaking/lip-reading tend to identify more with the Deaf culture.

Andrews University

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A STUDY OF SELF-CONCEPT ISSUES IN HEARING CHILDREN

OF DEAF ADULTS (CODA)

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Esther Saville

July 2008

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Esther Saville

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To my spiritual mother, the most beautiful person I know.
Thank you for teaching me about love, the most priceless
gift that can ever be given. Words cannot begin to
express the deep affection and admiration I have
for you. I have such gratitude for the gift
of you in my life.

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CHAPTER I CHAPTER I

INTRODUCTION INTRODUCTION

Background Background

Most people, within the general public, are likely to believe that disabled human beings strive to fit into and become a part of the larger society. However, unlike other handicapped groups, deaf individuals actually strive to become separate from the majority culture and establish their own culture (Davis, 2007; Ladd, 2003; Lane, Hoffmeister, & Bahan, 1996; Shield, 2005).

Heibert (1983) defined culture as more than learning how to dress and conform to external patterns of behavior. Culture is a system of shared assumptions, beliefs, and values. It is the framework from which we interpret, understand, and make sense of life and the world around us. It is learned, rather than instinctive, and passed on from one generation to the next.

Thus, regardless of the fact that Deaf and Hearing populations live intermingled, there are distinct cultural differences and barriers that exist between these cultures. Despite their invisibility, these differences appear to be strong and prominent (Ladd, 2003; Lane et al., 1996; Shield, 2005). Deaf culture includes more than the actual deafness itself: it includes a different way of life, of thinking, of relating to self or to others, and it can affect one's type of career of choice or how one views the world at large (Lane et al., 1996; Shield, 2005). In Myklebust's (1960) book *The Psychology of Deafness*, deafness is described as "a sensory deprivation that limits the world of experience and deprives the organism of some of the material resources from which the mind develops" (p. 1). Charlson (1989) explained that the consequences of deafness go far beyond the physiological condition of auditory loss. Blane (1995) and Wilcox (1989) suggest that the social, linguistic, and cognitive functioning are all profoundly influenced by deafness. As with any culture, the Deaf culture shares beliefs, values, attitudes, and a language that are different from those outside the culture, which forms an unbreakable bond among its members (Blane, 1995; Shield, 2005; Wilcox,

1989).

A major problem for the deaf has been the lack of knowledge and understanding among the Hearing population concerning Deaf culture and the Deaf community (Davis, 2007; Paul & Jackson, 1993). Only recently has the Deaf population been acknowledged as a culture in its own right (Davis, 2007; Ladd, 2003; Lane et al., 1996). Historically, deaf people were considered disabled members of whatever dominant culture they resided in (Baker-Shenk & Cokely, 1980; Davis, 2007; Lane, 1984; Padden, 1980; Padden & Humphries, 1988; Reagan, 1985, 1990, 2002; Woodward, 1982). What is more, the classification of deafness as being a handicap emerged from the medical world and was supported by the medical model. This has left the Deaf in a devalued or inferior position (Lane et al., 1996). Interestingly enough, however, the Deaf do not see deafness as a disability, but rather a difficulty in overcoming the language barrier between Sign Language and spoken language (Davis, 2007; Lane, 1984; Stokoe, 1993).

The Deaf culture also appears to resent society's lack of acknowledgment and awareness of the uniqueness of their culture (Davis, 2007; Lane et al., 1996; Shield, 2005). They see the many attempts to close deaf schools, main-stream deaf children, the suppression of Sign Language (the preferred Deaf language), and attempts to teach the Deaf to communicate verbally as refusals to officially acknowledge the Deaf culture (Ladd, 2003; Lane et al., 1996; Shield, 2005). They believe this was done in an attempt to force deaf individuals to be compatible with the Hearing majority culture and based on the belief that the Deaf minority should be the ones to accommodate to the Hearing majority communication style (Higgins, 1980; Lane et al., 1996; Shield, 2005). (As a side note, and consistent with current literature on this topic [Harvey, 1989; Ladd, 2003; Lane et al., 1996; Paul & Jackson, 1993; Preston, 1994; Shield, 2005; Stokoe, 1993], in this study I will use the capital "D" to represent the Deaf population as a cultural, linguistic minority that holds a

particular set of beliefs and sense of pride from being part of that culture. This is to distinguish it from the lower case “deaf,” which refers to the medical condition of the inability to hear. The same will apply to the word “hearing.” The capital “H” represents the Hearing population as the cultural majority, and the lower case “h” refers simply to the ability to hear.)

Within the Deaf community, there exists what is referred to as the 90% rule—about 90% of deaf children have hearing parents and about 90% of deaf adults have hearing children (Lane et al., 1996; Schein, 1989). The hearing children of deaf individuals who grow up in the Deaf culture, known as Children of Deaf Adults (CODAs), have a unique experience. They find themselves teetering between the two cultures. They have grown up within the embrace of the Deaf culture and possibly Sign Language, yet they are hearing and are expected to assimilate into the Hearing culture. The Deaf culture is their native culture, but they are not deaf. The Hearing culture is awkward and foreign to them. The nature of culture is such that it establishes and defines patterns of behavior that exist in and are unique to one group (Tseng & McDermott, 1981). Children must figure out who “we” are and who “they” are. Imagine the difficulty in achieving such a task when one’s parents are members of a culture that they can never become a part of (Blane, 1995). The real issue for CODAs is that they are brought up under the Deaf culture and values, yet they do not know what it is to be deaf (Blane, 1995; Preston, 1994; Shield, 2005; Walker, 1986). Although they are hearing, several studies suggest that the value system and cultural background held by CODAs are more reflective of the Deaf world than of the Hearing world (Meadow-Orlans, 1987; Preston, 1994; Sacks, 1989; Shield, 2005).

As CODAs grow into adults, it is assumed by both the deaf and the hearing that they will simply make a transfer and assimilate from the Deaf into the Hearing culture (Preston, 1994; Shield, 2005). However, regardless of this assumption, this is not the case. CODAs

grow up in the Deaf culture because their parents are deaf. This culture is like their native culture, their people, their way of life, and Sign Language is their “native tongue.” They find themselves more comfortable and at ease in the Deaf culture, and it is a place where they feel relaxed and “at home” (Preston, 1994; Shield, 2005).

Oddly enough, the mere fact that CODAs can hear leads the deaf to see them as not part of the Deaf culture and to treat them as “hearing” (Blane, 1995; Preston, 1994; Shield, 2005). Some would say that Deaf parents even have a preference of having Deaf children like themselves who will carry on their culture, language, and attend their former school (Dirksen & Bauman, 2005; Lane et al., 1996). Unfortunately, Deaf parents may not feel an identification with their hearing children, and similarly, hearing children may not fully identify with their parents (Charlson, 1989; Preston, 1994; Shield, 2005).

It is suggested that this lack of identity with parents or a cultural group creates a conflict of self-concept for CODAs (Blane, 1995; Preston, 1994; Shield, 2005). Becoming integrated into the society in which one lives is one of the main developmental tasks in a human’s life (Berger, 1994; Lynch, 1981). A major part of this integration is association and identification with a group (Beebe, Beebe, & Redmond, 2002). This also directly affects one’s self-concept. Self-concept is defined as “a sense of their own personal worth and social identity” (Myers, 1992, p. 84). This comes primarily through social experiences, a main focus being family (Adams & Fitts, 1971; Marsh, Relich, & Smith, 1983; Piers, 1984; Wylie, 1974).

The struggle for self-concept for the CODA may be intensified even more when one introduces the subject of interpreting. CODAs spend much of their lives hearing and interpreting for their parents. They constantly travel between the Deaf and Hearing worlds, mediating and interpreting (Champie, 1984). Their own wants and needs are often put aside in service to their parents’ wants and needs, thus contributing to a loss of the CODAs’ sense

of self (Preston, 1994). It is also stated in some of the research that the role as primary interpreter is reportedly performed by the oldest daughter.

Statement of the Problem

The literature suggests that CODAs fail to attain a sense of belonging in either the Deaf or Hearing cultures (Bull, 1998; Lane et al., 1996; Napier, 2002; Preston, 1994; Walker, 1986; Shield, 2005). The literature also reports that a sense of belonging and identification with a group is central to one's self-concept development (Beebe et al., 2002). Many of the elements stated in the literature that are needed for healthy self-concept formation appear to be compromised by the unique situation CODAs find themselves growing up in. This subsequently creates a problem for CODAs in regard to their self-concept, both personally and culturally (Blane, 1995; Buchino, 1990, 1993; Bull, 1998; Chan & Lui, 1987; Charlson, 1989; Davie, 1992; Deluigi, 1991; Frank, 1979; Higgins, 1980; Lane et al., 1996; Livingston, 1997; Marshall, 1978; Napier, 2002; Preston, 1994; Shield, 2005; Sidransky, 1990; Walker, 1986). Since 90% of the children born to deaf couples are hearing, this would mean that the majority of children born to deaf parents possibly struggle with issues of personal and cultural self-concept. The struggle for self-concept development and establishing a sense of belonging in the world around them needs to be examined and understood more clearly. Little empirical research has been done to address this specific issue, and thus is needed.

The literature repeatedly addresses the subject of interpreting for CODAs. The interpreting issue has been referenced in case studies and qualitative research, but has received minimal empirical research. The research suggests that since CODAs spend so much of their lives performing the role of interpreters for their parents that their sense of self is lost. Interpreting also places the CODA in a position of role reversal and contributes to a sense of duty and obligation to their parents. Both of these issues subsequently negatively

impact a CODA's self-concept development, and possibly even foster a lack of personal self-concept. More research, specifically empirical, is needed to bring to light the issues regarding interpreting. More research is also needed to investigate the possible impact that interpreting has on a CODA's self-concept.

It is stated in the research that the role of primary interpreter is reportedly performed by the oldest daughter. The issue of birth order and the CODA experience have been referenced in case studies and qualitative research, but has received minimal empirical research. There is a need to contribute empirical research on the possible relationship between birth order and performing the role as primary interpreter.

More research is also needed to ascertain whether there is a relationship between parental mode of communication (Sign Language and speaking/lip-reading) and a CODA's cultural identification (Deaf, Hearing, unique to CODA). With the centrality that language plays in cultural identification, it is possible to postulate that there might be a relationship between these variables, cultural identity and CODA parents' primary mode of communication. This has not been studied and is relevant to CODA and Deaf Culture issues and therefore important to investigate.

The question of the impact the CODA experience has on self-concept formation needs to be further explored. Most of the research written on CODAs is narrative in nature and not empirical. With case studies and biographies, there is the possibility of subject bias such as with CODAs idealizing their parents. The recall of childhood events may also be unreliable. There is the possibility that individual case reports represent only that group of CODAs most severely affected by their parental deafness. This type of research also tends to limit the sample size.

More empirical research is needed to help investigate the CODA experience. There is the need to increase awareness on the subject of CODAs and their unique experience. It is

important to consider the possibility that many may be saying CODAs are different when compared to non-CODAs, when in actuality they are not. This study attempts to provide more answers to these questions.

The bulk of the minimal empirical research done on CODAs and self-concept has been on children and adolescents. The self-concept of adult CODAs needs to be further explored. Deluigi (1991) and Tandler (1975) showed significant differences in children and adolescent CODA self-concepts when compared to non-CODAs. There is a need to contribute more empirical and quantitative research to CODA adults, investigating the long-term effects their unique experience has on their self-concept. This study will attempt to contribute to this need.

There is a need to adopt a more respectful cultural perspective of Deafness, rather than a pathological perspective. There is a need for literature to explore and challenge the perception that parental deafness negatively impacts children. Of the case studies done on CODAs, many were pulled from psychiatric and mental health treatment files (Arlow, 1976; Bene, 1977; Dent, 1982; Frankenburg, Sloman, & Perry, 1985; Halbreich, 1979; Tandler, 1975; Wagenheim, 1985). The fact that these CODAs sought therapy may have little to do with parental deafness, as proposed by the researchers. Is it possible such literature has misrepresented the impact of the CODA experience. Studies that bolster empirical research on CODAs will help to spread awareness and education. This will lead to increased positive family dynamics in the homes of deaf parents and help their hearing children live effectively in a bicultural world.

Purpose of the Study

The purpose of this study was to investigate whether there exists a difference in self-

concept between CODAs and non-CODAs due to the unique experience CODAs face. The second purpose of this study is to provide empirical research to the subject of interpreting and its subsequent impact on self-concept. The third purpose of this study is to provide empirical research to the possible relationship between birth order and performing the role as primary interpreter. The fourth purpose is to explore a possible relationship between parental mode of communication and reported cultural identification. The fifth purpose is to contribute to more empirical CODA research. Although there have been several qualitative reports such as biographies, interviews, and case studies of CODAs struggling with these different issues, more quantitative research is needed in this area. The sixth purpose is contributing to the need of providing more empirical research regarding CODA adults and the long-term effects of the CODA experience and its relationship to self-concept. The seventh and final purpose of this study is to assist in challenging some of the literature that has historically pathologized Deafness and presented the Deaf as inadequate when parenting. More education and research is needed to spread awareness of the Deaf and CODAs by providing a more respectful cultural perspective.

Significance of the Study

It has only been recently that CODAs have been recognized as a distinct group with their own set of characteristics and issues. CODAs would benefit from more research that enlightens them about the unique challenges they are subjected to as they strive to develop their own self-concept identity and place in their bicultural world. A significance of this study is to assist in providing much needed quantitative research to help balance out the bulk of CODA literature that is qualitative in nature. Another area of importance this study addresses is to specifically help fill the gap in addressing the long-term effects of the CODA experience as it relates to the self-concept in CODA adults.

Minimal research is available to help mental health professionals who work with

CODAs. This study could contribute to helping mental health providers be educated about the CODA experience and therefore better in tune with the dynamics of their CODA clients. Parents, educators, administrators, and communities would also benefit from such a study in order to help them decide which services and programs are needed to assist CODAs in their unique plight. A final significance of this study would be to learn more about the CODAs' cultural perspective of Deafness, and the important part in which it plays in the CODAs and their Deaf parents' lives.

Research Questions Research Questions

The questions this study addresses are the following:

1. Is there a difference in self-concept scores between CODAs and non-CODAs in total self-concept and the areas of physical, moral, personal, family, social, and academic self-concept?
2. For CODAs, do the variables of birth order, education level, cultural identity, and performing the role as the primary interpreter make a difference in total self-concept and the areas of physical, moral, personal, family, social, and/or academic self-concept?
3. For CODAs, is there a relationship between the variables of birth order and performing the role as primary interpreter for parents
4. For CODAs, is there a relationship between the variables of parental mode of communication and reported cultural identity?

Conceptual Framework Conceptual Framework

In this study, various theories and research form the conceptual framework that support this research. The first one considered is the theory that the Deaf culture is very much real, unique, and alive (Davis, 2007; Ladd, 2003; Lane et al., 1996; Shield, 2005).

Deaf culture goes far beyond the actual deafness itself, to a way of life, thinking, relating to self and others, type of career, and the world at large. Deaf culture shares beliefs, values, attitudes, and a language that are different from those outside the culture. The primary binding force of the Deaf culture is the shared language, American Sign Language (Costello, 1994; Davis, 2007; Shield, 2005). For the Deaf, deafness is not a disability, but rather a difficulty in overcoming language barriers (Davis, 2007; Lane, 1984; Stokoe, 1993; Shield, 2005).

Preston's research (1994) forms part of this study's framework in that it supports the theory that CODAs have a unique struggle. Other studies on CODAs are also referenced and frequently used; however, Preston's is most heavily referred to because of his many CODAs who so eloquently expressed this struggle. Preston shared that the struggle CODAs experience was unique because CODAs can hear and are therefore expected to assimilate into the Hearing culture; however, since CODAs have grown up in the Deaf culture, the Hearing culture is awkward and foreign to them. He also found that CODA values and the cultural belief system appeared to be more reflective of the Deaf world than of the Hearing world. Preston (1994) suggests that CODAs appear to fail to attain a sense of belonging in either the Deaf or Hearing culture, which creates a possible conflict of identity and self-concept. The struggle to form a self-concept appears to be further complicated when the topic of interpreting is introduced. He suggests that CODAs spend so much of their lives being interpreters for their parents that their sense of self is lost. This reversal of roles contributes to the CODAs' sense of duty and obligation to their parents, and possibly a lack of personal self-concept.

Another of the main supports for this study is literature reporting the theories of essential elements for healthy self-concept development. So many of these elements reported in the research would seem to be compromised by the unique situation CODAs find

themselves growing up in. The lack of identity with parents or a cultural group creates a conflict of self-concept for CODAs (Blane, 1995; Preston, 1994). Self-concept is defined as “a sense of their own personal worth and social identity” (Myers, 1992, pp. 84). This comes primarily through social experiences, a main focus being family (Adams & Fitts, 1971; Marsh et al., 1983; Piers, 1984; Wylie, 1974). Piers (1984) goes on to state that the three primary factors influencing the development of self-concept in children are communication, attitudes, and behaviors of their parents. Adams and Fitts (1971) clarify further, stating, “The family provides the individual with his earliest experiences with feelings of adequacy and inadequacy, feelings of acceptance or rejection, opportunity for identification, and expectancies concerning acceptable goals, values, and their behaviors” (p. 29). This study also refers frequently to Beebe et al. (2002) as they are forerunners in self-concept research.

Third Culture Kid (TCK) research by Pollock and VanReken (1999) reflects another theoretical pillar upon which this study stands since it also contributes to the understanding of the uniqueness of the CODA experience and struggle. TCKs, like CODAs, go through the process of living in a different culture from the one they experienced at home. TCKs have expressed frustration and shame because they feel they can never quite fit in socially as others do (Pollock & VanReken, 1999). As a result, adolescence is delayed (Pollock & VanReken, 1999). CODAs are also unique in the fact that they are a form of TCKs called hidden immigrants. They may look and act like the larger population, but they think differently. Because of this, the majority culture may not be as forgiving or understanding to the hidden immigrant as they would be to an obvious “foreigner.”

Adler (1958) and Toman (1961), who have done much theoretical development and research on the subject of birth order, are referenced in this study. The psychological situation of each CODA child, raised in the same family, is unique from that of the other siblings due to the order of their birth. The firstborn CODA is typically the primary

interpreter and mediator between the deaf parents and the Hearing world (Buchino, 1993; Preston, 1994). Many of the characteristics of firstborn children are apparent in CODAs who perform this role. Characteristics of a firstborn child are: naturally accepting responsibility, serving others, consistent, high achiever, gravitating to leadership positions, and dominating others (Toman, 1961). Firstborns often feel underappreciated and are typically the most emotionally enmeshed with the parents (Toman, 1961). The later-born CODA child, however, naturally does not assume leadership positions and acceptance of responsibility (Toman, 1961). Later-born CODAs often feel pushed aside and dominated by the firstborn and appear to be more separated emotionally from their parents (Toman, 1961). Birth order, thus, is an important variable to keep in mind.

Abraham Maslow's theory of hierarchy of needs to self-actualization also provides support for this study and the importance to learn more about the struggle that CODAs face. According to Abraham Maslow (1968), there is a hierarchy of needs that must be met before an individual can reach their full potential, or become self-actualized. The first level of needs is physiological such as hunger, thirst, and sex. The second level of needs is safety, such as protection from the elements, pain, and unexpected dangers. The third level of needs is belonging and love. The fourth level of needs is self-esteem. The fifth and final level is to become self-actualized. Maslow (1968) explains that when an individual has experienced sufficient gratification of his or her belonging needs, that individual will develop a "fuller knowledge of, and acceptance of, the person's own intrinsic nature, as an unceasing trend toward unity, integration or synergy within the person" (p. 25). As CODAs struggle to develop a sense of belonging, personal self-concept, and self-esteem, their ability to move on to higher levels of self-actualization may be a big challenge.

The research and theories stated above form the conceptual framework of this study.

Definition of Terms

The following terms are defined as used within this study.

Self-Concept: A self-definition that unifies the various selves into a consistent and comfortable sense of who one is. Consistent with the TSCS, the various selves are physical, moral, personal, family, social, and academic/work (Fitts & Warren, 1996).

Self-Esteem: The feeling of worth and value (Fitts & Warren, 1996).

Physical Self-Concept Scale: Measures an individual's view of his or her body, state of health, physical appearance, skills, and sexuality.

Moral Self-Concept Scale: Describes the self from a moral-ethical perspective: examining moral worth, feelings of being a "good" or "bad" person, and satisfaction with one's religion or lack of it.

Personal Self-Concept Scale: Reflects the individual's sense of personal worth, feeling of adequacy as a person, and self-evaluation of the personality apart from the body or relationships to others.

Family Self-Concept Scale: Reflects the individual's feelings of adequacy, worth, and value as a family member. It is the individual's perception of self in relation to his or her immediate circle of associates.

Social Self-Concept Scale: Measures how the self is perceived in relation to others. It reflects, in a more general way, the individual's sense of adequacy and worth in social interaction with other people.

Academic/Work Self-Concept Scale: Is a measure of how people perceive themselves in school and work settings.

Cultural identity: The knowledge, acceptance, and identifying with a specific culture and that culture's traditions, heritage, beliefs, values, behaviors, ideas, language, and attitudes (Heibert, 1983; Wilcox, 1989).

Children of Deaf Adults (CODA): Can refer to those who have either one parent or

both parents who is/are deaf.

Deafness: Any level of hearing loss, mild to severe, that impairs normal interaction with the Hearing culture.

Deaf Culture: Consists of deaf individuals who have established a way of life, thinking, relating to self, others, and the world at large (Lane et al., 1996). It is shared beliefs, values, attitudes, and a language that is different from those outside the Deaf culture (Wilcox, 1989).

Deaf (lower case): The medical condition of the inability to hear sounds.

Deaf (Capitalized): When the word “deaf” pertains to the Deaf culture or Deaf world. This is commonly used in literature that is dealing with issues on deafness to differentiate between the meaning of deafness as in the inability to hear and the term Deaf as in the entire Deaf culture itself (Harvey, 1989; Lane et al., 1996; Paul & Jackson, 1993; Stokoe, 1993).

Hearing (lower case): The medical condition of the ability to hear sounds.

Hearing (Capitalized): When the word “hearing” pertains to the Hearing culture.

Hearing Culture: The dominant culture that communicates through auditory and verbal methods.

Non-CODA: An individual whose parents possess the full capability of hearing sounds.

Limitations

When considering the limitations particular to this study, it is important to recognize that some of the responses may be misleading due to responder bias. The response to the surveys may be affected by CODAs who are sensitive to these issues and fear that they or

their parents will be seen as unusual, defective, impaired, or abnormal. There may also be an unrepresentative number of CODAs who volunteer for this study who have strong personal feelings about their experience, either positive or negative. CODAs who feel less passionately may be more inclined to refuse the offer of inclusion. These are possible limitations due to the sample selection method of volunteerism, thus producing results that are not representative of the population as a whole. There is also the possibility of examiner bias, as with any study where the examiner is a human being and fallible. I also have had personal experiences with the CODA population and possibly have a desire to present literature that is supportive of my viewpoint. I may also have a desire to obtain results that are statistically significant.

In regard to the testing instrument, a limitation of the TSCS, second edition, is that it measures the self-perception of self-concept, which may not always be accurate.

Delimitations

For the purpose of this study, the CODAs who were selected to participate were hearing adults, age 18 and older, with both parents deaf or hard of hearing.

The control group of non-CODAs was selected based on comparable demographics to the CODA group, willingness to participate, and having neither parent handicapped or disabled physically.

Organization of the Study

This study is organized into five chapters. Chapter 1 consists of the following: introduction and background to the study, statement of problem, purpose of study, significance of the study research questions, conceptual framework, definition of terms, delimitations, limitations, and delimitations. Chapter 2 reviews the relevant literature on this topic. Chapters 3 and 4 present two phases of this study, calling them Study Number One

and Study Number Two. Chapter 3 describes the methodology adopted for this study, population and sample, variables, instrumentation, procedures, limitations, and null hypotheses and statistical analysis. Chapter 4 presents and analyzes the data, tests the hypotheses, and interprets the results. Chapter 5 contains a summary of the study, discussion on the results, conclusions, and recommendations for further research.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The amount of research and literature on the subject of CODAs is relatively meager. It is also challenging to find professional publications on hearing children of deaf parents

because the topic is scattered across so many disciplines. There is some literature regarding the issue of English and written language acquisition of CODAs as compared to children with hearing parents, but there is little research on the topic of interpersonal issues of CODAs. Of the literature that does address the interpersonal issues of CODAs, biographies provide a great portion of the information currently available on this topic. In this study I turned to biographies, journal articles, informative books, videos, and dissertations during my search to prepare the literature review.

The Deaf Culture The Deaf Culture

The question is often asked, What is it that makes the challenges of deafness unique from other disabilities? Deaf individuals seem to have separated from the majority culture and have established their own culture (Davis, 2007; Costello, 1994; Ladd, 2003; Shield, 2005). Individuals with other forms of handicaps and disabilities strive to fit and function in the majority Hearing society. One does not hear of a “paraplegic sub-culture,” for example. Main-streaming is the norm in education whenever possible. The “disability” of deafness has unique implications that separate it from all other handicapped forms (Lane et al., 1996). The view of deafness as a disability or handicap is not viewed favorably by the Deaf community (Costello, 1994; Davis, 2007; Lane et al., 1996; Shield, 2005). Such terminology as “hearing impaired” is considered undesirable because it refers to a presumed disability (Costello, 1994). The perspective of deafness as a disability presumes “a world that is silent, tragic, and empty, devoid of the experience of the stimulating and wonderful sounds of nature” (Baker, 1999, p. 126). Research that uses the deficit model has dominated the literature in the past, frequently reinforcing negative assumptions (Lane et al., 1996). The Deaf prefer to view deafness not as a handicap, but rather as a shared experience underlying their sense of community (Costello, 1994; Shield, 2005). Deafness is not seen as a disability, but rather the quality that unites deaf people into a cohesive, vibrant community

(Shield, 2005; Smith, Lentz, & Mikos, 1988). Davis (2007) goes so far as to state, “For the most part, the Deaf are no longer viewed as ‘handicapped’ or ‘disabled.’ Deaf people get to be a sociological group, a ‘community’” (p. B6). The word “deaf” is often capitalized when referring to this group as a symbol of pride and identity within this community. Ladd (2003) and Lane et al. (1996) state that it is important to view the Deaf community in the context of history and communication and social limitations.

The Deaf community is a cultural group, sharing common experiences, concerns, and language (Costello, 1994; Davis, 2007; Ladd, 2003; Shield, 2005). The *American Heritage Dictionary* (2000) states that culture is “the sum of socially transmitted behavior patterns, such as arts, institutions, beliefs, and all other products of human work and thought characteristics of a community or population.” Wilcox and Wilcox (1991) state that culture is an inherited or established way of thinking, feeling, or doing. Other literature has described culture as consisting of four subsystems: social relations, language, technology, and ideology (Demerath & Maxwell, 1976; Paul & Jackson, 1993; Paul & Quigley, 1990; Van Cleve & Crouch, 1989). The Deaf community feels strongly about their identity as a culture (Davis, 2007; Lane et al., 1996; Shield, 2005).

The following poem so eloquently expresses the experience many Deaf have repeatedly reported regarding the Deaf vs. Hearing cultures:

DEAF

What is it like to be deaf?
People have asked me.
Deaf? Oh, hmmm, how do I explain that?
Simply, I can't hear.

Nooo, it is much more than that.
It is similar to a goldfish in a bowl.
Always observing things going on.
People talking all the time.
It is being a man on his own island
Among foreigners.

Isolation is not stranger to me.
Relatives say Hi and Bye.
But I sit for five hours among them.
Taking great pleasure at amusing babies.
Reading books, resting, helping out with food.

Natural curiosity perks up
Upon seeing great laughter, crying, upsetness.
Inquire only to meet with "Never mind,"
"Oh, it is not important,"
Getting such a summarized statement
of whole story.

Supposed to smile to show the happiness.
Little do they know how truly miserable I am.
People are in control of language usage,
I am at loss and real uncomfortable!

Always feeling of being an outsider
Among the hearing people
Even if it was not their intention.
Always assume that I am part of them
By my physical presence, not understanding
The importance of communication.

Facing the choice between the Deaf Camping
Weekend and Family Reunion.
Facing the choice between the family commitment
and Deaf friends,
I must make the choice constantly,

Any wonder why I choose Deaf friends???
I get such great pleasure at Deaf Clubs,
Before I realize, it is already 2 a.m.,
Whereas I anxiously look at the clock
Every few minutes in the family reunion.

With Deaf People, I am so normal,
Our communication flows back and forth,
Catching up with little trivials, our daily life,
Our frustration in the bigger world,
Seeking the mutual understanding,

Contented smiles, and laughing are musical.
So magical to me
so attuned to each other's feelings.
Truly happiness so important.

I feel more at home with Deaf people
Of various color, religions, short or tall,

Than I do among my own hearing relatives.
Any wonder why?
Our language is common.
We understand each other.

Being at loss in control
Of environment, that is, communication,
People panic and retreat to avoidance,
Deaf people are like plague.

But deaf people are still human beings
With dreams, desires and needs
Of belong just like everyone else. (Anonymous, n.d.)

This poem clearly states how many Deaf individuals report feeling a constant struggle between the Hearing and Deaf cultures. The Deaf community repeatedly reports feeling strongly about their identity as a culture for the very reasons this poem expresses. The Deaf do not feel included in the greater Hearing community, but always as an outsider, alone in a crowd. They feel alienated by and estranged from the Hearing, even from their own family (Bull, 1998; Lane et al., 1996; Preston, 1994; Shield, 2005). When the Deaf are together, the contrast of the natural flow of communication, inclusion, and experience between individuals is prominent. There's no stiff awkward attempts at the basic social chit-chat. The Deaf and Hearing cultures are frequently misunderstood by the other. There is a sense that the Deaf and Hearing worlds are so different. It is understood this is not intentional, but is a natural part of an encounter between human beings when there is a language barrier or differences in culture.

At the heart of this community is American Sign Language (Davis, 2007; Smith et al., 1988). This language embodies the thoughts, experiences, traditions, and values shared by the community (Smith et al., 1988). Since the primary binding force of this cultural group is shared language, deaf people who do not use American Sign Language are not considered as part of the Deaf community (Costello, 1994; Davis, 2007; Shield, 2005). Hall (1976) made the statement that "culture is communication, and communication is culture."

