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Career Self-Efficacy in Women

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CAREER SELF-EFFICACY IN WOMEN

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DEDICATION PAGE

I dedicate this thesis to my husband and son for all the sacrifices they endured while I was completing my Bachelor's and Master's degrees. I cannot begin to express my gratitude for my husband, Tom and all the support he has given me. It was not easy for him to be the sole caretaker of our son during the many nights I had class or needed to complete an assignment, but he did an excellent job. It also was not easy when I wanted to quit my job during my internship in order to focus on counseling, but he gave me encouragement that I needed to feel secure. To my son, Brendan I also want to express my gratitude. Brendan handled the changes in my schedule every four months without complaining. He sometimes did not get to do things he wanted to do because of my schedule, but he handled it well. He inspires me with his energy (and exhausts me with it as well) and loves me unconditionally. I am a better counselor for having their love and support. God truly blessed me to have Tom and Brendan in my life.

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CHAPTER 1

Introduction

Since the mid-1950s women have been having fewer children and have been joining the workforce in progressively greater numbers, pursuing careers and a more independent lifestyle (Dreyer, Woods & James, 1981). However, many women in today's society struggle with the decision of which career to pursue that will give them the most satisfaction. Finding a balance between what society expects and what they want for themselves can be a difficult dilemma for many women. Zunker (2002) noted that many women experience fear of losing the stereotypical female identity and this could lead to their reluctance to focus on career development.

The 1980 U.S. Census stated that traditional occupations for women (fields in which 75% are women) consisted of nursing, elementary school teacher, and secretary fields and traditional male occupations (fields in which 75% are men) included electrical engineer, detective, and pharmacist (Bonett & Stickel, 1992; Bonett, 1994). The U.S. Department of Labor (1989; in Juntunen, 1996) suggest that when 65 percent of one gender comprise the labor force of a particular occupation, then it would be considered gender-typed for that population. No matter what the percentage, overcoming any perceived barrier can be challenging.

The barriers that women face, such as sexual harassment, discrimination, lack of role models, and the lack of the social support they have for pursuing a nontraditional career can be forces that limit a woman's career development whether she is young, in a transitional period or reentering the workforce at a later

stage in life. These barriers, when perceived by women as threatening or difficult can effect career health (Zunker, 2002; Sullivan & Mahalik, 2000).

Socialization can be another barrier that women encounter as young girls. The socialization of women can encompass views expressed by parents, society, and school. Gottfredson (1981) states that exposure to sex role behavior between the ages of six to eight, is significant in determining what is expected for a particular gender. Social class, financial resources, and family attitudes have an important impact on the careers that young girls will consider (Betz & Fitzgerald, 1987). In addition, the media can have a dramatic effect on what a girl thinks she is capable of achieving. Discussion regarding gender socialization issues with women may provide a greater insight on how a woman chooses a particular career path. Women, especially those who seek nontraditional employment, may face sex-based stereotypes (Dickerson & Taylor, 2000). Women may find it difficult to break the 'glass ceiling' and be promoted based on achievement alone (London, 1998). Other barriers may include family responsibilities and an inability to find suitable role models or mentors (Primack & Stacy, 1997).

Increasing a female's self-concept seems to have a strong connection to women's educational and career development (Betz & Fitzgerald, 1987). Self-concept according to Super (1953), "…is a combination of biological characteristics, the social roles individuals play, and evaluations of the reactions other individuals have to the person" (cited in Zunker, 2002, p. 154). Increasing this self-concept can lead to an increase in self-efficacy and the successes gained with those expectations (Bandura, 1977). Increasing self-efficacy, which refers to the belief in one's ability to persevere in a difficult task (Zunker, 2002), may help

enable some women to overcome typical feminine socialization and expand their beliefs of success in nontraditional career opportunities. However, encouragement or lack of can be a significant barrier that keeps young girls and women from developing a strong sense of self-efficacy (Betz & Hackett, 1981).

In exploring the factors that enables some women to obtain higher paying jobs, higher levels of authority in management, and careers that may include using challenging fundamentals such as math or science, it may be vital to examine perceived career self-efficacy. Ancis and Phillips (1996) found that the level of perceived self-efficacy of a woman effects the range of occupations considered including choice of a nontraditional major. "Unless people believe they can produce desired outcomes by their actions, they have little incentive to act or to persevere in the face of difficulties" (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001, p. 187).

The purpose of this study is to examine the perceived career barriers, sex-role orientation and perceived career self-efficacy of collegiate women and to determine if either of these has a significant impact on their career choice. It is hypothesized that women who pursue nontraditional majors are likely to (i) endorse a more feminist sex-role orientation, (ii) perceive fewer career and educational barriers, and (iii) have a greater sense of career self-efficacy in pursuing traditionally male dominated careers than women who pursue traditional majors.

CHAPTER 2

Review of the Literature

History of Discrimination

Women have faced many career barriers throughout the years. Women had to first overcome the notion that they were meant to stay home and care for the husband, children, and house. In the early 1900s it was noticed that women began working outside the home and some women delayed marriage in order to achieve some independence from the family (Kelley, 1982). Still, other married women had difficulty getting a job due to society's perception that women should be at home taking care of their family (Kelley, 1982; Betz & Fitzgerald, 1987). The passage of the Nineteenth Amendment in 1920 that allowed women to vote was a step towards women having a voice in America (Kelley, 1982). With the passage of the Civil Rights Act in 1964, more women were protected by law to be able to go to work without facing gender discrimination. Of course, that was just the beginning; women were still predominately occupying traditionally feminine occupations such as teachers, secretaries, and nurses. This societal barrier is still in place today. Although the barrier is less formal it extends not only to selection of careers, but includes compensation and promotion (Betz & Fitzgerald, 1987).

Another barrier that women encountered was working during pregnancy. There was not much a woman could do to protect her job once she became pregnant until the passage of the Pregnancy Discrimination Act (PDA) in 1978, which is an amendment to Title VII of the Civil Rights Act that was passed in 1964 (Magid, 2001; Pediatrics, 2000). This act forbids women being discriminated against because of pregnancy. The enactment of the Family

Medical Leave Act in 1993 by Congress helped, in part, by providing additional protection for women needing leave due to pregnancy (Freinkel, 1998).

Barriers for Women in Nontraditional Careers

Barriers to nontraditional careers still exist today. The lack of women in nontraditional careers may suggest that societal attitudes (i.e., it is the woman's responsibility to take care of the family and home) are still barriers for women when selecting a career occupation today. Nontraditional careers for women are defined by a predominance of more than 70 percent of men over the women in a field (Betz & Hackett, 1981; Scheye & Gilroy, 1994). Some of the nontraditional careers for women are engineer, chemist, secondary school physics teacher while some of the traditional careers for women are administrative secretary, home economist, and librarian (Bonett, 1994). Data from the U.S. Department of Labor shows that women are still underrepresented in many nontraditional careers (Zunker, 2002). Table 2.1 looks at the percentage of women that occupy traditional and nontraditional occupations in 1998. The percentage of total women in traditionally feminine fields suggests that women are still choosing those careers in greater numbers. Table 2.2 looks at the earnings a woman made in comparison to that of a white male employed full-time who was over 18 years old in 1996. The white female is the highest paid of the group, but she still only earns 71 percent of what a white male earns.

TABLE 2.1

Occupation	*Total Employed (in Thousands)*	*Percentage of Total Women*
Traditionally Feminine		
Registered Nurses	2,032	92.5
Teachers, except college	4,962	75.3
Counseling, educational, and vocational	230	68.8
Secretaries, stenographers, and typists	3,599	92.6
Nursing aides and orderlies	1,913	89.0
Maids and house cleaners	653	82.8
Traditionally Masculine		
Engineers	2,052	11.1
Physicians	740	26.6
Managerial and professional	38,957	49.0
Teachers, college	910	42.3
Lawyers	912	28.5
Sales occupations	15,850	50.3
Food preparations workers	6,071	56.5
Janitors and cleaners	2,233	34.8
Mechanics and repairers	4,527	4.0
Truck drivers	3,012	5.3
Bus drivers	471	50.4

Source: Data from the U.S. Department of Labor, Employment and Earnings (January 1999), Table 1 (pp. 68-78). Reproduced from Zunker (2002).

TABLE 2.2

Earnings as a percentage of white male earnings for full-time workers over 18 years old, 1996.

Women	***Dollars***	
African American	21,000	60%
Mexican origin	17,000	49%
Puerto Rican	22,000	63%
Cuban	22,000	63%
Central and South American	18,720	53%
Other Latino	78,300	41%
White	25,000	71%

Earnings in real (1996) dollars

Source: U.S. Department of Commerce, U.S. Department of Census, 1998.
Current Population Survey--March 1997, Washington, DC. *Hispanic Population of the United States Current Population Survey*--March 1997.
Reproduced from Zunker (2002).

