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Career Orientation Levels in Adolescents : A Comparison of Cleft and Noncleft Subgroups

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THESIS APPROVAL

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ABSTRACT

An abstract of the thesis of Tara Darice Gaddis for the Master of Science in Speech Communication: Speech and Hearing Sciences presented May 6, 1998.

Title: Career Orientation Levels in Adolescents: A Comparison of Cleft and Noncleft Subgroups

The current research studied career orientation levels during adolescence utilizing previously collected cross-sectional data on 80 subjects. The subjects had participated in a study focusing on the ways in which clefting, gender, self-concept, mental ability, and socioeconomic status impact career development. Preliminary analysis of the data found that self-concept, mental ability, self-ratings of facial appearance, and desired level of future educational status were the factors most predictive of level of career development. In the initial analysis of the data, subjects, cleft and noncleft, who demonstrated high self-esteem, high mental ability, reported a more advanced level of desired higher education, and whose facial appearance were rated by objective judges as more acceptable were found to demonstrate more advanced levels of career development. In-depth analysis of the Career Development Inventory (CDI) subtest data collected for each of the 80 subjects was not performed as part of the initial study.

The current study involved in-depth analysis of CDI subtest data from 40 cleft and 40 noncleft individuals, equally divided between males and females in the age group categories of 14, 15, 16, and 17 years. Specifically, the study sought to identify the effects of subject

type (cleft and noncleft), age, and gender on the career orientation areas of career planning, career exploration, decision-making, and world-of-work knowledge. Three-way ANOVA analysis techniques failed to find significant effects for subject type, age, or gender in the developmental areas of career planning, career exploration, or decision-making. Significant effects were found for subject type and gender in the developmental area of world-of-work knowledge. Subjects without clefts were found to demonstrate more advanced levels of world-of-work knowledge as compared to their peers with orofacial clefts. Female subjects (cleft and noncleft) were found to be more advanced in world-of-work knowledge as compared to their male peers. A significant difference was found between 15-year-old subjects and 17-year-old subjects in world-of-work knowledge. Fifteen-year-old subjects scored significantly lower than their 17-year-old counterparts.

CAREER ORIENTATION LEVELS IN ADOLESCENTS: A COMPARISON OF CLEFT AND NONCLEFT SUBGROUPS

by

TARA DARICE GADDIS

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DEDICATION

I would like to dedicate this thesis to my Grandmother, Gram, who I still run to for love and comfort, and to my Grandfather, Papa, who I still run to in my thoughts.

ACKNOWLEDGMENTS

First and most important I want to thank my thesis advisor Lisa Letcher-Glembo for her support and encouragement throughout this process. Her patience and belief in me kept me believing in myself. I feel I have not only gained a colleague, but a friend.

I would also like to thank the other committee members. A special thank you to Dr. Tetnowski, who greatly assisted in meeting time deadlines.

Finally, thank you to my family, especially my parents, Steve and Sharon. Their undying love, support, and faith continues to give me the strength and courage to reach for goals I never thought possible. I love you.

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CHAPTER I

INTRODUCTION AND STATEMENT OF PURPOSE

Introduction

Orofacial clefts are a congenital anomaly that may result in persisting, life long differences in speech characteristics and facial appearance (Moller & Starr, 1993). These differences may lead to a poor self-concept due to factors such as poor social acceptance (Moller & Starr, 1993). Self-concept has been found to impact the career selection of individuals from a diversity of backgrounds, including those of different gender (King, 1989) and age (Niece, 1979). Limited research has been completed to study the impact of orofacial clefting on early career development.

Letcher-Glembo (1989) recruited 80 adolescent subjects, 40 cleft and 40 noncleft, to participate in a study of career maturity that focused on the impact of gender, self-concept, mental ability, and socioeconomic status (SES) on the level of career development. Each subject completed measures of career development (Career Development Inventory [CDI]; Super, Thompson, Lindeman, Jordaan, & Myers, 1981), self-concept (Tennessee Self Concept Scale [TSCS] ; Fitts, 1965), mental ability (Shipley Institute of Living Scale [SILS]; Zachary, 1986), self-ratings of speech and facial appearance acceptability, and a biographical questionnaire. Utilizing recorded speech samples and photographic slides, objective ratings of speech and facial appearance acceptability were obtained from judges unfamiliar with the subjects.

Career maturity scores, derived from a single measure utilizing the subjects' scores on the standardized CDI, were submitted along with the other factors for multiple regression analysis. Preliminary analysis of the data found that self-concept, mental ability, objective ratings of facial appearance, and desired level of educational status were the factors most predictive of level of the subjects' career development.

In the initial analysis of the Letcher-Glembo (1989) data, the cleft and noncleft subjects who demonstrated: (a) high self-esteem and high mental ability, (b) reported an advanced level of desired higher education, and (c) whose facial appearance were rated as more acceptable, were found to also demonstrate a more advanced level of career development. Subjects who demonstrated: (a) depressed levels of self-esteem, (b) lower mental ability, (c) who failed to desire to pursue higher education, and (d) whose facial appearance were rated as less socially acceptable were found to demonstrate more depressed levels of career development.

In-depth analysis of the factors that comprise the construct of career orientation, namely the subjects' developmental levels in career planning, career exploration, decision-making, and world-of-work knowledge was not performed. Further exploration of the available data would reveal whether or not differences exist in cleft and noncleft adolescents approach to career development within the construct of career orientation.

Statement of Purpose

The current study sought to explore whether or not differences exist between the career orientation levels of adolescents with and without clefts. The null hypothesis is stated as "Career development levels of adolescents with clefts will be equivalent to the career

development levels of adolescents without clefts (H_o: $\mu_{cleft} = \mu_{noncleft}$)." The following null hypotheses are stated for this study:

1. Adolescents with orofacial clefts will score similarly in the area of career planning to adolescents without clefts.

2. Adolescents with orofacial clefts will score similarly in the area of career exploration to adolescents without clefts.

3. Adolescents with orofacial clefts will score similarly in the area of decision-making to adolescents without clefts.

4. Adolescents with orofacial clefts will score similarly in the area of world-of-work knowledge to adolescents without clefts.

5. Younger adolescents, both cleft and noncleft, will score similarly across the categories of career planning, career exploration, decision-making, and world of work knowledge to older adolescents with and without clefts.

6. Male adolescents, both cleft and noncleft, will score similarly across the categories of career planning, career exploration, decision-making, and world-of-work knowledge to female adolescents with and without clefts.

Based on review of the literature and past findings, the following research hypotheses were developed:

1. Adolescents with orofacial clefts will demonstrate a lower level of career planning than their noncleft peers.

2. Adolescents with orofacial clefts will demonstrate a lower level of career exploration than their noncleft peers.

3. Adolescents with orofacial clefts will demonstrate a lower level of decision-making than their noncleft peers.

4. Adolescents with orofacial clefts will demonstrate a lower level of world-of-work knowledge than their noncleft peers.

5. Younger adolescents, both cleft and noncleft, will demonstrate a lower level of career orientation across the categories of career planning, career exploration, decision-making, and world-of-work knowledge than older adolescents with and without clefts.

6. Male adolescents, both cleft and noncleft, will demonstrate a lower level of career orientation across the categories of career planning, career exploration, decision-making, and world-of-work knowledge than female adolescents with and without clefts.

To test this study's research hypotheses, the following specific research questions were asked:

1. What are the effects of subject type, age, and gender on career planning?

2. What are the effects of subject type, age, and gender on career exploration?

3. What are the effects of subject type, age, and gender on decision-making?

4. What are the effects of subject type, age, and gender on world-of-work knowledge?

Definition of Terms

The following terms are defined for the purpose of this study:

career development: A term used to include occupational awareness, planfulness, desire to explore the world-of-work, and recognition of changes in the tasks of vocational development as a person ages (Super, 1957).

Career Development Inventory (CDI): A standardized test used to assist in individual career planning or group educational programs (Hansen, 1985).

career exploration: The resources an individual has used or contacted

in regards to an occupation. Also includes, how useful those resources are as judged by the subject (Hansen, 1985).

career maturity: The degree to which an individual is prepared to make informed, age-appropriate career decisions (King, 1989).

career orientation: The combined developmental levels of career planning, career exploration, decision-making, and knowledge of world-of-work (Hansen, 1985).

career planning: How deeply involved a person is in a vocational plan, and what kind of knowledge they have on a career of interest (Hansen, 1985).

cleft stigmata: A negative societal opinion placed on an individual with an orofacial anomaly.

craniofacial anomaly: Abnormalities or malformations of the face. It may include the muscle tissue and/or the skeletal structure (Nicolosi, Harryman, & Kresheck, 1989).

decision-making: The ability to make an age-appropriate decision when presented with a problem. In the assessment of career development, individuals are presented with scenarios in which they must determine the correct decision.

family cohesion: Emotional bonding of family members towards one another as measured by emotional bonding, boundaries, coalitions, time, space, friends, decision-making, and interests and recreation (Olson, 1988).

orofacial cleft: Used to describe persons who have cleft, or a lack of fusion, of the lip, the palate, or both. Often the acronym CLP will be used (Nicolosi et al., 1989).

self-concept: Carl Rogers defines self-concept as self evaluations heavily influenced by evaluations made by others (Lindzey, Hall, & Thompson, 1975).

social-concept: The evaluation of one's self within the context of social and cultural environment in which he or she develops. The contexts affect one's view of how one is

perceived, how his or her family interacts socially with them, and how the community responds socially (Strauss, as cited in Bzoch, 1997).

world-of-work information: Gaining knowledge of occupational structures and career development tasks (Hansen, 1985).

CHAPTER II

REVIEW OF THE LITERATURE

The current study sought to explore whether or not differences exist between the career orientation levels of adolescents with and without clefts. To complete a study of this nature, it is necessary to have an understanding of the construct of career development and factors that can affect level of career development. Knowledge of measurement tools of career development and how these tools have been utilized to study career development of individuals of diverse backgrounds was also necessary. Review of pertinent research findings with particular emphasis on findings in the cleft palate/craniofacial population has been underway. An overview of findings is presented.

What is Career Development?

