Self-Efficacy and Vocational Outcome Expectations for Adolescents of Lower Socioeconomic Status: A Pilot Study

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Self-Efficacy and Vocational Outcome Expectations for Adolescents of Lower Socioeconomic Status: A Pilot Study

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Relationships between contextual support, perceived educational barriers, and vocational/educational self-efficacy and outcome expectations were examined for a group of 114 ninth graders from lower socioeconomic backgrounds. Results of this exploratory pilot study indicated that sibling and peer support accounted for a significant amount of variance in vocational/educational self-efficacy beliefs. Vocational/educational self-efficacy beliefs also significantly predicted vocational outcome expectations, and contextual supports and barriers did not account for any unique variance associated with vocational outcome expectations. Results are discussed in relation to social cognitive career theory. Implications for counseling and future research are presented.

Keywords: self-efficacy, vocational outcome, expectations, lower SES adolescents, sibling support, peer support, parent support, vocational development

Socioeconomic status (SES) influences multiple dimensions of an individual's life (Liu, 2002; Liu et al., 2004; Maher & Kroska, 2002), including the educational and occupational opportunities available to that individual and the attainments she or he achieves (M. T. Brown, 2000; Fouad & Brown, 2000; Gilbert & Kahl, 1993; Turner & Lapan, 2003). For example, SES influences quality of education, health care access, and other areas in a way that often limits individuals' perceived options and goals (Astin, 1984; Hotchkiss & Borrow, 1996; Howell, Frese, & Sollie, 1984). Despite their pervasive influence, social class and SES have been largely ignored in the career development literature (Fitzgerald &

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Betz, 1994). In a 30-year anniversary edition of the *Journal of Vocational Behavior*, several contributors (e.g., Betz, 2001; Blustein, 2001; Subich, 2001) emphasized the "need to address how social class functions in all aspects of vocational development" (Blustein, 2001, p. 175).

Although there is very little agreement about the way that SES is measured in the career development literature, the small amount of research conducted has commonly used occupation, income, or education of participants as a way of stratifying groups into low, middle, and upper socioeconomic groups (Liu & Ali, 2004). These studies have demonstrated that SES influences the way individuals perceive their opportunities and affects their access to educational and vocational resources. For example, Blustein et al. (2002) conducted a qualitative investigation of the school-to-work transition with 20 participants (mean age = 21.9) representing high and low SES groups. These authors found that participants from high socioeconomic backgrounds reported more interest in work for personal satisfaction, better self-concepts, greater access to resources, and more career adaptability than did lower social class participants (Blustein et al., 2002). Additionally, Trusty, Robinson, Plata, and Ng (2000) used national data to study the effects of gender, SES, and academic performance on the postsecondary educational choices of late adolescents. These authors found that SES was an important predictor of type of college major (grouped together by Holland codes) for adolescents. For males, results indicated a strong negative relationship between SES and choice of Realistic majors. For both men and women, increases in SES were associated with choice of Artistic majors, and there were positive relationships between Investigative majors and SES.

Studies such as these call attention to the importance of SES and suggest that adolescents from lower socioeconomic groups do experience the career development process as different and perhaps more difficult than their higher SES counterparts. Additionally, these studies highlight the need for theory-driven research on the vocational/career development of youth from lower socioeconomic groups.

Social Cognitive Career Theory

Social Cognitive Career Theory (SCCT) (Lent, Brown, & Hackett, 1994, 2000) was introduced to explain the career development of adolescents and young adults from a sociocognitive behavioral framework. Lent et al. (1994) developed SCCT based on Bandura's (1982, 1986, 1989) social-cognitive theory and Hackett and Betz's (1981) career self-efficacy theory. SCCT hypothesizes that personal, contextual, and social cognitive factors influence the development of career interests, selection of career goals, and career behaviors.

According to SCCT, SES is considered to be one of the personal variables, which are a set of individual factors including sex, race, and SES. SCCT outlines the ways in which personal factors such as SES interact with contextual factors (e.g., social support) to influence the development of career interests, the selec-

tion of career goals, and career behaviors. Personal and contextual variables do not determine an individual's career interests and goal activities but set the stage for the experiences that influence the career development process. For example, an adolescent from a lower SES background is more likely to have poorer quality schooling, fewer career role models, and less financial support for postsecondary options than higher SES adolescents (C. Brown, Darden, Shelton, & Dipoto, 1999; D'Andrea, 1995), and these influences may result in lower self-efficacy beliefs and outcome expectations for certain careers. Thus far, there has been a paucity of research examining the role that contextual variables have on the development of domain- and task-specific self-efficacy beliefs and outcome expectations.

Social Support and Career Barriers

Recently, Lent et al. (2000) more clearly articulated the role of social support and career-related barriers in the SCCT model and stressed their importance in the development of self-efficacy beliefs, outcome expectations, and goal mechanisms. In the SCCT model, background contextual affordances represent factors such as differential opportunities for task and role model exposure, emotional and financial support for engaging in activities, and internal and external barriers to career progress. According to the SCCT model, these distal background contextual factors are seen as shaping learning experiences, giving rise to self-efficacy and outcome expectations, which in turn are responsible for the development of career interests and goals.