This concept accurately describes the Deaf experience. The heart of Deaf culture is the language. Helen Keller was once asked what she felt impacted her more, being deaf or blind. She responded, “To be deaf is a greater affliction than to be blind. . . . To be cut off from hearing is to be isolated indeed” (Christie, 1987, p. 125).

People often mistakenly believe that American Sign Language (ASL) is English conveyed through signs (Bishop & Hicks, 2005; Davis, 2007; Smith et al., 1988). It has even been described by some as a “bastardized” form of English (Bull, 1998). Linguistic research demonstrates that ASL is comparable in expressiveness and complexity to spoken languages. It has its own distinct grammatical structure (Bishop & Hicks, 2005; Emmorey, Borinstein, & Thompson, 2008; Smith et al., 1988). ASL has principles governing the formation of signs and their use in combination (Costello, 1994). It is not a form of English. ASL is a visual rather than auditory language and is composed of precise hand shapes and movements (Emmorey et al., 2008; Smith et al., 1988).

ASL is a natural language, exhibiting all the defining features of language. It provides all the needs of daily discourse (Emmorey et al., 2008; Costello, 1994). Signers can discuss philosophy, literature, or politics as well as cars, sports, or income taxes. ASL is capable of communicating subtle, complex, and abstract ideas. Humor, wit, and satire are communicated just as biting. Poetry is poignantly expressed. As is common to any language, new vocabulary is constantly being introduced by the community in response to cultural and technological change (Smith et al., 1988).

Children of Deaf Adults

About 90% of children born of deaf individuals are hearing. This places them in a unique position. Because hearing children with deaf parents live some their life in the Deaf world and some of their life in the Hearing world, they often wonder whether they belong in the Deaf world or the Hearing world (Bull, 1998; Preston, 1994; Shield, 2005). They have

grown up within the embrace of the Deaf culture and language, yet they are hearing and are expected to assimilate into the Hearing culture. The Deaf culture is like their native culture, but they are hearing not deaf, and the Hearing culture is awkward and foreign to them. It is suggested that this creates a conflict of identity and self-concept (Blane, 1995; Bull, 1998; Davie, 1992; Preston, 1994; Shield, 2005; Woodward, 1987). In the video *Tomorrow Dad Will Still Be Deaf and Other Stories* (1997), a CODA named Bonnie Kraft explained it this way, “Even though my ears can hear, my heart is Deaf.”

Initially, hearing children of deaf parents were labeled “HCDPs” (hearing children of deaf parents). But in 1983, there was a significant spread of the term CODA (Children Of Deaf Adults), which is now almost exclusively used today. The term CODA was started by Millie Brother, founder of the now international organization CODA (Children of Deaf Adults). The choice of the term CODA for Millie was a deliberate one. Millie Brother stated, “In a musical composition, it [CODA] was the concluding segment dependent upon the preceding musical development; yet it was an altered version of the original. In my eyes, I was the human analogy to this musical form” (Bull, 1998, p. 1).

Preston (1994), himself a CODA, has quickly become a leader in research on CODA issues. He completed a study based on 150 interviews with CODAs that was rich in stories and actual accounts of the lives of CODAs. Preston firmly believed at the very conception of his study that cultural affiliation and identity were important issues for CODAs. He eloquently described the plight of CODAs in their search for identity. His study was published with the fitting title *Mother Father Deaf: Living Between Sound and Silence* (Preston, 1994). The chasm between the deaf and hearing world is demonstrated time and time again in Preston’s book.

Bull (1998) shares his experience of being a CODA as wandering for years in a wilderness alone, always having a sense of being different from others because his parents

were deaf. He gives several examples of the contradictions he experienced between the Deaf and Hearing cultures that he could not resolve and was left wondering “What’s wrong with me?” (p. 3). He explains that it was not until the age of 47 that he finally realized he was caught in “a cultural wasteland of confusion between the Deaf and Hearing worlds” (p. 3) and he finally came to understand himself as a bilingual and bicultural person. Bull (1998) goes on to share how with his first CODA conference, his isolation and aloneness yielded to camaraderie and joy when he realized that his experiences were a common denominator of what it meant to be a CODA.

CODAs and Third Culture Kids Literature

Pollock and VanReken (1999) defined third culture kids (TCK) as kids growing up experiencing different cultures: one being their home life and the other being the dominant culture outside the home in which they reside. Thus, CODAs are third culture kids. TCKs share remarkably important life experiences through the process of living in a different culture from the one they experience at home. These kinds of experiences affect the deeper parts of their personal or cultural being (Pollock & VanReken, 1999).

TCKs have expressed frustration and shame that they can never quite fit in socially as others do. For this reason, as children, TCKs report feeling more comfortable with older adults than with fellow peers. Peers are more critical and unmerciful when social taboos are committed. Acceptable behavior and thinking in one situation are suddenly seen as crude or ridiculous in another. This often leaves them with the question, “Where do I fit?” (Pollock & VanReken, 1999).

CODAs have often expressed their unease and awkwardness in the Hearing culture (Davie, 1992; Preston, 1994; Rutherford, 1987; Shield, 2005; Walker, 1986). The ways of the Hearing culture are unfamiliar and foreign to them. They constantly find themselves committing social taboos out of ignorance. Anxiety is aroused when in contact with the

Hearing world for fear of making social mistakes and bringing shame and embarrassment on themselves (Davie, 1992; Preston, 1994; Rutherford, 1987; Walker, 1986). Neville (1990) reports that studies have shown that brain activity of CODAs more resembles the brain activity of Deaf people than Hearing people. The hearing ways are not part of the native culture they are familiar with. Because of this, CODAs fail to attain a sense of belonging in either the Deaf or the Hearing culture (Preston, 1994; Rutherford, 1987; Shield, 2005; Walker, 1986). Napier (2002) reports a CODA stating, “As someone who grew up in the Deaf community and who now works as a sign language interpreter, trainer, and researcher, I resist being labeled as a Hearing person along with the Hearing majority” (p. 145). Preston (1994) conducted interviews with 150 CODAs, which allows us to get a glimpse of how many CODAs view their place in the larger culture. One of the interviewees in Preston’s (1994) book, David, expresses his situation like this:

So, my parents are deaf. And, I’m hearing. I grew up with deaf people. People looked at me and made fun of me just like they made fun of them. I always felt a part of the Deaf world. When I started working with the deaf, it really seemed right. Then some deaf people would tell me I wasn’t deaf, I was hearing. So I asked my father and mother and they said, Oh, you’re Deaf. And some deaf people keep telling me I’m not. I don’t know. Deaf, Hearing. Hearing, Deaf. This world, that world, in-between. There must be a reason for all this. There just must be. It’s got to mean something. (p 37)

Preston (1994) found that because CODAs have grown up in the Deaf world, they feel most comfortable around Deaf culture. He also found that when, in later life, CODAs are forced to interact more with the Hearing culture, it feels awkward and uncomfortable to them. Gloria, another CODA interviewed by Preston (1994), expressed her frustration about the Hearing world like this: “When we were at the Deaf club, or when it was just me and my sister, we didn’t need to talk about our deaf parents. I mean, that’s just the way it was. And we certainly didn’t want to talk about it with hearing people. They were the ones who kept making us feel different” (Preston, 1994, p. 50).

Another CODA expressed it this way,

People look at me and they see this hearing person. . . . But just beneath the surface, there's this Deaf person. I'm not talking about hearing loss, I'm talking about a whole way of being. The real me is Deaf. If you want to know me, you've got to know that part of me. (Preston, 1994, p. 216)

This same theme appears to be reflected over and over. A quote on this struggle of identity within cultures is again told by an interviewee of Preston (1994, p. 199):

I always felt like I didn't belong either place. I didn't belong with the Deaf 100 percent and I didn't belong with the Hearing. I didn't feel comfortable with Hearing. I felt more comfortable with Deaf, but I knew I wasn't deaf. I feel like I'm somewhere in-between.

The video *Passport Without a Country* (Davie, 1992) directly deals with this conflict of CODAs. It uses the analogy of a traveler with a passport that gives him permission to go into a country, but at the same time the authorities there refuse to let him in.

The ideology of Deaf culture is to identify oneself as hearing or deaf, thus forcing CODAs to illegitimate themselves, "rending visible an otherwise invisible difference between deaf and hearing" (Shield, 2005, p. 193). Shield (2005) goes on to explain this "self-revelation reifies the division between hearing and deaf. Importantly, it enables Deaf people to maintain authority and relegate status within their community" (p. 192). Bucholtz (2002) states that the ideologies here touch on issues of authenticity to a culture, what is called authorization and illegitimation. Authorization "concerns the claiming or imparting of a culturally recognized powerful status, while illegitimation is the denial or rejecting of such a claim" (p. 408).

Preston (1994) also shares how frequently the CODAs felt pushed out by the Deaf. They often felt that their deaf parents and friends tried to convince them to leave their way of life and to go and join "their people"—the Hearing culture. Preston (1994) tells another story:

When I turned eighteen, my father took me aside. He pointed out the window and said [Signs, "*The time is coming. Soon you must go. That's your world out there. The Hearing worlds. You belong there*"]. For eighteen years I had grown up Deaf, and now all of a sudden I'm supposed to be Hearing? I looked at him and said

[Signs, “*What do I know about the Hearing world? I hear, yes. I speak, yes. But I thought I was Deaf*”]. My father smiled and said [Signs, “*True, you’re Deaf, but your Hearing too*”]. I grew up Deaf. I guess now I’m Hearing. But some part of me still feels Deaf. (p. 189)

This can often hurt CODAs’ feelings, and bestows upon them the message that they are not wanted because they are plainly too different. One interviewee (Preston, 1994) resolved the issue in this way:

Ten years ago I think that deaf people tried to push me out. . . . But I got to the point where I started saying, Wait a minute. You can’t get rid of your kids, and you can’t get rid of people that are part of Deaf culture. We are as much a part of Deaf culture. We’re not a hearing person coming in and telling you what to do. We’re your kids□ We grew up in the same household. You cannot deny me that. (p. 217)

CODAs fit into Pollock’s and VanReken’s (1999) definition of what they called hidden immigrants. Pollock and VanReken (1999) describe hidden immigrants as physically resembling the majority culture around them, but internally viewing life through a lens that is different from those around them, like an obvious foreigner. They look alike, but think differently. Pollock and VanReken go on to state that relating as a hidden immigrant is one of the greatest cultural challenges that many TCKs face. People around them presume that since they look the same on the outside, they are alike in every basic way. Their expectations are inaccurate, however, and they are not as forgiving to the hidden immigrant as they would be to a conspicuous foreigner (Pollock & VanReken, 1999).

Another characteristic of many TCKs is delayed adolescence. Useem and Cottrell (1999) state that developmentally TCKs will often experience adolescence between the ages of 22 and 24, sometimes even later. They suggest that the typical stages of adolescence are: (a) establishing a personal sense of identity; (b) establishing and maintaining strong relationships; (c) developing competence in decision making; and (d) achieving independence. When the cultural rules are always changing, this process maybe disrupted. While peers are internalizing the roles of culture and beginning to move out with confidence, TCKs are still trying to figure out what the rules are. They are unable to explore

their personal gifts and talents because they are preoccupied with the question “What is appropriate behavior?” (Useem & Cottrell, 1999). Some TCKs also experience delayed adolescence because of an extended compliance to cultural rules (Useem & Cottrell, 1999). They do not have as much freedom as peers to make some decisions about where they will go and what they will do, and they believe TCKs must thus delay the normal adolescent process of testing parental and societal rules until later in life.

Self-Concept Formation Literature Identity Formation Literature

Since this study is about self-concept issues among CODAs, I would like to review with the reader what the literature says about self-concept formation in general. We begin by noting that it has been suggested that one of the main developmental tasks in a human’s life is to become integrated and adapted into the society in which one lives (Berger, 1994; Lynch, 1981). Adaptation is a continual process that begins at birth and proceeds throughout the course of a lifetime (Berger, 1994; Lynch, 1981). One of the main aspects of adaptation is to define the self (Lynch, 1981). It is a continual process of interacting and adjusting to the environment. Myers (1992) defines self-concept as “a sense of their own personal worth and social identity” (p. 84). Wylie (1974) defines self-concept as “cognition’s [*sic*] and evaluations regarding specific aspects of self . . . overall self-regard” (pp. 3-4). Wylie (1979) goes on to elaborate that the development of self-concept is a dynamic and often unconscious process that is affected by a complex interplay of personal and situational variables, a main focus being family. Marsh et al. (1983) define self-concept as an individual’s perception of self formed through experience with the environment, attribution of his or her own behavior, and interaction with significant others, specifically parents. Piers (1984) states that the self-concept is defined through social interactions that children engage in as they mature and interact socially with peers and adults. Piers goes on to observe that there are three primary factors that influence the development of self-concept in children,

which are as follows: communication, attitudes, and behaviors of their parents. Adams and Fitts (1971) state, “The family provides the individual with his earliest experiences with feelings of adequacy and inadequacy, feelings of acceptance or rejection, opportunity for identification, and expectancies concerning acceptable goals, values, and their behaviors” (p. 29).

Beebe et al. (2002) define self-concept as a core set of behaviors, attitudes, beliefs, and values. They present five basic elements that develop self-concept. The first is interactions with individuals. Individuals learn who they are by having their self reflected back to them through another person. Our sense of who we are is a consequence of our relationship with others. During the early years of our lives, our parents are the key individuals who reflect who we are. They are the dominant voices of credibility and authority. With age, as we become less dependent on our parents, our friends become highly influential in shaping our attitudes, beliefs, and values.

The second element in self-concept development, according to Beebe et al. (2002), is association with groups. Peer pressure is a powerful force in shaping attitudes and behavior. Examples of such groups are: religious, political, ethnic, social, study, occupational, professional, and athletic. Some of these groups you are born into, whereas others you choose on your own. Groups play a very important role in determining self-concept for people who are not part of the dominant culture. They are beneficial to the well-being of minority groups who need the social support that groups provide.

The third element in self-concept development, according to Beebe et al. (2002), is found in the roles one assumes. Examples of such roles are: father, aunt, sister, uncle, manager, salesperson, male, female, teacher, student, healer, and leader. They imply certain expectations for behavior. One’s gender group asserts a powerful influence from birth onward. Our culture defines certain roles as masculine or feminine. Appropriate and

inappropriate behavior are often different for males and females.

The fourth element in self-concept development, according to Beebe et al. (2002), is found in one's self-labels. Although our self-concept is deeply affected by others, we still exercise individual choices. The labels we use to describe our own attitudes, beliefs, values, and actions also play a role in shaping our self-concept. We are both participants and observers in all we do. We think about what we are doing while we are doing it. We talk to ourselves about ourselves. This dual role encourages us to use labels to describe who we are.

The fifth and final element in self-concept development, according to Beebe et al. (2002), is personality. Personality is defined as consisting of a set of enduring internal predispositions and behavioral characteristics that describe how you react to your environment (Lefton, 2000). Beebe et al. (2002) go on to state that understanding the forces that shape your personality is central to increasing your awareness of your self-concept and how you relate to others. One's personality influences whether you are shy or outgoing, humorous or serious, nervous or mellow. There is considerable debate as to how much influence genetics has on these factors versus how much is learned behavior (Beebe et al., 2002).

The emergence of a self-concept is an event that occurs at different ages, but usually not before the age of 2 (Howe, Courage, & Peterson, 1994). Child development literature unhesitatingly supports the idea that children's experiences with their immediate family in early life provide the foundation of their self-concept. Combs and Snygg (1959) state that the family is the first to mirror to a child those basic concepts of self which will then guide their behavior for the rest of their life. Adams and Fitts (1971, p. 29) go on to state that "the family provides the individual with his earliest experiences with (1) feelings of adequacy and inadequacy, (2) feelings of acceptance or rejection, (3) opportunity for identification,

and (4) expectancies concerning acceptable goals, values, and their behaviors.” The relationship of the family to the child is the single most important influencing factor in self-concept development. This demonstrates the need of research for the many variations of parent-child relationships that the span of humanity provides, one variant being deaf parents with hearing children.

Berger (1994) reports that almost as soon as their sense of self is established, preschoolers use this awareness to facilitate their interactions with others. Preschoolers assiduously note which possessions are theirs (“my teacher”); repeatedly explain who they are and who they are not (“I’m a big girl,” “I am not a baby”); and relish many forms of mastery-play that allow them to show that “I can do it” (Berger, 1994, p. 258). Levine (1983) states that the first interactions of 2-year-old males are ones typically asserting selfhood. Most often this comes in terms of ownership. “A child’s increased interest in claiming toys may not be a negative sign of selfishness but a positive sign of increased self-awareness” (p. 547).

Berger (1994) states that self-concept and social awareness are allied achievements during the play years. With development, preschooler interactions take on a different character that is marked by possessiveness and an attempt to make sense of the other child as a separate social being. Children become more sensitive and understanding of their friends as they become aware of the feelings and interests that make them different from others and unique. Levine (1983) reported finding that those children with a more firmly established self-understanding, as measured by pretests, were those who engaged in more interactive play. Hartup (1983) echoed these findings, reporting that children who are most social are those who have a better developed sense of self and exhibit a more secure feeling of self-assurance in a given situation. Rubin (1980) reported that children who are skilled at social interactions tend to be those who are quite confident of their own ability. They are less

dependent on teachers or parents in a playground situation than children who are more awkward at the skills of friendship.

As cognitive abilities mature and their social experiences widen during middle childhood (ages 6-11), children's thoughts about themselves develop rapidly (Berger, 1994). By school age, children begin to describe themselves in terms of gender, group members, and psychological traits. They begin to see themselves as good and skillful in some ways but not in others. They develop a concept of which traits they would like to have (Myers, 1992). A child's self-concept becomes integrated even as it becomes more differentiated, thus enabling school-age children to view themselves in terms of several competencies at once (Harter, 1983).

Along with their developing self-concept, school-age children (6-11 years old) also develop greater self-regulation as they learn to control their reactions for strategic purposes. With emotion, for example, children at this stage acquire skills to monitoring and modifying their emotional experiences (Band & Weisz, 1988; Thompson, 1990). Berger (1994) goes on to state that they learn to reinterpret an emotionally arousing situation, such as realizing that a teacher's crankiness is not to be taken personally. They learn to intentionally distract oneself, such as reading a book during an argument between their parents. By understanding various aspects of their emotions and personality, they can sometimes even modify their behavior. An example of this is the developed ability to apologize for an angry outburst by referring to their hot temper, or possibly even taking steps to protect against an outburst by purposely going for a walk to cool off.

Higgins (1981) states that in the beginning of the school years, children often explain their actions by referring to the events of the immediate situation. For example, a 6-year-old might say she hit him because he hit her. Within just a few years, children more readily relate their actions to their personality traits and feelings. For example an 11-year-old might

explain that she was already upset because he had lost her book bag and that, besides, he is always hitting people and getting away with it.

It is not until near the end of childhood, at about the age of 12, that most children have developed a self-concept. To refine their sense of self, adolescents usually try out different “selves” in different situations—at home acting out one’s self, while another with friends, and still another at school or work. The teen often asks, “Which self should I be? Which is the real me?” (Myers, 1992, p. 102). Most of the time this role confusion is resolved by gradually reshaping a self-concept definition that unifies the various selves into a consistent and comfortable sense of who one is (Myers, 1992). Adolescents successfully completing this development task are described as independent and busy with their own interests (Berzonsky, 1989; Marcia, 1980; Streitmatter, 1989).

Erickson (1975) states that an adolescent person seeks to establish him/herself as a separate individual while at the same time maintaining some connection with the meaningful elements of the past and accepting the values of a group. Adolescents attempt to develop a sexual, political, moral, and religious self-concept that is relatively stable, consistent, and mature (Erickson, 1975).

The struggle for self-concept identity continues past the teen years (Myers, 1992). Many college students reported being unclear about who they are or what they want to do (Marcia, 1980; Waterman, 1985). College seniors reported achieving a clearer self-concept identity than they had as first-year students (Waterman, 1988). In several nationwide studies, it was shown that between the ages of 13 and 23, young adults typically incorporate an increasingly positive self-concept (O’Malley & Bachman, 1983). Along with a clearer and more self-affirming self-concept, also comes a greater sense of control over one’s future (Baumgardner, 1990).

Several studies have investigated the relationship between academic achievement

and self-concept. These studies have repeatedly shown a positive relationship between educational achievement and an increase in self-concept (Baker & Siryk, 1984; Bridgemann & Shipman, 1978; Byrne, 1984; Caslyn, 1974; Cokley, 2000; Diesterhaft & Gerken, 1983; Gordon, 1995, 1996; Hansford & Hattie, 1982; Maruyuma, Rubin, & Kingsbury, 1981; Michie, Glachan, & Bray, 2001; Pottebaum, Keith, & Ehly, 1986; Rogers, Smith, & Coleman, 1978; Scheirer & Kraut, 1979; Sedlacek, 1999; Smart & Pascarella, 1986; Valle et al., 2003; Wattenberg & Clifford, 1964; Williams, 1973). These studies have spanned the multiple levels of academic achievement starting with preschoolers (Bridgemann & Shipman, 1978), to elementary education (Wattenberg & Clifford, 1964; Williams, 1973), to junior high (Diesterhaft & Gerken, 1983), then high school (Gordon, 1995, 1996; Pottebaum et al., 1986), and finally college and university level of education (Baker & Siryk, 1984; Cokley, 2000; Michie et al., 2001; Sedlacek, 1999; Smart & Pascarella, 1986; Valle et al., 2003). At the college level, it was shown that specifically positive personal, social, family and physical self-concepts were positively related to adjustment and attachment to college (Baker & Siryk, 1984).

Valle et al. (2003) present an educational model relating motivational learning to a positive self-concept, which is then related to academic achievement. Valle et al. present this model with an empirical study consisting of a large sample of university students. Valle et al.'s (2003) study shows significant results, supporting their educational model. Valle et al. (2003) attempt to demonstrate that students who experience success, while attributing them to their own abilities, will have a more positive self-concept, trust more in their abilities, and will assume more responsibility for their academic endeavors. Students will display higher levels of engagement, effort, persistence, and subsequently higher levels of academic achievement.

The bulk of these research studies have shown that there is a relationship between

positive self-concept and educational achievement. When studies have been initiated attempting to address causation or to gain information about the direction of possible causation (from self-concept to educational achievement, or from educational achievement to self-concept) the results have been conflicting (Caslyn, 1974; Maruyuma et al., 1981; Pottebaum et al., 1986). Of these studies it is suggested, and most generally supported, that there is no causal relation between self-concept and educational achievement as many educators have assumed, but rather that this relationship is the result of one or more unknown and uncontrolled third variable (Pottebaum et al., 1986).

In more recent literature, the issue of self-concept and educational achievement in minority groups has been explored. For African-American students, Gordon (1995) investigates the high-school education level, and then Cokley (2000) and Sedlacek (1999) investigate the college education level. Gordon (1996) also investigates Hispanic high-school students. In these studies with minority groups, again the relationship between positive self-concept and academic achievement stands out.

Myers (1992) states that the process of self-concept definition frequently even reappears at different turning points during adult life. Even though we have a core self-concept, it can and does change depending on life circumstances and influences (Beebe et al., 2002).

Myers (1992) states that there are several ways this process of self-concept formation can be arrested. Some adolescents may forge their identity early by simply taking on their parents' values and expectations. Berger (1994) calls this premature identity formation. An individual will simply accept earlier roles and parental values wholesale without exploring alternatives and going through the process of developing their own. Such individuals tend to experience more respect and deference toward their parents (Berger, 1994). They also tend to have a strong sense of ethnic identification, but are relatively high in prejudice

(Berzonsky, 1989; Marcia, 1980; Streitmatter, 1989). This group can also reflect individuals who choose totalitarian groups, such as a religious cult or an extreme political organization, where they submit all independent decision making (Archer & Waterman, 1990).

Berger (1994) reports that apathy is another way successful self-concept formation may fail to be achieved. Such individuals seem not to care about anything. They typically have few commitments, goals, and values. They have difficulty meeting the usual demands of adolescence such as completing homework, making friends, and planning for the future (Berger, 1994). They tend to be withdrawn, perhaps deliberately, avoiding parental contact by sleeping or listening to headphones when the family is together (Berzonsky, 1989; Marcia, 1980; Streitmatter, 1989).

Another way self-concept development is thwarted is when individuals choose to define themselves in opposition to parents and society by conforming with a negative peer group. They may find that the roles their parents and society try to fill are unappealing or unattainable, yet they may be unable to find alternative roles that are truly their own. In an attempt to resolve this conflict, one may simply take on a role that is the opposite of the one he/she is expected to adopt. An example of this is a child of devoutly religious parents who defies their upbringing by claiming to be an atheist.

A final way that self-concept development fails to be achieved relates to the theory presented by Beebe et al. (2002). According to their theory, individuals learn who they are by having their self reflected back to them through another person. When this process of mirroring is not followed through, the development of one's sense of self is stunted (Beebe et al., 2002).

The ease or difficulty in self-concept development is very much affected by one's surrounding society. Society provides values, social structures, and customs that ease the

transition from childhood to adulthood. In a culture where social change is slow, and the moral, political, sexual, and religious values are virtually the same for everyone, self-concept identity formation is easy to achieve. The young person simply accepts the only social roles and values they have ever known (Berger, 1994). In our modern society that is characterized by rapid social change, broad diversity of values and goals, and an ever-expanding array of identity choices, an individual's self-concept identity formation can be a difficult and painful task (Phinney, Lochner, & Murphy, 1990; Spencer & Markstrom-Adams, 1990). This is especially true for children of minority groups (Phinney et al., 1990; Spencer & Markstrom-Adams, 1990).

Most minority groups place an emphasis on honoring their roots and taking pride in their heritage and language. Finding the right balance between one's background and the current culture is difficult. This can be especially difficult when the minority's past is ignored or slighted by society and educational institutions (Berger, 1994). School educators are often ignorant of very real differences among members of minority groups (O'Connor, 1989). Discrimination, prejudice, stereotyping, and other various forms of hidden discrimination may impede education and career development (Berger, 1994). Relationships with parents and relatives are often stressful for minority adolescents (Harrison, Wilson, Pine, Chan, & Bureil, 1990).

To cope with such problems, adolescents may attempt to reject wholesale the traditional values of both their minority group and the majority culture, or simply choose the values of one culture exclusively (Phinney et al., 1990). This prevents the individual from a mature reconciliation of both the minority and majority culture (Berger, 1994).

Pollock and VanReken (1999) illustrate that to form our sense of identity and belonging is to internalize the principles and practices of the basic cultural rules of our society, and then adopt them as the basis for how we live and act as adults. A sense of

belonging is a vital part of a full life. It is a secure feeling to know how we fit into the larger picture. Cultural identity is defined as the knowledge, acceptance, and identification with a specific culture and that culture's traditions, heritage, beliefs, values, behaviors, ideas, language, and attitudes (Heibert, 1983; Wilcox, 1989). This sense gives us the freedom to continue developing rather than being stuck and continually repeating the same lessons of life (Pollock & VanReken, 1999).

Tennessee Self-Concept Scale

Tennessee Self-Concept Scale (TSCS) was first developed by Fitts and Warren in the 1960s to fill the need for a scale that would be simple for the respondent, yet broadly applicable and multidimensional in its definition of self-concept. The TSCS has fostered a vast amount of clinical and research knowledge regarding the self-concept. The success of the TSCS is reflected in the large number of published references since its development. In 1996, the Tennessee Self-Concept Scale: Second Edition (TSCS, second edition) was updated and streamlined by eliminating inefficient and outdated items and simplifying scoring procedures. In addition, the TSCS, second edition, was restandardized on a nationwide sample of over 3,000 individuals. Validity measures were also worked into the instrument, assessing inconsistent responding, self-criticism, faking good, and response distribution.

Fitts and Warren (1996) state how an individual's self-concept is defined in more than one way. First, it reflects the individual's associated level of self-esteem. Self-esteem is defined as a feeling of worth and value. Next, Fitts and Warren define self-concept as a self-definition that unifies the various selves into a consistent and comfortable sense of who one is. They define these various selves as physical, moral, personal, family, social, and academic/work. Fitts and Warren used these six aspects of our selves as the sub-scales of the Tennessee Self-Concept Scale, which they designed. The physical self-concept subscale

measures an individual's view of his or her body, state of health, physical appearance, skills, and sexuality. The moral self-concept subscale describes the self from a moral-ethical perspective: examining moral worth, feeling of being a "good" or "bad" person, and satisfaction with one's religion or lack of it. The personal self-concept subscale reflects the individual's sense of personal worth, feeling of adequacy as a person, and self-evaluation of the personality apart from the body or relationships to others. The family self-concept subscale reflects the individual's feelings of adequacy, worth, and value as a family member. It is the individual's perception of self in relation to his or her immediate circle of associates. The social self-concept subscale measures how the self is perceived in relation to others. It reflects in a more general way the individual's sense of adequacy and worth in social interaction with other people. The academic/work self-concept subscale is a measure of how people perceive themselves in school and work settings.

The TSCS has built-in validity scores that are designed to identify response patterns that are defensive, guarded, socially desirable, and unusual or distorted. The first of these validity scores is Inconsistent Responding (INC). This score indicated whether there is an unusually wide discrepancy in responses to pairs of items with similar content. Such a discrepancy is often due to careless or haphazard responding. However, it may also reflect some peculiarity in the individual's life circumstances related to content of particular paired items.

The second built-in validity score is Self-Criticism (SC). The items that contribute to the SC score are all mildly derogatory statements that most people would admit to when responding candidly. An individual that is being defensive and making a deliberate effort to present a favorable picture of themselves may tend to deny most of these statements, thus receiving a low SC score. An individual with a high SC score may represent an individual perceiving little redeeming value in his or her typical behavior and has given up all attempts

to regain self-esteem. It may possibly be a “cry for help” or “faking bad” (Fitts & Warren, 1996, p. 15).

The third built-in validity score in the TSCS is Faking Good (FG). This scale is an indicator of the wish to present a favorable impression or project a falsely positive self-concept.

