This article examined the degree to which personality hardiness (control, commitment, and challenge), career beliefs (status, preference, motivation, and flexibility), self-efficacy (general and social), and occupational choice status related to career self-efficacy among a sample of 181 college juniors and seniors. Results from an intercorrelation matrix and regression analysis indicated that motivation, self-efficacy, occupational choice status, and commitment correlated significantly to career self-efficacy. Applications of these findings to career counseling are discussed.

Research in career development has recently included the application of Bandura's (1977) theory of self-efficacy to the domain of vocational behavior. The construct resulting from the application of this theory to vocational behaviors is referred to as "career self-efficacy" (Betz & Hackett, 1986). This term refers to "judgments of personal efficacy in relation to the wide range of behavior involved in career choice and adjustment" (Lent & Hackett, 1987, p. 349). Research findings pertaining to career self-efficacy indicate that "self-efficacy beliefs are predictive of important indices of career entry behavior" (Lent & Hackett, 1987, p. 362). For instance, researchers have reported that students with higher levels of self-efficacy had lower levels of career indecision, perceived a greater range of career options, and were more persistent in their major field of study than students with lower levels of self-efficacy (Betz & Hackett, 1983; Lent, Brown, & Larkin, 1984, 1986; Taylor & Betz, 1983).

It is clear that career self-efficacy provides important information for understanding the career development process. While this construct has been linguistically and operationally defined (Taylor & Betz, 1983), there is a further need to study the correlates of career self-efficacy.
self-efficacy measures, "particularly to establish their validity in operationalizing Bandura's construct and to distinguish career self-efficacy from other constructs" (Lent & Hackett, 1987, p. 364). For example, individuals with low career self-efficacy may experience greater decision-making anxiety than individuals with high self-efficacy. Persons with low self-efficacy may also experience lower self-esteem, tend to focus on their deficiencies, and view challenging tasks as threats. The need exists, therefore, to examine the relationship between career self-efficacy and other variables important in the career development process. Achieving a greater understanding of how career self-efficacy relates to these variables is important if counselors are to confidently use the construct of career self-efficacy in their work with clients.

The variables examined in this study emerged from theory and research that suggest a relationship among efficacy expectations, core beliefs, coping style, and career indecision (Bandura, 1977; Borders & Archadel, 1987; Krumboltz, 1983; Lent & Hackett, 1987; O'Hare & Tamburri, 1986; Taylor & Betz, 1983). It has been argued that individuals with extensive histories of success experiences in varied situations may be expected to have a more generalized sense of positive self-efficacy expectancies than individuals without such experiences (Bandura, Adams, & Beyer, 1977; Sherer et al., 1982). It may also be the case that the degree to which individuals experience success influences the acquisition of specific beliefs that can serve to promote or impede career development (Krumboltz, 1983). Beliefs that impede progress, according to Krumboltz, are often based on faulty generalizations, self-comparison with a single standard, and drawing false causal relationships. Borders and Archadel (1987) have suggested that these beliefs may reflect core beliefs within the individual that may moderate the influence of self-efficacy on career decision-making behaviors. If these beliefs are linked to a lower sense of self-efficacy, then they may also result in higher anxiety when one is confronted with career decision-making tasks (Kimes & Troth, 1974; O'Hare & Tamburri, 1986). The coping style used when confronted with career decision-making tasks, therefore, can also promote or impede career development.

To further the process of mapping the nomological network of career self-efficacy, this research explored the relations among career beliefs, coping style as reflected through personality hardiness, general self-efficacy, career self-efficacy, and occupational choice status.

**METHOD**

**Sample**

The sample consisted of 181 volunteers who were undergraduate students at a university in the Southeast. Eight of the students did not complete demographic sheets. Therefore, the description of the
sample is based on 173 students (62 men and 111 women). The analysis procedures were computed on the entire sample. The data were collected in a large psychology of adjustment class that limited enrollment to upper-level undergraduates (83% seniors and 13% juniors). Based on information reported on the demographic sheet through answers to a fill-in-the-blank question, “Current Choice of Occupation (if you are not sure, list as undecided),” 118 students had made a career choice and 55 students remained undecided. This information was used as a measure of occupational choice status.