A small body of research supports the proposition that background contextual affordances such as social support are important in the development of career outcomes. Levels of support from parents, family, peers, and teachers have been found to predict educational plans, career aspirations, perceptions of structure of opportunity, plans for staying in school, self-efficacy, and the perception of opportunity and school outcomes (Farmer, 1985; Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003; Lapan, Hinkelman, Adams, & Turner, 1999; McWhirter, Hackett, & Bandalos, 1998; Rosenthal, 1996; Sewell & Hauser, 1972; Wall, Covell, & MacIntyre, 1999). Furthermore, qualitative investigations have found that college students report that their siblings served as a source for career information, role modeling, and relational security and as a support for work- and career-related decisions (Schultheiss, Kress, Manzi, & Glasscock, 2001; Schultheiss, Palma, Predragovich, & Glasscock, 2002). Together, these findings provide evidence that family, peer, and teacher support affects adolescents' career behavior.

The construct of career barriers was introduced into the literature primarily in relationship to women's career development (Farmer, 1976; O'Leary, 1974; Swanson, Daniels, & Tokar, 1996; Swanson & Tokar, 1991a, 1991b), and career barriers have been defined as "events or conditions, either within the person or

his environment, that make career progress difficult" (Swanson & Woitke, 1997, p. 446). Lent et al. (2000) suggested that career barriers could be conceptualized in the SCCT model as background contextual variables that influence self-efficacy beliefs and outcome expectations and as moderators of interest–goal activity relationships.

Although Lent et al. (2000) highlighted the importance of career barriers and obstacles in the career development process, career research examining the influence of barriers on self-efficacy and outcome expectations is relatively sparse. The little research that has examined the role of perceived barriers in the career development process has revealed somewhat mixed results. For example, the relationship between barriers and career outcome variables such as aspirations has been mixed, with no or small demonstrated effects (Lent et al., 2000). Lent et al. (2000) suggested that these mixed findings may be related to problems with the way in which the barriers construct is measured, and they proposed that future studies should include barrier and outcome measures that are specific to the appropriate developmental tasks of the population of interest. For example, high school students are often in the process of deciding what types of activities they will engage in to prepare for their future (college applications, preparing for vocational training, etc.), whereas college students are more concerned with choosing a major that will provide them with lucrative career opportunities. In contrast to the previous literature on barriers, Kenny et al. (2003) found that perceived barriers were associated with career aspirations, commitment to school, school engagement, attaining career goals, and vocational outcome expectations among two groups of ethnically diverse urban middle school students. Perhaps this finding is attributable to the use of a barriers measure that tapped into the specific developmental task of preparing for future education and investigated perceptions of barriers with a group of youth who have been traditionally marginalized in the American workforce.

Self-Efficacy and Outcome Expectations

Self-efficacy beliefs are defined as an individual's "judgments about his or her capabilities to organize and execute courses of action required to attain designated performances" (Bandura, 1986, p. 391). Researchers have generated strong support for the influence of self-efficacy on the career decision-making process of individuals since the landmark study by Betz and Hackett (1981), which introduced the notion of career-related self-efficacy (C. Brown et al., 1999; Multon, Brown, & Lent, 1991).

Outcome expectations are defined as an individual's beliefs about probable outcomes (Bandura, 1989), and in SCCT, outcome expectations are linked to probable outcomes of career decisions and behavior. In contrast to the burgeoning research on self-efficacy, relatively little research has been generated that examines the role of outcome expectations in the lives of high school students.

However, Morrow, Gore, and Campbell (1996) contended that outcome expectations may be a more powerful predictor of vocational behavior than self-efficacy beliefs for marginalized groups. Outcome expectations, therefore, may have particular salience for individuals of lower SES who may have limited access to resources.

Purpose of the Present Study

Considering the previous research on support and barriers in conjunction with the suggestions of Lent et al. (2000), it seems important to better understand how support systems and barriers influence self-efficacy beliefs and outcome expectations of youth from lower SES backgrounds. The purpose of this pilot study was to examine the relative contributions of support systems, SES, and barriers to the vocational self-efficacy and outcome expectations of a group of predominantly lower SES youth. Specifically, our predictor variables were parent, peer, and sibling support, SES, and barriers to postsecondary education. Our criterion variables were vocational/educational self-efficacy and vocational outcome expectations.

METHOD

Participants

Participants for this study were 114 ninth-grade students (47 boys, 66 girls, and 1 with no sex identification information) enrolled in a health class in a semirural Pacific Northwest high school. The mean age for participants was 14.7 years. Students self-identified their ethnic/racial backgrounds as follows: White (77.1%), African American (.8%), Latino (6.9%), Asian American (5.3%), Native American (4.6%), biracial (3.8%), multiracial (0.8%). In this high school, 32.2% of students were eligible for free and reduced lunch. The percentage of students eligible for free and reduced lunch in the neighboring high school was half of this figure (16.4%). Free and reduced lunch percentages are a common estimate of poverty level for high schools (e.g., C. Brown et al., 1999). The estimated average for individuals under the age of 18 living in poverty in this area was 18% (at the time of data collection the national average for individuals living in poverty was 16.9% and the average for this particular state was 11.6%), and the average for individuals of all ages living in poverty in this area was 14.9% (national average was 12.7%) (Dalaker & Proctor, 2000). According to the U.S. Census Bureau 1999 report on poverty in the United States, "if a family's total income is less than that family's threshold, then that family, and every individual in it, is considered poor" (Dalaker & Proctor, 2000, p. vii).