The fourth and final built-in validity score in the TSCS is Response Distribution (RD). This score is calculated by tallying the number of extreme responses recorded by the respondent. It is interpreted as a measure of certainty about the way an individual sees oneself. A respondent who is very definite in describing himself or herself will receive a high score, whereas a low score indicates an individual who is being defensive and guarded, and is avoiding committing themselves. Extremely high RD scores may indicate a stereotyped or polarized set of responses without the typical tempering of responses that is usually found. It may represent an individual with a flippant or impulsive response pattern (Fitts & Warren, 1996).

Overview of Research Studies on CODAs

This section gives a brief overview of the main research studies investigating CODA issues. They are presented as follows: dissertations, group studies presented in journal articles, and single case studies and autobiographies. Under the sections, these studies are presented in chronological order.

Dissertations

The major empirical study on CODA adults was conducted by Marshall (1978) for his doctoral dissertation. Marshall (1978) compared CODAs and non-CODAs using the TSCS, first edition. He reported finding no significant difference in self-concept of CODAs to non-CODAs in the overall self-concept scale and on the additional nine subscales. When

looking at Marshall's (1978) study, there are some interesting points to address. Marshall (1978) seemed surprised by his lack of significant results, and attributed the lack of significant difference to two factors. The first factor was "impression management," or CODAs taking on a defensive strategy in "a desire to appear in a positive light" (p. 4). For the second factor, Marshall (1978) was sampling bias: 35 of the 89 CODAs contacted participated, whereas 35 of the 40 non-CODAs contacted participated. Marshall (1978) theorized that the "willing" CODAs might have had a stronger self-concept than the non-CODA group, thus unrepresentative.

When critically analyzing Marshall's (1978) study, there was some perceived weaknesses in his methodology. Marshall's (1978) subjects were adults (ages 16-40) living in Oregon, but his sample size contained only 35 subjects in each of the testing and control group. Since this was a small sample size it therefore yielded a low power analysis and was not seen to be statistically sound. The ability to generalize the findings to the general CODA population is limited. It was thought that a larger sample size, with an acceptable power analysis, would be important to investigate. When looking at his results, Marshall (1978) himself stated:

Although none of the 9 individual TSCS scale scores showed significant differences between the HO/DP [Hearing Offspring of Deaf Parent] samples, it is interesting to look at the results in a comprehensive fashion. A trend towards higher scores by the HO/DP scores were higher than the HO/HP [Hearing Offspring of Hearing Parents] scores. Since the chances of this trend occurring randomly is very low, it is interesting to speculate on some possible reasons for this apparent pattern. (p. 48)

Marshall (1978) used the TSCS, first edition. The TSCS, second edition, showed stronger internal/external validity, test-retest reliability statistics, and internal consistency when compared to the first edition. The TSCS, second edition, is a widely used instrument with strong statistical validity that is consistent with measuring the elements of self-concept as defined in the literature (Fitts & Warren, 1996). It was thus postulated that by using the TSCS, second edition, it would be more sensitive to measuring a possible significant

difference.

Blaksey (1984) completed both a qualitative and quantitative study examining CODA and non-CODA levels of socialization. Her sample consisted of 70 CODAs ranging in age from 12 to 61. They were then matched on gender, age, education level and birth order to a control group of non-CODAs. She utilized two testing instruments for her study; the first was the California Psychological Inventory and the second instrument she developed, calling it the Personal History Questionnaire. Blaskey also included a comment section addressing adverse affects of having Deaf parents.

Blaskey's (1984) study reported finding CODAs scoring higher on quality of communication with parents. Blaskey's (1984) study also stated that CODAs reported themselves as having more responsibility at an earlier age and that their parents depended on them more for social support than did non-CODAs. Blaskey (1984) reported three factors that were positively related to the score of socialization as (a) the mother's comfort with the Hearing community, (b) school experiences, and (c) the child's experience of the parent as a disciplinarian. Two factors that were negatively related to the score of socialization was conflict CODA experienced between the Deaf and Hearing communities and the amount of responsibility for the CODA.

A weakness of Blaskey's (1984) study is that her CODA sample was obtained through a list of Deaf parents who were affiliated with a large school of the Deaf. Parents were sent the questionnaire and requested to give it to one of their hearing children. Deaf parents might have tended to relay this questionnaire to the child they felt would present them in the best light and that they had the most positive relationship with. This might also be the child who would be more sensitive about defending their Deaf parents.

Buchino (1988) completed a study of CODA children for her doctoral dissertation. Each subject was the oldest child in the family. She also tested a control group of non-

CODA children. The specific issues investigated were: communication between parent and child, feelings towards parents, role reversal between parent and child, and interpreting. She used both quantitative and qualitative measures for her study. The quantitative section was a Child Perception Questionnaire for the CODA children and a Parent Perception Questionnaire for the deaf parents, with questions addressing the issues of communication, feelings towards parents, role reversal between parent and child, and interpreting. The qualitative part of the study included two parts. The first part was an interview using hypothetical family situations followed by open-ended questions. The second part was an open-ended set of questions focused on the personal experiences of the child.

No significant findings were found regarding the quantitative questionnaires.

Buchino (1988) did report finding that the oldest child was the primary interpreter for their Deaf parents. They reported being called upon to interpret a few times each week, and they saw no one else with whom they could consistently share this responsibility. They also reported feeling frustrated with having to interpret frequently, having to interpret a situation when they did not understand the vocabulary and content, and frustrated trying to get their deaf parents to understand things they believed a hearing parents would “automatically” understand (p. 121). Several issues with interpreting and communication difficulties were reported from the open-ended part of the study. With role reversal, Buchino (1988) found it to be more of an issue of power and discipline, but overall not a major concern. Among the CODA children, the most commonly expressed feelings were of guilt, embarrassment, responsibility, and a loyalty to the deaf.

When looking specifically at Buchino’s (1988) study, it is noted that the focus was on the eldest CODA child. Buchino used three different methods of gathering data: an interview, a questionnaire, and an open-ended set of questions focusing on personal experiences. The data presented were both quantitative and qualitative in nature. This is

seen as a strength when interpreting the results. A major weakness of Buchino's study was that the questionnaire used which was developed specifically for use in this study alone, and therefore reliability and validity of this instrument remain unknown. Buchino's small sample size of 32 may also be a weakness to consider when interpreting these results.

Charlson (1989) conducted a quantitative study on CODA adolescents for her doctoral dissertation. The instrument she used was the TSCS. Charlson (1989) produced mixed results when exploring adolescent CODAs' self-concepts. For adolescents, Charlson's study (1989) showed no difference in overall self-concept. However, Charlson reported finding a significant difference for CODA adolescents on the family subscale (feelings of worth and adequacy as a family member) dependent upon whether they identified themselves as mediating, or interpreting, on a regular basis for their parents or not. CODA adolescents who reported not mediating reveal a lower self-concept in relation to their feelings as a family member than did CODA adolescents who did report mediating for parents.

Charlson (1989) reports that a limit to this study is the generalizability of these results due to the selection process. With the consent process she reports, "Many families were unwilling to have a researcher investigate family relationships, being somewhat fearful of having an outsider explore their private lives" (p. 69). Of the Deaf parents who did give their consent, Charlson theorizes that they may be more open, comfortable with, and less distrustful of hearing people, thus conveying a greater acceptance of their hearing children than those parents who refused to permit their CODA children to participate.

Deluigi (1991) completed a study on CODA children for her doctoral dissertation. She examined the relationship between parental and child hearing status and the child's self-concept. She used both qualitative and quantitative methods in her study. Deluigi (1990) used the Modified Piers-Harris Children's Self Concept Scale with the following subscales:

behavior, physical appearance and attributes, intellectual and school status, anxiety, popularity, and happiness and satisfaction. Deluigi (1990) reported finding that “when the hearing status of parents is inferior to the hearing status of their children, their children tend to have less positive self-concepts when compared with deaf children whose parents either hear or are deaf themselves” (p. 74). Hearing children of Deaf parents demonstrated significantly lower total self-concept scores than did deaf children of hearing parents or Deaf children of Deaf parents. CODAs identified themselves as being inadequate physically, socially, emotionally, and intellectually. Deluigi reported that CODAs as a group identified themselves as low in popularity, physically unattractive, having poor leadership qualities, having difficulty making friends, and demonstrated poor academic and cognitive abilities. They also experienced a general feeling of dysphoria and often felt left out (Deluigi, 1991).

When examining Deluigi’s (1991) study, although it is empirical, some weaknesses are noted so that her results are interpreted with strong caution. First of all, Deluigi’s (1991) sample size of 14 CODAs severely constricts the generalizability of her results. Second, there are not an equal number of boys and girls represented in each age group. Third, Deluigi’s control group consisted of 33 Deaf children. Considering that the control group consisted entirely of Deaf children, it is questioned whether this is an appropriate sample to use as a matched group when exploring self-concept. The Deaf children, with their unique situation, may also struggle with self-concept issues. Finally, it is noted in Deluigi’s (1991) study that there were some inconsistencies with timing allotments and group size. Deaf children were tested primarily at schools where there were constraints with timing, and several children were reportedly tested as groups rather than individually.

Preston (1994) is considered a leader in research on CODA issues, as evidenced by his writing the preface for Bull’s (1998) annotated bibliography, *On the Edge of Deaf Culture*. Preston’s research study is referred to on the book jacket as “the major study on

this topic and will be so regarded by researchers in deafness” by John S. Schuchman, professor of history at Gallaudet University. Preston is the associate director of Through the Looking Glass, a nonprofit organization in Berkeley, California. Through the Looking Glass is a “nationally recognized center that has pioneered research, training, and services for families in which a child, parent or grandparent has a disability or medical issues” (lookingglass.org, June 2008).

For his doctoral dissertation, Preston (1994) completed a qualitative study of interviews with 150 CODA adults. His research is full of stories and actual accounts of the lives of CODAs. When looking at Preston’s (1994) research, it is important to keep in mind that he himself is a CODA, and a personal bias may have been impossible to keep out of the interview process or the write-up phase of his study. It is also important to note that the bulk of Preston’s (1994) subjects grew up in a time where there was limited communication and social services for the Deaf. Signing was not widely acceptable and oralism was prevalent. Parents had limited communication access to the Hearing world. Ignorance about the Deaf was prevalent which resulted in frequent discrimination in employment and basic civil rights. Many Deaf parents had no choice but to rely on their children for interpreting. It is considered important to keep in mind that there might be differences in current research, as compared to Preston’s (1994) findings, due to the increased services and communication devices readily available in our current world.

Weiner (1997) conducted a qualitative study for the completion of her doctoral dissertation. She interviewed 6 deaf parent couples with hearing children, exploring parental perceptions of raising hearing children. Themes of the interview were interaction with the Hearing world, handling their children’s and their own shame, what Deaf culture is, relationship with their children’s school, parent-child communication issues, and parenting difficulties. Her subjects repeatedly expressed the struggle to communicate with the Hearing

world and how this affected the family system. Her study also reported that none of the parent couples went through a grieving process with the news of a hearing child. They reported expecting a hearing child and were not surprised. When looking at Weiner's (1997) study, it is considered important to keep in mind that she was a Deaf mother of two hearing children. Weiner also worked at Gallaudet University and was married to a deaf husband. It was seen that this inside perspective brought both strengths and weaknesses to her study. Being so steeped in the Deaf culture, her research focus brings valuable information. Additionally, being a Deaf parent herself, possibly helped in that other Deaf parents might have revealed more information regarding sensitive family matters seeing her as one of them. However, it must also be noted that it would be basically impossible to keep an unbiased perspective throughout the research process when Weiner herself is a Deaf mother of CODA children. Weiner herself stated, "The researcher cannot always separate from his or her background and identity" (p. 6), and because of this she attempted to set for herself "validity checks" (p. 6). This being noted, it may still be considered a weakness of this study, as the possibility for bias is significant. Additionally, Weiner's sample size was very small, consisting of only 6 pairs of Deaf parents with CODA offspring.

Group Studies Presented in Journal Articles

In Denmark, after a report of a number of cases of CODA children having severe behavioral problems in school, Vesterager (1978) initiated a qualitative study to collect information on CODA family dynamics. He interviewed 24 families. He reported the Deaf parents as being "fully capable as parents" (p. 52). He reported that "almost all of the children were bilingual, they had mastered both spoken language and sign language to a variable degree" (p. 53). Compared to the norms of behavior to other school-age children, Vesterager (1978) found CODA children to be within the average range. He reported the main difficulty of Deaf parents was lack of communication with teachers and school staff

due to no interpreters. Vesterager (1978) encouraged national development of cooperation between Deaf parents and professional groups to recognize and serve the needs of CODA families. The weakness of this study is Vesterager's (1978) failure to discuss the format of the interview or communication style used. Without this baseline, it is difficult to analyze the conclusions drawn in this study.

Bunde (1979) completed a study on CODA subjects from adolescence to young adult, with the age range 13 to 30 and over. His survey included both quantitative and qualitative questions. He had a large sample size of 229 returned surveys. His survey contained 14 questions, some with Likert-style responses to select (e.g., "Good Feelings," "Never," "Regularly," "Frequently," or "Occasionally") and some were stated as open-ended questions. These 14 questions focused on four areas: parent/child interaction; decision-making, interpreting, and discipline; overall feelings towards parents; and communication mode. Of the significant points in his findings, 95% of the children reported interpreting for their parents. Forty-nine percent of the CODA children reported parental dependency for decisions as done "regularly." Seventy-three percent reported having positive feelings toward their Deaf parents, 18% reporting both positive and negative, and 9% giving no response.

Regarding Bunde's (1979) study, a strength was the open comments provided by the subjects. There were some areas that were incomplete, however, when looking at the methodology. First of all, on the survey, the reader was left unclear by the lack of definition of terms of the Likert-style responses to select such as "good feelings," "occasionally," or "regularly." This left the reader unclear with interpreting the results of the four areas the survey investigated: parent/child interaction; decision-making, interpreting, and discipline; overall feelings towards parents; and communication mode. Bunde also failed to provide an option for comments when a subject failed to respond to a question. It was also unclear how

many of the subjects were still living at home with their Deaf parents. Finally, there was no control group with which to establish a baseline to compare his testing group against.

Pecora, Despain, and Loveland (1986) conducted a survey utilizing both qualitative and quantitative methods. This study consisted of 36 individuals of equal numbers of males and females, with an average of 31 years of age. The qualitative questionnaire was developed by the researchers and consisted of 20 open-ended questions about the CODA's experience having Deaf parents. The quantitative questionnaire was the Hudson Clinical Measurement Scale that assessed general contentment, self-esteem, and child's attitude toward their parents.

Pecora et al. (1986) reported finding from the Hudson Clinical Measurement Scale that although most CODAs reported positive feelings about their life, a substantial number experienced difficulty in at least one area. Pecora et al. (1986) reported the open-ended questions yielded diverse responses that identified problem areas in interpreting, communication issues, embarrassment of parents, and parental dependency. Pecora et al. (1986) reported many CODAs felt that the older they got, the greater parental dependency was. They were more likely to be asked to make decisions and handle budget matters.

A weakness of Pecora et al.'s (1986) study is that all the participants were Caucasian and mostly (86%) from the religious organization of the Church of Jesus Christ of Latter-Day Saints, thus possibly not generalizable to other groups of CODAs of different ethnic or religious background.

Wilbur and Fristoe (1986) conducted a study consisting of qualitative and quantitative questions. The number of CODA participants was 165 with an age range from 18 to 79, the average age being 38. The researchers developed a questionnaire consisting of both open-ended and an agree/disagree section. It was based on the theory that the CODAs' experience was similar to other family situations where children needed to assume adult

responsibilities at an early age. Their study was “designed to tap traits often found to be characteristic of adult children of alcoholic parents” (p. 4). They found that CODAs reported feeling that they frequently had to take on parental responsibility. They also stated that the CODA sample was “highly educated and are not representative of the adult hearing population in the United States as a whole” (p. 5). Thus, the generalizability of this study is limited.

The major weakness of Wilbur and Fristoe’s (1984) study is that it was based on the assumption that CODA family systems were similar to alcoholic family systems, thus biasing his study from the start. The design of the questionnaire is also highly questionable and biased because the reliability and validity of the testing instrument were not established.

Chan and Lui (1987) conducted an empirical study of the self-concept of Chinese CODA children. The questionnaire used consisted of specific statements selected from the Coopersmith Self-esteem Inventory, Self-Description Questionnaire, and the Kang Questionnaire, along with some statements developed by the investigators. This was an empirical study that sought to examine a possible difference in self-concept between CODA and non-CODA children. Chan and Lui (1987) reported that there was no significant difference in the overall self-concept between CODA children and hearing children of hearing parents. Additionally, no significant differences were found between these two groups in the areas of physical ability, relationships with peers, performance in school, and general ability. However, in this study some significant differences were found. First of all, they reported CODA children rated themselves significantly higher in physical appearance than did non-CODA children. Second, for CODA children, Chan and Lui (1987) reported “that their scores on ‘relationship with parents’ were significantly lower than the scores of the hearing children of hearing parents” (p. 302). CODA children consistently gave lower scores on relationship with parents than the control group. Finally, CODA children reported

perceiving their parents as less warm.

A perceived weakness of Chan and Lui's (1987) study is that the testing instrument used has questionable validity and reliability. The testing instrument used in this study was a compilation of specific questions selected from three different questionnaires along with statements designed by the investigators. The three instruments they selectively pulled from was the Coopersmith Self-esteem Inventory, Self-Description Questionnaire, and the Kang Questionnaire. These inventories have established norms, reliability, and validity. To pull selectively from these three instruments to make an eclectic questionnaire, and additionally adding statements by the examiners, pulls into question the soundness of the reliability and validity of the instrument used in Chan and Lui's (1987) study, and its subsequent ability to make meaningful statistical interpretations.

Shield (2005) conducted a qualitative study on a small sample of adult CODAs. Four CODAs were interviewed, two males and two females. Multiple quotes are shared in this article from these subjects. There was no report of the format or questioning procedure of these interviews. It was only stated, "I explored various issues surrounding coda identity and Deaf ideologies" (p. 190). Based on these interviews, Shield (2005) reported, "Codas occupy a conflicted position in the Deaf community: they are both insiders and outsiders, hearing and Deaf, and neither" (p. 190). Shield (2005) goes on to state how CODAs are marginalized by the Deaf community, practices, ideologies, and culture. Shield also states that because of CODAs' linguistic and cultural knowledge of the Deaf, they are also legitimated as participants on some levels though.

The multiple quotes in Shield's (2005) study provide a rich realism to the CODA experience. However, there are several weaknesses to this study. First of all is the lack of report on the sampling procedure. Second, there is also a large discrepancy in age for the participants. The age for three of the participants is age 21 or 22, but then the fourth is

reported as being 63 years old. Third, the generalizability of this study is questioned as the sample size is very small, with only 4 subjects. Shield (2005) states, “The experiences of my subjects are not meant to be representative of the experiences of all codas; however, I do take their experiences to be reflective of real ideologies and practices in operation in the Deaf community” (p. 190). This is perceived as a broad statement when the sample size is so small. Finally, it is also seen as a weakness that there is no defined procedure or set of questions for these interviews.

Single Case Studies and Autobiographies on CODAs

I will now review several single case-studies and biographies here. With case studies and biographies, there is the possibility of subject bias by CODAs idealizing their parents. The recall of childhood events may also be unreliable. There may also be the possibility that individual case reports represent only that group of CODAs most severely affected by their parental deafness. Such case studies include: Arlow (1976), Bene (1977), Dent (1982), Frank (1979), Frankenburg et al. (1985), Halbreich (1979), Robinson and Weathers (1974), Wagenheim (1985), and Walker (1986). It is important to note here that several of these case studies were drawn from the files of mental health treatment centers (Arlow, 1976; Bene, 1977; Dent, 1982; Frankenburg et al., 1985; Halbreich, 1979; Tandler, 1975; Wagenheim, 1985). Specifically, Arlow (1976), Bene (1977), and Halbreich (1979) emphasized the assumption that Deaf parents will lead to almost certain pathological emotional development. The cases of Bene (1977) and Dent (1982) were additionally diagnosed with a neurological disorder. The fact that these CODAs sought therapy may have little to do with parental deafness, as proposed by the researchers, but instead may be due to a mental illness, current life stressors, or a recent loss.

The case study of Robinson and Weathers (1974) is of a CODA family with Deaf parents and three hearing children. The family sought therapy with the presenting problem

of the son's eating disorder. The authors/therapists took a family-systems approach to treatment. They presented as being knowledgeable of Deaf family issues and used a therapeutic approach that looked at the family first and the deafness of the parents as second. Their discussion suggests that CODA families may tend to struggle with child rearing issues and be in need of some intervention.

The case study of Arlow (1976) was of a CODA male in his 30s, married, and successful in business. The presenting problem was to seek relief for symptoms of anxiety. The issue of anxiety was related back to his chronic fears of humiliation, guilt, and shame from the Hearing public and subsequent loss of self-esteem. Arlow gives lengthy discussions of the pathological effects of having Deaf parents and minimally notes the fact that the bulk of his patient's life had gone well.

The case study of Bene (1977) was of a 12-year-old boy, the oldest of three sons to Deaf parents. The presenting problem was nightmares and concentration difficulties. Communication between the son and parents was reported as sparse. The son's language development was delayed and his comprehension abilities were limited to concrete concepts. There are several perceived weaknesses to this study. The first is the overall tone of the article which places the cause of John's impairment on his parents' deafness. This is seen as a limited perspective considering there is no report of seeking consultation regarding Deafness or Sign Language. Second is the report of communication between the child and parents as sparse, but there was no discussion regarding assessing the quality of Sign Language within the family or the consideration of Sign Language as a viable and complete language. Finally, there was no discussion of family therapy work, which would be a significant part of treatment considering the age of the identified client as 12 years. This study is seen as weak for these reasons.

The case study of Halbreich (1979) was of a 21-year-old native Israeli girl. She was

the younger of two children of Deaf parents. Her presenting problem was a suicide attempt and she was diagnosed with a Borderline Personality Disorder. Issues addressed in therapy were early independence, parental dependence, an inability to maintain ongoing relationships, overly strong sense of obligation and responsibility, and depersonalization. Halbreich (1979) reports consulting the literature on Deafness and draws conclusions and makes blanket statements placing Deaf parents' abilities as less than positive. He states, "It is a well established fact that the inability to communicate verbally leads to some psychological abnormalities" (p. 129). Halbreich's willingness to make such broad generalizations is seen as a weakness to this study, and leaves the reader cautious when evaluating the results and conclusions. A second weakness is that there is no report that Halbreich shows any consideration to Sign Language as a viable and complete language. Correspondingly, there is no discussion regarding assessing the quality of Sign Language within the family.

The case study of Dent (1982) was with two Hispanic CODA sisters, 7 and 9 years old, who lived with their Deaf mother. The presenting problem of these two sisters was learning and behavioral problems. A major goal for treatment was to develop thinking and reasoning skills. Play therapy was a treatment method as well as "remedial work in thinking" (p. 436). Dent (1982) reported the issues were poor parent-child communication, interpreting, and reversal of the parent-child roles. Dent (1982) concluded that the mother's deafness was at the core of these sisters' problems. A great flaw in Dent's study is that he fails to acknowledge that not all Deaf families struggle with communication, and that poor communication can arise even in families with all hearing members.

In summary, when looking at the literature, it is evident that research that has been mixed when exploring CODAs' self-concepts. The qualitative studies of Preston (1994), Davie (1992), and Blane (1995), or the autobiographies of Dau (1975), Fant and Schuchman

(1974), Royster (1981), Walker (1986), Abrams (1996), and Sidransky (1990) all report CODAs repeatedly struggling with the issue of self-concept and the myriad of other common CODA experiences that impact self-concept such as a sense of belonging, role reversal, interpreting, cultural identification, and birth order. However, other quantitative research has shown conflicting results. Of the empirical child and adolescent studies, Chan and Lui (1987) and Charlson (1989) showed no difference in overall self-concept, but did show a significant difference in specific areas of self-concept. Chan and Lui (1987) reported CODA children produced significantly higher scores on physical appearance, and significantly lower scores on relationship with parents and parental warmth. Charlson (1989) reported CODA adolescents who did not report mediating/interpreting on a regular basis for parents scored significantly lower on feelings of worth and adequacy as a family member than did CODA adolescents who did report mediating/interpreting for parents. Deluigi (1991) reported CODA children scored significantly lower on total self-concept than non-CODA children and identified themselves as being inadequate physically, socially, emotionally, and intellectually. However, Deluigi's methodology and restricted sample size severely limit the generalizability of her study. When looking at CODA adults and self-concept, Marshall's study (1978) showed no difference, but he himself questioned his results, specifically pointing out weaknesses in his methodology and sampling procedure. Even though two previous studies were conducted using the TSCS, first edition, and no significant results were found (Charlson, 1989; Marshall, 1978), the possibility of conducting research using a larger sample size, with adults, and with the updated TSCS, second edition, should be considered. It is also important to consider that since adolescence is an important time of self-concept development (Erickson, 1975; Myers, 1992), it would be interesting to compare the self-concept of adults in order to see if there is a long-term change in self-concept when comparing CODA and non-CODA subjects. When looking at these

issues, the need for further research in this area is evident.

CODAs and Self-Concept

Weiner (1997) stated it is important for Deaf parents to help their hearing children search for self-concept and self-acceptance, accepting the fact that their children are hearing and that it is acceptable for them to be hearing. Unfortunately the experiences of Deaf parents and their hearing children is often quite the opposite (Lane et al., 1996). Many Deaf individuals express their preference for Deaf children (Lane et al., 1996). Dirksen and Bauman (2005) discuss the controversy surrounding a Deaf couple's deliberate attempt at finding a Deaf donor to increase their chances of having a Deaf baby. Deaf advocates respond that the couple's decision reflects a natural cultural desire. Dirksen and Bauman (2005) report that the ethical defense of seeking a Deaf child continues to gain further support. Preston (1994) relates a story shared by a Deaf mother regarding her reaction to the news that her firstborn child was hearing:

I just couldn't believe it. . . . I thought, oh, my God, she's hearing! What am I going to do with her? I don't even know how to talk to her. . . . I was really surprised. I was scared. I wanted to be close to my children. . . . The Hearing world and the Deaf world are such separate worlds. I worried that we would never connect, or that we would drift apart. (p. 17)

The struggle to bridge this gap is repeatedly shared. How can this mother contribute to her child's self-concept development if she finds it so difficult to feel connected to her? This perception that the Deaf and Hearing worlds are so different is repeatedly echoed in Preston's book (1994).

Carroll (1989) relates the very traumatic situation of a hearing girl, Sheila, who was raised in a family that consisted of Deaf parents with two Deaf older siblings, and even a Deaf twin—herself being the only hearing person. It was assumed that Sheila was deaf and it was not realized that she was fully hearing until she was age 7. Sheila herself thought she was deaf and did not want to “become” hearing. When this news was relayed to her, she

was removed from the Deaf school she attended with her siblings, and enrolled in a public school. Sheila carried the guilt with her for years, thinking she had done something terribly wrong to be ostracized from her family, and she felt forced to interact with the Hearing world she hated. She remembers her mother sitting her down at the age of 7 to explain to her that she was different from them and was not one of them. Her mother told her that she needed to go and be with her own people, the Hearing people. Sheila described cultural and personal self-concept issues she struggled with to bridge the Deaf world she loved and the Hearing world she had hated.

Willmer (1984) states that few TCKs have any idea what it means to be a person. TCKs have little sense of their own personal identity. She goes on to express that every person has basic legitimate needs of strong relationships, a sense of belonging, of being nurtured and cared for, of internal unity, of significance; a feeling of knowing themselves and being known by others. She also notes that one must learn to express emotional, creative, intellectual, volitional, and spiritual aspects of their being (Willmer, 1984). These needs define us as human beings. It is the specific manner and variety in which we express or meet these needs that leads to our sense of personal identity unique to only ourselves. Being denied any of these needs robs us of something precious and important pertaining to ourselves as human beings (Willmer, 1984).

One lady, Martha, remembered an incident that brought this issue home to her: I was asked to draw a picture of myself once, my body and how I saw myself. I started drawing my parents on one side, and then these hearing people on the other. But I didn't know what I looked like. I couldn't do it. I could draw anybody else in my family, but not me. (Preston, 1994, p. 219)

This same phenomenon was described by another person in this way: "It's like you live in this mirror world. You reflect what they say, but where are you? Where am I? I live in the mirror, I'm only a reflection" (Preston, 1994, p. 219).

CODAs and Self Identity

Interpreting, Role-Reversal, and the CODA Experience

Interpreting, Role-Reversal, and the CODA Experience

Hearing children of Deaf parents hold a special place within the family for they are the ears and mouths for their parents. Bunde (1979) reported finding that 95% of Hearing children with Deaf parents in his study answered “yes” to the question, “Did you interpret for your parents?” CODAs are the communication link with the Hearing world, beginning when they are born. From that point on they are constantly traveling between the Deaf and Hearing worlds to mediate for their parents (Champie, 1984).

Preston (1994) believed that a possible reason for what he observed as the struggle with identity that many CODAs face was because they seem to spend so much of their lives being interpreters for their parents. He believed this led to losing their sense of self. He suggested they feel as if they simply are communication machines and not real persons. They become like chameleons, mutating in their roles as required.

Some suggest that it is common for Deaf parents to look upon their Hearing children with a special pride and joy that is laced with increasing dependency as the child matures (Bunde, 1979; Preston, 1994). Typically, the firstborn child will be entrusted with the role of interpreter (Buchino, 1988, 1993; Frankenburg et al., 1985; Preston, 1994; Wilber & Fristoe, 1986). The firstborn is typically the best signer (Wilber & Fristoe, 1986). The dependency roles of the parents and child are altered, placing increasing responsibility on the child. The term “role reversal” refers to the situation that occurs when parents expect their children to adopt responsibility for the parents (Buchino, 1993). The child may develop a sense of duty and obligation to their parents. Instead of the usual situation where adults ignore the children and talk to other adults, with Deaf parents, the children become the perceived adults

and the parents are ignored (Blane, 1995; Buchino, 1993). Walker (1986) tells how she was naturally very shy; however, as she was required to interpret business transactions for her parents, she transformed into a forthright and assertive person. It would make sense then that as adults, CODAs commonly feel the need to take care of others—acting as a bridge, dealing with heightened responsibility, and struggling to learn how to practice self-care (Walter, 1990). Livingston (1997) reported that CODAs who had a hearing non-parental caretaker tended not to engage in compulsive care giving in adulthood.

