The Career Decision State and Rehabilitation Counselor Education Programs

Stephen J. Leierer, PhD¹, Caroline K. Wilde, PhD², Gary W. Peterson, PhD³, and Robert C. Reardon, PhD³

Abstract
Undergraduate and graduate students enroll in rehabilitation counselor education programs with varying degrees of commitment to a career goal in the field. The career decision state (CDS) comprising certainty, satisfaction, and clarity is a snapshot of one’s career goals. It is bidimensional, differentiates between undergraduate and graduate rehabilitation counseling students, and is associated with negative career thinking. Implications for using CDS in the form of a brief questionnaire, in student orientation and ongoing advising, and in future research are discussed.

Keywords
career decision state, career thoughts, career satisfaction, rehabilitation counselor education, career certainty

By the time students matriculate in rehabilitation counselor education programs, faculty members have typically considered the academic background of applicants in making admissions decisions (e.g., SAT or GRE scores, high school or college grade point average [GPA]). The admissions review might have also included an interview or a personal statement to obtain information about the applicant’s history, goals, and aspirations. However, information about an applicant’s career decision state (CDS), including occupational decidedness, level of certainty regarding a career choice, or the applicant’s quality of career thinking, has typically not been considered in this review process. Thus, entering students in rehabilitation counselor education programs may begin their coursework but with some degree of tentativeness or uncertainty regarding their program of study and where it will lead in terms of a career. In our data set, taken from 10 postsecondary institutions, 65.8% of undergraduates and 66.7% of graduates were entertaining alternatives to their first career choice. Moreover, 18.7% of undergraduates and 10.8% of graduates indicated no first choice of occupation. Finally, 50.0% of undergraduates and 36.9% of graduates were less than well satisfied with their choice of occupation. Even though these data are not from a national survey, they nevertheless strongly suggest that with this degree of uncertainty and lack of satisfaction with occupational choice, we believe information regarding a student’s status toward a career goal should be considered as an important component in the orientation and the ongoing advising process of students.

To explore this matter of a match between rehabilitation counseling students and the status of their career goals and professional aspirations, we examined the CDS of 263 students who were enrolled in undergraduate and graduate training courses in rehabilitation counseling. We also sought to investigate the quality of the applicants’ career thoughts and how these thoughts might be associated with their CDS. Bullock-Yowell, Peterson, Reardon, Leierer, and Reed (2011) referred to CDS as (a) the degree of decidedness with respect to a career choice and (b) the extent of satisfaction with the choice. In addition, we added three questions drawn from the My Vocational Situation (MVS; Holland, Gottfredson, & Power, 1980) inventory as a third component measuring vocational clarity. This component was included to enhance the construct of the CDS as an indicator of one’s vocational identity and self-confidence in pursuing a career goal. We conceptualized these five individual items as comprising the entity of the CDS and together as an indicator of readiness (Sampson, Peterson, Reardon, & Lenz, 2000) for pursuing professional training in a human services educational program.

¹East Carolina University, Greenville, NC, USA
²University of South Florida, Tampa, USA
³Florida State University, Tallahassee, USA

Corresponding Author:
Robert C. Reardon, Career Center, Florida State University, 100 South Woodward Avenue, Tallahassee, FL 32306–4162, USA.
Email: rreardon@fsu.edu
Lotkowski, Robbins, and Noeth (2004) found evidence that nonacademic factors, including the students’ academic goals and self-confidence, social involvement and support, and institutional commitment, were positively related to academic outcomes (e.g., retention and graduation). The present study explores whether CDS should be added to this list of nonacademic factors. A study by Reardon, Melvin, McCain, Peterson, and Bowman (in press) examined the relationship between academic and nonacademic factors contributing to baccalaureate graduation. They found that traditional input measures of academic success, such as high school GPA and SAT scores, were statistically but not practically significant predictors of college graduation rate. Instead, nontraditional process variables (e.g., cumulative GPA, number of major changes, completing a career course, and number of withdrawals) produced a significantly predictive model of college graduation rate that also portends practical value. In their study, the CDS was positively associated with graduation by completion of the career development course. The positive impact of the career course on graduation rate was especially noteworthy and has implications for successful matriculation and completion of counseling and human services training programs.