Self-Efficacy

Self-efficacy expectation is the belief a person has that they can perform the behavior needed for a successful outcome in whatever endeavor they embark on (Bandura, 1977). The higher the self-efficacy the more control a person believes they have in determining the outcome of any situation (Jimmieson, 2000). Higher levels of self-efficacy might lead a woman to consider nontraditional career opportunities and the persistence to stick with it (Ancis & Phillips, 1996). Individuals with low self-efficacy may become discouraged or overwhelmed by a difficult task and decide to no longer pursue it (Sharf, 2002).

Bandura (1977) looks at the way cognitive processing effects self-efficacy through four principal sources of information: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. "The initial approximations of response patterns learned observationally are further refined through self-corrective adjustments based on informative feedback from performance" (Bandura, 1977, p. 192). Performance accomplishments look at how a person views one's ability to be successful based on repeated successes with a task, how this increases self-efficacy and then changes behavior (Bandura, 1977). Vicarious experience can increase a person's self-efficacy by seeing a task performed by another person with similar characteristics having a positive outcome and then thinking that, they too, could have positive results (Bandura, 1977). According to Bandura (1977) verbal persuasion works best when the person doing the persuading is viewed as competent and uses an interactive approach. Emotional arousal has an effect on self-efficacy by alerting a person about the level of stress they have regarding a situation; this lets a person know,

based on their competency beliefs that they have about their ability to be successful, if they wish to proceed with the action (Bandura, 1977).

Perceived self-efficacy beliefs can be a pivotal factor in what a person chooses to do with one's life. If a person does not believe in their ability to accomplish a certain task, the likelihood that they will pursue that task, especially in regards to career choice, is minimal. "Perceived self-efficacy is, therefore, posited as a pivotal factor in career choice and development" (Bandura, et al., 2001, p. 187). Having a strong core belief that your actions will generate positive results especially when faced with difficulties such as job strain, employment inequities, stress, and employee adjustment, is imperative for long-term success (Bandura, et al., 2001; Jimmieson, 2000). Research by Bandura et al., (2001) indicates,

> The higher people's perceived efficacy to fulfill educational requirements and occupational roles, the wider the career options they seriously consider pursuing, the greater the interest they have in them, the better they prepare themselves educationally for different occupational careers, and the greater their staying power in challenging career pursuits (p. 188).

Career Self-Efficacy in Women

Lacking confidence in their ability to succeed can be a self-limiting behavior that keeps some women from seeking careers in fields where they may have to perform challenging tasks (Dickerson & Taylor, 2000). Strong career self-efficacy beliefs are important for the continued development and pursuit of academic and occupational achievements (Smith-Weber, 1999). Testing completed by Betz and Hackett (1991; Scheye & Gilroy, 1994; Juntunen, 1996)

indicated that even though there was not a significant difference in mathematical or English ACT scores between male and female college students, their efficacy expectations differed regarding traditionally male-dominated career fields. This study found that men had stronger beliefs in their mathematical ability than the women did and tended to choose a college major that was mathematically or scientifically based (Scheye & Gilroy, 1994; Juntunen, 1996). A study completed by Malpass, O'Neil, Jr., and Hocevar (1999) found that, "...young men had higher self-efficacy for math than young women" (p. 281).

Looking at how men and women can score equally well on instruments such as the ACT and SAT, that are designed to measure mathematical and scientific knowledge and ability, among other variables, and yet have women avoid pursuit of these courses is puzzling. Socialization has been put forward as one of the reasons that women's perceived career self-efficacy is low and this might lead them to avoid technically challenging careers. Although not much evidence exists on how children develop the career interests that they do, there is the belief that parental influence can affect a child's career development by promoting the value of education and reinforcing educational pursuits (Bandura et al., 2001). The study of vocational choices mainly focused on men due to the predominance of men in the workforce; it was not until the late 1950s that researchers seriously began to look at career-oriented women (Betz & Fitzgerald, 1987).

Socialization

Socialization looks at the way people learn based on the environment. The observations people make about society can influence how they perceive what opportunities are available to them. How children learn what is expected of them is usually through observation and can then be reinforced by the actions of adults. Children observe what adults do: who does the cooking and cleaning, who mows the lawn and makes household repairs. Girls are encouraged to play with dolls and kitchen sets and boys are given trucks and building block sets. Teachers might give a girl affirmation by commenting on how nice she is to her classmates and might give affirmation to a boy by stating that he did good job by completing his building block tower (Betz & Fitzgerald, 1987). Boys are typically punished for acting like a girl or for playing with traditional feminine toys, such as a kitchen set, dolls, and cosmetics. Girls that play with traditional male toys such as trucks, tools, and building sets are typically ignored. Boys also seem to get more attention from teachers, negative and positive (Betz & Fitzgerald, 1987). This lack of incentive (or reinforcement) to pursue typical masculine interests may limit the choices girls have early on when considering a career choice.

Reinforcement happens when children model these stereotypical behaviors and are rewarded by praise and encouragement from parents, family, teachers, entertainers and sports figures. Reinforcement of stereotypes is also conveyed through gender-role socialization. This type of socialization is presented in children's textbooks and literature, magazines, and television (Betz & Fitzgerald, 1987). Gender-role socialization is conveyed by seeing girls playing with kitchen sets and dolls, women cooking and cleaning, boys playing with dirt and cars, and

men in hardware stores and as presenters of scientific data. The effect of gender-role socialization on women may lead a girl to avoid a technically or scientifically challenging career due to lack of confidence. As stated earlier, self-efficacy grows through repeated successes with a task (Bandura, 1977). If a woman is not given those opportunities, how is she supposed to gain success?

The socialization experiences of women can have an effect on the self-efficacy beliefs of women and can lead to a reduction in available career options (Betz, 1994). Career choices are usually made before entering college or shortly thereafter. How do women decide what they are capable of doing? What helps some women to decide that not only are they interested in mathematics, but are also interested in becoming an engineer? How big of an impact does society, the environment, vicarious experiences, and past accomplishments have on helping a woman to decide her career? A woman's self-efficacy beliefs can be a strong determinant in her career searching process.

Women's Role Models

Lack of role models is another barrier for women seeking nontraditional careers. Vicarious experience is one of four informational sources in the self-efficacy expectation model (Bandura, 1977). The vicarious experience helps a person to change her thought process of what she may not be able to do when she views another person successfully completing a task (Bandura, 1977). Lack of women in nontraditional careers can be a hindrance for those women needing that identification source. People that have high self-efficacy beliefs tend to seek feedback from those who are experts and this can be problematic with women who look to other women for that feedback (London, 1998). A short supply of

female role models for girls and young women to emulate makes it difficult to determine how significant their effect could be (Betz & Fitzgerald, 1987; Ancis & Phillips, 1996).

The lack of occupational role models and mentors, especially within higher education, leave many women without a same-sex role model and can deter them from thinking they could be successful where so few females exist. Women and girls in this society tend not to get the encouragement needed to strengthen their personal efficacy (Betz & Hackett, 1981). Getting this encouragement from society may be difficult, but the home environment may be more influential.

Parental Influence

Mothers can be a great influence as a female role model. Research suggests that daughters of working women, especially those with a higher level of education, are more likely to pursue nontraditional careers than the daughters of homemakers (Betz & Fitzgerald, 1987; Ex & Janssens, 1998). Additional research found that girls who were dissatisfied with their mother's role as homemaker or whose mothers had positive views of career pursuits were just as likely to have strong career motivation (Betz & Fitzgerald, 1987). Kutner and Brogan (1980; in Betz & Fitzgerald, 1987) discovered that 57% of female medical students had working mothers and only 43% of the male medical students had working mothers. Stephan and Corder (1985; in Betz & Fitzgerald, 1987) found that girls reared in dual career families were more likely to combine the roles of career, wife, and mother.

More significant role models for a girl could be both her mother and father. A two-parent home study by Ex and Jassens (1998) found that the mother was instrumental in influencing her daughter's views about motherhood. The more traditional the view of motherhood that the mother had, the more the daughter had a traditional view of motherhood. The more educated the mother was, the more liberal the mother's view of women's roles tended to be and this normally lead to the daughter's outlook matching the views of her mother.

The father's input can be a positive influence for his daughter as well. Stevenson (1991) stated, "Females who rated themselves as highly instrumental also rated the quality of their relationship with their father as better than more traditional females" (p. 243). One aspect of that study examined the perceived closeness between a father and daughter and how that would effect the view the child had of herself. Research seems to suggest that when the mother and father encourage the daughter to excel in math and science subjects, have positive views of women, and seek challenging life roles they have a greater propensity for producing a daughter whose self-efficacy beliefs are strong. Bandura et al., (2001) noted,

> The aspirations parents hold for their children also have a strong impact on their children's academic aspirations and level of academic achievement....Children who have a secure sense of academic efficacy judge themselves to be efficacious for careers in science and technology...(p. 197).