Rayson (1987) suggests there is an imbalance in the normal power relationship between parent and child because of the parents' deafness. The parent becomes dependent on their child for interpreting. The role of interpreter provides the Hearing child of Deaf parents more power than would otherwise be given. The option of exercising this power, which influences the entire family, is not within the usual parameters of childhood (Marshall, 1978; Preston, 1994).

Being their parents' interpreter places great pressure on the child. He is required to understand adult conversations and translate it into proper Sign Language. The child will, more often than not, be too immature to do this (Fant & Schuchman, 1974). Bull (1998) tells of the time when he was 12. His grandmother died tragically and he had to help his parents select the casket and interpret with the mortuary personnel to set up the funeral. He cites another story where the 10-year-old daughter had to interpret for her parents in selecting a coffin and dealing with the funeral director when her 4-year-old brother was tragically killed when falling off the fire escape in their tenement building. Preston (1994) relates the story of a CODA:

So, there I was. I don't know, I was probably five or six. And the doctor is saying, "Tell your mother she needs a mastectomy." I didn't know how to spell it. And I didn't even know what it meant. And my mother is looking at me like, "What? What did he say?" (p. 146)

From these experiences we can see that feelings of frustration, inadequacy, and guilt

result from children being asked to interpret information that is beyond their own understanding, such as sophisticated vocabulary and the personal or business affairs of the parents. Misinterpretation may create great financial or personal problems for the parents, which cause the child to feel totally responsible and shameful (Charlson, 1989; Preston, 1994). Additionally, interpreting can be embarrassing for the child since it attracts attention, pointing out more plainly the differences of the child from others (Frankenburg et al., 1985; Glickfeld, 1989; Sidransky, 1990; Walker, 1986).

CODAs are also regularly put in the position of making decisions. The majority of the hearing public do not understand the separation of roles between the parent and the child when the child is acting as interpreter and intermediary (Preston, 1994; Rienzi, 1990; Thurman, Whaley, & Weinraub, 1985).

When you are a child—six or seven years old—you can't talk to them like an adult, tell them that what they are asking for is too much or is frustrating. You don't have the sensibility or maybe the vocabulary to express it. It's always: You have to do it. (Preston, 1994, p. 155)

CODAs have reported that their parents also relied on them for decision-making based on the widely held belief (by the Deaf) that hearing people are inherently intellectually superior. "They think about it, discuss it with each other and then turn to you and ask what you thought. Most of the time what I said became the final decision" (Day, 1975, p. 40). This fosters a sense of inferiority in CODAs, an intense self-consciousness about themselves, their families, and a burden of guilt when the responsibilities are too heavy (Preston, 1994; Walker, 1986).

Schlesinger and Meadow (1972, p. 27) believe many Deaf mothers "developed a symbiotic relation with their hearing children, expecting the child to be a proctor, a guide through the mazes of the hearing world, a source of unrealistic gratifications." The parents' reliance on their children's hearing extends beyond interpreting to that of surrogate parent. They suggest this predisposes them toward an unusual degree of guilt. They tend to feel

guilt when they inflict pain on their parents, whom they perceive as already suffering. They feel that any resentment toward their parents is unjustified (Frank, 1979; Glickfeld, 1989; Sidransky, 1990; Walker, 1986).

Performing the role of mediator for the parents can cause the child to feel both inadequate and superior simultaneously. CODAs have reported that interpreting for their parents interfered with their own playtime and left them with little time for their childhood. They felt their parents' needs were placed above their own (Charlson, 1989; Glickfeld, 1989; Mathis, 1977; Preston, 1994; Sidransky, 1990; Walker, 1986). The dependence of the parents on the Hearing child affects the child's own dependency needs (Charlson, 1989; Glickfeld, 1989; Mathis, 1977; Preston, 1994; Sidransky, 1990; Walker, 1986). It becomes the child's responsibility to provide explanations, elaborations, and information to their parents. This conveys to the child a feeling of servitude. The child's own needs for nurturing and support often are subordinate to the parents' need for information (Charlson, 1989; Glickfeld, 1989; Mathis, 1977; Preston, 1994; Sidransky, 1990; Walker, 1986).

The normal processes everyone experiences of separating from their parents to form their own identity are more complicated for CODAs (Filer & Filer, 2000). Filer and Filer (2002) go on to state a possible reason for this is that with CODAs, the roles are switched. Instead of the parents worrying if the children will manage without them, the children (the CODAs) worry that their parents will not be able to manage without them. Buchino (1993) found in her study the same issues of role-reversal for CODAs and their parents. Buchino (1990), Preston (1994), and Walker (1986) share several situations in which the relatives of the Deaf parents treat the Deaf parents as if they were children or incompetent parents. These family members place a lot of guilt on CODAs, constantly telling them to be good, and that mom and dad need them. Abrams (1996), a CODA, tells in her biography how she struggled with leaving home after she married because she worried about how her parents

would manage without her. Abrams experienced a great deal of personal stress since she could not be with her parents to constantly watch over them and make sure they would be all right; eventually she had them move in with her.

The enmeshment of CODAs and their parents appears to become especially restrictive as the child approaches adolescence. The desire to become independent from parents becomes much more prominent and necessary for normal psychological development. This need for separation from parents and more socialization with persons other than parents is easily misinterpreted by overly dependent parents as a rejection. The dependence of the parents on the Hearing child for interpreting and decision-making exacerbates this common phenomenon (Day, 1975; Glickfeld, 1989; Lauritsen, 1973; Preston, 1994; Sidransky, 1990; Walker, 1986).

While many CODAs reported feeling pushed out of the Deaf community as they became older, as previously discussed, other CODAs reported being expected to maintain close ties with the Deaf community. They were expected to engage in such professions as interpreting or mediating needed services to the Deaf. This could create much stress and guilt for the CODA who aspires to do something unrelated to the Deaf world. The Deaf parents reportedly experienced disappointment, anger, and guilt over the Hearing child's perceived detachment from the Deaf culture (Blane, 1995; Frankenburg et al., 1985).

The Hearing child's feelings about themselves were not reflected by their Deaf parents' ability to communicate with them, but was more directly linked to their role as a Hearing person in a Deaf family (Goldenberg, Rabinowitz, & Kravetz, 1979). While CODAs expressed that they feel a sense of worth in their role as an interpreter, it has also been expressed that they feel valued only for their hearing. It has been suggested that CODAs' low self-esteem may also be attributed to feelings of being unworthy of success based on the beliefs that their achievements were only a result of their ability to hear

(Charlson, 1989).

R. J. Hoffmeister, a leading researcher in deafness and language acquisition, states, “It is remarkable that Deaf families function as well as they do. The odds appear overwhelming against success, yet the majority of Deaf families appear to succeed in basic child rearing, providing family nurturing, and remaining close throughout adulthood” (as cited in Thurman et al., 1985, p. 121). Becker (1980) suggests that the Deaf community contributes substantially to the support of proper parenting procedures by providing a forum to air problems, compare practices, and learn from the experiences of others. Buchino (1988) states, “Other authors seem to miss the point, poor communication is not the case in all families of deaf parents with hearing children. Poor communication happens in many families, regardless of hearing status” (p. 16).

As CODAs become older they begin to realize how deaf people are often manipulated and mistreated by hearing people. Hearing people can be patronizing, dominant, uncaring, uninformed, demeaning, or unwilling to communicate clearly with deaf individuals (Lane, 1988). If the parents also then communicate mistrust or resentment of hearing people to their hearing children, it has been suggested that the child will tend to feel a sense of shame for their hearing and experience a split between identities (Frank, 1979). They may also receive a conflicting value system (Woodward, 1987). These feelings may be intensified when the child is required to interpret verbal abuse toward the parent from a hearing person. This situation is most likely especially shameful and destructive for the child. The child may experience guilt for their own hearing, coupled with the feelings of shame for contributing to the humiliation of their parents by interpreting the verbal abuse. Many times CODAs reported that they would not interpret what was actually said, but rather altered it to protect their parents. This still would leave the CODA with feelings of humiliation when witnessing the degradation of their parents (Charlson, 1989; Preston,

1994; Walker, 1986).

CODAs and Birth Order

It is primarily during childhood that the family exerts an influence on the development of personality. The family atmosphere and constellation help fashion the social meaning of behavior (Sherman & Dinkmeyer, 1987). The person's sense of human relationships, self, and how he relates to the world, emerges in the family atmosphere (Sherman & Dinkmeyer, 1987). Birth order was first addressed by Adler (1958). The fact that people born into the same sibling position in different families grow up with so many common personality characteristics is perhaps the best illustration of the emotional forces in a family system. The system dictates that individual members will function in certain ways. A child is simply born into that position and is increasingly molded by it as they grow older (Gurman & Kniskern, 1981). Sherman and Dinkmeyer (1987) suggested that all behavior was designed to overcome feelings, which emerged from childhood, of inferiority and attain feelings of superiority. Hall (1987) suggests that a person's sibling position in their family of origin is considered a major determining influence on a person's self-differentiation and vulnerability to family projection. The functioning sibling position may strongly influence the probability of becoming emotionally trapped in a family by unusual closeness, dependency, enmeshment, and an exaggerated sense of responsibility (Hall, 1981).

Typically it is the firstborn child who will be entrusted with the role of interpreter and mediator between the Deaf parents and the Hearing world (Blaskey, 1984; Buchino, 1988, 1993; Bunde, 1976; Frankenburg et al., 1985; Pecora et al., 1986; Preston, 1994; Vesterager, 1978; Wilber & Fristoe, 1986). Vesterager (1978) went on to report that most often the firstborn is the key person in the family, the one around whom all communication is centered. This included both communication outside and inside the family. The firstborn also tends to assume parental roles with younger children.

There are several reasons why the firstborn is given this role most often. So many of the characteristics of firstborn children are necessary for CODAs performing the role of interpreter and mediator between the Deaf world of their parents and the Hearing world they live in. The oldest child is described as dependable, hard working, and striving to keep ahead (Adler, 1958; Gurman & Kniskern, 1981; Toman, 1961). The oldest also tends “to carry a lion’s share of the guilt” (Gurman & Kniskern, 1981, p. 250). Toman (1961) goes on to characterize the oldest sibling as a leader who works hard and endures hardships. The oldest sibling naturally accepts responsibility and assumes that tasks will not get done unless he does them himself or sees to it that someone does them. A female oldest sibling will also tend to take care of others, gravitating to leadership positions but also tending to dominate others (Toman, 1961). Toman (1961) suggests that she may tend to act more sure of herself than she really is. It was additionally mentioned that the oldest child may feel he is doing all the work and that he is overused and underappreciated (Toman, 1961).

Berg-Cross (2000) identifies several other attributes of a typical firstborn that also make the firstborn an ideal candidate to play the role as interpreter when the parents are deaf. A firstborn is characterized as having extremely high levels of achievement and a very special parent/child relationship. Berg-Cross (2000) goes on to describe a firstborn as consistent and rigid, one who seeks signs of appreciation, is serious, conscientious, critical, self-assertive, parent oriented, serving of others, and attaining high academic levels. Sherman and Dinkmeyer (1987) stated the eldest sibling learns to be a high achiever, responsible, conforming, and a leader. Kerr and Bowen (1988) describe the firstborn as more vulnerable than others to become caught up in the family sources of anxiety. They are the ones who grow up the most emotionally enmeshed with the parents. Firstborns tend to develop an exaggerated sense of responsibility for others. Sherman and Dinkmeyer (1987) theorize the reason for these characteristics of firstborns is because with the eldest child,

parents rely on him to undertake more responsibility than his siblings. The firstborn is expected to model “good behavior” and take care of the younger siblings. The eldest child may complain about his burdens, but is unlikely to give up his position. Along with this, eldest children tend to enter helping professions and are over-represented there. Many of these firstborn characteristics appear to be valuable for CODAs performing the role of interpreter and mediator between the Deaf world of their parents and the Hearing world they live in.

Correspondingly, the typical characteristics of a later-born sibling, as stated by Kerr and Bowen (1988), make them unlikely candidates as the parents’ primary interpreter. They are described as the ones who tend to go their own way. A later-born child appears to be more “free spirited” and tends to be the most separated emotionally from the parents (Kerr & Bowen, 1988). Younger siblings are also described as being more independent and more distant than other family members, and often less conforming to family and adult values (Sherman & Dinkmeyer, 1987). While it has been stated that the burden of interpreting for the parents typically falls on the eldest child (Buchino, 1988, 1993; Frankenburg et al., 1985; Preston, 1994; Vesterager, 1978), the younger siblings appear to be also affected by their parents’ deafness. Studies suggest that feelings of resentment and low self-esteem are exhibited by younger siblings because they do not have special responsibilities at home. They may be viewed by others as incompetent and childish compared to the eldest sibling (Robinson & Weathers, 1974; Wagenheim, 1985). It has been noted that a younger sibling naturally does not assume leadership positions, nor accepts responsibility. The younger sibling is likely to assume that tasks will get done because others will do them (Gurman & Kniskern, 1981; Toman, 1961). Also, the younger sibling will often have feelings of being pushed aside and being dominated or “negated” (Toman, 1961).

CODAs and Autonomy Struggles

Positive and Negative Characteristics of CODAs Positive & Negative Characteristics of

CODAs

Due to the unique experience CODAs go through, specific characteristics associated with CODAs have been stated in the literature. The positive characteristics will be addressed first. Blaskey (1984) states that CODAs reported feeling comfortable around handicapped people, having a broader perspective in life, and an appreciation for language and hearing. Searls (1989) reported finding that CODAs scored significantly higher on a self-concept instrument in the Behavior and Moral-Ethical subscales. Fant and Schuchman (1974) reported the development of patience and diplomacy as benefits of being a CODA. As relating to interpersonal skills, an increase in compassion and understanding of others along with a greater social knowledge was listed by Blaskey (1984), Charlson (1989), and Pecora et al. (1986). In regard to communication, they also listed an increased ability to gain insight from nonverbal communication and an enhanced ability to communicate (Blaskey, 1984; Charlson, 1989; Pecora et al., 1986). Other characteristics listed in the literature are: bi-lingual (Frankenburg et al., 1985; Pecora et al., 1986) and earlier development of decision-making skills and ability to cope with life stressors (Day, 1975; Pecora et al., 1986). Wagenheim (1985) reported CODAs as having normal cognitive development, and Pecora et al. (1986) reported CODAs having no problems in school and having normal peer relationships.

Charlson (1989), Sanders (1984), and Wilber and Fristoe (1986) reported high ambition and academic achievement as positive CODA characteristics; however, Charlson goes on to elaborate that this may be a result of the external pressures they felt when required to handle adult situations effectively while still a child. Charlson speculates that CODAs quickly learned that alertness and general knowledge of people and events were essential to succeeding at the difficult task of mediating.

It is interesting to note that some of the characteristics specific to CODAs were listed

as both positive and negative. Day (1975) and Pecora et al. (1986) listed the CODA characteristic of a developed sense of responsibility as a benefit, whereas Blaskey (1984), Buchino (1988), and Wilber and Fristoe (1986) reported CODAs as expressing a tendency toward overwhelming responsibility. Maturing faster was listed as a benefit by some CODAs (Frankenburg et al., 1985; Pecora et al., 1986), while other CODAs lament being forced to grow up too quickly as they felt robbed of a normal childhood and having expectations that they be more mature than they really were (Pecora et al., 1986; Wilber & Fristoe, 1986).

Several negative characteristics are listed in the literature specific to CODAs. They are as follows: difficulties forming close interpersonal relationships (Wilber & Fristoe, 1986); feelings of inferiority (Harris, 1983); depersonalization (Arlow, 1976; Halbreich, 1979); living between two worlds and feeling different (Brother, 1980; Bull, 1998; Wilber & Fristoe, 1986); role-reversal (Arlow, 1976; Bene, 1977; Buchino, 1988; Dent, 1982; Pecora et al., 1986; Royster, 1981; Weiner, 1997; Wilber & Fristoe, 1986); feelings of alienation or isolation (Blaskey, 1984; Ford, 1984; Halbreich, 1979; Wilber & Fristoe, 1986); shame, humiliation, and embarrassment (Arlow, 1976; Buchino, 1988; Pecora et al., 1986; Weiner, 1997); guilt (Buchino, 1988; Frank, 1979; Royster, 1981; Wilber & Fristoe, 1986); delayed speech (Critchley, 1967; Weiner, 1997); low self-esteem (Arlow, 1976; Frankenburg et al., 1985; Pecora et al., 1986); communication difficulties with parents (Blaskey, 1984; Buchino, 1988; Ford, 1984; Halbreich, 1979; Pecora et al., 1986); family relationship difficulties (Buchino, 1988; Halbreich, 1979); and separation-individuation and social identity difficulties (Blaskey, 1984; Frankenburg et al., 1985; Livingston, 1997).

As stated previously, it is important to note that several of these case studies were drawn from the files of mental health treatment centers (Arlow, 1976; Bene, 1977; Dent, 1982; Frankenburg et al., 1985; Halbreich, 1979; Tandler, 1975; Wagenheim, 1985). The

fact that these CODAs sought therapy may have little to do with parental deafness, as proposed by the researchers, but instead may be due to a mental illness, current life stressors, or a recent loss. The cases of Bene (1977) and Dent (1982) were additionally diagnosed with a neurological disorder. When reading these articles, one is left with the impression that CODAs will most likely encounter mental health issues as an adult. Specifically, Arlow (1976), Bene (1977), and Halbreich (1979) emphasized the assumption that having Deaf parents will lead to almost certain pathological emotional development. Arlow gives lengthy discussions of the pathological effects of having Deaf parents and minimally notes the fact that the bulk of his patient's life had gone well. The tone of Bene's article is that his patient's impairment was caused by his parents' deafness. Bene presents the impression that Deaf parents will only minimally meet the emotional needs of CODAs. Halbreich goes so far as to state that it is a "well established fact" that CODAs will develop "psychological abnormalities" (p. 13). Tandler (1975) drew conclusions from a group study of psychiatric records. He goes so far as to conclude that his findings of poor analytic functioning, poor impulse control, and poor reality judgment, along with less clear distinctions between feelings, perceptions, and thought, are the result of the parents' deafness. None of these conclusions have been specified by other research on CODA characteristics.

The Parenting of CODAs

Since parents who were positively attached to their children are better able to form attachment relationships with their own children, a strong argument can be made that Deaf parents will act toward their Hearing children similarly to the way their parents acted toward them (Bolton, 1983). Ninety-percent of Deaf individuals have Hearing parents. Hearing parents of Deaf children go through a mourning process when their child's deafness is diagnosed. The parents of Deaf children have been described as overprotective, frustrated, and guilt ridden (Luterman, 1979). In dealing with their disabled child, parents experience

feelings of powerlessness and inadequacy (Schlesinger, 1987). Parents of Deaf children who feel powerless have been described as: (a) engaging in parent-child dialogues that are directive rather than interactional; (b) showing antagonism and tension in their speech; (c) tending to be less flexible, more intrusive, and provide less positive reinforcement; and (d) being less creative (Godd, 1970; Matey & Kretschmer, 1985; Schlesinger & Meadow, 1972).

Poor parent-child interactions have also been used to explain maladaptive behaviors that are seen in many Deaf adults (Quigley & Kretschmer, 1982). Several of the maladaptive personality characteristics that have been correlated with Deaf persons are: impulsive behavior; ego-centrism; lack of empathy; overt aggression; lack of self-awareness; and conduct and adjustment disorders (Bachara, Raphael, & Phelan, 1980; Craig, 1965; Eabon, 1984; Gibson, 1984; Harris, 1978; Hirshoren & Schnittjer, 1979; Levine, 1981; Meadow, 1984; Sarlin & Altshuler, 1977).

Child-rearing attitudes and behaviors by parents that have been found to relate to low self-concept in children are harsh punishment (Coopersmith, 1981), and being overprotective, indulgent, and rejecting (Warren & Hasenstab, 1983). Of the literature available there are ample references of parental maladjustment, such as dependence, rejection, and indulgence, concerning their hearing offspring (Schlesinger & Meadow, 1972). Livingston (1997) reported that CODAs recalled their mothers as less warm and affectionate. It was noted by Ford (1984) that Deaf parents of Hearing children feel insecure, guilty, and are often overprotective with their children.

Research has indicated that because of communication restrictions, Deaf individuals have a lack of exposure to society in general and thus a corresponding lack in developing social skills and knowledge base (Higgins, 1980; Lane et al., 1996). As a result, Deaf individuals may experience great difficulty in understanding the perspectives of other people, social roles, and in making good moral judgments (DeCaro & Emerton, 1978;

Kusche & Greenberg, 1983; Lou, Charlson, & Rowell, 1987; Nass, 1964). This may adversely affect the Deaf parents in their ability to understand their children's actions and in explaining the actions of others to their children (Charlson, 1989). This ability has been associated with social cognitive development (Shantz, 1975). Rainer, Altshuler, and Kallman (1969) reported that Deaf parents with both Hearing and Deaf children tended to have more problems with discipline and control of their Hearing children than with their Deaf children. This was specifically related to the Deaf parents struggling with their Hearing children's abilities and establishing healthy expectations. The researchers questioned the ability of Deaf parents to raise Hearing children without the assistance of local agencies.

It is also suggested that it is out of ignorance that literature has historically presented Deaf parents in a negative light, when in reality there is mounting literature that suggests otherwise (Higgins, 1980; Lane et al., 1996). Meadow, Greenberg, and Erting (1983) reported that, in their study, attachments between Deaf mothers and their children were just as secure as those in Hearing mothers and their children. Deaf parents were found to be very sensitive to their children's needs and were responsive to them. This resulted in a positive outlook for the child's future emotional health (Blane, 1995). Research has shown that the hearing status does affect the quantity of mother-child interactions, but the quality of the relationship was found to be unaffected (Lederberg & Mobley, 1990). Blane (1995) reported that Deaf mothers did not differ in affect, sensitivity, dominance, or teaching behavior. Vesterager (1978) reported finding Deaf parents to be "fully capable as parents, taking a great interest in the welfare of their children" (p. 52).

In a study comparing teens of parents with or without disabilities, Olkin, Abrams, Preston, and Kirshbaum (2006) reported no differences except that teens of parents with disabilities had a higher level of comfort around people with disabilities than teens whose

parents were not disabled. Specific to CODA teens and their Deaf parents, Olkin et al. (2006) reported Deaf parents scored significantly higher on family happiness, and that CODA teens reported more protection and support and more freedom to do things. CODA teens were also more likely to report that their families had stories and traditions about Deafness as compared with teens in other disability groups.

Marschark (1993) concluded that Deaf mothers and their children have different interaction strategies with different consequences. Instead of vocalization, interactions are dominated by smiles, postures, and tactile cues. Understanding these differences and showing respect for the Deaf culture and the family system are important (Brazelton, 1982; Hofer, 1987; Rea, Bonvillian, & Richards, 1988).

SummarySummary

The Deaf and Hearing cultures are considered to be different and consist of two different cultures. CODAs struggle with the problem of feeling suspended between these two cultures. The literature has often reported CODAs experiencing frustration because of the hearing people's differences, and the Hearing culture's ignorance of Sign Language, deafness, deaf people, and everything deaf. From their Deaf parents, CODAs may experience the pressure of role-reversal and the expectation to bridge the gap between the Deaf and Hearing worlds through interpreting and mediation. These unrealistic expectations produce feelings of guilt and incompetence, and may stifle self-concept development.

This literature review shows the need for more research on the topic of CODAs. Several case studies and biographies exist, but quantified data in the literature regarding CODAs are scant. Of the empirical studies, there are conflicting results and small sample sizes. Several of the articles written have focused on pathologizing Deafness.

Interpretations of the parenting abilities of Deaf parents have often been misinterpreted.

This study is intended to contribute to the scientific inquiry of the CODA experience in a

quantifiable way. This study focuses on the long-term effects of the CODA experience by examining adult CODAs. It will attempt to help dispel generalizations and give meaningful focus to the issues of the CODA experience.

METHODOLOGY

Introduction

METHODOLOGY Introduction

This chapter presents a description of the research methods employed in the two phases of this study. Phase one is called Study Number One, and phase two is called Study Number Two. The research methods employed are as follows: introduction, population and sample selection, variables, instrumentation, procedures, limitations, delimitations, and null hypotheses and statistical analysis.

Study Number One

Study Number One focused on investigating the self-concept of CODA and non-CODA groups when matched on age and gender.

Population and Sample

The CODA participants in this study were hearing adults, age 18 and older, with both parents either deaf or hard of hearing. The first method used to obtain a CODA sample was by contacting Tom Bull, the director of the National Information Center on Deafness, at Gallaudet University. I stated to him that I was conducting a research study on CODA identity/self-concept issues and requested volunteers. It was also stated that a gift certificate of \$20.00 to a national business chain would be presented upon completion of the survey in appreciation of participation. Tom Bull then relayed this information to an email listserv of CODAs. Interested individuals were asked to email me back, expressing their desire for inclusion in my research and providing me with their mailing address. This procedure

resulted in the largest proportion of CODA participants obtained for this study.

The second method of obtaining a CODA sample was through various CODA web sites. I posted an advertisement for participants, stating I was completing a study on CODA identity/self-concept issues and then a request for participation. It was also stated that a gift certificate of \$20.00 to a national business chain would be presented upon completion of the survey in appreciation of participation. Interested individuals then emailed me, expressing their desire for inclusion in my research, and provided me with their mailing address.

The non-CODA sample consisted of adult children of normal hearing parents, age 18 and older, recruited from Utah State University in Logan, Utah. Students and faculty were approached randomly on campus. They were asked to participate in a study of identity/self-concept issues. All participants were informed that a gift certificate of \$10.00 to a national business chain would be awarded them upon receipt of their completed survey.

The CODA sample was broken down into age groups with approximate 10-year increments (ages 18-30, 31-40, 41-50, and >50). The number of females within each 10-year age group and the number of males within each 10-year age group were tallied. The number of participants in each of these groups was used as the basis of the comparable age and gender demographics between the CODA and non-CODA groups.

For the CODA group, all means of recruiting participants were followed without regard to age and gender. Since the non-CODAs were a matched sample of the CODA group, attention was given here to age and gender. At the start of the non-CODA group selection phase, non-CODA participants volunteered based on general solicitation, without specific attention given to age and gender. It was assumed they would be a match for the study, but with the understanding that if they did not match they would then be rejected from inclusion. As the sample size of the non-CODA group increased, more attention was given to age and gender to match the CODA sample, and the non-CODA selection process became

more selective of who was accepted in this group.

Although there was a discrepancy of monetary reimbursement between the CODA (\$20.00) and non-CODA (\$10.00) group, it is important to note that neither group was aware of this difference. There were limited funding resources for this study, and considering the CODA sample was being recruited from the internet, it was seen necessary to offer a more substantial reimbursement to encourage participation. The non-CODA group experienced face-to-face contact with the researcher. This face-to-face contact made it easier to recruit for participation and follow through with return of a completed research packet. It was believed that the needed non-CODA sample size would be appropriately achieved, even with the monetary reimbursement being less.

Variables

Dependent Variables

The set of dependent variables in this study consisted of the measures related to the total self-concept score of the TSCS, and the six subscales: physical, moral, personal, family, social, and academic self-concept.

For each of the 82 items, there was a 5-point Likert scale. To get a total self-concept score, each of the items was recorded and then the total items were summed together. This is the raw score. This same procedure was repeated for each subscale.

The six subscales of the TSCS, as defined by Fitts and Warren (1996), are presented here. The physical subscale is described as how a person views their body, state of health, physical appearance, skills, and sexuality. Following the TSCS manual, items that are included in the physical subscale are as follows: 1, 17, 21, 22, 29, 30, 42, 48, 58, 59, 64, 68,

69, and 71. The moral subscale is defined as examining moral worth, feelings of being a “good” or “bad” person, and satisfaction with one’s religion or lack of it. Items that are included in the moral subscale are as follows: 2, 4, 8, 23, 31, 46, 49, 60, 61, 72, 75, and 76.

The personal subscale is defined as addressing personality integration, the person’s sense of personal worth, feelings of adequacy as a person, and self-evaluation of the personality apart from the body or relationships to others. Items that are included in the personal subscale are as follows: 11, 14, 16, 19, 24, 25, 26, 33, 34, 62, 74, and 82.

The family subscale was defined as examining the individual’s perception of self in relation to his or her immediate circle of associates and examining feelings of adequacy, worth, and value as a family member. Items that are included in the family subscale are as follows: 3, 10, 13, 15, 27, 35, 36, 51, 52, 53, 65, and 77.

The social subscale is described as addressing the more general way the individual’s sense of adequacy and worth are for social situations and interactions with other people. Items that are included in the social subscale are as follows: 5, 7, 20, 38, 39, 45, 54, 55, 66, 73, 78, and 79.

And finally, the academic subscale is described as assessing how individuals perceive themselves in school and work settings, and how they believe they are seen by others in those settings. Items that are included in the academic subscale are as follows: 6, 9, 12, 18, 32, 37, 43, 44, 50, 63, 70, and 81.

Due to the fact that the subscales had disproportionate numbers of items, I chose to convert the raw scores to standardized *t*-scores that were provided by the publisher, so that there would be an equal metric for each subscore. All the analysis was computed from these subscore *t*-scores.

Independent Variables

The first independent variable was CODA and non-CODA. This is a categorical

variable measured on a nominal scale. CODAs are defined as hearing adults with both parents deaf or hard of hearing (1). Non-CODAs are defined as adults with neither parents deaf or hard of hearing (2).

The second independent variable was birth order. Birth order is a categorical variable measured on a nominal scale with the following levels: both firstborn and/or only child (1), middle child (2), and last child (3).

The third independent variable was education level. This is a categorical variable measured on a nominal scale with the following levels: high school/associates degree/vocational training/some college (1), completed B.A. or B.S. 4-year college degree (2), and graduate school (3).

The fourth independent variable was CODAs' self-report of performing the role of primary interpreter for Deaf parents as compared against other siblings. The question was stated, "Out of your siblings, did you see yourself as the primary interpreter for your parents?" The options for responses were "No" (1) or "Yes" (2). This is a categorical variable measured on a nominal scale.

The fifth independent variable was reported cultural identification. The question was stated as, "What culture do you identify with more?" Cultural identity is a categorical variable measured on a nominal scale with the following levels: Deaf (1), Hearing (2), and unique to CODA (3).