In the present study, we focused on the CDS as an example of a nonacademic factor that might be considered at the time of admission or orientation to a counseling program. The CDS could serve as a factor in assessing students’ readiness for matriculation and commitment to attaining educational and career goals. It could also inform the advising process for students during their time of study.

We were also interested in the extent to which career thinking was associated with an applicant’s CDS. Lerkanen (2002) reported that Finnish students in an applied science program in a polytechnic university with more negative career thoughts were at a greater risk of not completing the program. High scores in the Decision Making Confusion (DMC) subscale of the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996a) were associated with high unintentional dropout (70%) of these students.

CDS
The CDS is defined as a condition of being or consciousness, a “snapshot,” with respect to one’s career goals and aspirations in the present. The components of this state are contained within working memory and include (a) a person’s self-assessment of occupational preferences or lack thereof, (b) a personal hierarchical assessment of the degree of positive to negative feelings related to the preferences or lack of preferences, and (c) the strength of a person’s vocational identity regarding the career problem-solving and decision-making process. The CDS ranges from being highly certain, satisfied, clear, and confident in one’s choice (first choice, no alternatives) to being completely undecided, dissatisfied, confused, and lacking confidence in making a choice (no choice, no options). This conceptualization builds on the research by Bullock-Yowell et al. (2011). Furthermore, we posit that one’s CDS may have important implications for a person’s entry to and success in a counselor training program. Thus, we advance the overarching question: To what extent do uncertainty, dissatisfaction, and lack of clarity (lack of self-confidence and self-efficacy) as a career decision maker affect the quality of career thoughts and ultimately a student’s success in counselor training?

In this study, the CDS is composed of five elements, including one’s level of career decidedness and degree of satisfaction with that level, along with three items from the MVS. Career decidedness has been measured by responses to the Occupational Alternatives Question (OAQ; Zener & Schnuelle, 1972), that is, “What occupations are you now considering, and which is your first choice?” Responses on the OAQ range from 1 to 4 (1 = first choice and no options, 2 = a first choice and options, 3 = just options, 4 = no choice). The satisfaction item was first reported by Zener and Schnuelle (1972) in the evaluation of the Self-Directed Search (SDS). It includes a 6-point scale indicating the degree of satisfaction with one’s career choice satisfaction (e.g., satisfied, uncertain, dissatisfied). In addition, we identified three MVS items with a true–false response format as an additional component of the CDS for measuring an individual’s vocational clarity. The MVS was designed to assess factors affecting educational and career planning among college students. In practice, these five elements constitute a five-item questionnaire we label the Career Decision State Survey (CDSS), which can be administered at orientation to a rehabilitation counselor education program or included as a student background data form in a course. The CDSS can also be used in ongoing student advising at either the undergraduate or graduate level.

Career Thoughts
Responses to the CDSS may suggest a lack of readiness for career decision making and attributed to the presence of negative or dysfunctional career thinking. Because thinking cannot be measured directly, we used the CTI (Sampson et al., 1996a; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996b), which elicits students’ level of endorsements of statements about career thinking or career thoughts. The CTI yields a total score that is used as a global indicator of the extent of negative or dysfunctional thinking related to career problem solving and decision making, along with three construct scale scores. The DMC scale measures an inability to begin or continue the decision-making process due to negative emotions and a lack of knowledge about the process of career decision making.
The Commitment Anxiety (CA) scale denotes an inability to commit to a specific career choice and the presence of generalized anxiety about the consequence of making a career decision. The External Conflict (EC) scale represents a person’s negative thinking with regard to balancing one’s own perceptions against the perceptions of significant others related to making career choices. Finally, any 1 of the 48 items on the CTI endorsed as agree or strongly agree may impede effective career problem solving and decision making.

**Purpose of the Study**

This study, employing undergraduate and graduate students in rehabilitation counseling, was framed in terms of four questions:

**Research Question 1:** Is the CDS, as a higher order construct, measured by its three components: career decidedness, career choice satisfaction, and vocational clarity (three items from the MVS)?

The purpose of this question is to determine the factor structure of the CDS entity. We hypothesized the CDS components would comprise a unidimensional construct.