Procedure

The first author mailed students' parents passive informed consent forms 2 weeks before administration of the measures. During survey administration, an alternative activity was provided for one student who did not receive parental consent. The first author administered instruments to students in intact health classes (seven periods total) using a standardized administration procedure. The survey required 30 to 40 min to complete. A total of 146 surveys were administered, completed, and returned. Of the 146 surveys, 32 were eliminated because of random response patterns and incomplete data.

Instruments

Participant information. Respondents indicated their age, sex, race/ethnicity, parents' educational level, parents' occupation, and persons living in the household (mother, father, stepmother, stepfather, grandparents). Parent educational level was assessed by asking students to check the highest level of education each parent had completed. Response options ranged from 1 (*some grade school*) to 10 (*finished graduate degree*). Students indicated their aspirations after high school by indicating which postsecondary option they would choose if they had no constraints upon them. The choices included (a) obtaining full-time employment with no additional training or education, (b) obtaining vocational technical training, and (d) attending college for the purpose of obtaining a college degree. The majority of the participants (71.9%) indicated that they would choose to attend college after high school, with 10.5% of students indicating they would like to obtain vocational technical training and 5.3% indicating that they would like to pursue full-time employment. The remaining 12.3% did not indicate an option.

Socioeconomic status. SES was calculated for each student using the Four Factor Index of Social Status (Hollingshead, 1975). For the purpose of this study, SES was defined according to the Four Factor Index of Social Status (Hollingshead, 1975). This index takes into consideration the multidimensional nature of social status and reflects three major assumptions: (a) A differentiated unequal status structure exists in our society, (b) the primary factors indicative of status are the occupation an individual engages in and the years of schooling she or he has completed, with sex and marital status included, and (c) the primary factors may be combined to estimate the status positions that individuals and members of nuclear families occupy in U.S. society. The Hollingshead index is a computed score that ranges from 8 to 66, with higher numbers indicating a higher index of SES. This range remains consistent whether the score is based on one or two members of the family or household.

Scores are derived from an individual's sex, marital status, education, and occupation. For this study, we used parents' information. Respondents provided

information on parental education level, occupation, and parents in the household on the demographic questionnaire. The first author and an advanced counseling psychology doctoral student independently assigned each parental occupation a code, using Hollingshead's (1975) 9-point occupational factor scale. Discrepancies were resolved by consensus between the first author and a second coder. The mean SES for the participants in this study was 26.58 with a standard deviation of 15.06. Although there was some variability in SES among this sample, the majority of students in this sample were characterized as lower SES because 70% of the students' Hollingshead scores fell into the lower strata of the scale (29-8), which indicates that most of these participants' parents were employed in semiskilled and unskilled laborer positions characterized by low wages (e.g., factory and domestic workers) (Hollingshead, 1975). Furthermore, only 3% of this sample had a Hollingshead score in the upper strata (55-66) indicating parents employed in major business and professional occupations (e.g., lawyers, physicians, etc.).

Vocational/Educational Self-Efficacy Scale (VESES). The VESES is a 21-item measure that was constructed by the first author and designed to assess students' confidence in their abilities to complete a variety of tasks pertaining to college attendance, vocational technical training, and obtaining a job after high school. First, we examined the areas of interest included in the high school curriculums. Options available for students included three types of classes: college preparatory classes (physics, chemistry, mathematics, SAT preparation class, etc.), vocational technical training classes (auto mechanics, computer technician, and electrician training classes), and general education classes (preparation for employment after high school such as business administration, accounting classes). Based on information about each type of class, we first generated a list of items. Second, research team members consisting of three doctoral students in counseling psychology and one counseling psychology faculty member discussed each item and used an iterative process to identify levels of challenge in each of the three interest areas. Third, research team members critiqued and reworded VESES items numerous times. Fourth, two high school teachers critiqued the measure before administration to ensure inclusion of a broad sampling of items with respect to the three curriculum areas (college preparatory, vocational technical training, or general education). These teachers also read the measures (the VESES and those of other original measures) and provided critical feedback regarding appropriate use of language and structure of items, format, and overall readability of the measure for this particular population. The first author incorporated all suggested improvements. Sample VESES items are "Find information about applying to colleges and universities" and "Find information about how to obtain certification in a technical career (example, certification as a medical transcriptionist [typist] or electrician)." Respondents rated their degree of confidence using a 10-point Likert-type scale ranging from 0 (*no confidence at all*) to 9 (*complete confidence*). A total score was calculated by summing all items

for a possible score of 0 to 210, with higher scores corresponding to higher vocational/educational self-efficacy expectations. The VESES yielded a correlation coefficient of .79 with the Career Decision Self-Efficacy Scale (Taylor & Betz, 1994) providing strong concurrent validity evidence. A Cronbach's alpha of .94 was obtained for the VESES with the present sample.

Vocational Outcome Expectations (VOE). The VOE scale (McWhirter, Rasheed, & Crothers, 2000) is a six-item measure that assesses outcome expectations. Sample items are "My career planning will lead to a satisfying career for me" and "I will be successful in my chosen career/occupation." Responses include four options: *strongly agree* (4 points), *agree* (3 points), *disagree* (2 points), and *strongly disagree* (1 point). Test-retest reliability over a 9-week period with a group of high school sophomores yielded a coefficient of $r = .59$ and a Cronbach's alpha of .83 (McWhirter et al., 2000). McWhirter et al. (2000) obtained a concurrent validity estimate of $r = .54$ using a five-item measure of outcome expectations developed by Fouad and Smith (1996). For the current sample, a Cronbach's alpha of .92 for the VOE was obtained.