Super (1957, p. 131) defines career development as a "process of growth and learning which subsumes all vocational behaviors." Vocational behaviors are the interactions individuals encounter throughout their lives that relate specifically to preparing for, being involved in, or retiring from a career. Individuals pass through stages of career development as they mature in their career behavior. The stages are as follows: preschool, elementary school, high school, young adulthood, mature adulthood, and older age. Super (1957) made it clear that as an individual matures in career development, a new developing behavior is a modification of the old. Behaviors simply expand and mature with age. Super (1957) lists factors such as concepts of roles and self, personal factors (intelligence, special aptitudes,

interests, values, attitudes, and personality), and situational factors (religious beliefs, socioeconomic factors, parental support) as affecting vocational and behavioral development.

What Are Measures of Career Development?

Level of career development can be measured during adolescence and young adulthood as a means of an individual's eventual career success and satisfaction (Super & Thompson, 1979). As defined by Hansen (1985, p. 222), "*career orientation* is the combined developmental levels of career planning (CP), career exploration (CE), decision-making (DM) and knowledge of world-of-work (WW)." Super (1957) described these four aspects of career orientation as the basis of career development.

Level of career development depends upon the extent to which an individual has engaged in planning, exploration, decision-making, and expanding their knowledge of the world-of-work in which they want to enter. With these factors in mind, appropriate test instruments have been developed. Review of the literature suggests that the most commonly used tools to measure career development in individuals and across groups are: the Career Maturity Inventory (CMI) and CDI (Super et al., 1981).

Career Maturity Inventory

The CMI is designed to be used with children age 6 to 12 years old. It consists of two components: an attitude scale and a competence test. The attitude scale consists of 50 items. The results reveal a positive or negative reaction to finding an occupation. The competence test includes five subcategories of self-appraisal, occupational information, goal selection, planning, and problem-solving. The authors of the test consider these five aspects to be components of career decision-making. While the tool has been highly utilized in a number of

past researched studies, there are drawbacks to its use. There is no criteria for a time limit, thus allowing for inconsistencies in administration. There is a *don't know* response in the competence component of the CMI. Subjects completing the instrument can interpret *don't know* in differing manners, depending on their background factors and personalities (Frary, 1984). The ages on which the test is normed prohibits its use with adolescents 13 years of age and older.

Career Development Inventory

The CDI has two standardized formats: High School Form and College and University Form. The CDI was designed to assess the career orientation areas of career planning, career exploration, decision-making, world-of-work, and knowledge of preferred occupational group. The CDI was normed on over 5,000 adolescents. Although not a representative national sample, the norming does include groups that differ in urban-suburban-rural, and inner city regions as well as differing grades and genders. The authors report each category of the CDI to have content validity, meaning they may be used individually as well as a group measure of career development. Construct validity has been supported in the areas of age and grade, gender, and curricular differences (Super & Thompson, 1979). Furthermore, the CDI has been used successfully to differentiate among special populations (Border & Strauss, 1989; Kelly & Cobb, 1991; Lee, 1984).

What Are Factors That Affect Career Development?

Factors that have been found to affect career development include age, gender, mental ability, SES, ethnicity, self-concept and social relationships, locus of control, and

family cohesion. Findings of past research studies that focus on the impact of these factors on the career development process are discussed.

Age

Studies show that with an increase in age, typically, there is an increase in career development. Using the CDI to measure career maturity in adolescents, King (1989) found that there was a different relationship between age and level of career planning and career exploration. Levels of career planning and career exploration increased systematically as age of the subjects increased.

Age has also been found to be directly related to career decision-making. Niece and Bradley (1979) believed that with an increase in age, an adolescent would become more decided on a career choice. Testing 377 students with the *Career Indecision Instrument*, Niece and Bradley (1979) found their hypothesis to be true. With an increase in age, came an increase in career decisiveness.

Gender

Researchers, such as Kelly and Cobb (1991), have studied the differences that exist in the career development levels of boys and girls. Kelly and Cobb (1991) compared males and females in the areas of cognitive resources for career decision-making and career planning. Utilizing the CDI as the measurement instrument, results revealed existing differences between males and females in career development levels. Girls held greater knowledge of their preferred career than their male peers.

In 1989, King looked at career differences between males and females using the CDI Attitude scores which included background variables (parental SES and child's age), family climate (parental aspirations, family cohesion, and cultural participation), and locus of

control. Results indicated that girls' career development attitudes were higher than their male counterparts. These findings support that females progress at a more rapid rate in their career development process during the adolescent years.

Mental Ability

Level of mental ability has been found to be related to level of career development. A study of economically disadvantaged adolescents (ages 16 to 22), most of whom had dropped out of high school, examined the relationship between intelligence scores on the Wechsler Adult Intelligence Scale (WAIS; Wechsler, 1981) and scores on the CMI (Crites, 1978; Palmo & Lutz, 1983). Palmo and Lutz (1983) recruited 120 subjects to participate. A relationship was found to exist in that high WAIS scores were directly correlated with high CMI scores.

The relationship between career development and mental ability has also been researched in the gifted population. Kelly and Cobb (1991) recruited 107 gifted adolescents (ages 11 to 14) to complete the CDI. Comparing scores to normative data, it was found that these gifted students scored higher on decision-making than high school seniors and scored equivalent to 9th grade students in career planning. Findings support the theory that advanced mental ability is related to higher levels of career development.

Socioeconomic Status

SES has been found to be related to career development; however, results have been inconsistent. Mullis, Mullis, and Brailsford (1997) found that increased SES relates to an increase in comfort in academic settings. In turn, a higher academic comfort may result in an increased desire to pursue higher education and, therefore, increase career development. Mullis et al. (1997) administered the Academic Comfort subscale of the Strong-Campbell

Interest Inventory to 1,364 subjects to assess their perception of academic competence. Subjects whose parents were categorized as professional or skilled workers scored higher on the Academic Comfort subscale than their peers whose parents were categorized as unskilled or farmers. These results suggest that SES of families is a factor in adolescence comfort in academic settings and career development.

Super and Nevill (1984), in contrast, failed to find a direct relation between SES and level of career maturity. Two hundred four high school students participated in their study utilizing the CDI. Results of the study showed that disadvantaged adolescents exposed to the world-of-work were at the same level of career development as their advantaged peers, thus failing to support consistently the hypothesis that level of SES dictates level of career maturity.

Ethnicity

The relationship between career development and ethnicity has been a topic of research. Lee (1984) found that significant differences exist in the career development levels of various ethnicities such as African Americans, Caucasians, and Native Americans. A multiple regression analysis revealed the need for differing equations when measuring the impact of various factors on the career maturity levels in African Americans, Caucasians, and Native Americans. The factors of parental involvement, self-concept, and world-of-work knowledge were found to have varying impact on the career maturity levels of these different ethnic subgroups.

Self-Concept and Social Relationships

Self-concept or *self-esteem* refer to how we view ourselves. Our self-concept is often influenced by our interactions with others. According to Rogers, an individual's self-concept

develops as a component of his or her relationship within the world they exist. The experiences of this self system are those that refer to the "I." They are the ways in which an individual experiences oneself. Statements such as the following are examples of expressions of one's self experiences: "I am ugly." "I am bright." These statements reflect an individual's self-evaluation, but also, as Rogers points out, the experiences of the self may be inaccurate as the self-concept can be heavily influenced by evaluations of others such as teachers and parents (Lindzey, Hall, & Thompson, 1975, p. 553).

Pleasant experiences and interactions give a person positive feedback in regards to their social skills and may encourage a person to continue to engage in social interactions. If their social experiences, however, are negative, a person may withdraw from further attempts at social relations. Among children, negative reactions may include rejection, teasing, or exclusion. Being rejected, teased or excluded may make an individual feel poorly about themselves (Pillemer & Cook, 1989).

Chui (as cited in McCullough, Ashbridge, & Pegg, 1994) researched self-esteem and career goals and found that adolescents with a higher self-esteem had career goals, whereas, those with low self-esteem failed to develop career goals. Chui believed that an adolescent with high self-esteem would have better social adjustment, career development, and aspire to more prestigious careers.

Findings of Munson (1992) support the correlation between high self-esteem and advanced levels of career development. In his study of 251 subjects, he found that students with high self-esteem had more concrete career goals than students with low self-esteem.

Research specifically focusing on children with CLP have found that children with craniofacial differences are at a much higher risk for poor self-esteem and impaired social relations. Research of the non-cleft population suggests that individuals with a low self-

esteem will be less decisive in their career, are not as involved in career planning, and may aspire to a less prestigious career. From this information, one could generalize that adolescents with CLP are at risk for low self-esteem and may be less decisive about career goals or select careers with lower prestige. This assumption is supported by a study completed by Van Demark and Van Demark (1970). They found that out of 39 adolescents with CLP, only 20 had discussed career plans with school counselors; their planning was limited to the selection of high school courses.

Locus of Control

Locus of control (LC) is thought of in two forms: internal and external. An individual who has an internal locus of control believes that his or her own personality and behaviors have an effect on events that occur in his or her life. An individual with an external LC credits events in their life to luck or outside forces. Effects of LC have been the focus of studies comparing individuals with external LC and individuals with internal LC to determine the impact of LC on career development level.

Kosher (1981) completed a study which looked at the impact of LC and self-esteem on career goal decision-making. Kosher hypothesized that adolescents with external LC would be more likely to withdraw from decision-making and would not have a career decision. Kosher further hypothesized that adolescents with a high self-esteem and internal LC would be more likely to state a vocational decision. Results supported his hypothesis. Adolescents with an internal LC and a high self-esteem decided on a career choice more frequently and earlier in life than adolescents with low self-esteem and an external LC.

In 1994, McCullough et al. studied LC in terms of its relationship with social adjustment and leadership abilities. It was theorized that adolescents who presented internal

LC would be better adjusted and, therefore, be leaders. McCullough et al. (1994) found that members in the leadership group demonstrated internal LC. Individuals with an internal LC also held more prestigious career aspirations than those with an external LC.

Lokan, Boss, and Patsula (1982) used the CDI to evaluate career maturity in adolescents in relation to LC. They, too, hypothesized that adolescents with internal LC would demonstrate greater career maturity than those with external LC. Their hypothesis was supported by the study's results in that adolescents with an internal LC demonstrate more advanced levels of career maturity, particularly in terms of career planning.

Current research on adolescents with CLP with focus on LC was unavailable.