The sixth and final independent variable was parents' mode of communication. The question was stated as, "What was your parent's primary mode of communication?" This is a categorical variable measured on a nominal scale with the levels being Sign Language (1) or speaking/lip-reading (2).

InstrumentationInstrumentation

One testing instrument and one demographics questionnaire were used in this study.

Tennessee Self-Concept Scale

The testing instrument used in this study was the Tennessee Self-Concept Scale (TSCS), second edition. This test, the Tennessee Self-Concept Scale (TSCS), was initially developed by Fitts in 1965 (Fitts & Warren, 1996), and was updated to a second edition, developed by Fitts and Warren (1996). I used the TSCS second edition because it is based on more recent research, with refined scales and restandardization of the first edition. The second edition was also designed to eliminate unnecessarily complex and confusing material, to provide expanded and clarified guidance in interpreting, and to extend the use of the test across a larger age range (Fitts & Warren, 1996). The median correlation of scale scores in the two editions of the test is .94. The reliability and scale structure of the two editions showed a solid correspondence between the two editions. The TSCS, second edition, has been shown to faithfully preserve the strengths of the first edition. For these reasons it was stated that the existing literature on the TSCS first edition could be used with confidence on the TSCS second edition (Fitts & Warren, 1996).

The TSCS, second edition, consists of 82 questions with responses based on a 5-point Likert scale. The questions are worded both positively and negatively. There are six subscales: physical, moral, personal, family, social, and academic. These are described in chapter 2. Fitts (Fitts & Warren, 1996) designed the questions with three internal frames of reference: identity (who am I), satisfaction (how I feel about myself), and behavior (what I do or how I act).

Reliability

Regarding the reliability of this instrument, as reported by Fitts and Warren (1996), the internal consistency coefficients for the TSCS ranged from .73 to .95. The

test-retest reliability coefficients ranged from .55 to .83. Score differences for each subscale were calculated, producing a range of values from -.14 to .20. The standard error of measurement values ranged from 4.1 to 7.2, with a median of 5.1.

Validity

The TSCS areas of validity, as reported by Fitts and Warren (1996), are content, construct, and discriminant. The content validity was developed from a large pool of self-descriptive items from written self-descriptions of patients and non-patients. After this, several psychologists were employed to classify and review the accuracy of each statement. A method of mapping sentences was also designed to logically structure the questionnaire items. The results confirmed that an adequate fit could be obtained (Fitts & Warren, 1996).

For the construct validity, factor analysis provided strong support for the self-concept dimensions and somewhat weaker support for the supplementary groupings of identity, satisfaction, and behavior (Fitts & Warren, 1996). Multiple-group factor analysis was used with squared multiple correlations as commonalities, and with a weight matrix specifying which items were hypothesized to load on which factor. Only loadings of absolute value greater than .30 were recognized as confirmed assignments of items to factors. The results showed that only 22% of the items were assigned as expected to the self-concept by frame of reference categories, but 80% of the items were assigned to the appropriate self-concept category, and 79% of the items were assigned to the hypothesized frame of reference category. It was concluded that this presented strong evidence of content reliability (Fitts & Warren, 1996). Through a series of multiple-group factor analyses and rotations, all the self-concept factors were confirmed except for the “personal” factor (Fitts & Warren, 1996).

Several studies have compared the TSCS to other instruments that would be

expected to relate to the construct of general self-concept. Between the TSCS and the Coopersmith Self-Esteem Inventory a correlation of .75 was shown (Fitts & Warren, 1996). Correlations in several different areas between the MMPI and the TSCS ranged from -.37 to .71 (Fitts & Warren, 1996).

The TSCS has the following built-in validity scores: Inconsistent Responding (INC), Self-Criticism (SC), Faking Good (FG), and Response Distribution (RD). The INC score indicates whether there is an unusually wide discrepancy in responses to pairs of items with similar content. A INC score $\geq 70T$ should be interpreted with caution. A SC score $\leq 40T$ and $\geq 70T$ represents an invalid protocol. A FG score $\geq 70T$ indicates a possibly invalid protocol, especially in conjunction with a low SC score. A RD score of ≥ 70 may indicate a possible invalid profile (Fitts & Warren, 1996). These validity scales were used to eliminate invalid protocols from this study.

Demographics Questionnaire Demographics Questionnaire

A one-page demographics questionnaire was also administered. For both the CODA and non-CODA groups, the questions related to gender, age and education level, and birth order.

For the CODA group, the demographics questionnaire also addressed issues regarding the specifics of their CODA experience which included: the presence of deaf or hearing siblings, reported cultural identification, parents' deafness, playing the role of primary interpreter for parents, and parents' mode of communication.

ProceduresProcedures

The first step taken was to apply to Andrews University Human Subjects Institutional Review Board (HSIRB) to obtain permission to conduct this research study. After permission was granted by the HSIRB, I then proceeded to the data

gathering phase of this study.

CODA Sample CODA Sample

I first contacted Tom Bull, the director of the National Information Center on Deafness, at Gallaudet University. I told him that I was conducting a research study on CODA identity/self-concept issues and requested volunteers. I informed him that a gift certificate of \$20.00 to a national business chain would be presented upon completion of the survey in appreciation of participation. Tom Bull then relayed this information to an email listserv of CODAs. Interested individuals were asked to email me back, expressing their desire for inclusion in my research and providing me with their mailing address.

I also posted an advertisement for participants on two CODA web sites (www.coda-international.org, March 2004; www.deaflinx.com, March 2004). I informed them that I was conducting a study on CODA identity/self-concept issues and requested participants. I also stated that a gift certificate of \$20.00 to a national business chain would be presented upon completion of the survey in appreciation of participation. Interested individuals were provided my email address to contact me, expressing their desire for inclusion in my study, and providing me with their mailing address.

After receipt of an email expressing interest in participating in the study and a mailing address, CODA participants were mailed a CODA testing packet. The packet contained two Informed Consent Forms, the Tennessee Self-Concept Scale (2nd edition), the CODA demographics questionnaire, and a return envelope with postage attached. These were pre-coded with a subject identification number for tracking to protect confidentiality. No identifying information was included within the packet. A cover letter with instructions was included, which gave instructions for the

participants to first read and sign one of the two Informed Consent forms, keeping the second one for their own personal records. Next they were instructed to complete the TSCS testing instrument and demographics sheet. Finally, they were instructed to return the completed Informed Consent form, TSCS testing instrument, and demographics sheet within 2 weeks in the prestamped and addressed envelope provided. They were also assured that their anonymity would be guarded, and names were not necessary other than their signature on the Informed Consent Form.

For the CODA sample, two individuals from overseas (Israel and Australia) requested to be included in the study so an email form of the testing instrument and demographic questionnaire was developed and sent to them.

Upon the receipt of all forms, the Informed Consent Form was immediately separated from the TSCS testing instrument and demographics questionnaire. A master list that recorded which names correlated with which subject identification number was kept in confidence for my eyes only.

The four validity subscales on the TSCS were scored. Sixty-five completed testing packets were received. After scoring the validity scales, and dropping from this study subjects with invalid testing profiles, 54 CODA subjects were retained for further analysis. Of the 11 subjects dropped from this study, 10 were due to low Self-Criticisms scores and 1 from too many items on the TSCS with no responses.

The CODA sample was broken down into age groups with approximate 10-year increments (ages 18-30, 31-40, 41-50, and >50). The number of females within each 10-year age group and the number of males within each 10-year age group were tallied. The number of participants in each of these groups was used as the basis of the comparable age and gender demographics between the CODA and non-CODA groups.

Non-CODA Sample

The non-CODA participants were recruited from Utah State University in Logan, Utah. Participants were mostly recruited from the Taggart Student Center, specifically during lunchtime in the main eating area. Participants were informed only that this was a research project investigating identity/self-concept issues. They were also informed they would be compensated for their participation with a \$10.00 gift certificate. After I received a verbal or written consent to participate in this study, participants were given a testing packet that contained two Informed Consent Forms, the Tennessee Self-Concept Scale (2nd edition), the non-CODA demographics questionnaire, and a return envelope with postage attached. These were pre-coded with a subject identification number for tracking purposes and to protect confidentiality. No identifying information was included within the packet. A cover letter with instructions was included. It gave instructions for the participants to first read and sign one of the two Informed Consent forms, keeping the second one for their own personal records. Next, participants were instructed to complete the TSCS testing instrument and demographics sheet. Finally, they were instructed to return the completed Informed Consent form, TSCS testing instrument, and demographics sheet within 2 weeks in the prestamped and addressed envelope provided. They were also assured that their anonymity would be guarded, and names were not necessary other than their signature on the Informed Consent Form.

A small number of non-CODA participants were recruited from a class that I taught. The class was called Career Exploration. It was specifically clarified that participation in the study was unrelated to the class or their grade.

Upon the receipt of the forms, the Informed Consent Form was immediately separated from the TSCS testing instrument and demographics questionnaire. A

master list that recorded which names correlated with which subject identification number was kept in confidence for my eyes only.

The four validity subscales on the TSCS were scored. Sixty-six completed testing packets were received. After scoring the validity scales and dropping from this study subjects with invalid testing profiles, 53 non-CODA subjects were retained for further analysis. Of the 13 subjects dropped from this study, 12 were due to low Self-Criticisms scores and 1 due to a high Self-Criticism score.

The non-CODA sample was also broken down into age groups with approximate 10-year increments (ages 18-30, 31-40, 41-50, and >50). The number of females within each 10-year age group and the number of males within each 10-year age group were tallied. The number of participants in each of these groups was used as the basis of the comparable age and gender demographics between the CODA and non-CODA groups.

Limitations Limitations for Study Number One

A major limitation of this study was my lack of insight to include the education level, along with the age and gender demographics, as the basis for the comparisons of the matched samples between the CODA and non-CODA groups. It was only after the data gathering phase of this study was completed that the discrepancy of education level was noted between the CODA and non-CODA testing groups.

A second limitation to this study was that CODA participants were recruited from a CODA listserv and various CODA web sites and might not have represented CODAs who had no involvement with CODA organizations.

A third limitation of this study was the final male/female ratio which was not representative of the larger population. In this study, the male/female ratio was 1:3.

A fourth limitation of this study was that the validity studies in the manual for the second edition of the instrument were all based on the first edition of the instrument regardless of the fact that the second edition was shortened and revised.

A fifth limitation of this study was the small sample size. Some of the variables for the CODA group, such as the presence of deaf siblings or the identification with the Deaf culture, had low cell frequencies. This significantly weakened the observed power and the ability to generate meaningful and reliable statistics.

A final limitation to this study was responder bias as the testing instrument and demographics questionnaire were all self-report.

Delimitations Delimitations for Study Number One

For the purpose of this study, the CODAs who participated in this study were hearing adults, ages 18 and older, with both parents deaf or hard of hearing, who volunteered for this study. They were recruited from CODA listservs/websites.

The control group of non-CODAs was selected based on participants' volunteering, on having comparable age and gender demographics to the CODA group, and who met the requirement of having both parents who were not handicapped or disabled physically.

Null Hypotheses and Statistical Analysis
Null Hypotheses and Statistical Analysis The research questions in chapter 1 led to the following hypotheses. The 16 null hypotheses were as follows:

Null Hypothesis 1: There is no significant difference between the mean total

self-concept scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 2: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the physical subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 3: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the moral subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 4: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the personal subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 5: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the family subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 6: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the social subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 7: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents

(non-CODAs) on the academic subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypotheses 1 to 7 were tested by the *t* test for means of two independent samples. As independent *t* test increases the possibility of a Type 1 error, hypotheses 1 to 7 were tested with $\alpha = .01$.

Null Hypothesis 8: There is no linear combination of the six subscales of the Tennessee Self-Concept Scale, second edition, which significantly discriminates between adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs).

Null Hypothesis 8 was tested by discriminant analysis.

Null Hypothesis 9: For adult children of Deaf parents (CODAs), there is no significant difference between the total self-concept score of the Tennessee Self-Concept Scale, second edition, and the following variables: birth order groups, education level groups, cultural identity groups, and role of primary interpreter groups.

Null Hypothesis 10: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the birth order groups on any of the six subscales of the TSCS, second edition, which include physical, moral, personal, family, social, and academic.

Null Hypothesis 11: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the education level groups on any of the six subscales of the TSCS, second edition, which include physical, moral, personal, family, social, and academic.

Null Hypothesis 12: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the cultural identity groups on any

of the six subscales of the TSCS, second edition, which include physical, moral, personal, family, social, and academic.

Null Hypothesis 13: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the primary interpreter groups on any of the six subscales of the TSCS, second edition, which include physical, moral, personal, family, social, and academic.

Null Hypotheses 9 to 13 were tested by one-way ANOVA.

Null Hypothesis 14: There is no significant relationship for adult children of Deaf parents (CODAs) between birth order and reported primary interpreter.

Null Hypothesis 15: There is no significant relationship for adult children of Deaf parents (CODAs) between cultural identity and parental mode of communication.

Null Hypotheses 14 and 15 were tested by Chi-Square Analysis.

Hypotheses 8 to 15 were tested with $\alpha = .05$.

Study Number Two

Study Number Two focused on investigating the self-concept of CODA and non-CODA groups when matched on education level and gender.

Introduction

Study Number One matched CODAs and non-CODAs only on the variables of age and gender. Even though CODAs and non-CODAs were not matched on education, it was interesting to note there was a significantly greater percentage of CODA participants who had sought higher levels of education as compared to the non-CODA participants. When looking at education level, the CODA and non-CODA group were not a matched sample. When comparing the CODA and non-CODA

group on the education level by performing a Chi-Square analysis, a significant difference was found (Chi-Square = 22.124; $p = .001$). Since many studies had shown a positive relationship between higher education and a higher self-concept (Cokley, 2000; Michie et al., 2001; Pottebaum et al., 1986; Scheirer & Kraut, 1979; Smart & Pascarella, 1986), it was postulated that the higher education level may have impacted self-concept scores. Because the CODA group was further along in their educational endeavors than the control group, the CODA group may have already had an advantage over the control group. This provided justification for performing a second study matching the CODA and non-CODA groups on education level. This also meant adding more subjects to the non-CODA group with higher education levels and randomly removing non-CODA subjects in education level 1.

For this second study, this section presents a description of the research methods employed in Study Number Two: introduction, population and sample, variables, instrumentation, procedures, limitations, delimitations, and null hypotheses and statistical analysis.

Population and Sample

The CODA participants from the first study were used in this second study so the procedure for acquiring this sample will not be restated.

The non-CODA subjects for this second study were a combination of the participants from the first study and additional subjects selected who met the needed education levels to match the CODA group education levels. These additional non-CODA subjects were also adult children of normal hearing parents, ages 18 and older.

Two education level groups were deficient in the original non-CODAs subjects. The first education level was a completed B.A. or B.S. 4-year college degree and the second education level was graduate school. Non-CODA subjects for

this second study were selected based on meeting these two education level groups. These non-CODAs were gathered two ways. The first way focused on recruiting subjects in possession of a master's or a doctoral degree. Individuals who worked at a community mental health center in Cody, Wyoming, where I was also employed, were invited to participate in the non-CODA group. I informed them that they would be participating in a study of identity/self-concept issues, and would be provided \$10.00 upon completion of the survey in appreciation of participation.

The second method of obtaining non-CODAs for Study Number Two focused on recruiting individuals with a completed B.A. or B.S. 4-year college degree. Students in an intact class at Andrews University in Berrien Springs, Michigan, were requested to participate. It was also stated they would be provided \$10.00 upon completion of the survey in appreciation of participation.

Variables

Dependent Variables

The set of dependent variables in this second study were the same as the first study. They consisted of the total self-concept score of the TSCS, and the six subscales: physical, moral, personal, family, social, and academic self-concept. The specifics of these variables are defined in the first study section and will not be restated here.

As with the first study, due to the fact the subscales had disproportionate numbers of items, I chose to convert the raw scores to *t*-scores so that there was an equal metric for each subscore. All the analysis was computed from these subscore *t*-scores.

Independent Variables

The variables used in this second study are defined in the first study section. These variables include CODA/non-CODA, education level, birth order, reported cultural identity, and primary interpreter.

Instrumentation

The instrumentation, along with reliability and validity, is the same as described in the original study and will not be redefined here. They include the Tennessee Self-Concept Scale (2nd Edition) and a brief demographics questionnaire.

Procedures

CODA Sample

The CODA participants from the first study were used in this second study so the procedure for acquiring this sample will not be restated.

Non-CODA Sample

The non-CODA subjects for this second study were a combination of the participants from the first study and additional subjects selected who met the needed education levels to match the CODA group education levels. The procedure for acquiring the original non-CODA subjects used in the first study was described in that section and will not be restated here. As before, these additional non-CODA subjects also met the requirements of being adult children of normal hearing parents, ages 18 and older.

Twenty-nine testing packets were received. The four validity subscales on the TSCS were then scored. Subjects who recorded an invalid protocol were removed from this study. After scoring the validity scales and dropping from this study

subjects with invalid testing profiles, 24 additional non-CODA subjects were retained for further analysis.

Limitations for Study Number Two

All limitations, except the one referring to matching of education level stated in the first study, also apply to this second study and thus will not be restated here.

Delimitations for Study Number Two

For the CODA participants in this second study, the delimitations are the same as the first study and are as follows: hearing adults, age 18 and older, with both parents deaf or hard of hearing, who volunteered for this study.

The control group of non-CODA participants in this second study were selected based on participants' willingness to participate, on having comparable education levels to the CODA group, and who met the requirement of having both parents who were not handicapped or disabled physically.

Research Questions

Null Hypotheses and Statistical Analysis

For this second study, while matching the CODA and non-CODA groups on the education level, a more sophisticated design was carried out to also investigate interaction effects of variables. Research Question 1 in Chapter 1 generated the following two null hypotheses as follows:

Null Hypothesis 1: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the total self-concept scale of the Tennessee Self-Concept Scale, second edition.

Null Hypotheses 1 was tested by one-way univariate ANOVA.

Null Hypothesis 2: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the physical, moral, personal, family, social, and academic subscales of the Tennessee Self-Concept Scale, second edition.

Null Hypotheses 2 was tested by one-way multivariate ANOVA.

Both hypotheses were tested with an alpha of .05.

Summary

This chapter described the methodology for this Study Number One and Study Number Two. The population and sample of both the testing and control group were described. The process of participant selection was also explained. The testing instrument was described, along with the reliability and validity. The procedures of carrying out the research were delineated. Possible limitations and delimitations were identified. Finally, the null hypotheses and statistical analysis used in this study were reported.

CHAPTER IV CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA PRESENTATION AND ANALYSIS OF DATA

Introduction Introduction

This chapter presents the analysis of the two phases of this study. Phase one is called Study Number One, and phase two is called Study Number Two. This chapter presents the following: demographics of the sample, data on the instrument, and the testing of the null hypotheses.

Study Number One

Study Number One focused on investigating the self-concept of CODA and non-CODA groups when matched on age and gender.

Demographics of Sample Demographics of Sample

The CODA sample for this study consisted of 54 individuals. The CODA participants in this study were hearing adults, ages 18 and older, with both parents either deaf or hard of hearing. The first method used to obtain a CODA sample was by contacting Tom Bull, the director of the National Information Center on Deafness at Gallaudet University. I sent him a description of this research study along with a request for volunteers. It was also stated that a gift certificate of \$20.00 to a national business chain would be presented upon completion of the survey in appreciation of participation. Tom Bull then relayed this information to an email listserv of CODAs. Interested individuals were asked to email me back, expressing their desire for inclusion in my research and providing me with their mailing address. This procedure resulted in the largest proportion of CODA participants obtained for this study.

The second method of obtaining a CODA sample was through various CODA

web sites. I posted an advertisement for participants, giving first a description of my study and then a request for participation. It was stated that a gift certificate of \$20.00 to a national business chain would be presented upon completion of the survey in appreciation of participation. Interested individuals then emailed me, expressing their desire for inclusion in my research, and providing me with their mailing address.

Using this procedure I was able to get a 93% return rate. Seventy-one CODAs volunteered for the study and were sent survey packets, and 66 CODAs returned their surveys. Of the 66 packets received, 65 were returned by the deadline and correctly completed. One CODA packet was not used due to the lateness of its submission (3 months after the deadline). The four validity subscales on the TSCS were scored and 11 subjects who recorded an invalid protocol were withdrawn from the study. This left the total number of CODA participants at 54 (CODA: $N=54$). All of the CODA participants resided in the United States, except 2. One lived in Israel and the other in Australia.

The non-CODA sample for this study consisted of 53 individuals and were adult children of normal hearing parents, ages 18 and older, recruited from Utah State University in Logan, Utah. The participants were students and faculty on campus who volunteered based on general solicitation. All participants were informed that a gift certificate of \$10.00 to a national business chain would be awarded them upon receipt of their completed survey.

Using this procedure I was able to get an 89% return rate. Seventy-four non-CODA individuals volunteered for the study and were sent survey packets and 66 non-CODAs returned their surveys. Of the 66 non-CODA packets received, all were returned by the deadline and correctly completed. The four validity subscales on the TSCS were scored, and 13 subjects who recorded an invalid protocol were withdrawn

from the study. This left the total number of non-CODA participants at 53 (non-CODA: $N=53$).

Table 1 gives the means, standard deviations, and the reliability coefficients for the combined CODA and non-CODA groups. The reliability coefficients were generated using Cronbach's Alpha, which analyses internal consistency. As the reliability coefficients are all good, this demonstrates the instrument was appropriate for the sample.

Table 2 gives the means, standard deviations, and the reliability coefficients as reported on the TSCS subscales in this study for the CODA group.

Table 3 gives the means, standard deviations, and the reliability coefficients as reported on the TSCS subscales in this study for the non-CODA group.

The CODA sample was broken down into age groups with approximate 10-year increments (ages 18-30, 31-40, 41-50, and >50). The number of females within each 10-year age group and the number of males within each 10-year age group were tallied. The number of participants in each of these groups was used as the basis of the comparable age and gender demographics for the non-CODA group.

Table 1

Study Number One: TSCS Statistics of Combined CODA and Non-CODA Groups

Scale	Mean	SD	Reliability Coefficient
Total Score	311.69	31.27	.940
Physical	50.64	7.92	.847
Moral	49.31	6.37	.839
Personal	46.83	6.39	.858

Family	45.63	6.82	.828
Social	46.97	6.04	.832
Academic	45.05	6.83	.825

Table 2

Study Number One: TSCS Statistics of CODA Group

Scale	Mean	SD	Reliability Coefficient
Total Score	313.82	32.26	.945
Physical	50.64	8.63	.875
Moral	48.60	6.58	.850
Personal	46.94	6.65	.862
Family	45.30	6.91	.836
Social	47.38	6.73	.863
Academic	45.80	6.79	.844

Table 3

Study Number One: TSCS Statistics of Non-CODA Group

Scale	Mean	SD	Reliability Coefficient
Total Score	309.57	30.43	.937
Physical	50.63	7.20	.810

Moral	50.02	6.13	.837
Personal	46.71	6.18	.856
Family	45.96	6.78	.825
Social	46.57	5.30	.789
Academic	44.28	6.86	.805

For both groups, the majority of the participants were female. Although not done on purpose, the majority of the individuals to volunteer for the study were females (approximate 1:3 male-to-female ratio). Of the CODA group there were 14 males (26%) and 40 females (74%). For the non-CODA group there were 16 males (30%) and 37 females (70%). Chi-Square analysis was performed comparing the two groups on gender, and it was shown to be not significant ($p = .624$). For gender, there was no significant difference between these two groups, thus demonstrating the CODA and non-CODA group were a matched sample on the gender variable. Table 4 presents the CODA and non-CODA gender demographics of this study.

Table 4

Study Number One: Gender

Gender	CODA Group		Non-CODA Group	
	Frequency	Percentage	Frequency	Percentage
Male	14	26	16	30

Female	40	74	37	70
Total	54	100	53	100

Note. Chi-Square = .241; $p = .624$.

Table 5 presents a description of the CODA sample based on age. The overall CODA age range was 19-74. CODA females ranged from 20-74 and males ranged from 19-52. The CODA participants were categorized into groups with approximate 10-year increments (ages 18-30, 31-40, 41-50, and >50). The number of females within each 10-year age group and the number of males within each 10-year age group were tallied. The number of participants in each of these groups was used as the basis of the comparable age and gender demographics for the non-CODA group.

The overall non-CODA age range was 18-64. Non-CODA females ranged from 18-64 and males ranged from 20-56. The non-CODA sample was selected based on similarity to the CODA demographics of age range and gender. The non-CODA group was also divided into the same age groups as the CODA sample (ages 18-30, 31-40, 41-50, and >50). Table 6 presents a description of the non-CODA sample based on age.

Table 5

Study Number One: CODA Sample Age

Age	Gender	Frequency	Percentage	Mean
18-30	Male	7	12.96	22.71
	Female	16	29.63	25.38
	Total	23	42.59	24.57

31-40	Male	1	1.85	33.00
	Female	10	18.52	35.40
	Total	11	20.37	35.18
41-50	Male	5	9.26	44.60
	Female	7	12.96	44.57
	Total	12	22.22	44.58
>50	Male	1	1.85	52.00
	Female	7	12.96	58.71
	Total	8	14.81	57.88
Total	Male	14	26.00	33.36
	Female	40	74.00	37.08
	Total	54	100.00	36.17

Table 6

Study Number One: Non-CODA Sample Age

Age	Gender	Frequency	Percentage	Mean
18-30	Male	11	20.75	26.00
	Female	21	39.62	22.00
	Total	32	60.38	23.38
31-40	Male	2	3.77	34.00
	Female	6	11.32	32.67

41-50	Total	8	15.09	33.00
	Male	1	1.89	48.00
	Female	6	11.32	44.50
>50	Total	7	13.21	45.00
	Male	1	1.89	56.00
	Female	5	9.43	58.00
Total	Total	6	11.32	57.67
	Male	16	30.00	28.63
	Female	37	70.00	32.84
	Total	53	100.00	31.57

Chi-Square analysis was performed comparing the two groups on age and it was shown to be not significant ($p = .410$). For age, there is no significant difference between these two groups, thus demonstrating the CODA and non-CODA group were a matched sample on the age variable. Table 7 presents the demographics of the CODA and non-CODA sample based on age.

Table 8 presents the demographics of the CODA and non-CODA sample in terms of education level. It is interesting to note that although the non-CODA sample was selected based on similar age and gender demographics, there were particular differences in education level between the two groups. Chi-Square analysis was performed comparing the two groups on education level and was shown to be significant ($p = .000$). There is a significantly greater percentage of CODA participants who had sought higher levels of education as compared to the non-CODA participants.

Table 9 presents the demographics of the CODA and non-CODA groups in terms of birth order. Even though this was not a focus for comparable demographics,

it is interesting to note that the frequency ratio for the birth order groups was relatively balanced between the CODA and non-CODA participants. Chi-Square analysis was performed comparing the two groups on birth order and was shown to not be significant ($p = .666$). For birth order, there was no significant difference between these two groups, thus demonstrating the CODA and non-CODA groups were a matched sample on the birth order variable.

Table 7

Study Number One: CODA and Non-CODA Age Groups

Age	CODA Group		Non-CODA Group	
	Frequency	Percentage	Frequency	Percentage
18-30	23	42.59	32	60.38
31-40	11	20.37	8	15.09
41-50	12	22.22	7	13.21
>50	8	14.81	6	11.32
Total	54	99.99	53	100.00

Note. Chi-Square = 39.337; $p = .410$.

Table 8

Study Number One: Education Level

Education Level	CODA Group		Non-CODA Group	
	Frequency	Percentage	Frequency	Percentage
High School/ Vocational/ Associates Degree	20	37.04	43	81.13
B.S./B.A. Degree	16	29.63	3	5.66
Graduate School	18	33.33	7	13.21
Total	54	100.00	53	100.00

Note. Chi-Square = 22.124; $p = .000$.

Table 9

Study Number One: Birth Order

Birth Order	CODA Group		Non-CODA Group	
	Frequency	Percentage	Frequency	Percentage
Firstborn/Only Child	26	48.15	23	43.40
Middle Child	15	27.78	19	35.85
Last Born	13	24.07	11	20.75
Total	54	100.00	53	100.00

Note. Chi-Square = .812; $p = .666$.

The following demographics are specific to the CODA group only. Table 10 presents the demographics in terms of the number of hearing and deaf siblings reported. The majority of CODA participants reported having no deaf siblings.

Table 11 presents the demographics of the CODA participants in regard to the

primary parental mode of communication, Sign Language, or speaking/lip-reading.

There was a considerably greater percentage of CODA participants who reported their parents' primary mode of communication was Sign Language over speaking/lip-reading.

Table 12 presents the demographics of the CODA participants in regard to reporting interpreting for their parents on a regular basis while growing up. More than half of the CODA participants reported interpreting for their parents on a regular basis while growing up.

Table 10

Study Number One: CODAs' Number of Hearing and Deaf Siblings

Number of Siblings	Frequency	Percentage
<i>Hearing</i>		
0	11	20.4
1	11	20.4
2	20	37.0
3	7	13.0
4	4	7.4
5	1	1.9
<i>Deaf</i>		

0	47	87.0
1	7	13.0

Table 11

Study Number One: CODAs' Parents' Primary Mode of Communication

Mode of Communication	Frequency	Percentage
Sign Language	49	90.7
Speaking/Lip-Reading	5	9.3
Total	54	100.0

Table 12

CODAs' Reporting Regular Interpreting for Parents

Regular Interpreting	Frequency	Percentage
Yes	44	81.5
No	10	18.5
Total	54	100.0

Table 13 presents the demographics of the CODA participants in terms of primary interpreter for parents. Seventy-five percent of the CODA participants in this study reported playing the role as primary interpreter for their parents while growing up.

Table 13

Study Number One: CODAs' Role of Primary Interpreter

Role of Primary Interpreter	Frequency	Percentage
Yes	39	75
No	13	25
Total	52	100

Table 14 presents the CODAs' responses to the question of cultural identity: Deaf, Hearing, or unique to CODAs. Of the CODA participants in this study, more than half reported identifying more with the CODA culture.