**Research Question 2:** Are there differences between undergraduate and graduate students with respect to the CDS?

The purpose of this question is to ascertain whether undergraduate and graduate students in rehabilitation counseling courses are different in terms of the respective components of the CDS. The investigation of this question could be thought of as providing criterion-related validity of the variables comprising the CDSS. The hypothesis was that because of maturation processes and commitment to the field of counseling, graduate students would demonstrate greater certainty, satisfaction, and clarity toward their career goal than undergraduates.

**Research Question 3:** Are there differences between undergraduate and graduate students with respect to career thinking?

The purpose of this question is to ascertain whether undergraduate and graduate students enrolled in rehabilitation counseling courses are different with respect to the CTI Total score and the three subscale scores. Again, because of greater maturation and commitment to becoming a professional counselor, graduate students would endorse fewer negative career thoughts than undergraduate students on the respective dimensions of the CTI.

**Research Question 4:** Does the CDS predict career thinking in counseling students?

The purpose of this question is to examine the strength of relationship between the CDS and career thinking as evidence of concurrent validity of the CDSS. The answer to this question provides the basis for using the CDSS as predictor of dysfunctional career thoughts that may impede progress and performance in a rehabilitation counselor education program. The hypothesis was that each of the components of the CDS would capture significant independent variation in the prediction of the extent of negative career thoughts in undergraduate and graduate students.

**Method**

**Participants**

Participants in this study were drawn from undergraduate and graduate rehabilitation counseling programs within Region VI of the National Council on Rehabilitation Education (NCRE). Region VI includes 18 postsecondary institutions in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas that house rehabilitation counseling programs. These institutions vary in program offerings and in enrollment numbers. All students enrolled in undergraduate and graduate rehabilitation counseling programs at the designated institutions were invited to participate voluntarily in the study. Approval to use human participants for this study was secured from the university institutional review board.

Undergraduate and graduate rehabilitation counseling students were recruited through a program coordinator identified at each of the participating institutions. Each coordinator was responsible for overseeing the administration and collection of the research protocol. Time frames for communication with sites and for data collection varied as not all schools followed the same academic calendar.

Undergraduate students enrolled in 4-year campuses do not matriculate uniformly. Most undergraduate rehabilitation programs are not “lock-step” in nature. Individual schedules vary according to when students declare a major, when courses are offered, and in the context of all general educational requirements for graduation. In addition, undergraduate students are not often handled in the same one-on-one manner as graduate students (e.g., personal student mailboxes). For these reasons, reaching the undergraduate students was carefully planned and monitored. We identified rehabilitation core curriculum courses at each institution through which students could be contacted. In these cases, the protocol was administered in classes, and the site coordinator assisted the course instructor with dissemination of the protocol. The students completed the protocol.
and returned it to the site coordinator who in turn forwarded the packets to the researchers.

Students in the graduate program were recruited through each site coordinator. The graduate programs consisted exclusively of students pursuing the master’s degree and were typically treated in a more individualized fashion. Recruitment methodology included the use of student mailboxes to distribute protocols in addition to the group administration procedure described for the undergraduates. In this case, students were given a deadline for completing and returning the protocols to the site coordinator who returned them to the researchers.

The final sample included 10 schools and 263 students, 152 (58%) undergraduates and 111 (42%) graduate students. There were 42 (16%) men and 221 (84%) women in the sample. More specifically, 85.5% of the undergraduate sample were female, and 82.0% of the graduate sample were female. Given the nature of these academic programs, it may be noted that 75.7% of both undergraduates and graduates indicated “no” disability whereas 24.3% responded “yes.” The undergraduate and graduate groups were 38.2% and 46.8% Caucasian, and 42.8% and 26.1% African American, respectively. Concurrent employment for undergraduates and graduates was 17.1% and 39.6%, respectively. There were some differences between the two groups of students regarding changes of college major. No major changes were reported by 19.7% of the undergraduates but 67.1% had changed once or twice. For the graduate students, the numbers were 23.4% and 55.8% during their undergraduate years.