Family Cohesion

Per Olson (1988) family cohesion refers to the emotional bonding, boundaries, coalitions, time, space, friends, decision-making, and interests and recreation between family members. There are levels of family cohesion, namely *disengaged, separate, connected,* and *enmeshed.* Olson is cognizant of the fact that there should ideally be a balance within these levels of family cohesion.

The cohesiveness of a family has been found to effect career maturity in adolescents. Cohesiveness defines the level of emotional bonding that family members have. King (1989) studied family cohesion and its effects on career maturity. She found family cohesion to have an indirect effect on a person's level of career development. Adolescents from a family with high cohesion were scored as having a more internal LC, which, in turn, related to more advanced levels of career maturity.

Morrow (1995) used the Circumplex Model which focuses on the four levels of family cohesion. To reiterate in more detail what was eluded to earlier, the first level of

cohesion is disengaged (very low), the second is separated (low-to-moderate), the third is connected (moderate-to-high), and the fourth is enmeshed (very high).

Families operating in the disengaged level function independently of one another. In this level, beneficial parental guidance and parental support may be lacking for the adolescent in terms of career development. The enmeshed family functions at the other end of the continuum. The authors state that in an enmeshed family, individualism and identification of one's own dreams and wishes may be difficult to distinguish because family members have strong expectations of conformity rather than individuality.

Either very low or very high cohesion may be unconducive to career development. With a large continuum of family cohesion, it could be assumed that a "balanced" family, or one that is neither too disengaged or too enmeshed would be a more conducive environment in which career development will grow.

Literature regarding the effects of family cohesion on career development in the cleft palate/craniofacial population was not available.

Summary of Factors That Affect Career Development

In summary, the factors that appear to have the most consistent impact on career development are age, gender, self-concept, LC, family cohesion, and ethnicity. To a lesser extent, SES in some instances has been found to be influential. With an increase in age, there is advancement in level of career development. When differences in gender are found to exist, girls have been found to progress at a more rapid rate than boys across areas of career development. More positive levels of self-concept and internal LC have been found to correlate with more advanced levels of career development. Furthermore, factors appear to differ in their impact on career development in different ethnic-cultural groups.

What is Known About the Cleft Population in Terms of Career Development and Factors That Affect It?

Potential Factors Affecting Career Development in the Cleft Population

The earlier review alluded to select research findings focusing on the cleft palate/craniofacial population. The current section expands upon these and other studies available in the current literature.

Adolescents growing up with clefts are at an increased risk for impaired social skills and low self-concepts which are factors known to influence levels of career development. Other influential factors such as age, gender, mental ability, SES, ethnicity, LC, and family cohesion have not yet been studied at great length in the special populations of those with orofacial clefts. As Super and Thompson (1979) stated, determining the level of career development can help to determine the successful outcome of an individual.

Letcher-Glembo (1989) was the first to begin to address the combined affects of factors, including potential speech and facial differences, on the career development of individuals with clefts. The following review summarizes the results of available literature reviewed regarding research findings on the cleft palatal craniofacial population in terms of self-concept, family cohesion, and career development.

Self-Concept and Social Relationships in Persons with Cleft Lip and/or Palate

When a person is born with the craniofacial anomaly of clefting, there is typically long-lasting effects on his or her appearance. Speech quality may also vary as individuals with clefts are at risk for speech sound distortions due to dental differences and hypernasality secondary to velopharyngeal incompetence (Moller & Starr, 1993). The persisting stigma of

clefting may negatively impact one's view of oneself, as well as how an individual is viewed by others.

Pillemer and Cook (1989) completed a study using a task from the Tasks of Emotional Development (TED) test (Cohen & Weil, 1971) to assess self-concept levels in pediatric subjects with and without orofacial clefts. Each subject was shown a picture of a little boy looking into a mirror. The subject was to see themselves as the child looking into the mirror and describe his/her thoughts as he/she did so. The author stated that no normative data were available; however, the responses from the CLP group were more negative relating to physical appearance, as compared to the control group's responses. Based on the nature of subjects' responses, the authors surmised that the children with clefts had lower self-esteem.

These authors also believed that children with craniofacial anomalies were at risk not only for negative self-concept, but that they are also at risk for poor social adjustments due to the negative reactions received from society and peers. Utilizing a second task of the TED, the authors assessed peer socialization. For this task a card was shown to each subject. On the card was a picture of a single child watching a peer group from afar and deciding whether or not he/she will join the other children. The subject is then asked to judge the outcome of the interaction. Fewer CLP subjects judged the outcome as successful (the child joining the group) than their control counterparts. The CLP subjects also described the single child as "sad" and "lonely" because of "peer exclusion." The combined verbal descriptions of the subjects with clefts were indicative of poor social skills and impaired self-esteem.

Broder and Strauss (1989) studied the self-concept levels of primary school-aged children with CLP. When compared to school-aged children without CLP, the children with CLP were reported as having lower self-concepts and lower social-concepts. Scores were

based on self-reports of physical size, emotional state, peer acceptance, helpfulness, success, and student behavior.

Many of the social skill deficiencies that children with CLP have are a reflection of the negative social judgments they encounter every day. Dion and Berscheid (as cited in Pillemer & Cook, 1989) report children as young as 3½-years-old prefer friends who are more attractive and tend to judge the unattractive peers as "antisocial."

Similar findings were reported by Schneiderman and Harding (as cited in Tobiasen, 1987). Grade school children used the words "boring," "stupid," "sad," "dirty," "mean," and "bad" when asked to describe children with craniofacial differences. The negative judgments imparted on children with CLP often continue into adolescence, which can in turn, make it difficult for adolescents with persisting stigmata of clefting, to form social relationships.

Kapp-Simon, Simon, and Kristovich (1992) researched social adjustment, social skills, and self-concept in children with CLP. Their results differ from those noted above. Children with poor social skills were found to be less socially adjusted, but did not necessarily display a low self-concept. Kapp-Simon et al. (1992) found children with average self-esteem who were exhibiting poor social skills. The children with CLP avoid the negative societal reactions by withdrawing from social interactions. By removing themselves from negative judgments, the subjects were found to be able to maintain a higher, more average level of self-concept.

Family Cohesion and Family Relationships

Research involving family cohesion in persons with CLP has been carried out, although not to the same degree as studies of family cohesion in persons without CLP. In a

survey questionnaire study of social integration, Peter, Chinsky, and Fisher (1975) included items to assess family interdependence. The questionnaire was administered to adults with clefts, siblings of adults with clefts, and a non-familial related control group. They reported subjects with CLP as living at home more frequently than the control group or their siblings, regardless if they were single or married. Subjects with CLP who were living out of the house were found to live within a closer proximity than their siblings or the control subjects. They were also found to visit relatives more often than the noncleft subjects. One may conclude from this information that individuals with CLP are more dependent on family structure.

Families who function at either a very low or very high cohesion level may not provide the appropriate environment for career development in adolescents. To recap, individuals with CLP are more likely to live at home longer, live closer to home, and visit relatives more often. Does this then indicate them to have an external LC, making them dependent on outside sources? Research regarding family cohesion, LC, and its impact on career development in the cleft population has yet to be completed.

Career Development of Adolescents with Orofacial Clefts

Limited research is available in the area of orofacial anomalies and career development. Letcher-Glembo (1989) studied 80 subjects: 40 cleft and 40 noncleft subjects (5 males and 5 females in each subgroup at the ages 14, 15, 16, and 17 years). Each subject completed measures of career development, self-concept, mental ability, self-ratings of speech and facial appearance acceptability, and a biographical questionnaire. Utilizing recorded speech samples and photographic slides, objective ratings of speech and facial appearance acceptability were obtained from judges unfamiliar with the subjects. The purpose

of her study was to determine if adolescents with and without clefts differed in level of career development. Subjects involved in the study were between the ages of 14 and 17 years, were attending a regular education classroom and were not receiving any additional educational support, had parental approval, and did not display any neurological or physical disorders. Cleft subjects presented with cleft lip and/or palate (unilateral or bilateral). Using a global measure of career development, significant differences were not found between the cleft and noncleft subjects. Results showed subjects with and without clefts who demonstrated high self-esteem, high mental ability, reported a more advanced level of desired higher education, and whose facial appearance was rated by objective judges as more acceptable were found to demonstrate more advanced levels of career development. In depth analysis of the specific aspects of career orientation (career planning, career exploration, decision-making, and knowledge of world-of-work) was not completed as part of the initial data analysis.

Summary of Past Research Focusing on the Career Development of Adolescents with Clefts

Review of the literature indicates differences in career development in special populations across various developmental areas. Special adolescent populations include: those who are gifted (Kelly & Cobb, 1991), those of different cultural backgrounds (Lee, 1984), and those who have physical differences, such as adolescents with orofacial anomalies (Border & Strauss, 1989). Further research with these populations may improve individual and group counseling in the area of career development.

Review of the literature also points to factors that place adolescents at risk for lower levels of career development. Among these risks are self-concepts and social skills (Kapp-Simon et al., 1992), family cohesion (Peter et al., 1975), and SES (Mullis et al., 1997). When an individual is at risk for depressed self-concept, and impaired social skills, a

depressed level of career development may result. An adolescent experiencing these risk factors may not plan adequately for a career, fully explore their career options, or gain a thorough knowledge of the work world.

Little research has been completed with adolescents with orofacial clefts. As mentioned previously, Letcher-Glembo (1989) was the first to study career development in adolescents with clefts. The data obtained in her study provide the opportunity for more detailed analysis of *career orientation*, which is the basis for career development, between cleft and noncleft adolescents.

CHAPTER III

METHODS

This study sought to explore if differences exist between the career orientation levels of cleft and noncleft adolescents between the ages of 14 and 17 years. The specific purposes of this study were to determine if significant differences exist between adolescents with and without clefts in: (a) career planning, (b) career exploration, (c) decision-making and (d) world-of-work knowledge. Furthermore, the study sought to examine the effects of subject type, age (14, 15, 16, and 17 years), and gender (male and female) subgroups on career orientation. This study was completed as part of a larger, ongoing study focusing on the career development of adolescents and young adults with and without orofacial clefts.

Subjects

This study was completed utilizing a subsection of data collected from an ongoing study of adolescents and young adults with and without orofacial clefts. A group of eighty adolescents, 40 cleft and 40 noncleft, between the ages of 14 and 17 years, participated in a research study that focused on the effects of age, gender, mental ability, self-concept, and impact of orofacial clefting on career maturity. Utilizing the subjects' CDI scores, the current study focused on a particular aspect of career development, namely career orientation. The following sections describe the subject selection, criteria, recruitment, and consent procedures utilized for the data collection.