Table 14

Study Number One: CODAs' Reported Cultural Identity

Cultural Identity	Frequency	Percentage
Deaf	8	15.1
Hearing	9	17.0
Unique to CODA	36	67.9
Total	53	100.0

Regarding cultural identification, two participants wrote in the response 50% Deaf/50% Hearing. Both of the individuals who wrote in the response of 50% Deaf/50% Hearing gave an explanation. The first, a 25-year-old female, stated,

“Both parents . . . and all friends are deaf. . . . I don’t know which group I identify with more, or even how to go about deciding. However, I do feel more comfortable with deaf people and signing in some situations and other situations, I prefer speaking. Over all, I feel equally comfortable in both environments.” The second CODA individual, a 45-year-old female, gave the following explanation:

This varies, dependant on environment. There are many times I see the world from a Deaf perspective (this gets me into trouble), and other times, I relate to the hearing perspective. Because of the open and straightforward nature of the Deaf, I relate to people who are like that, to me it is more honest, easier, and refreshing. Sometimes hearing people’s world view is a lot of work and tedious.

Both of the individuals who gave no response also provided an explanation. The first individual, a 32-year-old female, stated, “I don’t feel 100% a part of the hearing world, I also don’t feel completely comfortable in the deaf world or even in the minimal space that CODAs occupy.” The second CODA individual, a 23-year-old female, gave the following explanation:

I would say that I identify as “other.” CODA is a term that I don’t really identify with because I wasn’t introduced to the term CODA until my sophomore year in college. Also, some of the “rules” of CODA (the org.) don’t sit well with me, so I find parts that go along with the term negative. . . . So, other things, such as SES and parental characteristics other than deafness influence my responses more so than characteristics related to the deafness.

Basic Data On Instrument Testing the Research Questions Testing the Null Hypotheses

Due to the fact the TSCS’s six subscales had disproportionate numbers of items, I chose to convert the raw scores to *t*-scores so that there was an equal metric for each subscore. Analysis regarding only the total self-concept score remained based on raw scores, but all other analysis was computed from these subscore *t*-scores.

Regarding the issue of periodic no responses on items, the suggested replacement by the test developer was used. For each item, the median response

value was printed on the scoring worksheet in bold type. This value was used to replace missing items for these protocols.

The four research questions in Chapter 1 led to the 14 hypotheses. Each of the 14 null hypotheses is here presented along with the appropriate statistical analysis of the data. Null Hypotheses 1 to 7 were tested by *t* test of means and an alpha of .01. Null Hypothesis 8 was tested by Discriminant Analysis. Null Hypotheses 9 to 12 were tested by one-way ANOVA. Null Hypotheses 13 and 14 were tested by Chi-Square analysis. Hypotheses 8 to 14 were tested with an alpha of .05. Power analysis was also reported for significant results when it approximated, as a standard for adequacy, an acceptable .80 (Cohen, 1969).

Research Question 1 Null Hypothesis 1

Research Question 1: Is there a difference in self-concept scores between CODAs and non-CODAs in total self-concept and the areas of physical, moral, personal, family, social, and academic self-concept?

Research question 1 generated the following eight null hypotheses.

Null Hypothesis 1

Null Hypothesis 1: There is no significant difference between the mean total self-concept scores of adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the Tennessee Self-Concept Scale, second edition.

Hypothesis 1 was tested by *t* test with alpha = .01. The results of this test was $t(105) = .028, p = .977$. The total self-concept scores of CODAs ($M = 284.61, SD = 32.82$) were not significantly different from non-CODAs ($M = 284.43, SD = 31.49$).

Null Hypothesis 1 was retained. There is no significant difference between the mean total self-concept scores of adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the Tennessee Self-Concept Scale,

second edition.

Null Hypothesis 2

Null Hypothesis 2: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the physical subscale of the Tennessee Self-Concept Scale, second edition.

Hypothesis 2 was tested by t test with $\alpha = .01$. The results of this test were $t(105) = .235, p = .815$. The physical subscale scores of CODAs ($M = 48.22, SD = 10.58$) were not significantly different from non-CODAs ($M = 47.77, SD = 9.08$).

Null Hypothesis 2 was retained. There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the physical subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 3

Null Hypothesis 3: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the moral subscale of the Tennessee Self-Concept Scale, second edition.

Hypothesis 3 was tested by t test with $\alpha = .01$. The results of this test were $t(105) = -1.361, p = .176$. The moral subscale scores of CODAs ($M = 46.06, SD = 9.71$) was not significantly different from non-CODAs ($M = 48.68, SD = 10.22$).

Null Hypothesis 3 was retained. There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the moral subscale of the Tennessee Self-Concept

Scale, second edition.

Null Hypothesis 4

Null Hypothesis 4: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the personal subscale of the Tennessee Self-Concept Scale, second edition.

Hypothesis 4 was tested by *t* test with alpha = .01. The results of this test were $t(105) = .238, p = .813$. The personal subscale scores of CODAs ($M = 46.87, SD = 10.58$) were not significantly different from non-CODAs ($M = 46.40, SD = 10.03$).

Null Hypothesis 4 was retained. There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the personal subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 5

Null Hypothesis 5: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the family subscale of the Tennessee Self-Concept Scale, second edition.

Hypothesis 5 was tested by *t* test with alpha = .01. The results of this test were $t(105) = -.781, p = .437$. The family subscale scores of CODAs ($M = 44.37, SD = 8.86$) were not significantly different from non-CODAs ($M = 45.79, SD = 9.95$).

Null Hypothesis 5 was retained. There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the family subscale of the Tennessee Self-Concept

Scale, second edition.

Null Hypothesis 6

Null Hypothesis 6: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the social subscale of the Tennessee Self-Concept Scale, second edition.

Hypothesis 6 was tested by t test with $\alpha = .01$. The results of this test were $t(105) = .871, p = .386$. The social subscale scores of CODAs ($M = 48.39, SD = 10.34$) were not significantly different from non-CODAs ($M = 46.81, SD = 8.25$).

Null Hypothesis 6 was retained. There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the social subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 7

Null Hypothesis 7: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the academic subscale of the Tennessee Self-Concept Scale, second edition.

Hypothesis 7 was tested by t test with $\alpha = .01$. The results of this test were $t(105) = 1.046, p = .298$. The academic subscale scores of CODAs ($M = 48.76, SD = 9.17$) were not significantly different from non-CODAs ($M = 46.87, SD = 9.53$).

Null Hypothesis 7 was retained. There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the academic subscale of the Tennessee Self-

Concept Scale, second edition.

Null Hypothesis 8

Null Hypothesis 8: There is no linear combination of the six subscales of the Tennessee Self-Concept Scale, second edition, which significantly discriminates between adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs).

Hypothesis 8 was tested by discriminant analysis with $\alpha = .05$. The results of this test were $X^2(6, n = 107) = 7.239, p = .299$.

Null Hypothesis 8 was retained. There is no linear combination of the six subscales of the Tennessee Self-Concept Scale, second edition, which significantly discriminates between adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs).

Research Question 2 Null Hypothesis 7

Research Question 2: Do the variables of birth order, education level, cultural identity, and performing the role as the primary interpreter make a difference in total self-concept scores and the scores for physical, moral, personal, family, social, and/or academic self-concept for CODAs?

Research question 2 generated the following five null hypotheses.

Null Hypothesis 9

Null Hypothesis 9: For adult children of Deaf parents (CODAs), there is no significant relationship between the total self-concept score of the Tennessee Self-Concept Scale, second edition, and the following variables: birth order groups, education level groups, cultural identity groups, and role of primary interpreter groups.

A one-way univariate factorial ANOVA, with an alpha of .05, was calculated comparing the total self-concept scores of CODAs on four different variables: birth order, education level, cultural identity, and primary interpreter. The main effect for birth order was not significant ($F(2, 22) = .275, p = .762$). The main effect for education level was not significant ($F(2, 22) = 1.550, p = .253$). The main effect for cultural identity was not significant ($F(2, 22) = .031, p = .970$). Finally, the main effects for primary interpreter was not significant ($F(1, 22) = .279, p = .602$). There was also no interaction effects of any combination of these variables. Thus, there is no effect on total self-concept scores from CODA's birth order position, education level, cultural identity, and performing the role of primary interpreter.

Null Hypothesis 9 was retained. For adult children of Deaf parents (CODAs), there is no significant relationship between the total self-concept score of the Tennessee Self-Concept Scale, second edition, and the following variables: birth order groups, education level groups, cultural identity groups, and role of primary interpreter groups.

Null Hypothesis 10

Null Hypothesis 10: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the birth order groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

A one-way ANOVA, with an alpha of .05, was calculated comparing the birth order groups against the six subscales of the TSCS. No significant difference was found on any of the six subscales. The physical subscale results were ($F(2, 51) = .300, p = .742$). The moral subscale results were ($F(2, 51) = .939, p = .398$). The personal subscale results were ($F(2, 51) = .078, p = .926$). The family subscale results

were ($F(2, 51) = .613, p = .546$). The social subscale results were ($F(2, 51) = .367, p = .695$). And finally, the physical subscale results were ($F(2, 51) = .483, p = .620$).

Null Hypothesis 10 was retained. For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the birth order groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

Null Hypothesis 11

Null Hypothesis 11: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the education level groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

A one-way ANOVA, with an alpha of .05, was calculated comparing the education-level groups against the six subscales of the TSCS. A significant difference was found on the physical subscale ($F(2, 51) = 3.184, p = .050$), however, when Tukey's HSD was used to determine the nature of the difference between the education levels, there was no significant difference so this is not valid to investigate further. No significant difference was found on the moral subscale ($F(2, 51) = 1.709, p = .191$), the personal subscale ($F(2, 51) = 2.722, p = .075$), the family subscale ($F(2, 51) = .882, p = .420$), and the social subscale ($F(2, 51) = .809, p = .451$). However, on the academic subscale a significant difference was found ($F(2, 51) = 6.460, p = .003$). Tukey's HSD was used to determine the nature of the differences between the education levels. For the academic subscale, this analysis revealed that CODAs in education level 1 (high school or 2-year associates/technical degree) scored significantly lower ($M = 43.95, SD = 9.01$) than CODAs in education level 2 ($M = 53.94, SD = 7.58$) (completed 4-year B.A. or B.S. college degree).

Null Hypothesis 11 was rejected. For adult children of Deaf parents (CODAs), there is a significant difference between the mean scores of the education-level groups on the academic subscale of the Tennessee Self-Concept Scale, second edition.

Null Hypothesis 12

Null Hypothesis 12: For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the cultural identity groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

A one-way ANOVA, with an alpha of .05, was calculated comparing the cultural identity groups against the six subscales of the TSCS. No significant difference was found on any of the six subscales. The physical subscale results were $F(2, 50) = 1.042, p = .360$. The moral subscale results were $F(2, 50) = .798, p = .456$. The personal subscale results were $F(2, 50) = .373, p = .690$. The family subscale results were $F(2, 50) = .808, p = .452$. The social subscale results were $F(2, 50) = .414, p = .664$. And finally, the physical subscale results were $F(2, 50) = 2.842, p = .068$.

Null Hypothesis 12 was retained. For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the cultural identity groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

Null Hypothesis 13

Null Hypothesis 13: For adult children of Deaf parents (CODAs), there is no

significant difference between the mean scores of the primary interpreter groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

A one-way ANOVA, with an alpha of .05, was calculated comparing the primary interpreter groups against the six subscales of the TSCS. No significant difference was found on any of the six subscales. The physical subscale results were $F(1, 50) = .185, p = .669$. The moral subscale results were $F(1, 50) = .046, p = .831$. The personal subscale results were $F(1, 50) = .110, p = .742$. The family subscale results were that no significant difference was found $F(1, 50) = .942, p = .336$. The social subscale results were $F(1, 50) = .674, p = .415$. And finally, the physical subscale results were $F(1, 50) = .032, p = .860$. Null Hypothesis 13 was retained. For adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the primary interpreter groups on any of the six subscales of the Tennessee Self-Concept Scale, second edition, which include physical, moral, personal, family, social, and academic.

Research Question 3 and Null Hypothesis 14 Null Hypothesis 8

Research Question 3: For CODAs, is there a relationship between the variables of birth order and performing the role as primary interpreter for parents?

Research question 3 generated the following null hypothesis.

Null Hypothesis 14: There is no significant relationship for adult children of Deaf parents (CODAs) between birth order and reported primary interpreter.

A Chi-Square goodness of fit test was calculated comparing the relationship for CODAs between birth order and role of primary interpreter. It was hypothesized that equal number of CODAs in the birth order groups would report performing the role of primary interpreter. A significant deviation from the hypothesized values was

found ($X^2(2) = 6.28, p = .047$).

Null Hypothesis 14 was rejected. There is a significant relationship for adult children of Deaf parents (CODAs) between birth order and role of primary interpreter.

Table 15 gives the results of this analysis. It is important to note that although the Chi-Square analysis was significant, there was a significant number of cells containing low expected frequencies, so the results may be unreliable.

By examining the observed frequencies in Table 15, we see that the firstborn/only child has an increased likelihood of reporting being the parents' primary interpreter and a decrease in likelihood of denying being the parents' primary interpreter. On the other hand, the last-born child is significantly less likely to report performing the role as primary interpreter for parents and significantly more likely to deny performing the role as primary interpreter for parents while growing up.

Research Question 4 and Null Hypothesis 15 Null Hypothesis 9

Research Question 4: For CODAs, is there a relationship between the variables of parental mode of communication and cultural identity for CODAs?

Research Question 4 generated the following null hypothesis.

Table 15

Study Number One: Chi-Square Analysis of the Variables Birth Order and Role as Primary Interpreter for CODAs

CODA Responses	Primary Interpreter	
	Yes	No
	<i>Firstborn/Only Child</i>	
Reported Count	22.0	3.0
Expected Count	18.8	6.3

	<i>Middle Child</i>	
Reported Count	11.0	4.0
Expected Count	11.3	3.8
	<i>Last Child</i>	
Reported Count	6.0	6.0
Expected Count	9.0	3.0

Note. Chi-Square = 6.28; $p = .043$.

Null Hypothesis 15: There is no significant relationship for adult children of Deaf parents (CODAs) between reported cultural identity and parental mode of communication.

A Chi-Square goodness of fit test was calculated comparing the relationship for CODAs between cultural identity and parental mode of communication. It was hypothesized that an equal number of CODAs in the cultural identity groups would report equal numbers in the parental mode of communication groups. A significant deviation from the hypothesized values was found ($X^2(2) = 15.61, p < .001$).

Null Hypothesis 15 was rejected. There is a significant relationship for adult children of Deaf parents (CODAs) between reported cultural identity and parental mode of communication.

Table 16 gives the results of this analysis. It is important to note that although the Chi-Square analysis was significant, there was a significant number of cells containing low expected frequencies, so the results may be unreliable.

By observing the observed frequencies on Table 16, we see two things when comparing cultural identity and parental mode of communication: First, CODAs

reporting their parents' primary mode of communication as speaking/lip-reading were significantly more likely to report cultural identity with the Deaf culture. And second, CODAs reporting their parents' primary mode of communication as Sign Language were significantly more likely to report cultural identity as Unique to CODA.

Summary of Hypotheses Testing Summary of Hypothesis Testing

Fourteen null hypotheses were tested in this study. Null Hypotheses 1 to 7 were tested by *t* test for means of two independent samples. Null Hypotheses 1 to 7 yielded no significant results and are all retained. There is no significant difference between the mean scores of CODAs and non-CODAs on total self-concept or on any of the six subscales of the TSCS.

Null Hypothesis 8 was tested by discriminant analysis. Null Hypothesis 8 yielded no significant results and was retained. No linear combination of the six subscales of the TSCS was found which significantly discriminates between CODAs and non-CODAs.

Table 16

Study Number One: Chi-Square Analysis of the Variables Cultural Identity and Parents' Primary Mode of Communication for CODAs

CODA Responses	Mode of Communication	
	Sign Language	Speaking/Lip-Reading
	<i>Hearing</i>	
Reported Count	8.0	0.0
Expected Count	7.3	0.8
	<i>Deaf</i>	

Reported Count	5.0	4.0
Expected Count	8.2	0.9

Unique to CODA

Reported Count	35.0	1.0
Expected Count	32.6	3.4

Note. Chi-Square = 15.61; $p < .001$.

Null Hypothesis 9 was tested by one-way univariate factorial ANOVA. Null Hypothesis 9 yielded no significant results and was retained. For CODAs, there is no significant relationship between the total self-concept score of the TSCS and the variables of birth order, education level, cultural identity, and primary interpreter.

Null Hypothesis 10 was tested by one-way ANOVA. Null Hypothesis 10 yielded no significant results and was retained. For CODAs, there is no significant difference between the mean scores of the birth order groups on any of the six subscales of the TSCS.

Null Hypothesis 11 was tested by one-way ANOVA. Null Hypothesis 11 yielded significant results and was rejected. For CODAs, there is a significant difference between the mean scores of the education-level groups on the academic subscale of the TSCS. Further analysis revealed that CODAs completing high school or a 2-year associates/technical degree scored significantly different from CODAs who completed a 4-year college degree.

Null Hypothesis 12 was tested by one-way ANOVA. Null Hypothesis 12 yielded no significant results and was retained. For CODAs, there is no significant difference between the mean scores of the cultural identity groups on any of the six

subscales of the TSCS.

Null Hypothesis 13 was tested by one-way ANOVA. Null Hypothesis 13 yielded no significant results and was retained. For CODAs, there is no significant difference between the mean scores of the primary interpreter groups on any of the six subscales of the TSCS.

Null Hypothesis 14 was tested by Chi-Square analysis. Null Hypothesis 14 yielded significant results and was rejected. There is a significant relationship for CODAs between birth order and role of primary interpreter. The firstborn/only child is significantly more likely to report performing the role as primary interpreter for parents while growing up and the last-born child is significantly less likely to report performing the role as primary interpreter for parents while growing up.

Null Hypothesis 15 was tested by Chi-Square analysis. Null Hypothesis 15 yielded significant results and was rejected. There is a significant relationship for CODAs between reported cultural identity and parental mode of communication. CODAs reporting their parents' primary mode of communication as speaking/lip-reading were significantly more likely to report cultural identity with the Deaf culture. Also, CODAs reporting their parents' primary mode of communication as Sign Language were significantly more likely to report cultural identity as Unique to CODA.

Study Number Two

Study Number Two focused on investigating the self-concept of CODA and non-CODA groups when matched on education level and gender.

In the first study, when matched on age and gender, no significant differences, except on education level, were found in self-concept between CODAs and non-CODAs. However, in this first study, it was noted there was a significant discrepancy

on education level between these two groups. Since no significant differences were found, in areas other than education when matching age and gender, and this discrepancy on education level between the two groups was evident, a second study was initiated to investigate the self-concept of CODAs when matched on education level with a control group of non-CODAs.

Demographics of Sample

The CODA sample for the second study was the same participants as in the first study. The CODA participants in this study were hearing adults, ages 18 and older, with both parents either deaf or hard of hearing. The method used to obtain the CODA sample was stated previously and will not be restated here. The total number of CODA participants was 54 (CODA: $N=54$).

The non-CODA sample for this study consisted of 58 individuals. The non-CODA sample for this study included non-CODA participants used in the first study along with additional subjects added to match the CODA group on education levels. The non-CODA sample consisted of adult children of normal hearing parents, ages 18 and older. The method used to obtain the non-CODA subjects used in the first study was previously described and will not be restated here.

Two methods were used to gather the additional non-CODA subjects for this second study. The first method focused on recruiting subjects in possession of a master's or doctoral graduate degree. Employees at a community mental health center in Cody, Wyoming, were approached and offered the opportunity to participate. In appreciation for participation, they were informed they would be provided \$10.00 upon completion of the survey.

The second method of obtaining additional non-CODA subjects focused on recruiting individuals with a completed B.A. or B.S. 4-year college degree. Students

in an intact class at Andrews University in Berrien Springs, Michigan, were requested to participate. They were also informed they would be provided \$10.00 upon completion of the survey.

Using this procedure I was able to get a 94% return rate. Thirty-one additional non-CODA individuals volunteered for the study and were sent survey packets and 29 non-CODAs returned their surveys. The four validity subscales on the TSCS were scored, and 5 subjects who recorded an invalid protocol were withdrawn from the study. This left 24 valid additional non-CODA protocols retained for further analysis.

From these additional non-CODA participants, 11 subjects were added in education level 2 and 13 were added in education level number 3. With the CODA and non-CODA groups now matching on education levels 2 and 3, the final step was to address the imbalance of non-CODA participants in education level 1. To accomplish this, the surplus of non-CODA subjects was randomly removed to match the number of CODA participants in educational level 1. Nineteen non-CODA subjects were randomly removed from education level 1. The CODA and non-CODA groups were a matched sample on education levels. This left the total number of non-CODA participants for this second study at 58 (non-CODA: $N=58$).

Table 17 gives the means, standard deviations, and the reliability coefficients for the combined CODA and non-CODA groups. The reliability coefficients are all good. As the reliability analysis demonstrates, this instrument was appropriate for the sample.

For both groups, the majority of the participants were female, although not done on purpose (approximately a 1:3 male-to-female ratio). Of the CODA group there were 14 males (26%) and 40 females (74%). For the non-CODA group there were 16 males (28%) and 42 females (72%). Chi-Square analysis was performed

comparing the two groups on gender and it was shown to be not significant ($p = .843$). For gender, there is no significant difference between these two groups, thus demonstrating the CODA and non-CODA group are a matched sample on the gender variable. Table 18 presents the CODA and non-CODA gender demographics of this study.

Table 17

Study Number Two: TSCS Statistics of Combined CODA and Non-CODA Groups

Scale	Mean	SD	Reliability Coefficient
Total Score	289.10	32.86	.947
Physical	49.79	10.25	.866
Moral	47.96	9.78	.844
Personal	48.07	10.17	.862
Family	45.70	9.51	.839
Social	49.17	9.71	.848
Academic	48.62	9.20	.838

Table 18

Study Number Two: Gender

Gender	CODA Group		Non-CODA Group	
	Frequency	Percentage	Frequency	Percentage

Male	14	26	16	28
Female	40	74	42	72
Total	54	100	58	100

Note. Chi-Square = .039; $p = .843$.

Table 19 presents the demographics of the CODA and non-CODA sample in terms of education level. Chi-Square analysis was performed comparing the two groups on education level and was shown to be not significant ($p = .869$). For education level, there is no significant difference between these two groups, thus demonstrating the CODA and non-CODA groups are a matched sample on the education level variable.

Table 19

Study Number Two: Education Level

Education Level	CODA Group		Non-CODA Group	
	Frequency	Percentage	Frequency	Percentage
High School/ Vocational/ Associates Degree	20	37.04	24	41
B.S./B.A. Degree	16	29.63	15	26
Graduate School	18	33.33	19	33
Total	54	100.00	58	100.00

Note. Chi-Square = .280; $p = .869$.

Testing the Research Questions

Because the subscales had disproportionate numbers of items, I chose to convert the raw scores to t -scores so that there is an equal metric for each subscore.

All the analysis was computed from these subscore *t*-scores.

Regarding the issue of periodic no responses on items, the suggested replacement by the test developer was used. For each item, the median response value was printed on the scoring worksheet in bold type. This value was used to replace missing items for these protocols.

Research Question 1 in chapter 1 led to two hypotheses in this second study. Each of the two hypotheses is presented here along with the appropriate statistical analysis of the data. Null Hypothesis 1 was tested by one-way univariate ANOVA. Null Hypothesis 2 was tested by one-way multivariate ANOVA. Both hypotheses were tested with an alpha of .05. Power analysis will also be reported for significant results when it approximates, as a standard for adequacy, an acceptable .80 (Cohen, 1969).

Research Question 1 and Null Hypotheses

Research Question 1: Is there a difference in self-concept scores between CODAs and non-CODAs in total self-concept and the areas of physical, moral, personal, family, social, and academic self-concept?

In the second study, Research Question 1 generated the following two null hypotheses.

Null Hypothesis 1: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the total self-concept scale of the Tennessee Self-Concept Scale, second edition.

A one-way between subjects factorial ANOVA was calculated to examine the effects of being a CODA on an individual's total self-concept, along with interaction effects of gender and education level. A significant interaction effect was found

between CODAs, non-CODAs, and gender when looking at total self-concept scores ($F(1, 100) = 4.193, p = .043$). Non-CODA males ($M = 307.41, SD = 7.70$) scored significantly higher on total self-concept than non-CODA females ($M = 292.78, SD = 4.42$) or CODA males ($M = 277.17, SD = 7.75$) and females ($M = 288.38, SD = 4.51$). No other significant interaction effects were found. A significant main effect for total self-concept was found between the education levels ($F(2, 100) = 13.038, p = .000$) (Observed Power = .997). Tukey's HSD was used to determine the nature of the differences between the education levels. This analysis revealed that the total self-concept score for subjects in education level 1 ($M = 270.62, SD = 4.64$) was significantly lower than the total self-concept score for subjects in education level 2 ($M = 307.10, SD = 6.16$) or education level 3 ($M = 296.58, SD = 5.48$).

Null Hypothesis 2: There is no significant difference between the mean scores of adult children of Deaf parents (CODAs) and of adult children of Hearing parents (non-CODAs) on the physical, moral, personal, family, social, and academic subscales of the Tennessee Self-Concept Scale, second edition.

A one-way multivariate MANOVA was calculated to examine the scores of CODAs compared to non-CODAs on the six subscales of the TSCS. A significant interaction effect was found between CODAs/non-CODAs, gender, and education level (Lambda (12, 190) = .785, $p = .023$) (Observed Power = .919). Follow-up univariate ANOVAs indicated a significant difference on the social subscale ($F(2, 100) = 4.125, p = .019$) (Observed Power = .718). When analyzing the means and standard deviations of the social subscale, it was shown that CODA males who had completed high school or an associates/technical degree scored significantly higher on the social subscale ($M = 50.33, SD = 3.553$) than CODA females ($M = 44.21, SD = 2.326$), non-CODA males ($M = 43.63, SD = 3.077$), and non-CODA females ($M =$

43.13, $SD = 2.175$) who had completed the same level of education. However, this switched with education levels 2 and 3. Non-CODA males who had completed a 4-year college degree scored significantly higher ($M = 63.33$, $SD = 5.024$) on the social subscale than did CODA males ($M = 42.25$, $SD = 4.351$), non-CODA females ($M = 51.75$, $SD = 2.512$), and CODA females ($M = 52.08$, $SD = 2.512$) who had completed the same level of education. Finally, CODA males reporting to be in graduate school scored significantly lower on the social subscale ($M = 46.25$, $SD = 4.351$) than did non-CODA males who had completed the same level of education ($M = 53.400$, $SD = 3.892$). Interestingly, even when matched on education level, no significant differences in total self-concept or the subscales were found between CODA females and non-CODA females.

Because there was no interaction between the other subtests, the education main effect will be reported. The education main effect showed a significant difference between education levels and the subscales of the TSCS ($\Lambda(12, 190) = .715$, $p = .001$) (Observed Power = .987). Follow-up univariate ANOVAs indicated that there was a significant difference between education levels on all six of the TSCS subscales: physical subscale ($F(2, 100) = 11.34$, $p = .000$) (Observed Power = .992), moral subscale ($F(2, 100) = 5.615$, $p = .005$) (Observed Power = .849), personal subscale ($F(2, 100) = 10.37$, $p = .000$) (Observed Power = .986), family subscale ($F(2, 100) = 8.56$, $p = .000$) (Observed Power = .963), social subscale ($F(2, 100) = 6.07$, $p = .003$) (Observed Power = .877), and academic subscale ($F(2, 100) = 10.02$, $p = .000$) (Observed Power = .983).

The means and standard deviations of the subscales on the education levels are presented in Table 20. When analyzing the means and standard deviations of the subscales on the different education levels, it was shown that testing subjects with a

high-

Table 20

Study Number Two: Subscale Statistics on the Education Levels

Education	Mean	SD
<i>Physical</i>		
Level 1	44.99	1.483
Level 2	56.52	1.968
Level 3	51.04	1.750
<i>Moral</i>		
Level 1	43.43	1.453
Level 2	51.02	1.929
Level 3	48.58	1.715
<i>Personal</i>		
Level 1	43.29	1.464
Level 2	54.00	1.943
Level 3	49.61	1.728
<i>Family</i>		
Level 1	41.34	1.408

Level 2	50.27	1.87
Level 3	47.78	1.662
<i>Social</i>		
Level 1	45.32	1.419
Level 2	52.35	1.884
Level 3	51.52	1.675
<i>Academic</i>		
Level 1	43.86	1.344
Level 2	52.10	1.785
Level 3	51.71	1.587

school or associates/technical degree scored significantly lower on all the subscales than did subjects with a 4-year B.A./B.S. college degree or graduate school. Specific to the physical subscale only, subjects reporting graduate school scored significantly lower than did subjects with a 4-year college degree.

Summary of Hypotheses Testing

Two null hypotheses were tested in this second study with an alpha of .05. Null Hypothesis 1 was tested by one-way univariate ANOVA. Null Hypothesis 1 yielded significant results and was rejected. A significant interaction effect was found between CODAs and non-CODAs and gender when looking at total self-concept scores. Non-CODA males scored significantly higher than did non-CODA females or CODA males and females. A significant main effect for education showed testing subjects with a high school or 2 year associates/technical degree scored significantly lower on their total self-concept score than testing subjects with a completed

B.S./B.A. 4-year college degree or graduate school.

Null Hypothesis 2 was tested by a one-way multivariate MANOVA. Null Hypothesis 2 yielded significant results and was rejected. CODA males with a completed high-school or associates/technical degree scored significantly higher than non-CODA males with the same level of education. However, CODA males with a completed 4-year college degree or graduate school scored significantly lower than did non-CODA males with the same level of education. Education main effects shows a significant difference between education levels on all six of the TSCS subscales. Testing subjects with a high-school or associates/technical degree scored significantly lower on all the subscales than did subjects with a 4-year B.A./B.S. college degree or graduate school. Specific to the physical subscale only, subjects reporting graduate school scored significantly lower than did subjects with a 4-year college degree.

CHAPTER V CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONSSUMMARY, DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

IntroductionIntroduction

The first section of this chapter summarizes the problem, purpose of the study, methodology, and demographics of this study. The second section of this chapter reports the testing of the null hypotheses. The results are then summarized and discussed. In the third and final section of this chapter conclusions are drawn, implications for practice are presented, and recommendations for future research are made.