Parent Support Scale (PSS). The PSS (Farmer et al., 1981) is a 26-item measure designed to assess students' perceptions of support received from their mothers (13 items) and fathers (13 items), with regard to their academic achievement and activities. Sample items are "In the past my mother/father encouraged me to do well in science or math courses" and "Now my mother/father doesn't care if I am successful in a career." Respondents rated their agreement along a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*), with higher scores indicating a higher degree of perceived parental support. Father and mother scores were obtained by first reverse scoring positively worded items and then summing responses pertaining to mother and father separately. Reliability and validity evidence for this measure were discussed by McWhirter et al. (1998). The Cronbach alpha for the present sample was .92 for the total scale, .86 for the mother subscale, and .89 for the father subscale.

Sibling Support Scale (SSS). The SSS is a 17-item measure developed for the purpose of this study and was designed to assess students' perceptions of the degree to which they experience support from their most influential brother or sister. Specifically, perceived support for students' educational and vocational activities, ideas, and plans is assessed, and the authors followed the same protocol for item development as was used for the VESES. The SSS assesses support for activities associated with each of the three types of classes available to students (college preparatory, vo-tech, and general education). The first item on the measure is "Circle the letter that best describes the brother or sister that influences you the most." Response options are (a) younger brother, (b) younger sister, (c) older brother, (d) older sister, (e) I have no brothers or sisters, or (f) my brothers or sisters are too young to be influential. Subsequent items require respondents to rate

their perceived degree of support using a 5-point scale with response options ranging from 1 (*strongly discouraging*) to 5 (*strongly encouraging*). Sample items are "Your sibling's attitudes towards choosing an occupation…that pays you a lot of money" and "Your sibling's attitudes towards the following activities: You taking the SAT or ACT during your junior or senior year." Two items were constructed to gather concurrent validity data for the SSS. Participants indicated their degree of agreement along a 5-point Likert scale with response options ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The two items read "My siblings are supportive of my future career plans" and "My siblings are interested in my future." In this sample, the SSS yielded a correlation coefficient of $r = .56$ with the two validity items

Friend Support Scale (FSS). The FSS is a 16-item measure developed for the purpose of this study and was designed to assess students' perceptions of the degree to which they experience support from their closest friends with respect to their educational and vocational activities, ideas, and plans. Items, response options, and scoring procedures for this measure are identical to the SSS with one exception; financial assistance from friends was not measured, as it is not likely that friends are able to offer this type of support. A total score for the FSS was obtained by summing all responses. Scores may range from 16 to 80, with higher scores corresponding to higher degree of friend support. Two items were constructed to gather concurrent validity data for the FSS. Participants indicated their degree of agreement along a 5-point Likert scale with response options ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The two items read "My friends are supportive of my future career plans" and "My friends are interested in my future." In this sample, the FSS yielded a correlation coefficient of .48 with the two validity items.

Perceptions of Educational Barriers (PEB). The PEB (McWhirter, 1997) is an 84-item measure designed to assess three dimensions of barriers to the pursuit of postsecondary education (Likelihood of Encountering Barriers or Likelihood, Magnitude of Barriers or Magnitude, Difficulty Overcoming Barriers or Difficulty). Items were based on previous research on perceived educational barriers (McWhirter et al., 2000). Because of concerns regarding multicollinearity, only the Likelihood and Difficulty subscales were used in the present study because the Likelihood and Difficulty subscales of the measure by McWhirter et al. (2000) were highly correlated with the Magnitude subscale. Respondents rate 28 potential barrier items with respect to (a) the likelihood that it would occur (four response options anchored by *not at all likely* [A, 1 point] and *definitely* [D, 4 points]) and (b) the estimated difficulty of overcoming this barrier (four response options anchored by *not at all* [A, 1 point] to *extremely difficult* [D, 4 points]). Each of the 28 barriers was rated twice, with points assigned to each response and totaled for two subscales: Likelihood and Difficulty. The two item stems are "How likely is it that this will be a barrier for you?" and "If you in fact

encounter this barrier, how difficult will it be for you to overcome it?" Sample items are "Parents don't support my plans," "Not talented enough," and "Racial/ethnic discrimination." Total scores for each subscale range from 28 to 112, with low scores corresponding to lower likelihood of encountering educational barriers (Likelihood subscale) and less anticipated difficulty of overcoming barriers (Difficulty subscale). Concurrent validity and reliability evidence was reported by McWhirter et al. (2000). For the present study, Cronbach's alphas of .95 and .91 were obtained for the Likelihood and Difficulty subscales, respectively.

RESULTS

Table 1 presents the means, ranges, standard deviations, reliabilities, and zero-order correlations among the study variables. Examination of the correlation matrix reveals a number of significant relationships between mother, father, sibling, and peer support; SES; likelihood of encountering barriers and difficulty of overcoming barriers; vocational/educational self-efficacy; and vocational outcome expectations. A moderate positive correlation was found between mother support and father support, and mother and father support were moderately correlated with the variables of peer support, SES, vocational outcome expectations, and vocational/educational self-efficacy. These results indicated that those who reported a high degree of mother support also reported a high degree of father and peer support, high SES, high vocational outcome expectations, and vocational/educational self-efficacy beliefs. Surprisingly, sibling support was not significantly correlated with mother or father support.