Noncleft Subject Criteria

For the purposes of this study, the noncleft subgroup met the following criteria:

1. All subjects were between 14 and 17 years of age. This age range provided a cross-section sampling during the period when career development is considered to be developing and is predictive of long-term career success and satisfaction.

2. All subjects were attending a regular education classroom and were not receiving any additional educational support. Tools to measure career development in adolescents with disabilities are unavailable and thus individuals with special needs or learning disabilities were excluded.

3. Subjects had written parental approval to be involved in the study. All subjects were minors and required parental or guardian approval in order to participate.

4. Subjects did not present any physical or neurological disorders. It has been shown that individuals with neurological disorders perform differently on intelligence tests than individuals without neurological disorders. Information regarding subjects neurological status was obtained from parents, guardians, and clinical records.

5. One-fourth of the sample was at each age level of 14, 15, 16, and 17 years of age. Studies have indicated that career development is affected by increases in age.

6. One-half of the subjects were male and one half were female. Studies have indicated that career development may be affected by gender.

Cleft Subject Criteria

For the purpose of this study, the cleft subgroup met the following criteria:

1. All subjects were between 14 and 17 years of age. This age range provided a cross-section sampling during the period when career development is considered to be developing, and is predictive of long term career success and satisfaction.

2. All subjects were attending a regular education classroom and were not receiving any additional educational support. Tools to measure career development in adolescents with disabilities are unavailable and thus individuals with learning disabilities were excluded.

3. Subjects had written parental approval to be involved in the study. All subjects were minors and required parental or guardian approval in order to participate.

4. Subjects did not present any physical or neurological disorders other than that of the orofacial anomaly. It has been shown that individuals with neurological disorders perform differently on intelligence tests than individuals without neurological disorders. Information regarding subjects neurological status was obtained from parents, guardians, and clinical records.

5. Subjects presented cleft lip and/or palate (unilateral or bilateral). Subjects with submucous clefts were not included.

6. Type of physical/medical management used in primary and secondary repairs of clefts of the lip and/or palate were not considered in the selection of the subjects due to limited information available regarding surgical procedures for all subjects and the difficulty in categorizing the procedures for use in this study.

7. One-fourth of the sample was at each age level of 14, 15, 16, and 17 years of age. Studies have indicated that career development is affected by increases in age.

8. One-half of the subjects in each age group were male and one half were female. While the incidence figure of clefting varies between males and females (Moller & Starr, 1993), studies have indicated that career development may be affected by gender. For this latter reason, an equal number of subjects across gender were recruited to control for this variable.

Noncleft Subject Recruitment

For her 1989 study, Letcher-Glembo recruited noncleft subjects from local youth groups and from friends of subjects who agreed to participate. With the approval of the youth agencies, letters were sent to adolescents who met the age and gender criteria (Appendix A). All subjects who agreed to participate and met the study criteria were scheduled until the predetermined number of subjects was met. Subjects were not paid for their participation.

Cleft Subject Recruitment

Recruitment for the subjects with clefts was completed by Letcher-Glembo for her 1989 study. Individuals who were potential subjects were recruited through three interdisciplinary agencies in the state of Minnesota which provided comprehensive cleft habilitation. These three agencies were the University of Minnesota Cleft Palate Maxillofacial Center, Minnesota State Department of Health's Services for Children with Handicaps, and the Logan Levin Cleft Palate Clinic. All subjects meeting age, gender, and cleft criteria were identified through patient files and were mailed a letter describing the

study and requesting participation (Appendix B). This letter was approved by the University of Minnesota Committee on Use of Human Subjects in Research. Use of Human Subject's in Research Approval was renewed by the University of Minnesota in 1997.

All subjects who met the study criteria and agreed to participate were scheduled until the predetermined number of subjects was met. Subjects were not paid for their participation.

Subject Consent

Written consent to participate was obtained by Letcher-Glembo (1989) for all cleft and noncleft subjects. As the subjects were minors, written consent was obtained both from the participating adolescents and their parent/legal guardian.

Final Subject Pool

Following the above mentioned subject criteria, recruitment, and consent procedures, a total of 80 subjects participated in this study. Table 1 shows the distribution for the cross-sectional age groups.

Table 1

Career Orientation Levels in Adolescents Study: Number of Subjects in Each Age, Gender, and Cleft Type Group (N = 80)

	14 years (n)	15 years (n)	16 years (n)	17 years (n)	Subtotal by Gender
Cleft					
Male	5	5	5	5	20
Female	5	5	5	5	20
Noncleft					
Male	5	5	5	5	20
Female	5	5	5	5	20

Measures and Procedures

In the original study completed by Letcher-Glembo (1989), each subject participated in a study protocol which included completion of the following: (a) full face photograph, (b) a biographical questionnaire, (c) the TSCS (Fitts, 1965), (d) self-rating of facial appearance, (e) self-rating of speech quality, (f) the SILS (Zachary, 1986), and (g) the CDI (Super et al., 1981). As the current study explores in greater depth the levels of career orientation as measured by the CDI, emphasis will be given to describing the details of the CDI in terms of its construct validity, method of administration, and scoring procedures.

Career Development Inventory Overview

As was mentioned earlier, the CDI (Super et al., 1981) is an instrument used to measure career development and vocational maturity. Two standardized test forms are available: the High School Form and the College and University Form. The High School Form was utilized for data collection. The High School Form was normed on grades 9 through 12 and has practical uses in individual and group counseling in career development. The CDI is a self-administered, paper and pencil test form. The CDI must be scored by computer analysis as there is not an option of hand-scoring.

The CDI contains two major components: Part I is Career Orientation and Part II is Knowledge of Preferred Occupation. Part I is divided into the following subcategories: career planning, career exploration, decision-making, and world-of-work knowledge. These subcategories will be described in greater detail in the upcoming section. Part II of the CDI is designed to help determine what occupational group preferences the individual taking the test is displaying as well as how much the individual taking the test actually knows about the

occupational area that they are moving toward in terms of his or her career planning. The emphasis of the current study is on career orientation and as a result, the following sections describe Part I of the CDI in greater detail.

Career Development Inventory: Career Orientation Scores

The career orientation component of the CDI consists of 80 questions that focus on (a) career planning, (b) career exploration, (c) decision-making. and (d) world-of-work knowledge. Super et al. (1981) report each subtests as having good content validity. Per the test manual protocol, the subtests may be used independently for analysis of individual or group differences. The career orientation component of the CDI takes approximately 40 minutes to complete. Scoring results in standard scores and percentile rankings for each subtest.

Career Planning

The first section of the career orientation component of the CDI is career planning. It consists of 20 items each presented in a multiple choice format. Table 2 provides examples of sample questions from the career planning section of the CDI. Items are scored a point value of 1 to 5 for answers A to E.

Career Exploration

The second section of the career orientation component of the CDI is career exploration. Table 3 provides examples of sample questions from the Career Exploration section of the CDI. It consists of 20 items presented in multiple choice format. Answers A to D are given a point score of 1 to 4, respectively. The score is weighted depending on judged quality of the resource.

Table 2

Career Planning CDI Questions

SAMPLE CAREER PLANNING QUESTIONS

Career Planning:: How much thinking and planning have you done in the following areas? For each question below, choose the answer that best tells what you have done so far.

Item 1. Find out about educational and occupational possibilities by going to the library, sending away for information, or talking to somebody who knows.

(A) I have not yet given any thought to this yet.
(B) I have given some thought to this, but haven't made any plans yet.
(C) I have some plans, but am still not sure of them.
(D) I have made definite plans, but don't know yet how to carry them out.
(E) I have made definite plants, and know what to do to carry them out.

❖ ❖ ❖

Keeping in mind the type of job you think you might like to be in after you finish your schooling, choose the one best answer which tells the amount of knowledge you already have about these jobs.

Item 13. What people really do on the job.

(A) Hardly any knowledge.
(B) A little knowledge.
(C) an average amount of knowledge.
(D) A good deal of knowledge.
(E) A great deal of knowledge.

Decision-Making

The third section of the career orientation component of the CDI is decision-making. It consists of 20 items presented in multiple-choice format. The total score for decision-making is obtained by adding the number of items answered correctly. Table 4 provides an example of a sample question from the decision-making section of the CDI.

Table 3

Career Exploration CDI Questions

SAMPLE CAREER EXPLORATION QUESTIONS

Career Exploration: Choose the one best answer for each question to show whether or not you would go to the following sources for information or help in making your plans for work or further education.

Item 21. Father, mother, uncles, aunts, etc.

(A) Definitely not.
(B) Probably not.
(C) Probably.
(D) Definitely.

❖ ❖ ❖

This time choose the one best answer to show how much useful information the people or sources listed below have already given you or directed you to in making your plans for the future.

Item 31. Father, mother, uncles, aunts, etc.

(A) No useful information.
(B) Some useful information.
(C) A good deal of useful information.
(D) A great deal of useful information.

World-of-Work Information

The fourth section of the career orientation component of the CDI is world-of-work information. It consists of 20 items presented in multiple choice format. The total score for world-of-work is calculated by adding the number of items answered correctly. Table 5 provides an example of a sample question from the world-of-work information section of the CDI.

Table 4

Decision-Making CDI Question

SAMPLE DECISION-MAKING QUESTION
Decision-Making: What should each of the following students do? Choose the one best answer for each case. Item 41. E.R. took some tests which show some promise for clerical work. This student says, "I just can't see myself sitting behind a desk for the rest of my life. I'm the kind of person who likes variety. I think a traveling job would suit me fine." E.R. should: (A) Disregard the tests and do what he/she wants to do. (B) Do what the tests say since they know best. (C) Look for a job which requires clerical ability but does not pin one to a desk. (D) Ask to be tested with another test since the results of the first one are probably wrong.

Table 5

World-of-Work Information CDI Question

SAMPLE WORLD-OF-WORK QUESTION
World-of-Work: Choose the one best answer to the following question about career development and the world of work. Item 61. Tenth graders should be expected to know (A) Exactly what occupation they want to go into. (B) The kind of work but not necessarily the specific occupation they want. (C) Where to get the job they want. (D) The different occupations a person with their interests and abilities could go into.