**Instruments**

The Career Decision-Making Self-Efficacy Scale (CDMSE; Taylor & Betz, 1983) was used to measure career self-efficacy. The CDMSE is a 50-item scale that measures self-efficacy expectations relative to specific career decision-making tasks. These tasks include appraising self, gathering occupational information, selecting goals, making future plans, and solving problems (Crites, 1981). Students indicated their confidence in accomplishing a specific task on a 10-point scale ranging from no confidence at all (0) to complete confidence (9). The total score is the sum of the ratings for all 50 items. A research report by Taylor and Betz (1983) reported high internal consistency reliability (coefficient alpha = .88) for the CDMSE. The Cronbach alpha computed for the sample used in this study was .95. Support for the validity of the CDMSE can be found in research reports by Robbins (1985) and by Taylor and Popma (1990).

The General Self-Efficacy Scale (GSE) is a 23-item scale developed by Sherer et al. (1982) to measure generalized self-efficacy expectations dependent on past experiences and on tendencies to attribute success to skill as opposed to chance. Students indicate their level of agreement with the items on a Likert scale that ranges from strongly disagree (1) to strongly agree (7). The GSE consists of two scales: general self-efficacy and social self-efficacy. The general self-efficacy scale measures self-efficacy without reference to any specific behavioral domain (e.g., “When I make plans, I am certain I can make them work,” “If I can't do a job the first time, I keep trying until I can,” “I avoid facing difficulties”). The social self-efficacy scale measures self-efficacy in reference to social interactions (e.g., “It is difficult for me to make new friends,” “I do not handle myself well in social gatherings”). Sherer et al. reported Cronbach alpha coefficients of .86 and .71 for the general self-efficacy and social self-efficacy subscales, respectively. For this study's sample, the Cronbach alpha coefficients were .85 for general self-efficacy and .73 for social self-efficacy. The construct validity of the GSE was examined by correlating scores on the two scales with several measures of other personality characteristics that were thought to be related to, but not synonymous with, personal efficacy (i.e., internal-external control, interpersonal...
competency, self-esteem, and ego strength). Correlations between the GSE scales and the other measures were moderate in magnitude and in the appropriate direction. Evidence for the criterion validity of the GSE was also demonstrated by positive correlations between the GSE and data related to employment history, education level, and military rank (Sherer et al., 1982).

The Career Beliefs Inventory (CBI; Krumboltz, 1988) measures career beliefs about the career development process. In this study, a preliminary form of the CBI was used. This form of the CBI consists of 122 items and four dimensions: status, flexibility, motivation, and preference. The status dimension is based on career plans and current employment status. The flexibility dimension examines a willingness to consider job options. The motivation dimension focuses on an individual's willingness to overcome obstacles and to explore career options. Finally, the preferences dimension measures extrinsic/intrinsic work satisfaction, individual versus team orientation to work, and individualized versus customary job expectations. The Cronbach alpha coefficients for status, flexibility, motivation, and preferences for the sample used in this study were .16, .76, .79, and .57. Students indicated their level of agreement with the CBI items on a Likert scale, with 1 indicating strongly disagree and 5 indicating strongly agree. Lower scores on the CBI tend to represent beliefs that impede one's career development. Items are seen as reflecting personal beliefs related to the career development process (e.g., "Once I make a career decision, I will stick to it," "I aim for the top in everything I do even if I sometimes fail," "I can succeed in whatever occupation I like").

Coping was measured with the Personal Views Survey (PVS; Hardiness Institute, 1987). The PVS uses 50 items to assess three factors: control (17 items), commitment (16 items), and challenge (17 items). According to Kobasa, Maddi, and Kahn (1982), control is a perception that life events and problems are an outgrowth of one's actions, challenge reflects a belief that change rather than stability is a basic characteristic of life, and commitment is a tendency to involve oneself actively with a sense of purpose in one's life. The PVS requires respondents to indicate their level of agreement (0 = not at all true; 3 = completely true) relative to each item. Items measure personal beliefs, which suggest levels of coping (e.g., "I often wake up eager to take up my life where it left off the day before," "I feel uncomfortable if I have to make any changes in my everyday schedule," "I believe most of what happens in my life is just meant to happen"). The measures of internal consistency found coefficient alphas in the .70s for the three factors of personality hardiness. For this research study, scores on the challenge scale reported a Cronbach alpha of .78. The Cronbach alpha for the commitment scale was .84 and for the control scale was .75 for the sample. Content validity was supported by significant correlations with criterion measures:
(a) commitment and the Alienation from Self and the Alienation from Work scales on the Alienation Test (Maddi, Kobasa, & Hoover, 1979), (b) control and Rotter's Locus of Control Scale (Rotter, 1966), and (c) challenge and the Powerlessness Scale of the Alienation Scale (Maddi, Kobasa, & Hoover, 1979) and the Security Scale of the California Life Goals Evaluation Schedule (Hahn, 1966).