Our primary analyses for this study were two hierarchical regressions (see Table 2). Hierarchical regression was chosen because this was an exploratory study examining the predictive value of the SCCT contextual variables of support, barriers, and SES. Our analyses were guided by SCCT (Lent et al., 2000), which suggests that support variables may be more influential in the development of career behaviors than contextual barriers and person inputs such as SES. Hetherington (2000) and Venter and Maxwell (2000) supported the use of hierarchical multiple regressions for the purpose of exploratory research that uses multiple predictors and that is guided by theory. To conduct the hierarchical regression analyses, we used only those participants who indicated sibling support ($n = 77$).

Mother, father, sibling, and peer supports were entered first into the regression equation. Likelihood of encountering and difficulty of overcoming barriers were entered second into the regression equation, and SES was entered last. As seen in Table 2, the regression equation accounted for 43% of the variance associated with vocational/educational self-efficacy, $F(2, 54) = 3.53$, $p < .05$. An examination of the beta weights reveals that sibling support (B = .33, $p = .00$) and peer support (B = .27, $p < .05$) were the only significant support predictors

Table 1
Means, Standard Deviations, Reliabilities, and Correlations Among Social Cognitive Career Theory Variables

Variable	α	M	SD	Range	N	1	2	3	4	5	6	7	8	9
1. Mother support	.86	55.16	2.91	29-65	109	—	.65**	.03	.38**	.35**	–.26**	–.22*	.44**	.38**
2. Father support	.89	51.46	3.76	26-65	98		—	–.05	.27**	.37**	–.35**	–.12	.25*	.37**
3. Sibling support	.91	62.66	11.32	19-85	77			—	.22	.02	–.07	–.15	.43**	.07
4. Peer support	.88	60.60	10.14	25-79	110				—	.29**	–.22*	–.17	.43**	.26**
5. SES	—	26.58	15.06	8-58	114					—	–.16	–.01	.24*	.22*
6. Barriers/like	.95	54.71	14.40	28-97	110						—	.55**	–.49**	–.47**
7. Barriers/diff.	.91	58.69	18.37	28-101	108							—	–.34**	–.36**
8. VE self-efficacy	.94	133.56	30.27	42-180	108								—	.55**
9. Voc. OE	.92	26.56	4.59	7-30	111									—

Note. SES = socioeconomic status; Barriers/like = likelihood of encountering barriers; Barriers/diff. = difficulty of overcoming barriers; VE self-efficacy = vocational/educational self-efficacy; Voc. OE = vocational outcome expectations.

*$p < .05$. **$p < .01$.

Table 2
Hierarchical Regression Analysis of Vocational/Educational Self-Efficacy With Support, Barriers, and SES as Predictors (N = 77)

Step	Variable	B	*SE* B	β	R^2 Change	*F* Change
1	Mother support	2.85	0.31	0.29	.36	7.68**
	Father support	–0.20	0.41	–0.02		
	Sibling support	0.87	1.18	0.27**		
	Peer support	0.91	1.44	0.33*		
2	Mother support	2.35	0.30	0.24	.07	3.54*
	Father support	–0.52	0.40	–0.07		
	Sibling support	0.77	1.22	0.29*		
	Peer support	0.92	1.45	0.27*		
	Barriers/like	–0.34	0.30	–0.16		
	Barriers/diff.	–0.28	0.24	–0.16		
3	Mother support	1.99	0.30	0.21	.01	0.91
	Father support	–0.76	0.40	–0.10		
	Sibling support	0.77	1.25	0.29*		
	Peer support	0.89	1.50	0.26*		
	Barriers/like	–0.37	0.31	–0.17		
	Barriers/diff.	–0.30	0.24	–0.18		
	SES	0.22	0.23	0.12		

Note. Barriers/like = likelihood of encountering barriers; Barriers/diff. = difficulty of overcoming barriers; SES = socioeconomic status.
*$p < .05$. **$p < .01$.

of vocational/educational self-efficacy, accounting for 36% of the variance. These results indicated that higher peer and sibling support was associated with high vocational/educational self-efficacy expectations. Contextual barriers variables explained variance in vocational/educational self-efficacy beyond that explained by the contextual support variables, $\Delta R^2 = .07$, $F(2, 54) = 3.54$, $p < .05$. The individual beta weights for the likelihood of encountering and difficulty overcoming barriers, however, were not significant, leaving the sibling support (B = .29, $p = .01$) and peer support variables (B = .27, $p < .05$) as the only significant predictors of vocational/educational self-efficacy. The addition of SES did not account for additional unique variance in vocational/educational self-efficacy.

Table 3 shows the results of a hierarchical multiple regression conducted to predict participants' vocational outcome expectations. Vocational/educational self-efficacy was entered first into the regression equation. Mother, father, sibling, and peer supports were entered second into the regression equation. Likelihood of encountering barriers and difficulty of overcoming barriers were entered third,

Table 3
Hierarchical Regression Analysis of Vocational Outcome Expectations With Vocational/Educational Self-Efficacy, Support, Barriers, and SES as Predictors (N = 77)