Career Development Inventory: Career Orientation Score Reliability

The High School Form was standardized on 5,039 students and is reported as having internal consistency on all scales of the test in that the average alphas are at .75 or higher which indicates the scales may be used for individual counseling or for the analysis of group differences (Hansen, 1985). The standard error of measurement (SEM) of the CDI scales ranges from 6.5 to 13.3 across the grade levels 9-12. SEM is the average error made when an instrument is administered.

Procedures

Data Collection

The following procedures were used by Letcher-Glembo (1989) in recruiting subjects whose data were being utilized for this current study:

1. Subjects were initially contacted by mail.

2. Written consent was obtained from the subjects who agreed to participate in the study.

3. Subjects agreed to meet with the examiner at their home or local libraries at an agreed upon date and time.

Each subject was then tested in a single self-administered time period averaging 1 to 3 hours. Data were collected in the following order: (a) full face photograph, (b) recorded speech sample, (c) CDI, (d) biographical questionnaire, (e) the SILS, (f) the self-rating of facial appearance, (g) the self-rating of speech acceptability, and (h) the TSCS. This order was chosen to balance *difficult* and *easy* tasks, kept the subjects from fatiguing, and because it did not appear that the order of presentation would cause participation in one task to

influence response on subsequent tasks. When all subjects were tested, responses were scored.

Data Analysis

Administration of Part I of the CDI generated four dependent variables of career development: career planning, career exploration, decision-making, and world-of-work knowledge. Standard scores for each subject in each age, gender, and subject group category were calculated. This quantitative data were transcribed from the original computer-scored result forms from each subject. Transcription of the scores was verified for accuracy by an independent party. Data for the variables were used to respond to the specific research questions. Statistical analysis was completed by Thomas Maan, B.S., Oregon State University statistician utilizing the SAF software package.

Use of Data to Respond to Study's Research Questions

The first research question asked: "What are the effects of subject type, age, and gender on career planning?" The subjects' standard scores from the career planning subtest of the CDI were utilized for this data analysis. A 3-way Analysis of Variance (ANOVA) at the $p \leq .05$ level was conducted to evaluate the possible differential or combined effects of subject type, age, and gender on career planning. Subsequently, a pairwise analysis was completed for data from the four age groups. Standard scores from the career planning (CP) subtest for the 14-year-old subjects (cleft and noncleft) were compared with the CP standard scores of the 15, 16, and 17-year-old subjects. Fifteen-year-old subjects' CP data, cleft and noncleft, were compared to the 16 and 17-year-old subjects' CP data. Sixteen-year-old

subjects' CP data (cleft and noncleft) were compared to the 17-year-old subjects' CP data. Analyses resulted in *p*-values for each pairwise comparison.

The second research question asked: "What are the effects of subject type, age, and gender on career exploration?" The subjects' standard scores from the career exploration (CE) subtest of the CDI were utilized for this data analysis. A 3-way ANOVA at the $p \leq .05$ level was conducted to evaluate the possible differential or combined effects of subject type, age, and gender on career exploration. Subsequently, a pairwise analysis technique was completed for CE data from each of the four age groups. Standard Scores from the CE subtest for the 14-year-old subjects (cleft and noncleft) were compared with the CE standard scores of the 15, 16, and 17-year-old subjects. Fifteen-year-old subjects' CE data, cleft and noncleft, were compared to the 16 and 17-year-old subjects' CE data. Sixteen-year-old subjects' CE data (cleft and noncleft) were compared to the 17-year-old subjects' CE data. Analyses resulted in *p*-values for each pairwise comparison.

The third research question asked: "What are the effects of subject type, age, and gender on decision-making?" The subjects' standard scores from the decision-making (DM) subtest of the CDI were utilized for this data analysis. A 3-way ANOVA at the $p \leq .05$ level was conducted to evaluate the possible differential or combined effects of subject type, age, and gender on decision-making. Subsequently, a pairwise analysis technique was completed for DM data from each of the four age groups. Standard scores from the DM subtest for the 14-year-old subjects (cleft and noncleft) were compared with the DM standard scores of the 15, 16, and 17-year-old subjects. Fifteen-year-old subjects' DM data, cleft and noncleft, were compared to the 16 and 17-year-old subjects' DM data. Sixteen-year-old subjects' DM

data (cleft and noncleft) were compared to the 17-year-old subjects' DM data. Analyses resulted in *p*-values for each pairwise comparison.

The fourth research question asked: What are the effects of subject type, age, and gender on world-or-work knowledge?" The subjects standard scores from the world-of-work knowledge (WW) subtest of the CDI were utilized for this data analysis. A 3-way ANOVA at the $p \leq .05$ level was conducted to evaluate the possible differential or combined effects of subject type, age, and gender on world-of-work knowledge. Subsequently, a pairwise analysis technique was completed on WW data from each of the four age groups. Standard scores from the WW Subtest for the 14-year-old subjects (cleft and noncleft) were compared with the WW standard scores of the 15, 16, and 17-year-old subjects. Fifteen-year-old subjects' WW data, cleft and noncleft, were compared to the 16 and 17-year-old subjects' WW data. Sixteen-year-old subjects' WW data (cleft and noncleft) were compared to the 17-year-old subjects' WW data. Analyses resulted in *p*-values for each pairwise comparison.

In addition to the 3-way ANOVA and pairwise analyses techniques, data collected allowed for calculation of least square means ($\bar{x}$) for the noncleft group (40) and the cleft group (40) standard scores from each of the following CDI subtests: career planning, career exploration, decision-making, and world-of-work knowledge. Lower and upper confidence interval bands were utilized at the 95% level. The confidence interval is a inferential statistic used for estimating magnitudes (Silverman, 1993). The confidence interval was not used to determine whether or not a difference or a relationship existed, but rather to show the importance or magnitude of the difference.

Least square means were also calculated for male, combined cleft and noncleft, subgroup as well as the female, combined cleft and noncleft, subgroup. Lower and upper

confidence limits were calculated to study gender differences at the 95% confidence limit. Similarly, least square means were calculated for each age group (14, 15, 16, and 17) for standard scores on each of the four CDI subtests and then followed by calculation of lower and upper confidence limits at the 95% level. Least square means and confidence intervals will be reported according to subject type, age, and gender.

Analysis of Data to Reject or Accept Study's Hypotheses

The following hypotheses were developed for the purpose of this study:

1. Adolescents with orofacial clefts will demonstrate a lower level of career planning than their noncleft peers.

2. Adolescents with orofacial clefts will demonstrate a lower level of career exploration than their noncleft peers.

3. Adolescents with orofacial clefts will demonstrate a lower level of decision-making than their noncleft peers.

4. Adolescents with orofacial clefts will demonstrate a lower level of world-of-work knowledge than their noncleft peers.

5. Younger adolescents, both cleft and noncleft, will demonstrate a lower level of career orientation across the categories of career planning, career exploration, decision-making and world-of-work knowledge than older adolescents with and without clefts.

6. Male adolescents, both cleft and noncleft, will demonstrate a lower level of career orientation across the categories of career planning, career exploration, decision-making, and world-of-work knowledge than female adolescents with and without clefts.

As previously stated, 3-way ANOVA techniques were conducted to analyze possible differences among and between the independent variables of subject type (cleft/noncleft),

age (14, 15, 16, 17 years of age), and gender (male/female) on the dependent variables of career planning, career exploration, decision-making, and world-of-work knowledge. Analyzing the three independent variables simultaneously allowed an informed decision to be made on whether or not the null hypothesis (H_o: $\mu_{cleft} = \mu_{noncleft}$) was to be rejected for each of the study's hypotheses (H_a: $\mu_{cleft} \neq \mu_{noncleft}$).

For each factor (subject type, age, and gender), analyses resulted in a F-statistic (equivalent to t^2 or a t-statistic from a two-sample t-test) with a p-value ($p \leq .05$). For p-values greater than .05, the null hypothesis, (H_o: $\mu_{cleft} = \mu_{noncleft}$) would not be rejected and the research hypothesis would not be supported. For p-values less than .05, the null hypothesis would be rejected and the research hypothesis would be supported.

Furthermore, the following is noted in terms of interpretation of the statistical data. If a p-value is greater than .05, the statistical assumption is that a larger data set may alter the p-value. In a case where the p-value is extremely close, but greater than .05, it is acceptable to interpret the findings of the data as providing "suggestive but inconclusive evidence" (T. Maan, personal communication, 1998).

CHAPTER IV

RESULTS AND DISCUSSION

Results

The current study sought to explore if differences exist in career orientation levels of adolescents with and without clefts. More specifically, it sought to determine if differences exist in the areas of career planning, career exploration, decision-making, and world-of-work knowledge. Three-way ANOVAs, calculation of least square means, Confidence interval band techniques, and pairwise analyses were completed for the dependent variables of career planning, career exploration, decision-making, and world-of-work knowledge and the independent variables, subject type, age, and gender.

Career Planning: Effects of Subject Type, Age, and Gender

ANOVA Analyses

Research question 1 asked: "What are the effects of subject type, age, and gender on career planning?" The subjects' standard scores on the CDI subtest of career planning were used to answer this question. A 3-way ANOVA was completed and no significant effects were found for the independent variable of subject type (cleft and noncleft) at a p-value of .46 ($p \leq .05$) on career planning. Significant effects were not found for gender at a p-value of .47 ($p \leq .05$). Similarly, age effects were not found to be significant for career

planning at a p-value of .47 ($p \leq .05$). *P*-values for the age groups will be discussed in *Pairwise Analyses.*

Career Planning Least Square Means and Confidence Intervals: Subject Type (Cleft and Noncleft) Subgroup Results

In career planning, the mean score for adolescents with clefts was 99.23 with a range of 94.150 to 104.299 (95% confidence interval) as revealed in Table 6. The mean score for adolescents without clefts was 99.60 with a range of 91.501 to 101.649 (95% confidence interval). There is strong evidence that the mean career planning score of adolescents with clefts is similar to the mean score of adolescents without clefts.