RESULTS

Analysis

Table 1 reports an intercorrelation matrix between measures of career beliefs (status, motivation, preferences, and flexibility), personality hardness (challenge, control, and commitment), general self-efficacy (general self-efficacy and social self-efficacy), career self-efficacy, and occupational choice status. The matrix indicates that the measures are highly intercorrelated, especially within instruments.

To study the redundancy of the measures, the scales that had the highest significant correlation with career self-efficacy within each measure (motivation, commitment, and general self-efficacy) and the measure of occupational choice, were entered into a regression analysis to predict career self-efficacy. The results of the regression are shown in Table 2. The regression equation significantly predicted the measure of career self-efficacy. Motivation, commitment, and general self-efficacy significantly contributed to the equation, while occupational choice status showed an insignificant beta weight (beta = -.10).

DISCUSSION

The results of this study support previous research findings that showed career indecision to be significantly related to career decision-making self-efficacy (Taylor & Betz, 1983). Although this study found that occupational choice status significantly correlated with career self-efficacy ($r = -.19, p < .01$), the correlation coefficient of the relationship was low and the beta weight within the multiple regression was insignificant for the measure. Therefore, these results should be interpreted carefully. It is important to note that Taylor and Betz used a measure of career decidedness in their 1983 study and the results, therefore, may reflect a different construct than that measured by occupational choice status in this research. Occupational choice status may only be a partial indicator of career decidedness for college students.

Because commitment is defined as taking active involvement in one's life and motivation as a willingness to take risks, to overcome obstacles, to explore options, and to assume responsibility for making
# TABLE 1

Means, Standard Deviations, Correlation Matrix (N = 181)

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>CARSE</th>
<th>OCC</th>
<th>STAT</th>
<th>FLEX</th>
<th>MOT</th>
<th>PREF</th>
<th>CHAL</th>
<th>COM</th>
<th>CONT</th>
<th>SOCSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARSE</td>
<td>355.94</td>
<td>51.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCC</td>
<td>1.32</td>
<td>0.47</td>
<td>-0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT</td>
<td>10.89</td>
<td>3.56</td>
<td>-0.09</td>
<td>0.20</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLEX</td>
<td>97.57</td>
<td>10.05</td>
<td>0.19</td>
<td></td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOT</td>
<td>180.01</td>
<td>13.24</td>
<td>0.43</td>
<td>-0.29</td>
<td>0.15</td>
<td>0.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PREF</td>
<td>133.40</td>
<td>8.68</td>
<td>0.19</td>
<td></td>
<td>0.00</td>
<td>0.07</td>
<td>0.38</td>
<td>0.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CHAL</td>
<td>32.93</td>
<td>6.75</td>
<td>0.13</td>
<td></td>
<td>-0.03</td>
<td>0.32</td>
<td>0.30</td>
<td>0.30</td>
<td>0.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM</td>
<td>37.34</td>
<td>6.80</td>
<td>0.41</td>
<td></td>
<td>-0.08</td>
<td>-0.16</td>
<td>0.38</td>
<td>0.52</td>
<td>0.42</td>
<td>0.64</td>
<td></td>
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</tr>
<tr>
<td>CONT</td>
<td>38.17</td>
<td>5.69</td>
<td>0.35</td>
<td></td>
<td>-0.11</td>
<td>-0.10</td>
<td>0.30</td>
<td>0.47</td>
<td>0.25</td>
<td>0.56</td>
<td>0.77</td>
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<tr>
<td>SOCSE</td>
<td>28.66</td>
<td>5.53</td>
<td>0.21</td>
<td></td>
<td>-0.02</td>
<td>0.01</td>
<td>0.23</td>
<td>0.28</td>
<td>0.18</td>
<td>0.24</td>
<td>0.33</td>
<td>0.35</td>
</tr>
<tr>
<td>GENSE</td>
<td>87.06</td>
<td>12.39</td>
<td>0.42</td>
<td></td>
<td>-0.09</td>
<td>-0.10</td>
<td>0.22</td>
<td>0.50</td>
<td>0.26</td>
<td>0.23</td>
<td>0.49</td>
<td>0.47</td>
</tr>
</tbody>
</table>