Step	Variable	B	*SE* B	β	R^2 Change	*F* Change
1	VE self-efficacy	0.06	0.01	0.46	.21	15.37**
2	VE self-efficacy	0.05	0.02	0.47**		
	Mother support	0.30	0.18	0.26		
	Father support	0.15	0.15	0.05		
	Sibling support	0.04	0.04	0.18		
	Peer support	0.05	0.05	–0.05		
3	VE self-efficacy	0.05	0.02	0.41**	.12	2.57
	Mother support	0.28	0.19	0.24		
	Father support	0.04	0.16	0.04		
	Sibling support	–0.06	0.04	–0.18		
	Peer support	–0.01	0.05	–0.03		
	Barriers/like	–0.01	0.04	–0.03		
	Barriers/diff.	–0.02	0.03	–0.10		
4	VE self-efficacy	0.05	0.02	0.42**	.00	0.30
	Mother support	0.30	0.20	0.26		
	Father support	0.06	0.16	0.06		
	Sibling support	–0.05	0.04	–0.19		
	Peer support	–0.01	0.05	–0.02		
	Barriers/like	–0.01	0.04	–0.02		
	Barriers/diff.	–0.02	0.03	–0.08		
	SES	–0.02	0.03	–0.07		

Note. SES = socioeconomic status; VE self-efficacy = vocational/educational self-efficacy; Barriers/like = likelihood of encountering barriers; Barriers/diff. = difficulty of overcoming barriers.
*$p < .05$. **$p < .01$.

and SES was entered fourth into the regression equation. Consistent with SCCT (Lent et al., 1994), vocational/educational self-efficacy scores significantly predicted vocational outcome expectations, $F(1, 58) = 15.37$, $p = .00$, such that higher vocational/educational self-efficacy was associated with higher vocational outcome expectations, B = .46, $p = .00$, accounting for 21% of the variance. When entered second, sibling and peer support variables predicted vocational outcome expectations beyond vocational/educational self-efficacy, $\Delta R^2 = .13$, $F(4, 54) = 2.57$, $p < .05$, and in combination with vocational/educational self-efficacy the support variables accounted for 34% of the variance associated with vocational outcome expectations. Beta weights for the remaining entries, however, were not significant.

DISCUSSION

With this pilot study, we examined the contributions of perceived contextual support, barriers, and SES to the vocational/educational self-efficacy and vocational outcome expectations of a group of lower SES youth. Results indicated that for the lower SES youth in this sample, peer and sibling support served as an important predictor of vocational/educational self-efficacy expectations. This finding is consistent with the results of Schultheiss et al. (2001, 2002), who found that support from siblings was an important component of social support in relationship to career development for young adults. Unlike previous research studies, mother support and father support (Farmer, 1985; McWhirter et al., 1998) were not found to be significant predictors for this sample of lower SES participants. To date, no research studies have examined sibling support in conjunction with mother and father support to predict self-efficacy beliefs or career outcomes. The findings from the present study suggest that support from influential siblings may play a major role in the career development of adolescents from lower SES backgrounds and may have a stronger impact on the development of self-efficacy beliefs of these students than parental support.

Additionally, peer support was found to be an important predictor of vocational/educational self-efficacy, a finding that is consistent with previous research suggesting that adolescents consider peers to be an important influence in the career development process (e.g., Paa & McWhirter, 2000). Bandura (1982) posited that observing similar others succeed or fail at a particular task (vicarious learning) and verbal support or discouragement (verbal persuasion) serve as two of the main sources of self-efficacy beliefs. Bandura (1982) also emphasized that these types of learning experiences are more powerful when role models are similar to the individual. Thus, it is possible that siblings and peers are seen by lower SES youth as more accessible role models and perceived to be better sources of support and career information than their parents. Furthermore, the majority of participants' parents in this sample did not complete a college degree, which may reduce their own efficacy for providing postsecondary education and career information to their children (e.g., Choy, 2002).

Examination of the zero-order correlations (see Table 1) suggests that students who had higher support from their mother, father, and peers also had lower perceptions of barriers. The results of this study seem to be consistent with the contention by Lent et al. (2000) that career barriers may be overemphasized in the literature and that attention should be focused on increasing social support rather than attempting to decrease perceptions of barriers. It appears that for lower SES youth, increasing their access and use of social support from similar others not only may enhance their self-efficacy for vocational and educational tasks but also may enhance their efficacy for overcoming obstacles that they may face to their career development.

Vocational/educational self-efficacy was found to be an important predictor of vocational outcome expectations. Students who expressed higher self-efficacy

expectations had higher outcome expectations. These results are consistent with a main tenet of SCCT (Lent et al., 1994), which states that task-specific outcome expectations are partly determined by task-specific self-efficacy. Individuals generally believe that outcomes will be favorable for those tasks with which they feel more efficacious (Lent et al., 1994).

Support from mothers, fathers, siblings, and peers, as well as barriers to postsecondary education and SES, did not significantly contribute to the vocational outcome expectations of the participants. Given the strength of self-efficacy as a predictor of outcome expectations, it is possible that self-efficacy mediated the relationship between the contextual variables and outcome expectations.

Surprisingly, SES was not a significant predictor of vocational/educational self-efficacy or vocational outcome expectations. Perhaps this has to do with the way in which SES was assessed. The SES variable was calculated in the standard fashion, based on the occupational and educational information of the participants' parents. Some researchers have suggested that social class should be understood from a subjective, theory-driven framework instead of as an objective, numerical stratification index (Liu et al., 2004). Examination of the self-reported subjective worldview of an individual from a lower social class background could yield greater understanding of the contribution of SES to self-efficacy and outcome expectations (Liu et al., 2004).