Table 6

Career Planning: Mean Standard Scores and Confidence Intervals for Cleft and Noncleft Subjects (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Cleft	99.23	94.15 to 104.3
Noncleft	96.58	91.50 to 101.65

Career Planning Least Square Means and Confidence Intervals: Gender Subgroup Results

In career planning, the mean standard score for male adolescents was 96.60 with a range of 91.53 to 101.67 (95% confidence interval). The mean standard score for female adolescents was 99.20 with a range of 94.13 to 104.27 (95% confidence interval). Table 7 shows mean standard scores and confidence intervals for male and females subjects (cleft and noncleft) in career planning. There is strong evidence that the mean standard career

planning score of males, cleft and noncleft, is similar to the mean standard score of females, cleft and noncleft.

Table 7

Career Planning: Mean Standard Scores and Confidence Intervals for Male and Female Subjects Across Subject Type and Age Groups (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Male	96.60	91.53 to 101.67
Female	99.20	94.13 to 104.27

Career Planning Least Square Means and Confidence Intervals: Age Subgroup Results

Least square means and confidence intervals were calculated for each age group and are presented in Table 8. In career planning, the mean standard score for 14-year-old subjects (male and female; cleft and noncleft) was 98.30 with a range of 91.12 to 105.48 (95% confidence interval). The mean standard score for 15-year-old subjects was 95.60 with a range of 88.42 to 102.78 (95% confidence interval). The mean standard score for 16-year-old subjects was 95.75 with a range of 88.57 to 102.93 (95% confidence interval). The mean standard score for 17-year-old subjects was 101.95 with a range of 94.77 to 109.13 (95% confidence interval). There is strong evidence that the mean standard score for any given age group will be similar to that of any other age group.

Career Planning Pairwise Analyses of Age

Pairwise analysis techniques were completed. There were no significant differences found between any two of the age groups ($p \leq .05$). Table 9 shows p-values between the

four age groups. There is strong evidence that the mean career planning score of any given age group will be similar to any other.

Table 8

Career Planning: Mean Standard Scores and Confidence Intervals for Each Age Group Across Subject and Gender Type (n = 20)

Years of Age	Mean Standard Score ($\bar{x}$)	95% Confidence Interval Range
14	98.3	91.12 to 105.48
15	95.60	88.42 to 102.78
16	95.75	88.57 to 102.93
17	101.95	94.77 to 109.13

Table 9

Career Planning: p-values of Pairwise Analysis Across Age Groups (n = 20)

	14 years	15 years	16 years	17 years
14 years		0.6	0.62	0.48
15 years			0.98	0.22
16 years				0.23
17 years				

Career Exploration: Effects of Subject Type, Age, and Gender

ANOVA Analyses

Research question 2 asked: "What are the effects of subject type, age, and gender on career exploration?" The subjects' standard scores on the CDI subtest of career

exploration were used to answer this question. A 3-way ANOVA was completed and no significant effect was found for subject type (cleft and noncleft) at $p = 0.18$ ($p \leq .05$). *P*-values for the age groups will be discussed in *Pairwise Analyses.*

Career Exploration Least Square Means and Confidence Intervals: Subject type (Cleft and Noncleft) Subgroup Results

Least square means and lower and upper confidence intervals were calculated for both the cleft and noncleft career exploration scores. These are presented in Table 10. In career exploration, the mean standard score for adolescents with clefts was 101.23 with a range of 96.15 to 106.30 (95% confidence interval). The mean standard score for adolescents without clefts was 106.08 with a range of 101.00 to 111.15 (95% confidence interval). There is strong evidence that the mean career exploration standard score for adolescents with clefts is similar to the mean standard score of adolescents without clefts.

Table 10

Career Exploration: Mean Standard Scores and Confidence Intervals for Cleft and Noncleft Subjects ($n = 40$)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Cleft	101.23	96.15 to 106.30
Noncleft	106.08	100.00 to 111.15

Career Exploration Least Square Means and Confidence Intervals: Gender Subgroup Results

In career exploration, the mean standard score for male adolescents, cleft and noncleft, was 100.40 with a range of 95.19 to 105.61 (95% confidence interval). The mean standard score for female adolescents, cleft and noncleft, was 106.90 with a range of 101.69

to 112.11 (95% confidence interval). Table 11 shows mean standard scores and confidence intervals for male and female (cleft and noncleft) subgroups in career exploration.

Table 11

Career Exploration: Mean Standard Scores and Confidence Intervals for Male and Female Subjects Across Subject Type and Age Groups (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Male	100.40	95.19 to 105.61
Female	106.90	101.69 to 112.11

Career Exploration Least Square Means and Confidence Intervals: Age Subgroup Results

Least square means and lower and upper confidence intervals were calculated for each age group and are presented in Table 12. In career exploration, the mean standard score for 14-year-old subjects (male and female; cleft and noncleft) was 102.20 with a range of 94.98 to 109.42 (95% confidence interval). The mean standard score of 15-year-old subjects was 97.00 with a range of 89.78 to 104.22 (95% confidence interval). The mean standard score for 16-year-old subjects was 106.20 with a range of 98.98 to 113.42 (95% confidence interval). The mean standard score for 17-year-old subjects was 109.20 with a range of 101.98 to 116.42 (95% confidence interval). There is strong evidence that the mean standard score for adolescents 14 years of age (combined cleft and noncleft) will be similar to that of 15, 16, and 17-year-old adolescents. There is strong evidence that adolescents 15 years of age will score similar to 16-year-old adolescents. There is strong evidence that adolescents 15 years of age will score significantly different than adolescents

17 years of age. There is strong evidence that adolescents 16 years of age will score similarly to adolescents 17 years of age.

Table 12

Career Exploration: Mean Standard Scores and Confidence Intervals for Each Age Group Across Subject and Gender Type (n = 20)

Years of Age	Mean Standard Score ($\bar{x}$)	95% Confidence Interval Range
14	102.20	94.98 to 109.42
15	97.00	89.78 to 104.22
16	106.20	98.98 to 113.42
17	109.20	101.98 to 116.42

Career Exploration Pairwise Analyses for Age

Pairwise analysis techniques were completed for career exploration scores for each subgroup. Table 13 shows the p-values between the four age groups. There is strong evidence that among the four age groups of 14, 15, 16, and 17 years of age, the mean career exploration score for adolescents 14 years of age will be similar to the score for adolescents 15, 16, and 17 years of age. There was no significant difference between adolescents 15 years of age, cleft and noncleft, and adolescents 16 years of age (p = .08). There is strong evidence that the mean career exploration score for adolescents 15 years of age will differ significantly from the mean score for adolescents 17 years of age (p = .02). There is strong evidence that the mean career exploration score for adolescents 16 years of age, cleft and noncleft, will be similar to the mean score for adolescents 17 years of age (p = .56). In the area of career exploration, the hypothesis that younger adolescents will have

lower levels of career development, while supported in some ways by the data, cannot be supported across all age groups.

Table 13

Career Exploration: *p*-values of Pairwise Analysis Across Age Groups (n = 20)

	14 years	15 years	16 years	17 years
14 years		0.31	0.44	0.18
15 years			0.08	0.02
16 years				0.56
17 years				

Decision-Making: Effects of Subject Type, Age, and Gender

ANOVA Analyses

Research question 3 asked: "What are the effects of subject type, age, and gender on decision-making?" The subjects' standard scores on the CDI subtest of decision-making were used to answer this question. A 3-way ANOVA was completed and no significant effect was found for the independent variable of subject type (cleft and noncleft) at $p = 0.22$ ($p \leq .05$). Similarly, gender effects were not found to be significant for decision-making at a *p*-value of .10 ($p \leq .05$). There were no significant age effects.

Decision-Making Least Square Means and Confidence Intervals: Subject Type (Cleft and Noncleft) Subgroup Results

In decision-making, the mean standard score for adolescents with clefts was 103.63 with a range of 97.63 to 109.62 (95% confidence interval) as revealed in Table 14. The mean standard score for adolescents without clefts was 108.83 with a range of 102.83 to

114.82 (95% confidence interval). There is strong evidence that the mean decision-making standard score for adolescents with clefts is similar to the mean standard score for adolescents without clefts.

Table 14

Decision-Making: Mean Standard Scores and Confidence Intervals for Cleft and Noncleft Subjects (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Cleft	103.63	97.63 to 109.62
Noncleft	108.83	102.83 to 114.82

Decision-Making Least Square Means and Confidence Intervals: Gender Subgroup Results

In decision-making, the mean standard score for male adolescents, cleft and noncleft, was 102.68 with a range of 96.69 to 108.66 (95% confidence interval). The mean standard score for female adolescents, cleft and noncleft, was 109.78 with a range of 103.79 to 115.76 (95% confidence interval). Table 15 shows mean standard scores and confidence intervals for male and female (cleft and noncleft) subjects in decision-making. There was no significant difference found between male and female subjects at $p = .10$ ($p \leq .05$).

Table 15

Decision-Making: Mean Standard Scores and Confidence Intervals for Male and Female Subjects Across Subject Type and Age Groups (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Male	102.68	96.69 to 108.66
Female	109.78	103.79 to 115.76

Decision-Making Least Square Means and Confidence Intervals: Age Subgroup Results

Least square means and lower and upper confidence intervals were calculated for each age group and are presented in Table 16. In decision-making, the mean standard score for 14-year-old subjects was 103.55 with a range of 95.07 to 112.03 (95% confidence interval). The mean standard score for 15-year-old subjects was 106.80 with a range of 98.32 to 115.28 (95% confidence interval). The mean standard score for 16-year-old subjects was 103.30 with a range of 94.82 to 111.78 (95% confidence interval). The mean standard score for 17-year-old subjects was 111.25 with a range of 102.77 to 119.73 (95% confidence interval). There is strong evidence that the mean standard score for any given age group will be similar to that of any other age group.

Decision-Making Pairwise Analyses for Age

Pairwise analysis techniques were completed. There were no significant differences found between any two of the age groups ($p \leq .05$). Table 17 shows the p-values between the four age groups. There is strong evidence that the mean decision-making score for any given age group will be similar to the mean score for any other age group.