School Experiences

How the more difficult subjects such as mathematics, chemistry, and physical and earth sciences are presented in high school may also effect how women eventually view their ability to do well in these fields. Tosun (2000) noted, "It is equally disturbing that science is viewed as a discipline for a select few, so many students avoid pursuing course work in science unless required to do so, as in high school" (p. 380).

Scheye and Gilroy (1994) found that not only did college women who attended single-sex high schools have more interest in nontraditional subjects than those who attended coed high schools did, but those raised in mixed sibling households had an even stronger desire to choose a nontraditional career. Support for Bandura's (1977) vicarious experience of live modeling is found in Scheye and Gilroy (1994) where they noted that men who teach in all girls' schools might be an example of providing support to the value of women and could also be enhancing verbal persuasion by encouraging achievement and competition. Ancis and Phillips (1996) found that when faculty ignored female students by not calling on them directly that this could diminish the value of experiencing performance enhancement and giving negative feedback could destroy the benefit of verbal persuasion. Women may also find themselves in a hostile environment where they are devalued and not selected as often by faculty to discuss relevant matters in nontraditional type educational classes. This can lead to a loss in performance accomplishment, which is another informational source in the self-efficacy expectation model (Ancis & Phillips, 1996; Bandura, 1977).

School counselors can be critical components in helping a female decide her major. If the counselor influences his or her female students toward traditional fields she might decide that is her only choice. The counselor might talk with a female regarding how a career would fit in with being a wife and mother, but would probably not have a male consider how his career choice would fit in with being a husband and father (Betz & Fitzgerald, 1987). School counselors could impact the female greatly by encouraging her growth into mathematical, scientific, and technological subjects. The earlier these interventions are introduced the stronger the impact they could have on developing a greater perceived self-efficacy for females within these subjects (Bonett, 1994; Betz, 1992).

Research has found that school achievement scores for girls is usually higher than it is for boys, but when it comes to higher educational and occupational achievement, males obtain more than females. Math skills are of central importance for achieving success in the fields of science, engineering, medicine, computer science, and many skilled trades. Women continue to be underrepresented in these fields and this is hypothesized to be due to low self-efficacy expectations (Betz & Hackett, 1981).

Science and math courses have a lower enrollment in the number of students, especially females taking these courses in college compared to the required courses in high school (Tosun, 2000; Zeldin & Pajares, 2000). This could further reduce the number of females available to teach science and math courses in the elementary, secondary, and high school levels. With the lack of female role models already, this could have a damaging effect on bolstering a

young girl's perceived self-efficacy for careers that require a mathematical or scientific background. The self-fulfilling prophecy that males are better at math than females may have inadvertently led to many females avoiding further math classes. Also, teachers may have not provided encouragement to those females and therefore reduced their self-confidence when faced with the anxiety that mathematics can produce (Betz & Fitzgerald, 1987).

Not having the encouragement from parents and teachers and not knowing of the success that other females have achieved within a challenging field can be an important factor in reducing the career self-efficacy a girl has regarding her career choice (Betz & Hackett, 1981). If a girl grows up socialized to take on the traditional characteristics of a feminine gender-typed role, it could take a greater effort to consider herself capable of being successful, and therefore being able to increase her perceived self-efficacy to fit the challenges of a nontraditional career.

Other Career Barriers

Title IX of the Education Amendments of 1972 was designed to protect school-aged children against sex discrimination and harassment in much the same way that Title VII helps to protect against sexual discrimination and harassment in the workplace (Keeney & Yelkovac, 1997). Their main objective is to protect a person from hostile or abusive working or learning environments and to allow each gender equal opportunity to grow within the organization. Despite this protection, women are still being denied the same credibility and salary in management positions that men have (Dickerson & Taylor, 2000; also noted in Table 2.1 & 2.2), even being referred to as a "female manager" (Wilson, Lizzio, Zauner, & Gallois, 2001). Sex-based stereotyping continues to be a hurdle for

women to overcome. Some men may have difficulty accepting leadership from women. Leadership skills can include assertiveness, aggressiveness, and emotional stability. When a woman steps into this role she has to contend with not only what her subordinates and peers think of her, but what she thinks she is able to accomplish. This can lead some women to not pursue the levels of upper management or any type of nontraditional task (Dickerson & Taylor, 2000). Anticipated discrimination might cause some women to shy away from a male-dominated environment (London, 1998).

Women have also faced many other overt forms of discrimination when entering college. Admission practices have included higher admission requirements for females, age restrictions on enrollment, even having quotas. Financial aid was given more to the males due to athletic scholarships, GI Bill, ROTC and many women attend college part-time thus eliminating themselves from the required fulltime status for financial aid from the government (Betz & Fitzgerald, 1987).

Women have also faced many subtle forms of discrimination. The stag effect as defined by Bernard (1976; in Betz & Fitzgerald, 1987) stated that many times women would not be selected as proteges due to the failure of taking female students seriously, male-only clubs and professional organizations, and deciding business over a golf game which women were not encouraged to learn. Harassment, whether it is in the form of gender-role stereotyping, sex-based stereotyping, or sexual harassment, can be a barrier that may hinder a woman's growth to an even greater degree in a nontraditional career field than in a traditional career field. Brian (2001) reported that female medical students

reported more harassment in their training years and in specialty areas that were dominated by men. In a sample size of 4,501 female physicians, 39.9 percent reported experiencing sexual harassment (Brian, 2001). These situations can all be barriers for many women who do not wish to endure the hassle at all or for those who give up after repeated doors are slammed in their face.

In a sample of male and female high school students, Lanier and Byre (1981; in Betz & Fitzgerald, 1987) found a correlation of .79 between perceptions of a woman being a professional and perceptions of her attractiveness. This could explain the devalued feeling women have when faced with negative consequences. Society tends to rate attractiveness as a contributing factor in success. Lanier and Byrne (1981) found that attractive women were rated as higher achieving, academically and professionally, by male college students and teachers, than less attractive women. Associations of high achieving women not being attractive might have been factor in keeping some girls from choosing a male-dominated career, but it seems that idea maybe slowly changing (Lanier & Byrne, 1981).

Role Conflicts

London (1998) presented other career-related barriers, such as multi-role conflict, uncertainty about the future, disapproval by others, and lack of information. Having a family can be demanding and so can many traditionally male dominated careers. Men have dominated the higher levels of management, mathematical, and scientific positions. When women acquire positions in nontraditional careers, the pressure to measure up to the same standards as men is high. Women have to first overcome the thought that they cannot accomplish

what a man can based on what society has engrained in the minds of many before they think they are capable of mastering a nontraditional career (London, 1998). Women also have to evaluate what they will give up or look at what can be compromised upon when deciding their career. Women have to evaluate how their career will fit in with demands or problems with their family; having a family might interfere with traveling or relocating (London, 1998; Primack & Stacy, 1997). These are some of the barriers that women might face when deciding upon a career. Career-oriented women are more likely to be single, divorced or widowed, and childless (Betz & Fitzgerald, 1987).

Many women have delayed having a family in order to establish a career first. For those women who are seeking the nontraditional career, having a family could mean deciding between being available to young children, a husband, and to other family members, or being available for the boss to take business trips out of town, working overtime, or working evenings and weekends. Climbing the ladder in a male-dominated career field may include more pressure and induce more conflicts between career and family than a traditional career. For example a study by Brian (2001) stated that, "Women who are surgeons differ from other female physicians in that they are likely to be younger, unmarried, childless, and work more clinical hours and call nights" (p. 2).

Role strain could be major factor in what some women choose to pursue. If a woman knows that pursuing a particular career path would entail a higher degree, overtime, and so forth she may be less inclined to follow that path if she is interested in having children soon, has a family member that needs extra attention, or wishes to become involved in personal growth activities. If a woman chooses

to work after having children, she has to deal not only with her feelings of how she feels about her children in childcare, but also what she thinks about society's viewpoint that may see her as less caring mother (Etaugh, 1998). Etaugh (1998) found that mothers who worked fulltime were seen as less nurturant and less family oriented than fathers who worked fulltime.