Limitations of the Study

In the present study, several limitations warrant mentioning. First, the peer, sibling support, and vocational/educational self-efficacy measures are original measures that were constructed for the purpose of this study. Although initial reliability and validity evidence was provided, additional validation studies will increase confidence in the construct validity. Additionally, we used an SES indicator that is quite common in counseling and counseling psychology research, but the measure has been recently critiqued as outdated and overly simple (Liu et al., 2004). Despite these limitations, this study has interesting implications for high school personnel and vocational researchers.

Implications for Counseling

The results of this study provide some important implications for career interventions and counseling with youth from lower SES backgrounds. For example, this study supports the findings from Kenny et al. (2003) suggesting that youth from disenfranchised backgrounds would benefit from interventions that help them access social support. Specifically, the results from the present study suggest that attention to building and accessing support from similar age role models, such as siblings and peers, to strengthen self-efficacy beliefs may be of particular value for youth from lower SES backgrounds. Group and family career counsel-

ing, therefore, may be one important intervention format that would include the involvement of peers and siblings in the adolescent's career planning process. By building this type of support, counselors may be able to strengthen self-efficacy beliefs and indirectly influence outcome expectations. Interventions that focus on amenable factors such as self-efficacy beliefs, outcome expectations, and building and accessing support systems might help to create a supportive school and home environment that will help students from lower SES backgrounds attain their career aspirations.

Suggestions for Future Research

Future research should focus on investigating the subjective experiences of social class and its role in the development of career-related self-efficacy beliefs and outcome expectations. One way to understand these experiences in rich detail would be to conduct qualitative investigations that would allow youth to express how they believe that their social class background has influenced their task-specific self-efficacy beliefs. Furthermore, additional research needs to be conducted to further explicate the role of sibling and peer support in the development of career beliefs and outcomes. Interactions among variables such as sibling, peer, parent, and school personnel support and SES should be explored in future research studies, with samples that have a greater range in socioeconomic status.

CONCLUSION

The results of this study provide evidence that environmental support, particularly support from siblings and peers, is associated with the vocational and educational self-efficacy beliefs of lower SES adolescents. Consistent with a large body of previous research, self-efficacy is an important predictor of outcome expectations. Future research should explore the role of sibling and peer support in the formation of career-related self-efficacy expectation.

REFERENCES

Astin, H. S. (1984). The meaning of work in women's lives: A sociopsychological model of career choice and work behavior. *The Counseling Psychologist*, *12*, 117-126.

Bandura, A. (1982). Human agency in social cognitive theory. *American Psychologist*, *44*, 1175-1184.

Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*, 1175-1184.

Betz, N. E. (2001). Perspectives on future directions in vocational psychology. *Journal of Vocational Behavior*, 59, 275-283.

Betz, N. E., & 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.

Blustein, D. L. (2001). Extending the reach of vocational psychology toward an inclusive and integrative psychology of working. *Journal of Vocational Behavior*, 59, 171-182.

Blustein, D. L., Chaves, A. P., Diemer, M. A., Gallagher, L. A., Marshall, K. G., Sirin, S., & Bhati, K. S. (2002). Voices of the forgotten half: The role of social class in the school-to-work transition. *Journal of Counseling Psychology*, *48*, 311-323.

Brown, C., Darden, E. E., Shelton, M. L., & Dipoto, M. C. (1999). Career exploration and self-efficacy of high school students: Are there urban/suburban differences? *Journal of Career Assessment*, 7, 227-237.

Brown, M. T. (2000). Blueprint for the assessment of socio-structural influences in career choice and decision making. *Journal of Career Assessment*, 8, 371-378.

Choy, S. (2002). *Students whose parents did not go to college.* Washington, DC: U.S. Department of Education, National Center for Education Statistics, Office of Educational Research & Improvement.

D'Andrea, M. (1995). Addressing the developmental needs of urban, African American youth: A prevention intervention. *Journal of Multicultural Counseling and Development*, *23*, 57-64.

Dalaker, J., & Proctor, B. D. (2000). *Poverty in the United States, 1999.* Retrieved April 27, 2004, from http://www.census.gov/hhes/www/povty99.html

Farmer, H. S. (1976). What inhibits achievement and career motivation in women? *The Counseling Psychologist*, *6*, 12-14.

Farmer, H. S. (1985). Model of career development and achievement motivation for women and men. *Journal of Counseling Psychology*, 3, 363-390.

Farmer, H. S., Keane, J., Rooney, G., Vispoel, W., Harmon, L., Lerner, B., Linn, R., & Maehr, M. (1981). *Career Motivation and Achievement Planning (C-MAP).* Measure available with scoring manual and interpretive materials from Helen S. Farmer, Department of Educational Psychology, University of Illinois, 1310 South Sixth Street, Champaign, IL 61820.

Fitzgerald, L. F., & Betz, N. E. (1994). Career development in cultural context: The role of gender, race, class, and sexual orientation. In M. L. Savickas & R. W. Lent (Eds.), *Convergence in career development theories: Implications for science and practice* (pp. 103-117). Palo Alto, CA: Consulting Psychologists Press.

Fouad, N. A., & Brown, M. T. (2000). Role of race and social class in development: Implications for counseling psychology. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (pp. 379-408). New York: John Wiley.

Gilbert, D., & Kahl, J. A. (1993). *The American class structure: A new synthesis* (4th ed.). Belmont, CA: Wadsworth.

Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior*, *18*, 326-339.

Hetheringon, J. (2000). Role of theory and experimental design in multivariate analysis and mathematical modeling. In H. E. A. Tinsley & S. D. Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 37-63). New York: Academic Press.