Table 16

Decision-Making: Mean Standard Scores and Confidence Intervals for Each Age Group Across Subject and Gender Type (n = 20)

Years of Age	Mean Standard Score ($\bar{x}$)	95% Confidence Interval Range
14	103.55	95.07 to 112.03
15	106.80	98.32 to 115.28
16	103.30	94.82 to 111.78
17	111.25	102.77 to 119.73

Table 17

Decision-Making: *p*-values of Pairwise Analysis Across Age Groups (n = 20)

	14 years	15 years	16 years	17 years
14 years		0.59	0.97	0.20
15 years			0.56	0.46
16 years				0.19
17 years				

World-of-Work Knowledge: Effects of Subject Type, Age, and Gender

ANOVA Analyses

Research question 4 asked: "What are the effects of subject type, age, and gender on world-or-work knowledge?" The subjects' standard scores on the CDI subtest of world-of-work knowledge were used to answer this question. A 3-way ANOVA was completed and significant effects were found for subject type (cleft and noncleft) at $p = .02$ ($p \leq .05$). Significant effects were found for gender type (combined cleft and noncleft) at $p = .04$ ($p \leq .05$). No significant age effects were found in world-of-work knowledge.

World-of-Work Knowledge Least Square Means and Confidence Intervals: Subject Type (Cleft and Noncleft) Subgroup Results

Least square means and lower and upper confidence intervals were calculated for both the cleft and noncleft world-of-work knowledge scores. These are presented in Table 18. In world-of-work knowledge, the mean standard score for adolescents with clefts was 106.98 with a range of 103.08 to 110.87 (95% confidence interval). The mean standard score for adolescents without clefts was 113.53 with a range of 109.63 to 117.42 (95%

confidence interval). There is strong evidence that the mean world-of-work knowledge standard score for adolescents with clefts will differ from the mean standard score for adolescents without clefts.

Table 18

World-of-Work: Mean Standard Scores and Confidence Intervals for Cleft and Noncleft Subjects (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Cleft	106.98	103.08 to 110.87
Noncleft	113.53	109.63 to 117.42

World-of-Work Knowledge Least Square Means and Confidence Intervals: Gender Subgroup Results

In world-of-work knowledge, the mean standard score for male adolescents, cleft and noncleft, was 107.30 with a range of 103.41 to 111.19 (95% confidence interval). The mean standard score for female adolescents, was 113.20. with a range of 109.31 to 117.09 (95% confidence interval). Table 19 shows mean standard scores and confidence intervals for male and female (cleft and noncleft) subjects in world-of-work knowledge. There is strong evidence that the mean world-of-work knowledge standard score for males, cleft and noncleft, will differ from the mean standard score for females.

Table 19

World-of-Work: Mean Standard Scores and Confidence Intervals for Male and Female Subjects Across Subject Type and Age Groups (n = 40)

	Mean Score ($\bar{x}$)	95% Confidence Interval Range
Male	107.30	103.41 to 111.19
Female	113.20	109.31 to 117.09

World-of-Work Knowledge Least Square Means and Confidence Intervals: Age Subgroup Results

Least square means and lower and upper confidence intervals were calculated for each age group and are presented in Table 20. In world-of-work knowledge, the mean standard score for 14-year-old subjects was 107.3 with a range of 107.79 to 12.81 (95% confidence interval). The mean standard score for 15-year-old subjects was 108.70 with a range of 103.79 to 114.21 (95% confidence interval). The mean standard score for 16-year-old subjects was 112.00 with a range of 106.49 to 117.51 (95% confidence interval). The mean standard score for 17-year-old subjects was 113.00 with a range of 107.49 to 118.51 (95% confidence interval). There is strong evidence that the mean standard score for any given age group will be similar to that of any other age group.

Table 20

World-of-Work: Mean Standard Scores and Confidence Intervals for Each Age Group Across Subject and Gender Type (n = 20)

Years of Age	Mean Standard Score ($\bar{x}$)	95% Confidence Interval Range
14	107.30	101.79 to 112.81
15	108.70	103.79 to 114.21
16	112.00	106.49 to 117.51
17	113.00	107.49 to 118.51

World-of-Work Knowledge Pairwise Analyses of Age

Pairwise analysis techniques were completed. Table 21 shows the *p*-values between the four age groups. There is strong evidence that the mean world-of-work knowledge standard score for any given age group will be similar to the mean standard score for any other age group.

Table 21

World-of-Work: *p*-values of Pairwise Analysis Across Age Groups (n = 20)

	14 years	15 years	16 years	17 years
14 years		0.72	0.23	0.15
15 years			0.40	0.28
16 years				0.80
17 years				

Discussion

The purpose of this study was to determine the effects of subject type, age, and gender on career orientation levels in adolescents with and without clefts. More specifically, it sought to determine the impact of these variables on career planning, career exploration, decision-making, and world-of-work knowledge.

The assumption was made that adolescents with clefts would score at a lower level across the areas of career orientation, career planning, career exploration, decision-making, and world-of-work knowledge, than their adolescent peers without clefts. Career planning deals with how involved an individual is in their vocational choice and the degree to which they follow-through on pursuing this choice. The fact that significant effects were not found

for subject type was surprising. As previously stated, individuals with clefts are at risk for depressed self-concept and social relationships, factors known to impact career planning.

It was just as surprising to find no significant effects of subject type in the areas of career exploration, searching for and utilizing resources to learn of occupations, and decision-making, making age-appropriate decisions in regards to occupations. Once again, this was anticipated due to their risk of lower self-concept levels and poor social relationships.

Significant effects of subject type were found in the area of world-of-work knowledge which is gaining knowledge of occupational structures and job requirements. This informs us that adolescents with craniofacial anomalies to not have an understanding of what is required to obtain and sustain a career. With the exception of world-of-work knowledge, the null hypotheses were supported in the areas of career planning, career exploration, and decision-making.

Past research has suggested that increases in career development across the categories of career planning, career exploration, decision-making, and world-of-work knowledge correlate with increases in age. Results of this study support that to some degree, although not consistently. One would expect to see adolescents 14 years of age score consistently lower on all areas of career orientation than their older peers. This, however, was not the case. The 14-year-olds did score consistently lower than the 17-year-olds, but not consistently lower than the 15 and 16-year-olds. It was especially surprising to see that there was never a significant difference found between the 14-year-old subjects and any one of the other age groups across the areas of career orientation.

It is interesting to note that the 15-year-old subjects scored lower than the 17-year-old subjects in the area of career exploration. In the previous study completed by Letcher-Glembo (1989), it is noted that the male adolescents 15 years of age scored significantly lower in career development as compared to their older counterparts. It is perhaps this group that lowered the overall results of 15-year-old subgroup, causing the significant differences between male and female subjects and 15 and 17-year-old subjects.

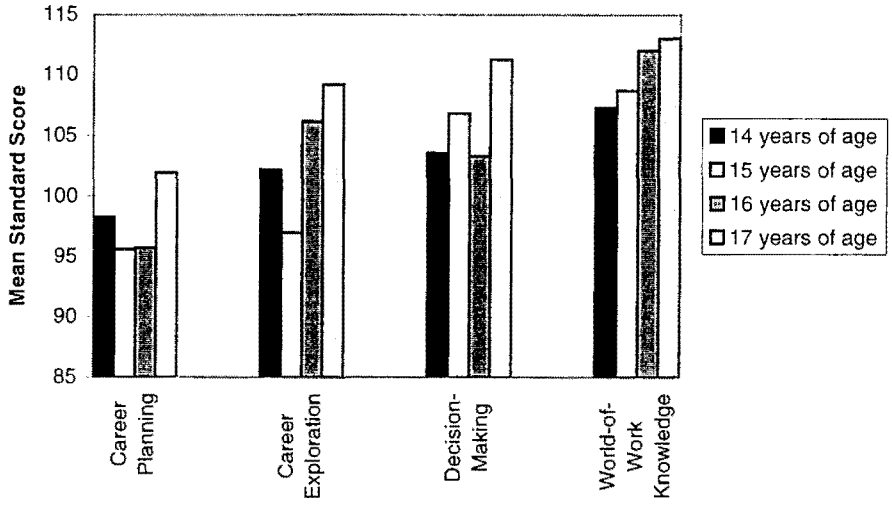
Significant gender effects were also anticipated. Past research has shown that males often score lower on standardized tests of career development than their female peers. Results did not support this across all areas of career orientation. Gender was found to be significant in levels of world-of-work knowledge. Females across age and subject type were found to be more advanced in their world-of-work knowledge than their male peers. Significant gender effects were not found for areas of career planning, career exploration, and decision-making. Results did show, however, a consistent pattern of male subjects scoring lower than female subjects. This pattern correlates to what past research has shown, that if a difference does exist, males score lower on career development tests than do females. Why do males tend to score lower on measures of career development? Perhaps it can be contributed to females developing more rapidly in other areas of life. Females often develop at an earlier age physically and socially, and it could be assumed that they mature in the area of career development at an earlier age as well.

In two of the four areas, career exploration and decision-making, the results are suggestive but inconclusive that the average male subject's score will differ from the average female subject's score. The *p*-value for career exploration and decision-making were .08 and .10 respectively. The results are stated as suggestive but inconclusive due to

the closeness of the p-values to $p \leq .05$. It is likely that a larger sample pool would have resulted in significant findings.

A figure of this study's findings was created to illustrate the group mean scores across ages. Specifically, the figure demonstrates the mean standard scores for each age group on each of the areas of career orientation, namely, career planning, career exploration, decision-making, and world-of-work knowledge. The only career orientation area showing consistent increases as age increases is world-of-work knowledge. It is interesting to note that world-of-work knowledge was the only subtest to show significant effects for subject type and for gender. It was also the only subtest in which the scores increased, although not significantly, as age increased. Findings for world-of-work knowledge in the current study mirrors the findings of previous research.

In summary, the results of this study were surprising in that there were little significant differences found between cleft and noncleft subjects, male and female subjects, or between the various age groups. Differences may not have been found due to this study's sample size. There were several results that were suggestive but inconclusive to state a significant difference existed. A larger sample size may alleviate that problem.



Figure

Career Orientation: Age Group Mean standard scores For career planning, Career Exploration, decision-making, and World-of-Work Knowledge Across Subject Type and Gender Groups (n = 20)

CHAPTER V

SUMMARY AND IMPLICATIONS

Summary

The current study involved in-depth analysis of CDI subtest data. Forty adolescents with cleft and 40 adolescents without clefts completed the CDI as part of an ongoing study of career development of individuals with orofacial clefts. Data were available for equally matched male and female subgroups, cleft and noncleft, for the age groups of 14, 15, 16, and 17 years of age. CDI results were computer-scored and resulted in standard scores for each of the 80 subjects. Standard score data were available for the CDI subtests of career planning, career exploration, decision-making, and world-of-work knowledge. The following analysis techniques were utilized to reject or accept the study hypotheses: 3-way ANOVAs, least square means, confidence intervals, and pairwise analysis.