Self-efficacy, role conflict, work control, and employee adjustment work together. Jimmieson (2000) reports that, "When employees perceived high role conflict they reported lower satisfaction with their job and felt more emotionally distant from their customers" (p. 275). Having a high level of self-efficacy and having work control aided an employee with more job satisfaction and less role conflict; interestingly, having work control alone did not effect the employee as greatly when they lacked in higher self-efficacy levels (Jimmieson, 2000). Erdwins (2001) noted that social support, which includes encouragement and help at home, along with a strong perceived self-efficacy, helped to reduce the negative factors of role conflict. A woman whose perceived self-efficacy is low may have a more difficult time pursuing a traditional male-dominated career and combining the responsibilities of home and family (Bonett, 1994).

Women have come a long way in gaining their place in the workforce. This process has not been easy and has meant sacrifice for some. Gaining the acceptance of society has been an arduous task, one that is still a work in progress. Women are beginning to take on careers that at first were employed only by men (i.e., scientist, manager, engineer, and so forth). Through this process they have had to endure harassment from men and other women.

Parents, teachers, school counselors, and society all have an enormous

influence on the career path that a young girl might consider. Using the components from Bandura's (1977) efficacy expectation model: performance accomplishments, the vicarious experience of modeling, verbal persuasion, and emotional arousal, one can see how this could add to the enhancement of a person's perceived self-efficacy level. The more a girl can look to a role model to encourage her ability to pursue nontraditional activities such as girls playing with trucks and hammers, girls in baseball, and girls enjoying math and science, the more likely she will see an opportunity for herself. Gaining this ability may lead to a high perceived self-efficacy belief in herself and help her to tolerate career barriers with great success.

Hypothesis

This research was conducted to look at the perceived barriers that women encounter and the perceived career self-efficacy that women have when choosing nontraditional careers. How a woman develops her attitudes about her abilities has much to do with her socialization and her environment as a child. Undergraduate women from the traditional career field of teaching were selected to determine if there was a difference between perceived career barriers and perceived career self-efficacy of nontraditional and traditional female majors. The first hypothesis is that women who decide to pursue careers in nontraditional career fields have a higher level of perceived self-efficacy than women who decide to follow traditional feminine careers do. Using the revised Career Attitude Scale (CAS; Bonnet & Stickel, 1989) this research is attempting to look at the self-efficacy levels a woman has regarding her ability to pursue both traditional and nontraditional careers.

The second hypothesis is that perceived career barriers can be more of a hindrance to women who do not have high perceived self-efficacy beliefs. Women who see many obstacles and do not believe they can overcome them might decide to choose a career where they are less likely to encounter more difficulty. The Perception of Barriers Scale (POB) along with the Coping with Barriers (CWB; Luzzo & McWhirter, 2001) look at the educational, familial, and financial concerns, and attitudes that can affect a woman's career decision and her level of coping efficacy.

The third hypothesis is that the different roles that women play, wife, mother, and employee, will be less traditional (i.e., the woman should stay home to raise the children) given the more nontraditional her career choice is. The Scale to Measure Sex-Role Orientation (ISRO; Dreyer, Woods & Sherman, 1981; Juntunen, 1996) looks at the sex-role orientation a woman has and the effects that lifestyle changes have on a woman's career development.

CHAPTER III

Method

Participants

The participants sought for this research were 50 female college students between 18 and 43 years of age. The women were chosen from classes that were specifically related to their chosen major. The final sample of participants in the nontraditional career fields consisted of 21 individuals; 14 women (66%) were from biomedical engineering, one from meteorology (5%), two from aerospace engineering (10%), three from mathematics (14%), and one from biology (5%). A limitation of this research was the number of women available from the nontraditional career fields; therefore, research had to be conducted at two universities using a variety of majors. Also, the two women from the aerospace engineering department were recent graduates that the researcher contacted through email. The sample size still remained small due to the limited number of female students available in nontraditional classrooms. In order to keep an even number of participants for the comparison, only 29 participants were included in the sample from the traditional career field of teaching at the second university. The 29 female students who participated were recruited from three education classes.

The nontraditional group consisted of two freshmen (10%), three sophomores (14%), eight juniors (38%), five seniors (24%), and three graduate (14%) student participants. The mean age for the nontraditional group was 22 years (SD=4.63). The traditional group consisted of two freshmen (7%), five sophomores (17%), 11 juniors (38%), nine seniors (31%), and two graduate (7%)

student participants. The mean age for the traditional group was 25 years (SD=7.98).

Instruments

The three instruments used were combined into one survey along with additional demographic information. The first part of the survey (the first 18 items) used the revised Career Attitude Scale (CAS; Bonnet & Stickel, 1989). The participant is asked, using a Likert Scale, to mark on a scale of 1 to 5, with 5 being very confident and 1 being not at all confident, how confident they are that they could completely handle this career.

According to Bonett (1994), the final version of the CAS included 18 different career occupations. The nine traditionally female and nine traditionally male occupations chosen by Bonett and Stickel (1992) were selected to reduce financial disparity as much as possible (Bonett, 1994). The nine traditionally female occupations were: occupational therapist, dental hygienist, administrative secretary, librarian, speech pathologist, dietitian, flight attendant, home economist (Ph.D.), and registered nurse. The nine traditionally male occupations were: pharmacist, surveyor, architect, secondary school physics teacher, drafter, optometrist, air traffic controller, chemist (Ph.D.), and electrical engineer. Each participant had two total scores, one for masculine occupations and one for feminine occupations; each score could range between 9 and 45. The higher the score meant a higher degree of self-efficacy for choosing either masculine or feminine occupations.

To help participants rate themselves based on the job dimensions rather than pay disparity or gender-typed traits, the authors made an attempt to match

characteristics such as, physical demands, education, science or math knowledge, stress or emotional demands, and schedule flexibility for all occupations selected (Bonett & Stickel, 1992). The 18 item CAS has a Cronbach's alpha between .81 and .87 and a 21-day test-retest reliability coefficient between .70 and .75. In this study, the traditionally male and female scores were compared between the women who choose traditional careers and the women who choose nontraditional careers. The scores were compared to determine if scores for the nontraditional group would be higher for the traditionally male occupations and if the scores for the traditional group would be higher for the traditionally female occupations.

The second part of the survey (the next 54 items) uses the Perception of Barriers Scale (POB; items 1 through 26) and the Coping with Barriers Scale (CWB; items 27 through 54). Both assess educational and career-related barriers (Luzzo & McWhirter, 2001). The difference between the educational and career-related barriers of the POB and the CWB is that the POB will look at barriers that the participant believes she has previously or might encounter in the future and the CWB looks at how the participant is currently coping or would cope with barriers.

The POB and CWB used a Likert Scale for scoring the participant's answer with values of: strongly agree (5), agree (4), not sure (3), disagree (2), to strongly disagree (1). The scores can range from 26 to 130 for the POB and from 25 to 125 for the CWB. The higher the score for the POB, the stronger the belief that the participant has that more barriers could impede her career and educational growth; the higher the score for the CWB, the greater the confidence level the

participant has in coping and overcoming perceived educational and career-related barriers (Luzzo & McWhirter, 2001).

Questions one through seven are associated with career-related barriers and questions eight through 26 are associated with educational-related barriers of the POB. Questions 27 through 31 are associated with career-related barriers and questions 32 through 51 are associated with educational-related barriers of the CWB. The POB was modified by this author to eliminate ethnic related questions in order to focus on gender related barriers. The last four questions ask the participant to rate their level of agreement with barriers they encounter in their education and career-related goals. The scores in this section can range from 4 to 20. This section is used to validate the scores of the POB and CWB. The POB has a Cronbach's alpha of .90 and the CWB has a Cronbach's alpha between .88 and .93 with a two-month test-retest reliability coefficient .78 for the POB and .50 for the CWB (Luzzo & McWhirter, 2001).

The third part of the survey uses the Scale to Measure Sex-Role Orientation (ISRO; Dreyer, Woods & Sherman, 1981). The ISRO looks at the sex-role orientation of the participants', whether it is feminist or traditional. It measures the degree of conflict that a woman has between family responsibilities and having a career, division of household responsibilities based on gender, and the role a woman should play in the working world (Dreyer et al., 1981; Juntunen, 1996). The ISRO was used to discover how the undergraduate women of today think about their sex roles and how this relates to the career path that they have chosen.

The ISRO used a five-point Likert Scale scoring that ranged from 'Strongly Agree' to 'Strongly Disagree'. Participant's scores could range from 16 to 80 with lower scores indicating a more traditional sex-role orientation and higher scores indicating a stronger feminist sex-role orientation. The 16 item ISRO has a split-half reliability coefficient of .92 and a test-retest correlation of .62 (Dreyer, et.al., 1981).

The fourth and final part of the survey consists of eight demographic questions that determines the age, undergraduate level, academic major, present career plans and how confident they are about following those plans. Also, what her parent's career choices were and the career choice of the person who had the greatest influence in their career path and why.