*Note. CARSE = Career Self-Efficacy; OCC = Occupational Choice Status; STAT = Status; FLEX = Flexibility; MOT = Motivation; PREF = Preference; CHAL = Challenge; COM = Commitment; CONT = Control; SOCSE = Social Self-Efficacy; GENSE = General Self-Efficacy. *p<.05. **p<.01.*
a career decision, the finding that these variables are significantly related to career self-efficacy reinforces the appropriateness of applying Bandura’s theory to the career domain. The significant findings related to general self-efficacy suggest that either self-efficacy is generalizable to more specific domains of behavior (i.e., career decision making) or that the CDMSE scale is more a measure of generalized self-efficacy than a measure of specific career decision-making self-efficacy as suggested by Robbins (1985). With regard to the former, there is evidence to suggest that efficacy expectancies that result from experiences of personal mastery are generalizable (Bandura, Adams, & Beyer, 1977; Hackett, Betz, O’Halloran, & Romac, 1990). Sherer et al. (1982) have suggested that “an individual’s past experiences with success and failure in a variety of situations should result in a general set of expectations that the individual carries into new situations” (p. 644). Tipton and Worthington (1984) have also argued that it is possible to measure an individual’s efficacy expectations across a broad range of situations.

Relatively lower correlations were obtained for the variables of status, flexibility, and preferences. This suggests that an individual’s willingness to be flexible in considering career options (e.g., a willingness to change career directions, relocate, and to consider jobs inconsistent with training) and preferences as they relate to factors such as intrinsic versus extrinsic work satisfaction and an individual versus team orientation toward work may not be as relevant to the construct of career self-efficacy as those variables for which higher correlations were obtained. It may be that these findings are artifacts of the sample in the study. Because the participants were university students, rather than being full-time employees, the variables of status, flexibility, and preferences may be developmentally out-of-step with their current career concerns.

The results of the regression equation further define career self-efficacy by identifying variables that are significant predictors of this construct. More specifically, the variables of motivation, commitment, and general self-efficacy predict over 50% of the variance in scores on the CDMSE for this sample. These findings provide important information concerning the nature of career self-efficacy.
for the sample of college students who participated in this study. The significant findings related to commitment and motivation suggest that encouraging clients to become active participants in the career development process could foster a sense of purpose and commitment toward one's career development. Tasks such as using a computer-assisted career guidance system, a vocational card sort, or conducting an information interview with an individual with whom the client is familiar may be helpful in this regard.

Also implicit in the variables of commitment and motivation is a willingness to tolerate ambiguity as it relates to the process and content of career decision making. If so, then counseling interventions that are directed toward helping clients manage the stress associated with being uncertain about one's career choice and challenging irrational beliefs related to the need for certainty may promote higher levels of career self-efficacy. For instance, clients in this study who responded "strongly agree" to the CBI item "To avoid the risk of failure, I set low goals for myself," can be challenged to examine their perceptions as to what it means to "fail." The implications of setting "low goals" can also be explored. Finally, the findings related to general self-efficacy suggest that a measure of generalized self-efficacy can provide important information concerning how clients tend to approach new tasks throughout the career planning process. For example, clients who obtain low scores on a general self-efficacy measure may need more support and encouragement as they learn career development skills requiring a high level of personal assertiveness (i.e., information interview skills, job interview skills, networking skills) than would students who score high on this measure.

CONCLUSION

Future research should continue to define and consider personal characteristics as correlates of career self-efficacy. The extension of this research to clients in later stages of career development would also help clarify the developmental interaction with predictors related to career self-efficacy. If common predictors of career self-efficacy across stages can be identified, as well as distinct predictors of career self-efficacy within stages, then these predictors may serve to direct counselors as to which interventions to use with clients.

REFERENCES