Based on research, it was hypothesized that adolescents with clefts would perform lower than their peers without clefts on the standardized career development test, the CDI. Presented is a summary of this study's research hypotheses and results:

1. Adolescents with orofacial clefts will demonstrate a lower level of career planning than their noncleft peers. Results did not support this hypothesis. Adolescent subjects with clefts' level of career planning was similar to that of the adolescent subjects without clefts.

2. Adolescents with orofacial clefts will demonstrate a lower level of career exploration than their noncleft peers. Results did not support this research hypothesis. The null hypothesis was supported. Adolescent subjects with clefts' level of career exploration was similar to that of the adolescent subjects without clefts.

3. Adolescents with orofacial clefts will demonstrate a lower level of decision-making than their noncleft peers. Results did not support this research hypothesis. The null hypothesis was supported. Adolescent subjects with clefts' level of decision-making was similar to that of adolescent subjects without clefts.

4. Adolescents with orofacial clefts will demonstrate a lower level of world-of-work knowledge than their noncleft peers. Results supported this research hypothesis. Adolescents with clefts demonstrated significantly lower levels of world-of-work knowledge than their adolescent noncleft peers.

5. Younger adolescents, both cleft and noncleft, will demonstrate a lower level of career orientation across the categories of career planning, career exploration, decision-making, and world-of-work knowledge than older adolescents with and without clefts. Results did not support this research hypothesis in the areas of career planning, decision-making, and world-of-work knowledge. Results partially supported this research hypothesis in the area of career exploration. Specifically, 17-year-old subjects across subject type and gender groups were found to demonstrate more advanced levels of career exploration than their 15-year-old counterparts.

6. Male adolescents, both cleft and noncleft, will demonstrate a lower level of career orientation across the categories of career planning, career exploration, decision-making, and world-of-work knowledge than female adolescents with and without clefts.

Results did not fully support this research hypothesis. In the areas of career planning, career exploration, and decision-making male subjects level of development was similar to that of their female peers. Significant gender effects were found for world-of-work knowledge in that males demonstrated more depressed levels of development in this component of career orientation than their female peers.

Implications

Clinical Implications

A significant difference between adolescents with and without clefts was found only in world-of-work knowledge. Depressed scores in world-of-work knowledge indicate that an individual is not aware of the range of occupations that are available to them. It also indicates a lack of knowledge in how a person acquires a job, how they keep it, and how they adjust to a work schedule (Super et al., 1981). It is suggested that a greater knowledge of the world-of-work will promote greater planning abilities and better decision-making skills.

A significant difference between adolescents with and without clefts may, therefore, indicate a need for intervention within the area of world-of-work knowledge. World-of-work knowledge is a broad area that includes planning, exploration, and decision-making. Providing information on a wide variety of careers, what resources can be used to discuss or research these careers, and instruction on decision-making may be needed. Intervention such as this may increase career development levels of adolescents with clefts, increasing the chances of a successful career and career satisfaction.

A significant difference found between male and female subjects in world-of-work knowledge may indicate the need for intervention with male adolescents, particularly those with orofacial clefts. Results show females having a better understanding of occupations, and the environment in which they want to work. Provision of career counseling with adolescent males may improve their career development levels.

Although it is believed that career developmental levels increase as age increases, results of the study show inconsistencies across the age groups. Group counseling involving planning, decision-making, exploring occupational areas, and building knowledge of what occupations exist and what is required at the job site for the various age levels may assist in a more consistent increase in career development with increases in age.

Future Research Implications

Results of the study showed several *p*-values as suggestive but inconclusive of significant findings. A duplication of this study with a larger sample size may reveal greater subject type, gender, and age effects. It would be of particular interest to test a greater number of subjects but recruit them solely from diverse age groups, i.e. 14 years and 17 years. This may help to clarify results obtained.

With differences revealed in world-of-work knowledge levels in the current study, it may be beneficial for future research to look at this area more in-depth. World-of-work knowledge can be broken down into two main areas: (a) early stages of exploring careers and establishing knowledge, and (b) an individuals knowledge of occupational structure from semiskilled to professional, and the techniques needed for getting a job. Analyzing these areas independently will provide specific information as to where differences exist between adolescents with and without clefts.

A variable which was not included in this study was that of cleft type. For the purpose of this study all cleft types (complete, incomplete, bilateral, unilateral, lip, palate, and lip/palate) were combined into one category of cleft. It would be reasonable to state that children with clefts of the palate only may differ in their social experiences from children with clefts of the lip since the palate is not visible to the eye. Completing a study in which the cleft types are separated may indicate if cleft type has a significant influence on career development.

It seems reasonable to assume that individuals with clefts of the lip or lip and palate may face more negative stigma than individuals with clefts of the palate only. A deformity of the lip is more visibly noticeable than a cleft of the palate. Children with observable clefts potentially receive more negative attention than their peers with less noticeable clefts, such as those of the palate. Grouping individuals with various cleft types into one category may obscure results. Adolescents with clefts of the palate, who may not receive negative attention, may develop better social relationship skills and higher self-esteem, therefore, scoring higher than adolescents with clefts who may display low self-esteem and poor social skills. This may increase the overall average score on career development tests of a cleft subgroup.

Future research should, therefore, consider developing subject groups of varying cleft anomalies and compare them each individually to their noncleft peers for levels of career development. It would be important to continue to control for age and gender in addition to the greater control for cleft type.

Future research should add to our current knowledge base regarding the career development patterns of special populations such as those with orofacial clefts. Longitudinal

studies should be considered that would serve to collect information on adolescents with clefts as they transition into adulthood. Such studies could help to document the status of these individuals which may serve to reinforce the benefits of early comprehensive cleft palate/craniofacial care and shed light on any unmet areas of need from a career developmental standpoint.

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APPENDIX A

INITIAL RECRUITMENT LETTER FOR NONCLEFT SUBJECTS

UNIVERSITY OF MINNESOTA
TWIN CITIES

Department of Communication Disorders
115 Shevlin Hall
164 Pillsbury Drive S.E.
Minneapolis, Minnesota 55455

(612) 373-4116

We are engaged in a study of the way teenagers, 14 - 18 years, decide on their future careers. We are particularly interested in finding out if persons with minor handicaps go about the task in different ways than persons with no handicaps. In order to complete our project, we need to collect information from adolescents who are not handicapped.

We invite you to participate in this project. We need you and one of your parents to sign the form below and return it to us. If you are interested in helping us, we will call and make arrangements to see you at your convenience. We need about three hours of your time. During that time, you will fill out some questionnaires, take some tests, make a recording, and have a picture taken. The questionnaires and test will be used to determine how you are pursuing your career goals, your general intellectual skills, and how you perceive yourself. The recording and picture will be used to describe your appearance and speech. These will be destroyed at the end of the project.

Any information we obtain from you will be kept strictly confidential and disclosed only with your permission. You will not be identified in any written reports or publications that result from this study. If you or your parents would like more information about our study please contact Lisa Letcher-Glembo at 624-3322 or 625-5945.

If you decide not to participate, or decide to participate and then decide to drop out, it will have no effect on any future relations you may have with the University of Minnesota. We hope you decide to take part in our study. However, if you decide not to participate, we will respect that decision. Please return the attached form to let us know. Feel free to call if you would like any additional information.

Sincerely yours,

Lisa Letcher-Glembo, MS
speech/language pathologist
Cleft Palate Maxillofacial Clinic

Clark Starr, PhD
Dept. of Communication Disorders
University of Minnesota

** You may keep a copy of this document for your records. **

. . . .

Please complete this portion and return it in the included self-addressed stamped envelope.

Name ______________________ Address ______________________

Date of Birth ______________________ ______________________

Phone ______________________

_____ Yes, I wish to participate in this project.

_____ No, I do not wish to participate in this project.

______________________ ______________________

Signature of participant Signature of parent or guardian

APPENDIX B

INITIAL RECRUITMENT LETTER FOR

SUBJECTS WITH CLEFTS

UNIVERSITY OF MINNESOTA
TWIN CITIES

School of Dentistry
Cleft Palate Maxillofacial Clinic
Health Sciences Unit A
515 Delaware Street S.E.
Minneapolis, Minnesota 55455

We are engaged in a study of the way teenagers, 14 - 18 years, decide on their future careers. We are particularly interested in knowing how persons seen in our clinics go about the task. We need to obtain this information so that we can determine if we should develop programs to assist persons in making their career decisions.

We invite you to participate in this project. We need you and one of your parents to sign the form below and return it to us. If you are interested in helping us, we will call and make arrangements to see you at your convenience. Upon request, we would be willing to furnish a report regarding the information obtained during your evaluation. It should be noted that results will not be available at the time of your evaluation.

We need about three hours of your time. During that time, you will fill out some questionnaires, take some tests, make a recording, and have a picture taken. The questionnaires and test will be used to determine how you are pursuing your career goals, your general intellectual skills, and how you perceive yourself. The recording and picture will be used to describe your appearance and speech. These will be destroyed at the end of the study.

Any information we obtain from you will be kept strictly confidential and disclosed only with your permission. You will not be identified in any written reports or publications that result from this study. If you or your parents would like more information about our study please contact Lisa Letcher-Glembo at 624-3322 or 625-5945.

If you decide not to participate, or decide to participate and then decide to drop out, it will have no effect on any future relations you may have with our clinic or with the University of Minnesota.

We hope you decide to take part in our study. However, if you decide not to participate, we will respect that decision. Please return the attached form to let us know. Feel free to call if you would like any additional information.

Sincerely yours,

Lisa Letcher-Glembo, MS
speech/language pathologist
Cleft Palate Maxillofacial Clinic

Karlind Moller, PhD
Director,
Cleft Palate Maxillofacial Clinic

** You may keep a copy of this document for your records. **

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Please complete this portion and return it in the included self-addressed stamped envelope.

Name ______________________ Address ______________________

Date of Birth ______________________ ______________________

Phone ______________________

_____ Yes, I wish to participate in this project.

_____ No, I do not wish to participate in this project.

______________________ ______________________

Signature of participant Signature of parent or guardian