Procedures

Female participants were recruited based on their junior or senior status as an undergraduate student. Those students were most likely to be in classes that reflected their major; however, since the participants were in specific career classes, freshman and sophomores were allowed to complete the survey as well. Three graduate students were allowed to participate since they had selected majors that directly related to the majors of the undergraduate students. They were solicited by the researcher either face-to-face or through a letter to participate in the research.

The purpose of the study was to examine the perceived career self-efficacy that undergraduate women have based on their attitudes toward career development and ability and the perceived career barriers they encounter. Once approval from the instructor for entering the class was confirmed, a short

presentation informed the class of the research. Participants were asked to return the survey in a sealed envelope whether they answered the questionnaire or not, to ensure anonymity of participants. Consent forms were collected separately in order to maintain confidentiality of participants. The data collection for those in teaching was completed during class time and those surveys were collected immediately. There was a 100 percent return rate among all the participants that were recruited.

The three instruments used in this study were chosen based on the population being surveyed and on previous research in this area. The CAS scale was used to assess how the undergraduate women participants felt about their skill and ability in the selected occupations. The POB and CWB scales were used to identify any potential barriers that the participant felt impeded her success currently or could possibly do so in the future. The subscales looked at educational and career-related barriers. The perceived educational barriers included financial concerns, family problems, lack of support while in school, and so forth. The career-related barriers included discrimination concerns, difficulty with combining family and work, lack of role models or mentors, and so forth. Both subscales also included questions that related to how gender could interfere with both educational and career goals.

The purpose of this research study was to examine if there were significant differences between women pursuing traditional and those seeking nontraditional majors in terms of their, (i) perceived career self-efficacy, (ii) perceived career and educational barriers and their confidence in overcoming them, and (iii) their sex-role orientation. Data was analyzed using a series of independent sample t-tests to examine the difference between the two groups.

CHAPTER IV

Results

A series of independent sample t-tests were utilized to test for significant differences between the traditional and nontraditional career groups in terms of their career attitudes regarding male occupations (CAS_m) and female occupations (CAS_f), their perceived career and educational-related barriers (POB), their ability to cope with perceived career and educational-related barriers (CWB), and their sex-role orientation (ISRO).

An alpha level of 0.05 was used to evaluate the significance of the hypothesis of t-test results. Results of the t-test suggest that there were significant differences between the traditional and nontraditional female participants in terms of their career attitudes towards male occupations (t=4.98, p=0.00) and in terms of their sex-role orientation (t=2.24, p=0.03; see Table 4.1). Descriptive statistics were analyzed for all variables of study. Means and standard deviations for the traditional and nontraditional careers groups are presented in Table 4.1.

TABLE 4.1

Variables	Traditional (n=29)		Nontraditional (n=21)		t	p
	M	SD	M	SD		
CAS_m	24.21	8.49	36.33	8.50	4.98	0.00*
CAS_f	34.03	5.85	35.62	8.55	0.73	0.47
POB	50.93	15.99	51.95	10.17	0.28	0.78
CWB	102.72	12.25	103.86	14.98	0.29	0.77
ISRO	66.24	7.94	70.81	5.82	2.24	0.03*

*p<0.05

Female participants in nontraditional majors reported a significantly higher level of confidence in their attitude regarding their pursuit of traditionally masculine career fields relative to female participants in traditional majors. Female participants in nontraditional majors also reported a significantly higher level of feminist attitude regarding their roles inside and outside the home in relation to family and career goals than their counterparts in traditional majors.

CHAPTER 5

Discussion

This study's primary focus was to observe any differences in the perceived self-efficacy, sex-role orientation, and perceived career barriers between collegiate women who choose nontraditional majors and those who choose traditional majors. Race, ethnicity, culture, and socioeconomic status were not relevant to this study although those might be concerns for additional research. This research did not address these issues although past research has (see Luzzo & McWhirter, 2001; Smith-Weber, 1999 for further review).

Previous research has generally examined gender differences. When women are tested against men regarding their self-efficacy in mathematical or scientific abilities or in those types of occupations, higher self-efficacy levels are found in more men than women (Malpass, et al., 1999; Smith-Weber, 1999; Bonett, 1994; Betz & Hackett, 1981). Although research has been conducted with women (Zeldin & Pajares, 2000; Sullivan & Mahalik, 2000) this author could not find any studies that were conducted between nontraditional and traditional collegiate women.

The results of this study suggest that women who choose nontraditional majors have more confidence about being successful in male dominated careers than women who choose traditional majors do. Having this higher level of confidence contributes to women who have a more feministic view about their place in society.

Some areas to help a girl increase her perceived career self-efficacy would be through the socialization process. Increasing the awareness of what women

are capable of either through role models, parental guidance, education enhancements, and media exposure will benefit women who seek challenging educational and career obtainments.

Although role models for the students who participated in this study were not readily available during their formative years, as more women enter nontraditional careers, more role models will become available for younger girls to vicariously experience success and to encourage younger girls to experience performance accomplishments. This could have a positive impact on the number of women who choose nontraditional careers in the future. Along with vicarious experience and performance accomplishments, Bandura (1977) noted that verbal persuasion could be helpful to increase self-efficacy.

Role models should be from both genders. Women who are in nontraditional careers can be a trusted source for verbal persuasion because they can explain how they became successful in careers that require mathematical and scientific knowledge. Men can also use verbal persuasion by encouragement of nontraditional feminine achievements (Scheye & Gilroy, 1994). Parents and educators have an important role to play in developing a greater level of self-efficacy among girls and women. Bandura et al. (2001), discovered that boys and girls do not differ in their perceived mathematical abilities initially, but by high school girls lose confidence in that ability. This decline was linked to the parents adherence to the cultural stereotype that boys were better at math than girls (Bandura et al., 2001). By encouraging girls to expand their career options to include science or mathematics, the women of the future may find that their career choices are no longer limited in these fields. Parents can facilitate this

encouragement by not limiting choices for girls as they grow up. Allowing them to play with trucks and in the dirt, letting them see the parents fulfilling nontraditional household duties, and not limiting their career choices with stereotypical comments can help girls to expand beyond traditional boundaries. Girls can also be exposed to encouragement through television and advertising as well. When women are seen in greater numbers through media exposure as competent in fields such as biology, chemistry, and engineering, society's thoughts as to what is possible for women may be further expanded and greater numbers of women may choose nontraditional careers.

No significant differences were found between collegiate women who choose nontraditional or traditional majors regarding perceived career-related or educational barriers or with their ability to cope with these barriers. This may be due to women in general perceiving barriers in their career and education. Research conducted by Luzzo and McWhirter (2001) compared female and male participants. That study found that women did perceive more barriers than men did. Some women, although they encounter resistance, may be able to overcome that because of a higher level of self-efficacy.

Another significant finding was the more feminist sex-role orientation of the women who choose nontraditional majors had compared to women who had chosen traditional majors. The women who choose nontraditional majors were more likely to have a feminist attitude on a woman's equal role in the workforce and about combining her career and family life. The women who choose traditional majors were more likely to have a traditional view of women staying home to care for the family and finding a career that supported the family.

Greater support either through flexibility in the workplace, social climate, or supportive spouses could encourage more women to seek nontraditional careers (Erdwins, 2001; Primack & Stacy, 1997).

The Dreyer, et al., (1981) review of the ISRO noted that the feminist attitude was more prevalent in women with a higher level of education. This could have some effect on this study due to a number of women from the nontraditional group indicating on the survey that they were interested in pursuing a graduate degree. However, due to the small sample size, a greater number of women would need to be studied further to determine if this was a significant finding.

A limitation to this study is the small sample size obtained. It was a challenging task to locate women in nontraditional classrooms. Since most classes had very few women, several instructors had to be contacted and not all could be reached. As stated previously, in order to keep the two groups at a comparable level only a small number of women in traditional classes were solicited to participate.

What can counselors due to increase the number of women who pursue nontraditional careers? Incorporating a feminist-based approach in their counseling may encourage women to define their abilities based on their interests, especially when introduced in early childhood education. Juntunen (1996) found that using feminist-based approach in counseling that introduced women to nontraditional careers as well as traditional careers, had a significantly more positive effect in ratings of perceived career self-efficacy than a strictly conventional approach did.

Further areas to study regarding this issue should include the interest level women have with various careers and how that interest level is developed. How significant a woman's interest level in a particular subject such as math or science may be an element in her career choice decision. If interests are developed through Bandura's (1977) expectation model, self-efficacy can be reinforced (Zunker, 2002). The career choice of a girl's parents may also have a significant influence on her career choice. Further research into whether a girl's career interest is influenced by the career choices her parent's made or by how they encouraged her is needed.