Hollingshead, A. B. (1975). *Four factor index of social status.* Unpublished manuscript, Yale University.

Hotchkiss, L., & Borrow, H. (1996). Sociological perspective on work and career development. In D. Brown & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 281-336). San Francisco: Jossey-Bass.

Howell, F. M., Frese, W., & Sollie, C. R. (1984). The measurement of perceived opportunity for occupational attainment. *Journal of Vocational Behavior*, *25*, 325-343.

Kenny, M. E., Blustein, D. L., Chaves, A., Grossman, J. M., & Gallagher, L. A. (2003). The role of perceived barriers and relational support in the educational and vocational lives of urban high school students. *Journal of Counseling Psychology*, *50*, 142-155.

Lapan, R. T., Hinkelman, J. M., Adams, A., & Turner, S. (1999). Understanding rural adolescents' interests, values, and efficacy expectations. *Journal of Career Development*, *26*, 107-124.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career, and academic interest, choice and performance. *Journal of Vocational Behavior*, *45*, 79-122.

Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, *47*, 36-49.

Liu, W. M. (2002). The social class-related experiences of men: Integrating theory and practice. *Professional Psychology: Research and Practice*, *33*, 355-360.

Liu, W. M., & Ali, R. S. (2004). *Using objective, subjective, and attitudinal social class variables to predict career perceptions among university and community college students: Implications for social class in research*. Manuscript submitted for publication.

Liu, W. M., Ali, S. R., Soleck, G., Hopps, J., Dunston, K., & Pickett, T. (2004). Using social class in counseling psychology research. *Journal of Counseling Psychology*, *51*, 3-18.

Maher, E. J., & Kroska, A. (2002). Social status determinants of control in individuals' accounts of their mental illness. *Social Science and Medicine*, *55*, 949-961.

McWhirter, E. H. (1997). Perceived barriers to education and career: Ethnic and gender differences. *Journal of Vocational Behavior*, *50*, 124-140.

McWhirter, E. H., Hackett, G., & Bandalos, D. (1998) A causal model of the educational plans and career expectations of Mexican American girls. *Journal of Counseling Psychology*, *45*, 166-181.

McWhirter, E. H., Rasheed, S., & Crothers, M. (2000). The effects of high school career education on social cognitive career variables. *Journal of Counseling Psychology*, *47*, 330-341.

Morrow, S. L., Gore, P. A., Jr., & Campbell, B. W. (1996). The application of a sociocognitive framework to the career development of lesbian women and gay men. *Journal of Vocational Behavior*, *48*, 136-148.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology*, *38*, 30-38.

O'Leary, V. E. (1974). Some attitudinal barriers to occupational aspirations in women. *Psychological Bulletin*, *97*, 809-816.

Paa, H. K., & McWhirter, E. H. (2000). Perceived influences on high students' current career choices. *Career Development Quarterly*, *49*, 29-44.

Rosenthal, B. C. (1996). Social support and 10th graders' plans for staying in school. *High School Journal*, *79*, 203-210.

Schultheiss, D. E. P., Kress, H. M., Manzi, A. J., & Glasscock, J. M. J. (2001). Relational influences in career development: A qualitative inquiry. *The Counseling Psychologist*, *29*, 214-239.

Schultheiss, D. E. P., Palma, T. V., Predragovich, K. S., & Glasscock, J. M. J. (2002). Relational influences on career paths: Siblings in context. *Journal of Counseling Psychology*, *48*, 302-310.

Sewell, W. H., & Hauser, R.H. (1972). Causes and consequences of higher education: Models of the status of attainment process. *American Journal of Agricultural Economics*, *54*, 851-861.

Subich, L. M. (2001). Dynamic forces in the growth and change of vocational psychology. *Journal of Vocational Behavior*, *59*, 235-242.

Swanson, J. L., Daniels, K. K., & Tokar, D. M. (1996). Assessing perceptions of career related barriers: The Career Barriers Inventory. *Journal of Career Assessment*, *4*, 219-244.

Swanson, J. L., & Tokar, D. M. (1991a). College students' perceptions of barriers to career development. *Journal of Vocational Behavior*, *38*, 92-106.

Swanson, J. L., & Tokar, D. M. (1991b). Development and initial validation of the Career Barriers Inventory. *Journal of Vocational Behavior*, *39*, 344-361.

Swanson, J. L., & Woitke, M. B. (1997). Theory into practice in career assessment for women: Assessment and interventions regarding perceived barriers. *Journal of Career Assessment*, 5(4), 443-462.

Taylor, K. M., & Betz, N. E. (1994). *Manual for the Career Decision Making Self-Efficacy Scale*. Columbus, OH: Author.

Trusty, J., Robinson, C. R., Plata, M., & Ng, K. M. (2000). Effects of gender, socioeconomic status, and early academic performance on post secondary educational choice. *Journal of Counseling and Development*, *78*, 463-472.

Turner, S. L., & Lapan, R. T. (2003). The measurement of career interests among at-risk inner-city and middle-class suburban adolescents. *Journal of Career Assessment*, *11*, 405-420.

Venter, A., & Maxwell, S. E. (2000). Issues in the use and application of multiple regression analysis. In H. E. A. Tinsley & S. D. Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 151-182). New York: Academic Press.

Wall, J., Covell, K., & MacIntyre, P. D. (1999). Implications of social supports for adolescents' education and career aspirations. *Canadian Journal of Behavioral Science*, *31*, 63-71.