Summary

SummaryProblemProblem

In several CODA biographies, case studies, interviews, and in the little research that has been done, it has been reported that CODAs fail to attain a sense of

belonging to either the Deaf or Hearing culture. Child development literature repeatedly presents a sense of belonging and identification with a group as central to one's self-concept formation. It is suggested that this would create problems for CODAs in regard to their self-concept, both personally and culturally. Since 90% of the children born to Deaf couples are hearing, this would mean that the majority of children born to Deaf parents might possibly struggle with these issues. Very little empirical research has been done to either refute or validate these claims and to address the specific issues surrounding self-concept for CODAs (e.g., interpreting). The bulk of the little research that has been done on CODAs has focused on children and adolescents. Several of the research studies have pathologized the Deaf and focused on how parental deafness negatively impacts children. More quantitative research is needed to complement the qualitative research in this area. More research is also needed to investigate the long-term impact of the CODA experience on adult CODAs. And finally, more research is needed to help present a more respectful cultural perspective of Deafness.

Purpose of the Study

The purpose of this study was to investigate whether there exists a difference in self-concept between CODAs and non-CODAs due to the unique experience CODAs face. The second purpose of this study is to provide empirical research to the subject of interpreting and its subsequent impact on self-concept. The third purpose of this study is to provide empirical research to the possible relationship between birth order and performing the role as primary interpreter. The fourth purpose is to explore a possible relationship between parental mode of communication and reported cultural identification. The fifth purpose is to contribute to more empirical CODA research. Although there have been several qualitative reports such as biographies, interviews,

case studies of CODAs struggling with these different issues, more quantitative research is needed in this area. The sixth purpose is contributing to the need of providing more empirical research regarding CODA adults and the long-term effects of the CODA experience and its relationship to self-concept. The seventh and final purpose of this study is to assist in challenging some of the literature that has historically pathologized Deafness and presented the Deaf as inadequate when parenting. More education and research is needed to spread awareness of the Deaf and CODAs by providing a more respectful cultural perspective.

MethodologyMethodology

Study Number One

Study Number One focused on investigating the self-concept of CODA and non-CODA groups when matched on age and gender.

CODA participants in this study were volunteers recruited through a CODA listserv from Gallaudet University and various CODA web sites. The non-CODA sample was selected based on comparable age and gender demographics to the CODA group. Non-CODA participants were student and faculty volunteers from Utah State University in Logan.

The research questions in chapter 1 led to 16 null hypotheses. Research question 1 led to the first 8 Null Hypotheses. For Null Hypotheses 1-7, a *t* test of means was used to test the TSCS total self-concept score and six subscales between CODA and non-CODA groups. For Null Hypothesis 8, discriminant analysis was used to test for a linear combination of the six subscales between the CODA and non-CODA groups. Research question 2 led to Null Hypotheses 9-13. One-way ANOVA was used to test the variables of birth order, education level, cultural identity, and role of primary interpreter of only the CODA subjects against the TSCS subscales

(physical, moral, personal, family, social, and academic). Research question 3 led to Null Hypothesis 14. Chi-Square testing was used to test for a relationship between birth order and primary interpreter for CODAs. Research question 4 led to Null Hypothesis 15. Chi-Square testing was used to test for a relationship between cultural identity and parental mode of communication for CODAs.

Study Number Two

Study Number Two focused on investigating the self-concept of CODA and non-CODA groups when matched on education level and gender.

The CODA participants from the first study were used in this second study. The non-CODA subjects for this second study were a combination of the participants from the first study and additional subjects selected who met the needed education levels to match the CODA group education levels. The first method of obtaining additional non-CODA subjects was requesting participants from a community mental health center in Cody, Wyoming. The second method was requesting participants from a class at Andrews University in Berrien Springs, Michigan.

In this second study, Research Question 1 in chapter 1 led to two Null Hypotheses. For Null Hypothesis 1, a one-way ANOVA was used to test the mean scores of the TSCS total self-concept between the CODA and non-CODA groups. For Null Hypothesis 2, a one-way MANOVA was used to test the mean scores of the TSCS six subscales between the CODA and non-CODA groups.

DemographicsDemographics

Study Number One

Of the 54 CODAs in this study, 74% were females and 26% were males. The age range for the CODA group was 19-74 with an overall mean of 36.17. Fifty-three

non-CODAs were recruited for this study: 70% females and 30% males. The age range for the non-CODA group was 18-64 with an overall mean of 31.57.

In regard to education level completed, 37.04% of CODAs and 81.13% of non-CODAs reported high school and an associates or vocational degree as their highest education level. For a completed 4-year B.S. or B.A. college degree, 29.63% of CODAs and 5.66% of non-CODAs reported this being their highest level of education. For graduate school and a master's or doctoral degree, 33.33% of CODAs and 13.21% of non-CODAs reported this being their highest level of education.

For birth order, 48.15% of the CODA group and 43.40% of the non-CODA group reported being the firstborn or only child. For the middle child, 27.78% of the CODA group and 35.85% of the non-CODA group reported being in this birth order position. More than 24% (24.07%) of the CODA group and 20.75% of the non-CODA group reported being the last-born child.

The following demographics are specific to the CODA group only. CODAs who reported having no hearing siblings were 20.4%; 20.4% reported having one hearing sibling; 37.0% reported having two hearing siblings; 13.0% reported having four hearing siblings; and 1.9% reported having five hearing siblings. In regard to deaf siblings, 87.0% reported having no deaf siblings and 13.0% reported having one deaf sibling. In regard to the question of parents' primary mode of communication, 90.7% of the CODA participants reported Sign Language as compared to 9.3% speaking/lip-reading. The majority of the CODAs, 81.5%, reported interpreting on a regular basis for their parents while growing up. Of this number, 88.64% reported that they were the primary interpreters for their parents. In regard to cultural identity, 15.1% of the CODA participants reported identifying most with the Deaf culture, 17.0% reported identifying most with the Hearing culture, and 67.9% reported their

cultural identity being unique to CODAs. Two CODA participants in this study did not indicate a cultural identity with any of the options provided, but instead wrote in “50% Deaf/50% Hearing.”

Study Number Two

For the CODA group, the participants from the first study were used, therefore the demographics will not be restated; however, education level will be reported for the CODA group as this is a main focus of this second study. In regard to education level completed, 37.04% of CODAs reported high-school and an associates or vocational degree as their highest education level. For a completed 4-year B.S. or B.A. college degree, 29.63% of CODAs reported this being their highest level of education. For graduate school and a master’s or doctoral degree, 33.33% of CODAs reported this being their highest level of education.

For the non-CODA group, 58 non-CODAs were recruited for this study. Of the 58 non-CODAs, 72% were females and 28% males. In regard to education level completed, 41.0% of non-CODAs reported high school and an associates or vocational degree as their highest education level. For a completed 4-year B.S. or B.A. college degree, 26.0% of non-CODAs reported this being their highest level of education. For graduate school and a master’s or doctoral degree, 33.0% of non-CODAs reported this being their highest level of education.

Discussion of the Results Discussion of the Results

The results of this study are organized under the four research questions stated in chapter 1. Under each research question, the relevant null hypotheses are stated

and then the results are summarized and discussed.

Research Question 1 Research Question 1

Research Question 1. Is there a difference in self-concept scores between CODAs and non-CODAS in total self-concept and the areas of physical, moral, personal, family, social, and academic self-concept?

Study Number One Results

In Study Number One, Research Question 1 led to Hypotheses 1 through 8. Research Question 1 was answered by testing Hypotheses 1 to 8. Null Hypothesis 1 stated there is no significant difference between the total self-concept scores of adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the TSCS. Hypothesis 1 was tested by *t* test of means. In this study, no significant differences were found and this null hypothesis was retained.

Null Hypotheses 2 to 7 stated that there is no significant difference between CODAs and non-CODAS on each of the six subscales of the TSCS, which are physical, moral, personal, family, social, and academic. Hypotheses 2 to 7 were tested by *t* test of means. In this study, no significant differences were found and the null hypotheses were all retained. Thus, for the physical subscale, CODAs and non-CODAs in this study responded similarly on the view of their body, state of health, physical appearance, skills, and sexuality. With regard to the moral subscale, CODAs and non-CODAs in this study responded similarly when examining moral worth, feelings of being a “good” or “bad” person, and satisfaction with one’s religion or lack of it. On the personal subscale, CODAs and non-CODAs in this study responded similarly when addressing personality integration, their sense of personal worth,

feelings of adequacy as a person, and self-evaluation of the personality apart from the body or relationships to others. For the family subscale, CODAs and non-CODAs in this study responded similarly when examining the individual's perception of self in relation to his or her immediate circle of associates and examining feelings of adequacy, worth, and value as a family member. For the social subscale, CODAs and non-CODAs in this study responded similarly when examining the individual's sense of adequacy and worth for social situations and interactions with other people. And finally on the academic subscale, CODAs and non-CODAs in this study responded similarly when assessing how they perceive themselves in school and work settings, and of how they believe they are seen by others in those settings.

Null Hypothesis 8 stated that there is no linear combination of the six subscales which significantly discriminates between adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs). Null Hypothesis 8 was tested by discriminant analysis. No linear combination of the six subscales that significantly discriminated between CODAs and non-CODAs was found and Hypothesis 8 was retained.

It was interesting to note that no differences were found in Study Number One between CODAs and non-CODAs when matched on age and gender. No differences were initially found in Study Number One between these two groups on total self-concept, or on any of the six subscales (physical, moral, personal, family, and academic). It was not until after the first study's data gathering phase was concluded that the discrepancy in education level was noted between the two groups. When looking at the relationship of education level and self-concept in the literature, it was decided that the findings in the first study may not be representative due to the disproportionate number of higher educated individuals in the CODA groups. It was

only after matching the CODA and non-CODA groups on education level that the difference in total-self-concept and the social subscale was shown. Future research may want to continue investigating possible differences of matched groups on education level between CODAs and non-CODAS.

Study Number Two Results

In Study Number Two, when CODAs and non-CODAs were matched groups on education level, some interesting significant results were discovered. Research Question 1 led to Hypotheses 1 and 2. Research Question 1 was answered by testing Hypotheses 1 and 2. Null Hypothesis 1 stated there is no significant difference between the total self-concept scores of adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the TSCS. Hypothesis 1 was tested by a one-way factorial ANOVA. In this study, a significant interaction effect was found between CODAs, non-CODAs, and gender when looking at total self-concept scores. It was found that for total self-concept, non-CODA males scored significantly higher than did non-CODA females and CODA males and females. In this study, a significant main effect for total self-concept was found between the education levels. Subjects in education level 1 with a high-school or associates/technical degree scored significantly lower on their total self-concept than did subjects who had completed a 4-year B.A./B.S. college degree.

In Study Number Two, Null Hypothesis 2 stated there is no significant difference between adult children of Deaf parents (CODAs) and adult children of Hearing parents (non-CODAs) on the TSCS six subscales, which are physical, moral, personal, family, social, and academic. Hypothesis 2 was tested by a one-way multivariate MANOVA. In this study, a significant interaction effect was found between CODAs/non-CODAs, gender, and education level. On the social subscale, it

was shown that CODA males who had completed high school or an associates/technical degree scored significantly higher than non-CODA males and females and CODA females with the same level of education. On education levels 2 and 3, however, this switched. Non-CODA males with a 4-year college degree scored significantly higher on the social subscale than did CODA males and females and non-CODA females. With graduate school, non-CODA males scored significantly higher than did CODA males on the social subscale.

No differences were shown between the females in the CODA or non-CODA groups, for either the total self-concept or on any of the six subscales. Only the males in the CODA or non-CODA groups showed significant differences.

When examining the results in regard to the subscales, CODA males with a high-school or associates/technical degree scored higher in their individual sense of adequacy and worth for social situations and interactions with people other than non-CODA males. However, non-CODA males with a completed 4-year college degree scored higher in their individual sense of adequacy and worth for social situations and interactions with other people than non-CODA males. This trend continued into graduate school.

Discussion

When looking at the gender demographics of this study, it is important to remember that the majority of the participants were female. So the significant findings here with males is limited only to the 14 males in the CODA groups and the 16 males in the non-CODA groups, which make for a small sample size. The generalizability here to the general population is limited. These findings must be interpreted with caution. Replication in future research is encouraged before meaningful interpretations can be concluded.

For the majority of the participants in this study, no difference was shown between CODAS and non-CODAS on either the total self-concept scores or on any of the six subscales. When looking at the qualitative research presented in the literature review, and then analyzing the results of this study and others like it that show no difference, it might be seen as a discrepancy. It is seen as important to discuss the CODA experience as a process of acculturation, and to consider CODAs as a transition generation. CODAs make up the generation that grows up in the Deaf culture and then has to transition into the hearing culture. This is similar to the experience many children of immigrants have had being the first generation raised in a new culture. This too is the reason the literature regarding TCKs was previously presented in chapter 2. But unlike CODAs, immigrants from a country, even several generations later, can look in the mirror and have reflected back to them features of their racial heritage. There is a sense of racial continuity. However, for CODAs, they are denied full inclusion of their “native” culture, their “racial heritage.” The essence of Deafness cannot truly be passed on. To be hearing is not to be Deaf. This might even heighten the acculturation process for CODAs.

This study reinforces other empirical research showing no difference in self-concept for adult CODAs when compared to non-CODAs. Although their experience is unique, their life journey can still contribute to becoming individuals with healthy self-concepts. For Deaf parents, this suggests that their CODA children are able to find a place that successfully and respectfully holds both the Hearing and Deaf cultures as they navigate this process of acculturation.

This study was mixed when comparing it against previous studies done on CODAs and self-concept, as there was a significant difference found for CODA males but not with CODA females. This study upholds the findings of Deluigi (1991) and

Tendler (1975), showing a significant difference in self-concept between CODAs and non-CODAs, but only with males. Although Deluigi's study (1991) and Tendler's study (1975) were done on children, this study showed similar results with CODA adult males. For CODA males, this study supported the qualitative studies of Preston (1994), Davie (1992), and Blane (1995), or the biographies of Walker (1986), Abrams (1996), and Sidransky (1990). These sources all reported that CODAs repeatedly struggle with the issue of self-concept and the myriad of other common CODA experiences that impacted their self-concept.

Although this study was done on adults, the comparison is mixed when looking at Rubin's (1980) study that stated children who are more skilled in social interactions also tend to be those who are confident in their own ability. In my study, CODA males struggled with their total self-concept and their social self-concept when higher levels of education were achieved. For males who had completed a 4-year college degree, a CODA's individual's sense of adequacy and worth for social situations and interactions with other people was lower than for non-CODAs. However, for males with a high-school or associates/technical degree, a CODA's individual's sense of adequacy and worth for social situations and interactions with other people appeared higher than non-CODAs.

For CODA females, this study upheld the conclusions of Chan and Lui (1987), Charlson (1989), and Marshall (1978) as they reported finding no significant differences on their total self-concept. Please note that Marshall (1978) used TSCS, first edition, whereas the TSCS, second edition, showed stronger internal/external validity, test-retest reliability statistics, and internal consistency as compared to the first edition. This study used the TSCS, second edition, and was possibly more sensitive to measure a possible significant difference. For adult CODA females, this

study suggests, along with Marshall (1978), that there are no long-term effects on self-concept.

Perhaps it is important to point out here that the CODA participants in this study were recruited from a CODA listserv and various CODA web sites and may not represent CODAs who have no involvement with CODA organizations. Could it be that CODAs who had found involvement in a CODA community differed from those who had not? Might those with developed self-concepts seek out memberships in such groups? Might one's self-concept be enhanced by finding one is not alone, that he/she has a place to belong by participating in CODA organizations? The process of acculturation for CODAs is possibly greatly assisted. In the narratives, several expressed finding relief in a CODA community where they felt understood and accepted, such as when a 31-year-old CODA female stated: "Once I knew I wasn't the only one with Deaf parents, my world opened up and allowed me to explore and become a 'whole' person." And again when a 52-year-old CODA female explained it this way:

I like to connect with CODAs now and then or with deaf people to access a part of myself that is very alive and that would be lost otherwise. . . . I learned very valuable life lessons being a CODA, very unique, and I take responsibility for having "chosen" deaf parents before this incarnation. This helps me deal with what happened in my youth. My 2 sisters rather not speak about it. This experience makes me the unique person I am that is interesting and "different" for other people. I am no less wise. It took me a very long time and lots of therapy to get to this point though. . . . I had to learn lessons about healthy boundaries, self-esteem, self-worth, taking care of self, "who am I" issues. . . . I have felt a stranger in both deaf & hearing communities, but am almost over it, accepting myself as I am.

The impact these organizations have on an individual's self-concept and feelings of alienation may be significant. The majority of the CODA participants, 67.9%, felt they belonged to a unique culture, one shared only with other CODAs. Is it possible that being associated with an established CODA organization could help

improve areas of self-concept that might otherwise have been dwarfed? The process of acculturation is possibly assisted. Future studies might want to further study these possibilities.

Another factor to take into consideration when looking at the results of this study is to note that the CODA participants were volunteers, and therefore may have represented a more “willing” or positively inclined sample of CODAs. Those who felt strongly about their experience may have been more inclined to volunteer for this study, also thus representing only a subgroup among CODAs.

Now I will address the topic of education level and self-concept of the combined CODA and non-CODA subjects in this study. In Study Number Two, CODAs and non-CODAs were matched on gender and education levels. When testing Null Hypothesis 1, a significant main effect for total self-concept was found between the education levels. Subjects in Education Level 1 with a high-school or associates/technical degree scored significantly lower, as a whole, on their total self-concept than did subjects who had completed a 4-year B.A./B.S. college degree. For Null Hypothesis 2, a main effect showed a significant difference also between education levels and the six subscales. It was shown that subjects with a high-school or associates/technical degree scored significantly lower on all six subscales of the TSCS than did subjects who had a completed a 4-year B.A./B.S. college degree. However, when graduate-school-level participants were compared to those who had a 4-year college degree, those with a graduate-level education scored lower on the physical subscale.

This study tended to support previous research in this area, again showing the relationship between positive self-concept and academic achievement (Cokley, 2000; Michie et al., 2001; Pottebaum et al., 1986; Scheirer & Kraut, 1979; Smart &

Pascarella, 1986). Higher education levels tend to increase scores in self-concept. These results are generated from analysis that combined the CODA and non-CODA groups, only analyzing differences in self-concept between education levels. This shows only a relationship and does not infer causality.

Research Question 2

Research Question 2. For CODAs, do the variables of birth order, education level, cultural identity, and performing the role as the primary interpreter make a difference in total self-concept and the areas of physical, moral, personal, family, social, and/or academic self-concept?

Research Question 2 led to Hypothesis 9-13. Null Hypothesis 9 stated that for adult children of Deaf parents (CODAs), there is no significant relationship between the total self-concept score of the TSCS and the variables of birth order, education level, cultural identity, and role of primary interpreter. This hypothesis was tested by one-way multivariate ANOVA. In this study, no significant relationships were found and the null hypothesis was retained.

Null Hypothesis 9 investigated the combined variables of birth order, education level, cultural identity, and primary interpreter on the TSCS total self-concept score. This hypothesis investigated these combined variables to look at differences, and to test for any possible interaction effects. No interaction effects were found between birth order, education level, cultural identity, and primary interpreter on the total self-concept score of the TSCS.

Null Hypothesis 10 looked at the birth order variable and CODAs' total self-concept scores. Null hypothesis 10 stated that for adult children of Deaf parents (CODAs), there is no significant difference between the birth order groups and the six subscales of the TSCS, which include physical, moral, personal, family, social, and

academic. This hypothesis was tested by one-way ANOVA. In this study, no significant difference was found and the null hypothesis was retained.

CODA literature has repeatedly addressed the different roles CODAs perform in the family based on their birth order. Regarding the firstborn, many suggested CODAs had a heightened feeling of responsibility toward their parents (Frankenburg et al., 1985; Preston, 1994; Wilber & Fristoe, 1986). Buchino (1988, 1993) specifically reports finding CODA firstborns as having disproportionate responsibilities as compared to the rest of the siblings. Even though this is reportedly a common theme, this research study found that birth order does not significantly affect any of the six aspects of CODA self-concept as measured by the TSCS.

Research Question 3

Null Hypothesis 11 looked at the education level variable and CODAs' total self-concept scores. Null Hypothesis 11 stated that for adult children of Deaf parents (CODAs), there is no significant difference between the education-level groups and the six subscales of the TSCS which are physical, moral, personal, family, social, and academic. This hypothesis was tested by one-way ANOVA. In this study, no significant difference was found and the null hypothesis was retained. For CODAs, education level made no difference on the mean scores of the TSCS six subscales.

Null Hypothesis 12 looked at the reported cultural identity groups on the six TSCS subscales. Null Hypothesis 12 stated that for adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the cultural identity groups on any of the six TSCS subscales, which are physical, moral, personal, family, social, and academic. This hypothesis was tested by using a one-way ANOVA. In this study, no significant differences were found and the null hypothesis was retained.

It was thought there might be a relationship between cultural identity for CODAs, as identified by Deaf, Hearing, or unique to CODA and the six aspects of self-concept as measured by the TSCS. Several studies have discussed the struggle for personal and cultural identity for CODAs (Davie, 1992; Preston, 1994; Rutherford, 1987; Walker, 1986). Preston (1994) and Walker (1986) discussed the resolution and acceptance some CODAs arrived at with regard to their unique CODA status. This study sought to investigate the possibility of a relationship between cultural identity and physical, moral, personal, family, social, and academic self-concept. Do people with a greater sense of cultural identity also have a higher self-concept in these areas? In this study, 15.1% identified with the Deaf culture, 17.0% with the Hearing culture, 67.9 % reported unique to CODA, and two subjects wrote in “50% Deaf/50% Hearing.” When measured by the TSCS, cultural identity did not affect any of the CODA participants’ six subscale self-concept scores.

Null Hypothesis 13 looked at the primary interpreter groups on the six TSCS subscales. Null Hypothesis 13 stated that for adult children of Deaf parents (CODAs), there is no significant difference between the mean scores of the primary interpreter groups on any of the six TSCS subscales, which are physical, moral, personal, family, social, and academic. This hypothesis was tested by using a one-way ANOVA. In this study, no significant differences were found and the null hypothesis was retained. Interpreting was not shown to impact self-concept.

Since the role of primary interpreter for parents carries a significant responsibility (Buchino, 1988, 1993; Preston, 1994), it was felt that there might be a corresponding impact on the six self-concept subscales of the TSCS, specifically the family or personal subscales. The majority of the CODAs in this study (81.5%) reported interpreting on a regular basis for their parents while growing up, with 75.0%

reporting that they were the primary interpreters for their parents. When empirically tested, the role of primary interpreter showed no significant impact on the TSCS subscales, which were physical, moral, personal, family, social, and academic. There were no differences on these subscale scores for CODAs who reported being the primary interpreter for parents for those who did not. This study contradicts Charlson's (1989) study. Charlson's (1989) study showed that CODA adolescents who reported interpreting on a regular basis for their parents scored significantly higher on the family subscale than did CODA adolescents who denied interpreting on a regular basis for their parents. Considering that Charlson (1989) focused on adolescents, could it be that the significant difference she found on the family subscale might not be carried into adulthood, as my study suggested?

Research Question 4 Research Question 3 Research Question 5

Research Question 3. For CODAs, is there a relationship between the variables of birth order and performing the role as primary interpreter for parents?

Research Question 3 led to Hypothesis 14. Null Hypothesis 14 stated there is no significant relationship for adult children of Deaf parents (CODAs) between birth order and performing the role as primary interpreter for parents. Hypothesis 14 was tested by Chi-Square analysis. In this study, a significant relationship was found between birth order and performing the role as primary interpreter for parents. Null Hypothesis 14 was rejected.

As previously stated in chapter 4, it is important to note there were some values with low expected frequencies. This possibly distorted the Chi-Square application since the test then becomes too sensitive, causing a minor discrepancy to result in large Chi-Square values. This could lead one to retain a null hypothesis when it was in fact false. Or simply put, it would show no difference when in fact

there was a difference. This was less of a serious consequence here since the contingency tables were larger than 2x2 and less than 20% of the cells had expected frequencies less than 5. But it should still be noted (Hinkle, Wiersma, & Jurs, 1998).

The literature has repeatedly reported that the role of primary interpreter typically is held by the eldest child, specifically the daughter (Buchino, 1988, 1993; Preston, 1994). Research Question 4 sought to provide some empirical data to this reported tendency. This question would provide valuable information regarding dynamics within a CODA's life.

For the variables birth order and performing the role as primary interpreter, it was shown that the firstborn daughter was significantly more likely to report performing the role as primary interpreter for parents, and significantly less likely to deny performing the role as primary interpreter for parents while growing up. On the other hand, the last-born child was found to be significantly less likely to report performing the role as primary interpreter for parents, and significantly more likely to deny performing the role as primary interpreter for parents while growing up. This finding was consistent with the literature (Buchino, 1988, 1993; Frankenburg et al., 1985; Preston, 1994).

In this study, 75% of the CODA participants reported playing the role as primary interpreter for their parents while growing up, while only 25% reported they were not their parents' primary interpreter. Although the largest group of CODA participants were firstborn/only child (48.15%), it is still interesting to note how many CODAs reported being the primary interpreter. When exploring why this may be, a few possibilities emerge. The first is the tendency between siblings for perceived injustice (Toman, 1961). Even with equal workloads, individuals often report feeling they contributed more than others. This seems to be especially true

between siblings. The second possibility is that as older siblings grow up and leave home, younger siblings perform the role as primary interpreter for a time as well. A third explanation may be that the CODAs who volunteered for this study were more often primary interpreters. They might also be continuing their role as serving others in the very act of volunteering. Also, CODAs who were not primary interpreters might have felt more apathetic and disinterested to Deaf and CODA issues and might not tend to volunteer to participate in such a study. One CODA participant presented as an oddity to this finding by reporting being the primary interpreter and also the youngest sibling. This participant gave an explanation of this difference as due to her family's circumstances and provided the following explanation:

Typically the oldest child acts as interpreter for deaf parents, often younger children learn less signs. My situation was unique in that my older siblings were identical twins, and often off in their own world, leaving me—the baby—behind to interpret. Also my parents lived in an age when deaf were told not to teach their children sign because then they wouldn't learn to talk. Out of love for their children, many deaf tried to do this. My mother used only voice with my sisters. By the time I was born—3 years later—Mom was so frustrated with not being able to understand the twins talking to her, she spoke to me predominately in sign. ASL was my first language and 2nd for my sisters.

Research Question 4 Research Question 5

Research Question 4. For CODAs, is there a relationship between the variables of parental mode of communication and reported cultural identity?

Research Question 4 led to Hypothesis 15. Null Hypothesis 15 stated there is no significant relationship for adult children of Deaf parents (CODAs) between reported cultural identity and parental mode of communication. Hypothesis 15 was tested by Chi-Square analysis. In this study, a significant relationship was found between cultural identity and parental mode of communication. Null Hypothesis 15 was rejected.

As previously stated in chapter 4, it is important to note there were some values with low expected frequencies. This possibly distorted the Chi-Square application since the test may have become too sensitive, causing a minor discrepancy to result in large Chi-Square values. This could lead one to retain a null hypothesis when it was in fact false. Or simply put, it could show no difference when in fact there was a difference. This was less of a serious consequence here since the contingency tables were larger than 2x2 and less than 20% of the cells had expected frequencies less than 5. But it should still be noted (Hinkle et al., 1998).

When examining the literature, it was thought a relationship might be shown between these two variables. Considering the centrality of language to culture, it was postulated that the parental mode of communication may be related to a CODA's cultural identification.

For the variables of cultural identity and parental mode of communication, it was shown that CODAs reporting that their parents' primary mode of communication was speaking/lip-reading were significantly more likely to report cultural identity with the Deaf culture, and that CODAs reporting that their parents' primary mode of communication was Sign Language were significantly more likely to report cultural identity as Unique to CODA. This specific question has not been addressed before in CODA research, so this result is interesting to note for further research. This information would be valuable to parents and educators as they raise the next generation. What would this mean to parents as they raise their children? Is this true for other languages and cultures?

Narrative Thoughts Shared

At the end of the demographics questionnaire, CODAs were presented with

the question, “Are there any thoughts you want to share?” It was valuable for this study that many took the time to share so much here. CODAs repeatedly expressed the significance that being raised by Deaf parents had for them. A 43-year-old female shared the following:

My adult life has held constant revelations as to how my parents’ deafness affected so many aspects of my childhood. As a parent now, I have experiences that cause me to look back and truly understand what their deafness meant in my life.

It was interesting to hear how CODAs described their feelings when looking back at being raised by Deaf parents. Some described it as an enriching experience, whereas others felt it was a negative experience, even going so far as to use the word “traumatic” to describe their feelings. A 48-year-old female, struggling to express her feelings, stated the following:

Each coda has a different experience. I find that any child whose parents depended upon them, it was way more responsibility than a child at that age should have. My experience was very traumatic. . . . I know there was something different about my childhood. I couldn’t verbalize it. . . . So many things I would of liked to say.

Another participant, a 36-year-old female, shared a very different experience:

My deepest thoughts, emotions, “speaking skills” teaching, joking are expressed best among the deaf—in sign language far over verbal skills. I have tried for years to balance the deaf and hearing worlds together—whether they are my children (hearing), my parents (deaf), my extended family’s friends. It is difficult for me to have both deaf & hearing together—one or the other is left out. I often gravitate to the deaf rather than the hearing. Yet my husband . . . my children are hearing. It is much easier for something to either be a “hearing” event or a “deaf” event. 2) I wouldn’t have my life any other way. I feel richer, and blessed to have deaf parents and the deaf world. 3) At times I’m at a loss where to “fit in” if the deaf view me as “hearing” whereas I feel “deaf” in my heart with the addition of a hearing world. It has grown stronger through the years rather than lessen as some may assume.

Several participants in this study explained their thoughts on their cultural identity. A 19-year-old female stated, “I love being a CODA: I feel like I have the best of both worlds (Hearing and Deaf) and I wouldn’t change my childhood, family

or life for anything.” A 29-year-old female wrote:

I have a close knit Deaf family and Deaf community. I am happily involved in the Hearing world with my husband and children. I am the type of CODA who needs to have a balance of Hearing and Deaf friends, with speaking English as well as signing ASL big parts in my life.