Also, further studies are needed regarding the view that men have of nontraditional careers and their reluctance to pursue them. Until more men are willing to become secretaries, teachers, and nurses women may have difficulty finding jobs available in male-dominated careers (Bonett, 1994; Giles & Rea, 1999). For women to increase their perceived career self-efficacy and achieve more positions within traditionally masculine careers, society will have to accept more men into traditionally feminine careers. Examining the reasons for pay differences and low status given to those in traditionally feminine careers may point to some reluctance for men to choose those careers (Clement, 1987).

APPENDIX A: CONSENT FOR RESEARCH PARTICIPATION AT ST. LOUIS UNIVERSITY

SAINT LOUIS UNIVERSITY

CONSENT FOR PARTICIPATION IN RESEARCH

1. Tammy Kirchhoff, a graduate student in the Master's of Professional Counseling program at Lindenwood University, has requested my participation in a research study at this institution. The title of this study is "The Perceived Barriers and Career Self-Efficacy of Undergraduate Women."
2. I understand that the purpose of this research is to look at the career issues of women. This will be a study consisting of two groups of approximately 30 women each who attend Saint Louis University that are currently working in classes related to their selected majors.
3. My participation will involve completion of this consent form and returning it along with the survey to the investigator during the first meeting of the next class meeting. The survey might take approximately 20 minutes to complete.
4. I understand that there are possible risks to me if I agree to participate in the study. Those risks may include anxiety or concerns regarding my career choice. I understand that if these conditions do occur, Tammy Kirchhoff, will make available the telephone number for the counseling center at Saint Louis University and her email address. I understand that the treatments or procedures described may involve risks to me which are currently unforeseeable or unknown at this time. I understand that the investigator may terminate my participation without regard to my consent when in the investigator's judgement, it is in my interest to do so, or under certain circumstances such as, the survey being returned incomplete or I am under 18 years of age.
5. I understand that the results of the research study may be published but that my name or identity will not be revealed and that my record will remain confidential. In order to maintain confidentiality Tammy Kirchhoff will be keeping the consent form and survey results in two separate secure locations. I also understand that the Saint Louis University Institutional Review Board (the Board that is responsible for protecting the welfare of human subjects recruited to participate in research) may review my study records.
6. The possible benefit of participation in the research study might be to inform those who look at women's career issues about how to better serve women in career advising. I understand that participation in this study may not benefit me personally.
7. I understand that the alternative to participation in this study is nonparticipation.
8. I understand that my participation is voluntary and that refusal to participate will involve no penalty to me or loss of any benefits to which I am otherwise entitled. I understand that I may withdraw from the research study at any time without penalty or loss of any benefits to which I am otherwise entitled.

9. Any questions that I may have concerning my participation in the research study will be answered by Tammy Kirchhoff, who can be reached anytime at Twohs2fs@aol.com. The telephone number for Saint Louis University's Counseling and Consultation Center is 314-977-2323.
10. If I have any questions about my rights as a research subject or in the event I believe I have suffered an injury as a result of participation in the research project, I may contact the Chairperson of the Saint Louis University Institutional Review Board (314-577-8108), who will discuss my questions with me or will be able to refer me to the individual who will review the matter with me, identify other resources that may be available to me, and provide further information as how to proceed.
11. I have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily responded to by the investigator. I believe I understand the purpose of the study as well as the potential benefits and risks that are involved. I hereby give my informed and free consent to be a participant in this study.

_____ _____

DATE Consent Signature of Subject

_____

Print Name of Subject

_____

Witness to Signature of Above Consent

I certify that I have explained to the above individual the nature and purpose and the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature.
These elements of informed consent conform to the assurance given by Saint Louis University to the Department of Health and Human Services to protect the rights of human subjects.
I have provided the subject with a copy of this signed consent document.

_____ _____

DATE Signature of Investigator

APPENDIX B: CONSENT FOR RESEARCH PARTICIPATION AT LINDENWOOD UNIVERSITY

LINDENWOOD UNIVERSITY

CONSENT FOR PARTICIPATION IN RESEARCH

My name is Tammy Kirchhoff and I am a graduate student at Lindenwood in the Professional Counseling program. I am doing my thesis research on the perceived self-efficacy beliefs that women have and the perceived barriers they face when deciding their career. Please sign this consent form and enclose it with the survey; I will separate them once I receive them back from you. Please return the survey along with the consent form in the attached envelope to your next class meeting. The survey should take no more than 20 minutes of your personal time to complete. If you would like a copy of the consent form please indicate that on the bottom of the consent form.

1. My participation will involve completion of this consent form and the survey and returning them both inside the attached envelope to the next meeting of this class. The survey might take approximately 20 minutes to complete.

2. I understand that the investigator may terminate my participation without regard to my consent when in the investigator's judgement, it is in my interest to do so, or under certain circumstances such as, the survey being returned incomplete or I am under 18 years of age.

3. I understand that the results of the research study may not be published, my name or identity will not be revealed, and that my record will remain confidential. In order to maintain confidentiality Tammy Kirchhoff will be keeping the consent form and survey results in two separate secure locations.

4. The possible benefit of participation in the research study might be to inform those who look at women's career issues about how to better serve women in career advising. I understand that participation in this study may not benefit me personally.

5. I understand that the alternative to participation in this study is nonparticipation.

6. I understand that my participation is voluntary and that refusal to participate will involve no penalty to me or loss of any benefits to which I am otherwise entitled.

7. I understand that I may withdraw from the research study at any time without penalty or loss of any benefits to which I am otherwise entitled.

8. Any questions that I may have concerning my participation in the research study will be answered by Tammy Kirchhoff, who can be reached anytime at Twohs2fs@aol.com.

9. I have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily responded to by the investigator. I believe I understand the purpose of the study as well as the potential benefits and risks that are involved. I hereby give my informed and free consent to be a participant in this study.

_____ DATE

_____ Consent Signature of Subject

_____ Print Name of Subject

_____ Signature of Investigator

APPENDIX C: DEMOGRAPHICS

Please answer the following questions. DO NOT include your name.

Age _____

Year(s) in college (check one) Freshman _____

Sophomore _____

Junior _____

Senior _____

Academic major, chosen or intended _____

Present career plans _____

Presently, how confident are you that your will follow these career plans?

Completely Unsure Completely Sure

1 2 3 4 5 6 7 8 9

What are your parents' career choices?

Mother _____

Father _____

Who had the greatest influence when deciding your career choice and why?
(Please indicate if male or female and his or her career choice if other than mother or father)

_____

_____

_____

APPENDIX D: QUESTIONNAIRE

For each occupation described below, please indicate how confident you are that you could competently handle this career. Answer by circling the appropriate number using the following scale:

1 = not at all confident **2** = somewhat confident **3** = moderately confident **4** = confident **5** = very confident

Occupational Therapist

Preparation requires a bachelor's degree in occupational therapy. Entry to educational programs is competitive and applicants are screened carefully. Occupational therapists provide services to people who are mentally, physically or emotionally disabled. Occupational therapists help these people learn skills by providing specific activities and adaptive equipment. The job can be physically demanding. Occupational therapists may occasionally have to work evenings, weekends, or holidays.

1 2 3 4 5

Pharmacist

For required licensing, one must obtain a bachelor's degree, which involves 5 years of study beyond high school. The curriculum emphasizes math, science, chemistry, biology physics, and social sciences. Pharmacists provide information regarding proper selection and use of medications as well as dispense prescribed drugs and medicines. They usually work in clean, light areas resembling small labs and spend a lot of time on their feet. They may have to work evenings, nights, weekends, and holidays

1 2 3 4 5

Dental Hygienist

For licensing, one must graduate from an accredited dental hygiene school and pass a written and clinical exam. Most programs grant an associate degree, including courses in the basic sciences, dental science and liberal arts. Hygienists remove deposits from patients' teeth, expose and develop x-ray films and instruct in proper personal dental care. Most hygienists work fewer than 35 hours per week and occasionally work evenings or weekends.

1 2 3 4 5

Surveyor

Preparation includes some post secondary schooling as well as extensive on-the-job training. Some states require a college degree for licensing. Surveyors establish official land and water boundaries, write descriptions of land for deeds, leases, etc. They measure construction and mineral sites and collect information for the preparation of maps and charts. The work is active and sometimes strenuous. Surveyors are exposed to all types of weather, but also spend considerable time indoors on office duties.

1 2 3 4 5

Administrative Secretary

Training can include a two-year program offered by a business school or community college. Administrative secretary duties range from filing, routing mail and answering phones to complex work such as doing research and preparing statistical reports. Highly specialized work in legal or medical areas is also possible. Administrative Secretary's work can involve long periods of sitting and reading of materials. Administrative secretaries generally work a 40-hour week.

1 2 3 4 5

For each occupation described below, please indicate how confident you are that you could competently handle this career. Answer by circling the appropriate number using the following scale:

1 = not at all confident **2** = somewhat confident **3** = moderately confident **4** = confident **5** = very confident

Librarian

A masters degree is necessary to obtain an entry level professional position. Librarians make information available to people and serve as a link between the public and sources of information. Libraries are demanding even stressful places to work. Contact with people may be taxing. Physically, the job may require much standing stooping bending and reaching. Public and college librarians may work some weekends and evenings.

1 2 3 4 5

Architect

To qualify for the required registration exam, individuals must have a Bachelor of Architecture degree and 3 years of experience in an architect's office. Course work can include design, graphics, engineering, social sciences and humanities. Architect duties require a variety of skills such as design, engineering, managerial and supervisory. Most of their time is spent in offices; however they also often work at construction sites, and may work under stress to meet deadlines.

1 2 3 4 5

Secondary School Physics Teacher

A bachelors degree from an approved teacher training program is needed. Courses include physics, mathematics, other sciences and general education courses. Secondary teachers facilitate the transition from childhood to adulthood. Physics teachers develop lesson plans, prepare, give, and grade examinations and supervise laboratory work. Other duties may include extracurricular activities and attending meetings with parents and school personnel. Teaching can be physically, mentally and emotionally tiring.

1 2 3 4 5

Speech Pathologist

A master's degree is the standard credential and course work includes advanced anatomy and physiology. Speech pathologists assist children and adults by evaluating their speech, language, or hearing abilities and providing treatment. The job is not physically demanding, however close attention to detail and the intense concentration needed can be mentally exhausting.

1 2 3 4 5

Drafter

Most drafters have 2 years post-high school training, which includes courses in mathematics, physical sciences, mechanical drawing, and drafting. Drafters prepare detailed drawings based on sketches, specifications and calculations made by engineers, architects and designers. They often sit at drawing boards or computer terminals and do detailed work for long periods of time. Drafters typically work a 5 day 40 hour week.

1 2 3 4 5

For each occupation described below, please indicate how confident you are that you could competently handle this career. Answer by circling the appropriate number using the following scale:

1 = not at all confident **2** = somewhat confident **3** = moderately confident **4** = confident **5** = very confident

Optometrist

The Doctor of Optometry degree requires a minimum of 6 years of college. Course work includes English, mathematics, physics, chemistry, biology and zoology. Optometrists examine eyes to diagnose vision problems and detect signs of disease and other abnormal conditions. They may also prescribe vision therapy or other treatment which does not require surgery. Optometrists can have considerable flexibility in setting their hours of work, however, may work over 40 hours a week, including weekends and evenings.

1 2 3 4 5

Air Traffic Controller

Air traffic controllers are selected through the competitive Federal Civil Service System. Computation, abstract reasoning and spatial visualization are among the aptitudes measured by the examination. Applicants generally have work experience and a college degree. Air Traffic Controllers keep track of planes flying within their assigned area and make certain that they are a safe distance apart. They must work rapidly and efficiently with total concentration. Controllers work a basic 40-hour week but may work additional hours. Night and weekend shifts are possible.

1 2 3 4 5

Chemist Ph.D

A Ph.D is required for basic research, for a college faculty position and for most administrative positions. A Ph.D. requires a minimum of 4 years of study beyond a bachelor's degree. In basic research chemists investigate the properties, composition and structure of matter. College faculty members divide their time among teaching, research, advising, and administrative responsibilities. Chemists usually work in offices, and laboratories. They typically work a 5 day 40 hour week.

1 2 3 4 5

Flight Attendant

Airlines like to have poised tactful and resourceful individuals who can deal comfortably with people. College training is preferred. Flight Attendants for international airlines must generally speak an appropriate foreign language fluently. Flight Attendants look after passengers flight safety and comfort by giving instructions and serving food and beverages. They answer questions help care for small children and may administer first aid. Attendants may work at night and on holidays and weekends. Work can be strenuous and trying. Attendants stand during much of the flight and must remain pleasant and efficient.

1 2 3 4 5

Dietitian

A bachelor's degree with a major in foods and nutrition or institutional management is the basic educational requirement. Dieticians provide nutritional counseling for individual and groups, set up and supervise food service systems for institutions such as hospitals and schools, and promote sound eating habits through education and research. Dieticians may spend considerable time on their feet. Those involved in consulting spend a significant amount of time traveling.

1 2 3 4 5

For each occupation described below, please indicate how confident you are that you could competently handle this career. Answer by circling the appropriate number using the following scale:

1 = not at all confident **2** = somewhat confident **3** = moderately confident **4** = confident **5** = very confident

Home Economist - College Faculty

Doctoral degree holders are considered for entry level academic appointment. Doctoral programs require a minimum of 4 years of study beyond the bachelor's degree including intensive research for a doctoral dissertation. Home economists generally teach several different courses in the same field. They keep up with developments in their field by reading current literature and participating in professional activities. They also conduct and publish the results of their own scholarly research. Faculty members generally have flexible schedules dividing their time between teaching, research, and advising.

1 2 3 4 5

Registered Nurse

Nursing programs vary in length from 2-5 years after high school graduation. Course work includes anatomy, physiology, microbiology, nutrition and psychology. A bachelor's degree is necessary for supervisory or administrative positions. Typically, they assess and record symptoms, and progress of patients, administer medication, and instruct patients and family members in proper health maintenance care. Nurses need physical stamina, and emotional stability is required to cope with human suffering and frequent emergencies. Nurses may have to work nights, weekends or holidays.

1 2 3 4 5

Electrical Engineer

A bachelor's degree is acceptable for a beginning engineering job. A typical 4-year curriculum includes courses in sciences, mathematics, physics, chemistry, introductory engineering, humanities, social, sciences, and English. Electrical engineers design, develop, and test electrical and electronic equipment. They generally specialize in a major area such as power distributing equipment, integrated circuits, computers, or communications. They typically work a 5 day 40 hour week.

1 2 3 4 5

Each of the statements below begins with, **"In my future career, I will probably..."**, or a similar phrase. Please respond to each statement according to what you **think (or guess)** will be true for you.

"In my future career, I will probably...."	**Strongly Agree**		**Not Sure**		**Strongly Disagree**
1. ... be treated differently because of my sex.	A	B	C	D	E
2. ... experience negative comments about my sex (such as insults or rude jokes).	A	B	C	D	E
3. ... have a harder time getting hired than people of the opposite sex.	A	B	C	D	E
4. ... experience discrimination because of my sex.	A	B	C	D	E
5. ... have difficulty finding quality daycare for my children.	A	B	C	D	E
6. ... have difficulty getting time off when my children are sick.	A	B	C	D	E
7. ... have difficulty finding work that allows me to spend time with my family.	A	B	C	D	E

For each item below, finish the sentence with: **"... currently a barrier to my educational aspirations."** For example, Item 8 would read: **"Money problems are ... currently a barrier to my educational aspirations."**

	Strongly Agree		**Not Sure**		**Strongly Disagree**
8. Money problems are... ... currently a barrier to my educational aspirations."	A	B	C	D	E
9. Family problems are...	A	B	C	D	E
10. Not being smart enough is...	A	B	C	D	E
11. Negative family attitudes about college are...	A	B	C	D	E
12. Not fitting in at college is...	A	B	C	D	E
13. Lack of support from teachers is...	A	B	C	D	E
14. Not being prepared enough is...	A	B	C	D	E
15. Not knowing how to study well is...	A	B	C	D	E
16. Not having enough confidence is...	A	B	C	D	E
17. Lack of support from friends to pursue my educational aspirations is...	A	B	C	D	E
18. My gender is...	A	B	C	D	E
19. People's attitudes about my gender are...	A	B	C	D	E

(Continued) For each item below, finish the sentence with: **"... currently a barrier to my educational aspirations."** For example, Item 20 would read: **"Childcare concerns are ... currently a barrier to my educational aspirations."**

	Strongly Agree		**Not Sure**		**Strongly Disagree**
20. Childcare concerns are...	A	B	C	D	E
21. Lack of support from my "significant other" to pursue education is...	A	B	C	D	E
22. My desire to have children is...	A	B	C	D	E
23. Relationship concerns are...	A	B	C	D	E
24. Having to work while I go to school is...	A	B	C	D	E
25. Lack of role models or mentors is...	A	B	C	D	E
26. Lack of financial support is...	A	B	C	D	E

Please rate your degree of confidence that you could <u>overcome</u> each of the potential career barriers listed below.