Another 29-year-old female expressed:

It’s hard to fit in more with either culture because we are not deaf and yet we come from a deaf culture. I find that I’m a little backward socially in the hearing world—it is hard to fit in because I think differently.

Finally, a 27-year-old female participant in this study gave the following statement regarding her struggle for cultural identity:

I have often thought about this issues of self identity among CODA’s. I grew up in a healthy “ordinary” home, my family is an optimistic and strong one. It wasn’t until I left home at age 21, that I realized my life/myself/my world view, was very different of that of my hearing peers. I grew up loving my deaf family and appreciating the culture. When you asked me to choose which culture I identify with, it took me days to answer. While I am hearing first, I interact equally as well with them. I found myself leaning more towards Deaf Culture simply because that is the world that surrounded my home, my childhood, and my entire life. Obviously, I chose unique to CODAs because I think it is inevitable that people like us (bicultural, bilingual) will feel some pull—or some tension between two very different worlds. I can be honest and say that I’ve struggled making friends, mostly with my hearing peers, but I am very friendly person and love all people. I do not know why I have a hard time with hearing peers, is it my CODA self, or just a product of society? This is a very pertinent area to study, not only for CODAs but all bicultural/bilingual children.

CODAs’ comments in this study reflected on their feelings of self-doubt, isolation, struggle for a cultural identity, and hyper-responsibility for others. A 33-year-old male expressed his following observations: “I’m sure you’ll find CODAs to be close with their families for the most part, are outgoing and mostly extroverts, but often self-doubting about their own satisfaction with life.” A 47-year-old male continues by saying: “One trait I have found common among my Coda friends is the sense of responsibility to fix things, make sure things are done correctly.” A 74-year-old female also expresses this tendency: “Both (my sister and I) are considered ‘overly responsible’, (and) compulsively neat.” A 25-year-old CODA male in this

study provided the following statement:

For as long as I can remember I have always felt like I had to “protect” (maybe not the right word) or act as a buffer between my parents and the “hearing” world. I didn’t want others to perceive my parents as dumb, and I wouldn’t let them know if anything was said that may have implied or even outright insulted their intelligence. I was basically a screen, and anything my parents said was embellished and “upgraded” linguistically to make sure they didn’t sound dumb. Anything that was said to them was censored and simplified, to avoid any misunderstandings that would make them seem incompetent.

So many of the comments provided by the CODA subjects in this study were consistent with the stories and anecdotal literature on CODAs (Preston, 1994; Walker, 1986). These comments shared by CODA subjects express hard experiences and struggles. Yet for CODA males and females, the TSCS scores do not reflect a lower self-concept as compared to non-CODA subjects in most (for males) or all (for females) areas. A significant difference in self-concept was found only in the specific areas of education level and the social subscale for CODA males.

When looking at why some of the male scores reflected a lower self-concept than for the females, there are five suggestions given here for this apparent discrepancy. First, the TSCS may measure aspects of self-concept that are not affected by the struggles of CODA females. Other scales may measure other qualities of self-concept that are affected. Deluigi (1991) used the Modified Piers-Harris Children’s Self Concept Scale with the following subscales: behavior, physical appearance and attributes, intellectual and school status, anxiety, popularity, and happiness and satisfaction. This presents an area for future research, which is to investigate the specifics of the female CODA experience, especially as they relate to a female CODA’s sense of self as stated in the literature in the following areas: low feelings of worthiness, guilt and shame, self-doubting, responsibility to others, feelings of alienation, feelings of inadequacy, lack of ability to practice self-care and setting healthy boundaries, and struggles in cultural identity development (Blane,

1995; Buchino, 1993; Bunde, 1979; Davie, 1992; Livingston, 1997; Pollock & VanReken, 1999; Preston, 1994; Rutherford, 1987; Useem & Cottrell, 1999; Walker, 1986; Walter, 1990).

Second, for CODA females, self-concept differences may not typically be carried into adulthood. The empirical studies of Deluigi (1991), and Tandler (1975), where some significant differences were found, focused on children as subjects, not adults. Most of the literature of adult CODAs is in the form of surveys, case studies, and biographies (Abrams, 1996; Davie, 1992; Lauritsen, 1973; Livingston, 1997; Pecora et al., 1986; Preston, 1994; Royster, 1981; Sidransky, 1990; Walker, 1986; Wilber & Fristoe, 1986; Woodward, 1987). The empirical literature of CODA adults is minimal, showing no statistical difference between CODAs' and non-CODAs' self-concept (Marshall, 1978). This is not to minimize the impact being a CODAs has on an individual, or to negate the acute memories CODAs so richly and frequently expressed in the literature, but it may suggest that long-term effects into adulthood are not reflected in this study when self-concept was measured empirically, specifically for females as this study demonstrates.

Third, the CODA experience may be no different from any other unique parenting situation. This study suggests that CODAs can be as well adjusted and successful as non-CODAs.

A fourth suggestion regarding why the TSCS scores of female CODAs do not reflect a lower self-concept as compared to female non-CODA subjects may be that belonging to a CODA organization is beneficial. Is it possible that CODAs involved in a CODA organization are helped in the area of their self-concept by finding a community of others like them, which helps them feel understood and accepted? Their process of acculturation into the Hearing culture is greatly assisted. It is

interesting that 64.6% of the CODAs reported identifying most with the CODA culture, over the Deaf or Hearing communities. Many of the comments from the participants expressed the wonderful difference the CODA organization had made in their lives. This too needs further investigation.

The fifth and final suggestion may be sampling flaws: That is, CODAs who volunteered to participate in this study might have had a higher self-concept than those who declined to participate. The very act of volunteering may reflect higher self-concept development. As previously mentioned, since the CODAs in this study were solicited from the web site of an established CODA organization, there exists the possibility that those with higher self-concepts may have sought memberships in such groups in higher numbers. Hence, CODAs in this study may or may not adequately represent CODAs who have no involvement with a CODA organization. Since the bulk of the CODA participants in this study were female, this may account for the lack of significant results for this population.

When recruiting volunteers for this study, several of the CODA participants expressed excitement about my study and the opportunity for them to participate. When looking over the thoughts shared, the desire for more research was again shared by CODAs. Some addressed some specific areas they believed needed further research. A 21-year-old international female, regarding future research, stated, “Maybe something from an international CODA’s point of view. . . . After getting to know CODAs from other countries, it never ceases to amaze me how similar CODA-related emotions can be.” Another CODA stated, “I think much more research is needed about CODAs, also more support needed for young KODAs [Kids of Deaf Adults] in a sensitive way, respecting parents.”

ConclusionsConclusions

It has only been recently that the uniqueness of the CODA experience has been recognized. The need for research in this area remains great. Of the 17 hypotheses proposed in this study (the first and second study combined), 4 hypotheses were shown to be significant. In the first study, Hypotheses 14 and 15 were shown to be significant. In the second study Hypotheses 1 and 2 were shown to be significant.

It was interesting to note that in the first study, no differences in self-concept were found between CODAs and non-CODAs when matched only on age and gender. It was only after matching the CODA and non-CODA groups on education level in the second study that significant differences were shown.

Only the males in the CODA or non-CODA group showed significant differences. It was found that for total self-concept, non-CODA males scored significantly higher than did CODA males. In regard to the subscales, only the social subscale showed significant differences between the male CODAs and the male non-CODAs. CODA males with a high-school or associates/technical degree scored significantly higher than did non-CODA males in this education level. However, non-CODA males with a completed 4-year college degree scored higher on the social subscale than non-CODA males in this education level. This trend continued into graduate school, with non-CODA males scoring higher in their individual sense of adequacy and worth for social situations and interactions with other people than did non-CODA males.

No differences were shown between the females in the CODA or non-CODA group for either the total self-concept or on any of the six subscales. Both male and female CODAs showed no difference on five of the subscales of the TSCS: the view of their body, state of health, physical appearance, skills, and sexuality.

A significant difference was found for total self-concept between the education

levels. Subjects in Education Level 1 with a high-school or associates/technical degree scored significantly lower on their total self-concept than did subjects who had completed a 4-year B.A./B.S. college degree. Second, significant differences between education levels and the six subscales of self-concept were found. It was shown that subjects with a high-school or associates/technical degree score significantly lower on all six subscales of the TSCS than do subjects with a completed 4-year B.A./B.S. college degree. Specific to the physical subscale only, subjects reporting graduate school scored significantly lower than did subjects with a 4-year college degree.

Next to address is the significant relationship found between birth order and the role of primary interpreter. The firstborn and only child were found to be more likely to report performing the role of primary interpreter. Correspondingly, CODAs who reported to be the last-born child were more likely to deny performing the role as primary interpreter for parents. This is consistent with reports in the literature and previous research (Buchino, 1988, 1993; Frankenburg et al., 1985; Preston, 1994; Wilber & Fristoe, 1986).

It is valuable to empirically show the patterns and trends of the CODA family dynamics. With this information, parents, mental health workers, and educators can make educated decisions about interventions to foster healthy family dynamics. This study shows the increased responsibility firstborn and only children often shoulder as they mediate between the Deaf and Hearing worlds for their parents. These dynamics could possibly affect CODAs later on in life in various ways: from what careers they might pursue, to what types of relationships they feel most comfortable in. This finding also helps the professionals and CODAs alike, whether firstborn or later born, to understand what appears to be a common pattern in Deaf families.

The final significant relationship was found between cultural identity and

parental mode of communication. It was found that CODAs reporting that their parents' primary mode of communication was speaking/lip-reading were more likely to report a cultural identity with the Deaf culture. Correspondingly, CODAs reporting that their parents' primary mode of communication was Sign Language were more likely to report a cultural identity as Unique to CODA. This is believed to be because of the centrality that language plays in Deaf culture (Costello, 1994; Lane et al., 1996; Sacks, 1989; Smith et al., 1988).

This result shows the importance and centrality of usage of language to the cultural identity of CODAs. Within the Deaf culture, the Deaf who speak/lip-read are often seen as outsiders and are even alienated at times by those in the Deaf culture (Davis, 2007; Lane et al., 1996). They are often seen as trying to deny their deafness and instead trying to be Hearing (Lane et al., 1996). This information helps CODAs and professionals who work with these families to understand the impact the CODA's parents' communication pattern may have on their choice of cultural identity.

There are several positive aspects of the CODA experience this study brings out. First of all, the majority of CODA participants in this study demonstrated average self-concepts. CODAs had a positive view of their body, state of health, physical appearance, skills, and sexuality. They felt good about their perspective on moral worth, feelings of being a "good" or "bad" person, and satisfaction with their religion or lack of it. They felt good about their personality integration, their sense of personal worth, feelings of adequacy as a person, and self-evaluation of the personality apart from the body or relationships to others. CODAs showed healthy perspectives in relation to their immediate circle of associates and when examining their feelings of adequacy, worth, and value as a family member. They felt accepted and had a sense of competency and worth for social situations and interactions with

other people. Finally, CODAs felt good about themselves in school and work settings, and of how they believe they are seen by others in those settings.

The majority of the CODAs in this study reported that they both interpreted on a regular basis and were the primary interpreter, yet this role did not show an empirical, long-term impact on self-concept. Birth order also showed no impact on self-concept for CODAs. These are seen as positive results as it is good to have empirical support demonstrating no negative impact on self-concept when interpreting and birth order are common issues for CODAs. This study supports the theories of Higgins (1980) and Lane et al. (1996) who state that it is out of ignorance that literature has historically presented Deaf parents in a negative light, when in reality there is mounting literature that suggests otherwise.

The majority of the CODAs in this study denied identifying with either the Deaf or Hearing culture, yet identified instead with their own cultural group of “Unique to CODA.” Forming and becoming actively involved in the “CODA culture” appears to be an empowering and healing experience as reported by many CODAs in this study. Having membership into the “CODA Culture,” which they appear to be proudly involved in, may also be seen as a positive contribution to the CODA experience.

To understand the CODA experience as a process of acculturation and CODAs as a transition generation is very important. Unlike transition generations from another country who can look in the mirror and see reflected back the features of their racial heritage in their faces, CODAs may feel denied full inclusion of their “native” culture and their “racial continuity.” The essence of Deafness cannot truly be passed on. To be hearing is not to be Deaf. This might even heighten the struggle to become acculturated for CODAs. This is not to invalidate the uniqueness of their experience,

but should be considered encouraging news. The subjects in my study showed development of self-concept equal to that of non-CODAs. It is possible for Deaf parents to provide an adequate childhood environment, which supports their CODA children through this necessary transition into the Hearing world. CODAs embracing their own culture, their “uniqueness,” is seen as empowering and healing.

Finally, a higher percentage of the CODA participants in this study pursued higher educational levels. When looking at CODAs as Third Culture Kids, this is contradictory to Berger (1994) who stated that discrimination, prejudice, stereotyping, and other various forms of hidden discrimination may impede education and career development for minority groups. However, this study supports Charlson (1989), Sanders (1984), and Wilber and Fristoe (1986) who reported high ambition and academic achievement as positive CODA characteristics. This study showed that the CODA experience and position as a minority culture may actually be an accelerant for higher educational goals.

ImplicationsImplications

The group that can learn the most about the information presented in this study is the CODA group themselves. Much of the literature regarding CODAs emphasizes uniqueness of the CODA experience. The qualitative literature supports that there is a difference between CODAs and non-CODAs, specifically in the area of self-concept development. This study helped to provide empirical support for the CODA experience, showing that there is a significant difference in self-concept for CODA males, for total self-concept and social self-concept. However, for CODA females, no significant difference was found.

This study helps mental health professionals who work with CODAs. Knowledge about the unique issues CODAs face can help mental health providers be

educated and therefore better able to provide effective treatment and support. For example, it would be beneficial for providers to have knowledge of the potential for CODAs to struggle with hyper-responsibility or cultural integration issues, as stated in the qualitative research (Preston, 1994; Shield, 2005; Walker, 1986) and expressed in the Narrative Thoughts Shared section of this study. For example, understanding the effect of one's family on the CODA's experience might suggest that utilizing a family systems approach for mental health treatment might better address these issues. My research also suggests that having to interpret for parents, birth order, and the "being caught between two cultures" (Hearing and Deaf) does not necessarily negatively affect a CODA's self-concept. The therapists must not automatically conclude that a CODA's situation is negatively affected by these things, and will thus want to explore other issues. Finally, it is recommended that mental health providers working with Deaf clients read Gutman's (2002) book, *Ethics in Mental Health and Deafness*. Other books and articles are also recommended as they address specific issues in working with Deaf clients such as Sign Language, the use of interpreters, and Deaf culture (Buchino, 1990; Filer & Filer, 2000; Glickman & Harvey, 1996; Scheetz, 2001; Schirmer, 2001; Singleton & Tittle, 2000; Williams & Abeles, 2004)

Parents, teachers, administrators, and communities can benefit by learning how to better develop and provide services or programs to assist CODAs and KODAs. Involving school counselors to help with possible acting out behavior or delayed adolescents that is more common in third culture kids (Pollock & VanReken, 1999) may be helpful.

A final implication of this study is to assist in spreading awareness of a more respectful cultural perspective of Deafness rather than a pathological one. This will benefit the Deaf, CODAs, KODAs, and all who work with this population.

Since there are no significant differences found for female CODAs, and the bulk of the subjects in this study were females, there are several things we can learn from this. This study supports that, for CODA females, uniqueness does not cause long-term, lower self-concept. This may seem contradictory to some studies; however, it is important to note that the stories and anecdotal writings often found in the literature are opinions. This study seems to suggest that even with their different experiences, the long-term self-concept development of this female CODA sample showed to be the same as the “normal” general female non-CODA population regardless of education level. This information is just as important and contributes to this area of knowledge, especially considering the paucity of empirical studies. One now may ask, could the CODA experience, as challenging and unique as it is, actually not be as negative an experience for CODAs as once thought? Is it a possibility that the CODA experience could actually serve as a self-concept enhancer? This study has demonstrated that for females the CODA experience does not have a negative impact on long-term self-concept.

This study is important because it supports that there is no difference in self-concept development for CODA females, regardless of their unique experience. This brings up the question: What is a “normal” childhood experience and subsequent self-concept development? Does not everyone feel they have a unique experience? Might it be that everyone struggles to some degree, CODAs and non-CODAs alike? Other variables impact self-concept other than parents’ hearing status such as parental personality variables. The CODA experience may be no different from other unique non-CODA parenting situations. This is in no way meant to minimize or invalidate the impact of what having Deaf parents means for CODAs, nor to minimize their stories and experiences. But it significantly challenges the hypothesis that being a

CODA is a set-up for delayed self-concept development and carries long-term effects on self-concept. This study suggests no lasting impact in long-term self-concept development for females. This study did not look at the experience of a CODA in a phenomenological or qualitative way, but only at one small piece, without being able to control for all variables that impact this study.

It is also suggested that the reason why more significant results were not found was because the CODA population that participated in this study was recruited from a CODA listserv and various CODA web sites. Might it be that being associated with the established CODA organizations is in fact helping CODAs establish areas of their self-concept that might have otherwise been neglected? Or, might CODAs with a higher self-concept development be the ones who join the CODA organizations or might this even have led them to participate in such a study? When considering CODAs are a transition generation between cultures, involvement into organizations such as CODA International can only assist the acculturation process. Future studies may want to look at this in greater depth.

Recommendations

The following are several recommendations for future research.

1. There continues to be a need for more research of the CODA experience.

One participant in this study states, “I think there needs to be *more* research on CODAs due to the unique environment we grow up in. I find that many times, I don’t identify with hearing or deaf people and there aren’t enough codas around to identify with.” Questions that this study generated need to be answered such as, Why do male CODAs have differences in their self-concept from female CODAs? What contributes to this phenomena found in this study? There is also the need to provide

more research in the area of KODAs, or Kids of Deaf Adults. KODAs are in the midst of their growing years and self-concept/identity development. Most of the empirical studies that show a difference in self-concept were done on children and adolescents. Research needs to be done on whether self-concept changes from KODA to CODA experiences. More understanding of their unique experience can help parents, educators, and mental health providers minimize the possible negative effects.

2. Studies are needed to assess if there is an overall difference in self-concept between CODAs who attend CODA conferences, are involved with Coda International, and have regular contact with other CODA individuals versus CODAs who do not. One participant, a 39-year-old CODA female in this study, wrote the following:

Codas (hearing adult children of deaf parents) who have experienced CODA (i.e., gone to conferences) are usually a different breed than those who have not. CODA was a HUGE thing for many of us, and to me it honestly changed me and gave me my sense of identity and a feeling of belonging in the world. I guess I'm just saying that you may want to take into consideration whether the Codas who respond are "CODA - Codas" or "Coda - Codas," and for how long they have been acquainted with CODA at a conference. For many, it is the first step in an amazing journey of self discovery, so CODA-Codas of one year may exhibit patterns very different than CODA-codas of 10 years. Just a thought for future research.

A further look into this difference would be helpful as it will provide education to CODAs of a possible avenue to help assist them in resolving the issues of their unique experience.

3. Studies investigating the CODA experience as a cultural transitional generation are also needed. It is specifically seen as important to investigate aspects that will assist this acculturation process.

4. Studies are needed to examine the possibility that the CODA

experience

may be no different in the end from other unique parenting situations.

5. This study suggests that additional research examine the results of a randomly selected CODA sample tested against a control group. This study surveyed CODAs who volunteered, whereas a randomly selected CODA sample might produce different results.

6. Future research is also needed as it pertains to CODAs from different ethnic backgrounds or different countries and cultures. Do other ethnic groups have the same dynamics within CODA families? For example, do Eurocentric CODAs report similarities to African CODAs in their experience? What is the impact that culture has on CODAs? What about the Asian culture with more conclusive or collective family systems? Is the impact of the CODA experience in an Asian family lessened as compared to families in the Western cultures? These are important questions as researchers look at the commonality and differences of the CODA experience across ethnicity and culture.

7. Future research can examine more closely the relationship between parental mode of communication and cultural identity. It would be interesting to understand more, as this study showed, why parental mode of communication is related to cultural identity. Is this true for other languages and cultures? What would this mean to parents as they raise their children? This information would be valuable to parents and educators as they raise the next generation.

8. In the current CODA literature, no references were found that addressed the possible relationship between the presence of deaf or hearing siblings and a CODA's cultural identification. For example, would the presence of deaf siblings affect a CODA's cultural identity? Studies in this area are needed.

9. Future research may want to continue investigating possible differences between CODAs and non-CODAs when matched on education level or other variables.

10. Finally, more research and subsequent education is needed to spread awareness of Deaf and CODA issues. More education to the general public is needed to spread a more respectful cultural perspective of the Deaf, rather than a pathological one.

Final Thoughts

There are some final thoughts I want to share in conclusion. To assist in providing a contribution to the literature on the subject of CODAs has been rewarding for me. I was so impressed with the willingness, openness, and even desire of my CODA participants to share their experiences. I was impressed by the dedication to spread knowledge of the CODA experience and future research. From one simple question at the bottom of the demographics questionnaire, “Are there any thoughts you want to share?” many responded, providing the numerous quotes throughout the last two chapters of this report. I was touched by the several participants who shared quite personal experiences. The journey of a CODA to self-discovery is a thing of beauty, and I so appreciated the willingness of my CODA participants to share a bit of their journey with me. I found such a passion about sharing their awakening to the uniqueness of the CODA experience and the final finding of themselves a “whole.”

APPENDIXAPPENDIX

APPENDIX A

AUTHORIZATION TO PERFORM STUDY AUTHORIZATION TO PERFORM
STUDY

APPENDIX B

LETTER REQUESTING CODA PARTICIPANTS LETTER REQUESTING
PARTICIPANTS

Esther Saville
66 South 100 East
Smithfield, UT 84335
(435) 563-6735
saville@andrews.edu

Dear CODA:

My name is Esther Saville. I myself am not a CODA. However, my interest in the CODA experience has been growing for several years. Initially this was because of my own personal experience and interactions with my deaf and CODA friends. Later my reading has widened and deepened this interest. I am completing a degree in psychology. For my dissertation I am studying the topic of identity and the CODA experience (Children Of Deaf Adults).

I believe the voice of CODAs need to be heard and the effects of their unique experience understood by all. That is why I am contacting you. I am wondering if you would be willing to help me by participating in this study and will only take about 30 minutes of your time. In appreciation for your participation I will be returning to you a \$20.00 gift certificate for the store of your choice selected from the following:

Barnes & Nobles
Best Buy
Wal-Mart
Olive Garden

If you are willing and interested, please contact me via email: saville@andrews.edu, or phone: (435) 563-6735, indicating your interest and how to contact you. Be sure to indicate your choice of business for the gift certificate. I will then mail you the study, instructions, and a prepaid envelope to return it in. Once this is completed and returned to me I will immediately send you your gift certificate. This will be on a first come first serve basis until the number of respondents required is met, so your prompt response is necessary to insure your receipt of a gift certificate. By the way, if none of these listed businesses interest you, then please inform me what you would be interested in and I will try to accommodate your wishes.

Feel free to call if you have any questions. Thank you for considering my request.

Sincerely,

Esther Saville

APPENDIX C

CODA TESTING PACKET CODA TESTING PACKET

Esther Saville
66 South 100 East
Smithfield, UT 84335
(435) 563-6735
saville@andrews.edu

Dear CODA Participant:

Thank you for your willingness to participate in this study.

- You will notice there are two identical Informed Consent Forms (beige). One of these forms is for you to keep. Please read and sign the other one.
 - Please complete the Demographics Questionnaire (blue).
 - Please complete the Tennessee Self-Concept Scale (note: it's double sided).

Please return the signed Informed Consent, completed Demographics Questionnaire, and completed Tennessee Self-Concept Scale in the envelope provided. As soon as this material is received, I will mail out to you the \$20.00 gift certificate for the business of your choice. Thanks again for your participation in this study, it is much appreciated.

Sincerely,

Esther Saville

Andrews University

Educational and Counseling Psychology Department

Informed Consent Form: CODA

TITLE OF STUDY:

A Study of Identity/Self-Concept Issues in Hearing Children of Deaf Adults (CODAs)

PURPOSE:

The purpose of this study is to investigate the possibility of a difference in self-concept formation between CODAs and non-CODAs.

INCLUSION CRITERIA

I understand that in order for me to participate in this study I must be a normal hearing adult, age 18 and older, with both parents deaf or hard of hearing.

PROCEDURE

I understand that I will be asked to complete the Tennessee Self-Concept Scale and a brief Demographics Questionnaire. I understand that this will take about 20 minutes of my time. I understand that the materials are to be returned in the self addressed and stamped envelope within 2 weeks to receive compensation.

RISKS AND DISCOMFORTS

I understand that there are no known risks for participating in this study.

BENEFITS/RESULTS

I understand that I will be paid the sum of \$20.00 for participating in this study. I understand that the results may help parents, teachers, and mental health clinicians best provide services to CODAs. I understand that the information collected during this study will be included in a Doctoral Dissertation, and may be presented or published in professional meetings or journals.

VOLUNTARY PARTICIPATION

I understand that my participation in this study is voluntary. I understand that I may discontinue my participation in this study at any time without any penalty or prejudice.

CONFIDENTIALITY AND/OR ANONYMITY

I understand that my identity in this study will not be disclosed in any published document.

ADVISOR OR IMPARTIAL THIRD PARTY CONTACT

I understand that if I wish to contact the researcher's advisor regarding any complaint I may have about the study I may contact: Nancy Carbonell, Ph.D., Email: carbanel@andrews.edu, Phone#: (269) 471-3472.

INFORMED CONSENT

I have been given a copy of this consent form. I understand that if I have further questions before signing this Informed Consent I may contact Esther Saville (saville@cc.usu.edu, Phone #: (435) 563-6735).

I hereby give voluntary consent to be in this study.

(Signature of Subject)

(Date)

(Witness)

(Date)

CODA Demographics Questionnaire

Gender: Male _____
Female _____

Age _____

Highest education level or grade completed: High School _____
Some College or vocational _____
Associates Degree _____
B.S./B.A. Degree _____
Some Graduate school _____
Master Degree _____

Doctoral Degree _____

Birth Order: First-born _____
Middle child _____
Last born _____
Only child _____
First-born Daughter _____
First-born Son _____

How many hearing siblings did you have? _____

How many deaf siblings did you have? _____

Were both your parent's deaf or hard of hearing? Yes _____
No _____

What was your parent's primary mode of communication?
Sign Language _____
Speaking/Lip Reading _____

Did you interpret on a regular basis for your parents? Yes _____
No _____

Out of your siblings, did you see yourself as the primary interpreter for your parents?
No _____ Yes _____

What culture do you identify with more? Deaf _____
Hearing _____
Unique to CODAs _____

Are there any thoughts you want to share? (Continue on back of page if needed)

APPENDIX D

NON-CODA TESTING PACKETNON-CODA TESTING PACKET

Esther Saville
66 South 100 East
Smithfield, UT 84335
(435) 563-6735
saville@andrews.edu

Dear Participant:

Thank you for your willingness to participate in this study.

□ You will notice there are two identical Informed Consent Forms (orange color). One of these forms is for you to keep. Please read and sign the other one.

□ Please complete the Demographics Questionnaire (green).

□ Please complete the Tennessee Self-Concept Scale (note: it's double sided).

Please return the signed Informed Consent, completed Demographics Questionnaire, and completed Tennessee Self-Concept Scale in the envelope provided. As soon as this material is received, I will mail out to you the \$10.00 gift certificate for the business of your choice. Thanks again for your participation in this study, it is much appreciated.

Sincerely,

Esther Saville

Andrews University

Educational and Counseling Psychology Department
Informed Consent Form: Non-CODA

TITLE OF STUDY:

A Study of Identity/Self-Concept Issues in Hearing Children of Deaf Adults (CODAs)

PURPOSE:

The purpose of this study is to investigate the possibility of a difference in self-concept formation between CODAs and non-CODAs.

INCLUSION CRITERIA

I understand that in order for me to participate in this study I must be a normal hearing adult, age 18 and older, with both parents having normal hearing.

PROCEDURE

I understand that I will be asked to complete the Tennessee Self-Concept Scale and a brief Demographics Questionnaire. I understand that this will take about 20 minutes of my time. I understand that the materials are to be returned in the self addressed and stamped envelope within 2 weeks to receive compensation.

RISKS AND DISCOMFORTS

I understand that there are no known risks for participating in this study.

BENEFITS/RESULTS

I understand that I will be paid the sum of \$10.00 for participating in this study. I understand that the results may help parents, teachers, and mental health clinicians best provide services to CODAs. I understand that the information collected during this study will be included in a Doctoral Dissertation, and may be presented or published in professional meetings or journals.

VOLUNTARY PARTICIPATION

I understand that my participation in this study is voluntary. I understand that I may discontinue my participation in this study at any time without any penalty or prejudice.

CONFIDENTIALITY AND/OR ANONYMITY

I understand that my identity in this study will not be disclosed in any published document.

ADVISOR OR IMPARTIAL THIRD PARTY CONTACT

I understand that if I wish to contact the researcher's advisor regarding any complaint I may have about the study I may contact: Nancy Carbonell, Ph.D., Email: carbonel@andrews.edu, Phone#: (269) 471-3472.

INFORMED CONSENT

I have been given a copy of this consent form. I understand that if I have further questions before signing this Informed Consent I may contact Esther Saville (saville@cc.usu.edu, Phone #: (435) 563-6735).

I hereby give voluntary consent to be in this study.

(Signature of Subject)

(Date)

(Witness)

(Date)

Non-CODA Demographics Questionnaire

Gender: Male _____
Female _____

Age _____

Highest education level or grade completed: High School _____
Some College or vocational school _____
Associates Degree _____
B.S./B.A. Degree _____
Some Graduate school _____
Master Degree _____
Doctoral Degree _____

Birth Order: First-born _____
Middle child _____
Last born _____
Only child _____
First-born Daughter _____
First-born Son _____

APPENDIX E
RAW DATADATA

DATA FORMAT

Row 1 Row Per Subject

Columns

- 1-3 Subject Number
- 4 Group (Testing or Control)
- 5 Gender
- 6-7 Age
- 8 Education Level
- 9 Birth Order
- 10 Number Hearing Siblings
- 11 Number Deaf Siblings

- 12 Parent's Mode of Communication
- 13 Regular Interpreting
- 14 Primary Interpreter
- 15 Cultural Identity
- 16-97 Tennessee Self-Concept Scale 2nd Edition

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REFERENCE LIST

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