	Highly Confident				**Not At All Confident**
27. Discrimination due to my gender.	A	B	C	D	E
28. Negative comments about my sex (insults, jokes).	A	B	C	D	E
29. Difficulty finding quality daycare.	A	B	C	D	E
30. Difficulty getting time off when my children are sick.	A	B	C	D	E
31. Difficulty finding work that allows me to spend time with my family.	A	B	C	D	E

Please rate your degree of confidence that you could <u>overcome</u> each of the potential educational barriers listed below.

	Highly Confident				**Not At All Confident**
32. Money problems...	A	B	C	D	E
33. Family problems...	A	B	C	D	E
34. Not being smart enough...	A	B	C	D	E
35. Negative family attitudes about college...	A	B	C	D	E
36. Not fitting in at college...	A	B	C	D	E
37. Lack of support from teachers...	A	B	C	D	E
38. Not being prepared enough...	A	B	C	D	E
39. Not knowing how to study well...	A	B	C	D	E

Please rate your degree of confidence that you could <u>overcome</u> each of the potential educational barriers listed below.

	Highly Confident				**Not At All Confident**
40. Not having enough confidence...	A	B	C	D	E
41. Lack of support from friends...	A	B	C	D	E
42. My gender...	A	B	C	D	E
43. People's attitudes about my gender...	A	B	C	D	E
44. Childcare concerns...	A	B	C	D	E
45. Lack of support from my "significant other"...	A	B	C	D	E
46. My desire to have children...	A	B	C	D	E
47. Relationship concerns...	A	B	C	D	E
48. Having to work while I go to school...	A	B	C	D	E
49. Lack of role models or mentors...	A	B	C	D	E
50. Lack of financial support...	A	B	C	D	E

Finally, please indicate your level of agreement with the following four statements:

"In general, I think that..."	**Strongly Agree**		**Not Sure**		**Strongly Disagree**
51. ...there are many barriers facing me as I try to achieve my *educational* goals.	A	B	C	D	E
52. ...I will be able to overcome any barriers that stand in the way of achieving my *educational* goals.	A	B	C	D	E
53. ...there are many barriers facing me as I try to achieve my *career* goals.	A	B	C	D	E
54. ...I will be able to overcome any barriers that stand in the way of achieving my *career* goals.	A	B	C	D	E

1. Women should take care of running their homes and leave running the country up to men.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

2. Most women who want a career should not have children.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

3. A preschool child is likely to suffer if his mother works.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

4. Having a job means having a life of your own.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

5. A girl proves she is a woman by having a baby.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

6. A woman should not let bearing and rearing children stand in the way of a career if she wants it.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

7. Except in special cases, the wife should do the cooking and housecleaning, and the husband should provide the family with money.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

8. A woman should have exactly the same job opportunities as a man.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

9. Women are much happier if they stay at home and take care of their children.

   Strongly Agree Agree No Opinion Disagree Strongly Disagree

10. A working mother can establish just as warm and secure a relationship with her children as a mother who doesn't work.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

11. Women should be concerned with their duties of childrearing and house tending, rather than with their careers.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

12. Although women hold many important jobs, their proper place is in the home.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

13. I approve of a woman providing the financial support for the family while the husband does the household chores.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

14. Men and women should be paid the same money if they do the same work.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

15. I could not respect a man if he decided to stay at home and take care of his children while his wife worked.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

16. A woman should realize that just as she is not suited for heavy physical work, there are also other jobs that she is not suited for, because of her mental and emotional nature.

    Strongly Agree Agree No Opinion Disagree Strongly Disagree

References

Ancis, J.R. & Phillips, S.D. (1996). Academic gender bias and women's behavioral agency self-efficacy. Journal of Counseling & Development, 75, 131-138.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.

Bandura, A., Barbaranelli, C., Caprara, G.V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. Child Development, 72, 187-206.

Bernard, J. (1976). Where are we now? Some thoughts on the current scene. Psychology of Women Quarterly, 1, 21-37. In Betz, N. & Fitzgerald, L. (1987). The career psychology of women. San Diego: Academic Press, Inc.

Betz, N. & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. Journal of Counseling Psychology, 28, 399-410.

Betz, N. & Fitzgerald, L. (1987). The career psychology of women. San Diego: Academic Press, Inc.

Betz, N. (1992). Counseling uses of career self-efficacy theory. Career Development Quarterly, 41, 22-27.

Bonett, R.M. (1994). Marital status and sex: Impact on career self-efficacy. Journal of Counseling & Development, 73, 187-191.

Bonett, R.M. & Stickel S. (1992). A psychometric analysis of the career attitude scale. Measurement and Evaluation in Counseling and Development, 25, 14-26.

Brian, S.R. (2001). Women in medicine. American Family Physician, 64, 174-180.

Clement, S. (1987). The self-efficacy expectations and occupational preferences of females and males. Journal of Occupational Psychology, 60, 257-265.

Dickerson, A. & Taylor, M.A. (2000). Self-limiting behavior in women, self-esteem and self-efficacy as predictors. Group & Organizational Management, 25, 191-211.

Dreyer, N.A., Woods, N.F. & James, S.A. (1981). ISRO: A scale to measure sex-role orientation. Sex Roles: A Journal of Research, 7, 173-182.

Erdwins, C. (2001). The relationship of woman's role strain to social support, role satisfaction, and self-efficacy. Family Relations, 50, 230-239.

Ex, C.T.G.M. & Janssens, J.M.A.M. (1998). Maternal influences on daughters' gender role attitudes. Sex Roles: A Journal of Research, 38, 171-186.

Giles, M. & Rea, A. (1999). Career self-efficacy: An application of the theory of planned behaviour. Journal of Occupational & Organizational Psychology, 72, 393-399.

Gottfredson, L.S. (1981). Circumscription and compromise: A developmental theory of career aspiration. Journal of Counseling Psychology, 28, 416-427.

Jimmieson, N. (2000). Employee reactions to behavioural control under conditions of stress: The moderating role of self-efficacy. Work & Stress, 14, 262-280.

Juntunen, C. (1996). Relationship between a feminist approach to career counseling and career self-efficacy beliefs. Journal of Employment Counseling, 33, 130-144.

Keeney, M.G. & Yelkovac, P.G. (1997). Sexual harassment in the School. The St. Louis Bar Journal, ILIV, 22-26.

Kelley, R. (1982). The shaping of the American past. Englewood Cliffs: Prentice-Hall, Inc.

Kutner, N.G., & Brogan, D.R. (1980). The decision to enter medicine: Motivation, social support, and discouragement for women. Psychology of Women Quarterly, 5, 321-340.

Lanier, H.B., & Byrne J. (1981). How high school students view women: The relationship between perceived attractiveness, occupation, and education. Sex Roles, 7, 146-148.

London, M. (1998). Career barriers: How people experience, overcome, and avoid failure. Mahwah: Lawerence Erlbaum Associates, Inc.

Luzzo, D.A. & McWhirter, E.H. (2001). Sex and ethnic differences in the perception of educational and career-related barriers and levels of coping efficacy. Journal of Counseling & Development, 79, 61-67.

Malpass, J., O'Neil, H.F. Jr., & Hocevar, D. (1999). Self-regulation, goal orientation, self-efficacy, worry, and high-stakes math achievement for mathematically gifted high school students. Roeper Review, 21, 281-288.

Primack, R. & Stacy, E. (1997). Women ecologists catching up in scientific productivity, but only when they join the race. Bioscience, 47, 169-175.

Sharf, R.S. (2002). Applying career development theory to counseling. Pacific Grove: Brooks/Cole.

Smith-Weber, S. (1999). Career self-efficacy among African-American female adolescents. Delta Pi Epsilon Journal, 41, 141-157.

Stephan, C.W., & Corder, J. (1985). The effects of dual-career families on adolescents' sex-role attitudes, work and family plans, and choices of important others. Journal of Marriage and the Family, 47, 921-929.

Sullivan, K.R. & Mahalik, J.R. (2000). Increasing career self-efficacy for women: Evaluating a group intervention. Journal of Counseling & Development, 78, 54-63.

Super, D.E. (1957). The psychology of careers. New York: Harper & Row. In Zunker, V. (2002). Career counseling: Applied concepts of life planning. Pacific Grove: Wadsworth Group.

Tosun, T. (2000). The beliefs of preservice elementary teachers toward science and science teaching. School Science & Mathematics, 100, 376-382.

Wilson, K., Lizzio, A., Zauner, S., Gallois, C. (2001). Social rules for managing attempted interpersonal domination in the workplace: Influence of status and gender. Sex Roles: A Journal of Research, 44, 129-154.

Zeldin, A. & Pajares, F. (2000). Against the odds: Self-efficacy beliefs of women in mathematical, scientific, and technological careers. American Educational Research Journal, 37, 215-246.

Zunker, V. (2002). Career Counseling: Applied concepts of life planning. Pacific Grove: Wadsworth Group.