When examining for the possible influence of institutional bias with respect to the variables of interest, an analysis of covariance was used to test institutional differences in mean scores, using undergraduate or graduate status as a covariate to partition variation attributed to the representation of the level of education among the programs. The results of the analysis revealed that there were no differences among the institutions with respect to OAQ; that is, decidedness, \( F(9, 252) = 2.03, p = ns \); MVS (vocational clarity), \( F(9, 252) = 1.50, p = ns \); and CTI Total (negative thoughts), \( F(9, 252) = 0.88, p = ns \). There was a significant difference among the 10 institutions with respect to satisfaction with choice, \( F(9, 252) = 3.31, p = .023 \). A post hoc analysis indicated only two institutions differed significantly (\( p < .05 \)) from each other. Therefore, the results of these analyses support the minimal—if any—effect of institutional bias and that all 10 institutions could be combined into a single sample when testing the hypotheses.

**Procedures**

All participants were given the research protocol. Each protocol included the following information: (a) a cover letter explaining the purpose of the study, (b) a consent form, (c) demographic data sheet, (d) the items of the CDSS, and (e) the CTI. The CDSS and the CTI were randomly sequenced in all packets to control for possible bias due to ordering effects. All responses were coded so that individual identity of participants was protected. Data were analyzed using the statistical software SPSS (Version 20.0).

**Instruments**

The study protocol materials consisted of (a) a five-page recruitment survey, (b) three measures of CDS (OAQ, satisfaction question, and three items from the MVS), and (c) the CTI. The recruitment survey provided information on demographic variables, how/when students learned about rehabilitation, and measures of career decidedness and satisfaction.

**OAQ.** The OAQ (Zener & Schnuelle, 1972), modified by Slaney (1980), is a measure of occupational indecision that asks respondents to (a) “list all of the occupations you are considering right now” and (b) “designate the first choice.” If undecided, the respondent writes, “undecided.” The OAQ is scored on a scale from 1 to 4 (1 = *first choice with no alternatives*, 2 = *first choice with alternatives listed*, 3 = *only alternatives with no first choice identified*, 4 = *no alternatives listed*); the higher the score, the greater the degree of occupational indecision. The OAQ served as the measure of certainty in the CDS.

The OAQ has been found to have convergent validity with other measures of career indecision, including the Satisfaction With Career Scale, the Vocational Decision Making Difficulties Scale, and the Career Decision Scale (Slaney, Stafford, & Russell, 1981). Six-week test–retest reliability coefficient was .93 (Slaney, 1978). Scores for the current sample (\( N = 263 \)) ranged from 1 to 4 on the OAQ, with a mean of 2.54 (\( SD = 0.71 \)). Of this sample, 222 (84.0%) indicated a first choice of occupation. When choices were aggregated according to broad categories, the category with the highest frequency was counseling professions (50.6%), followed by rehabilitation services professions (12.5%), allied health professions (9.9%), non-rehabilitation human services (6.8%), and health services administration (1.1%). No first choice of an occupation was listed by 15.6%.

**Satisfaction With Choice Question.** This instrument (Zener & Schnuelle, 1972), modified by Holland, Gottfredson, and Nafzinger (1975), asks a single question: “How well satisfied are you with your first choice?” This item is rated on a 6-point scale (1 = *well satisfied*, 2 = *satisfied, but have a few doubts*, 3 = *not sure*, 4 = *dissatisfied and intend to remain*, 5 = *very dissatisfied and intend to change*, 6 = *undecided about my future career*); the lower the score, the greater the degree of satisfaction with choice. This single item measured satisfaction with choice in the CDS. Holland and Holland (1977) used alternatives 3 through 6 in
the satisfaction item in their study of 1,005 high school juniors and 692 college juniors and found that being undecided was related to a wide range of psychological variables with substantial explanatory value. Scores of the current sample ranged from 1 to 6 with a mean of 3.37 (SD = 2.05). Of this sample, 55.5% of the participants indicated being “well satisfied” (1), 32.3% “satisfied but have a few doubts” (2), 3.4%, “not sure” (3), and 8.7% “undecided about my future career” (6).

Vocational clarity. Three true–false items drawn from the MVS measured the dimension of vocational clarity in the CDS: (a) “If I had to make an occupational choice right now, I’m afraid I would make a bad choice” (No. 6); (b) “Making up my mind about a career has been a long and difficult problem for me” (No. 8); and (c) “I am confused about the whole problem of deciding on a career” (No. 9). These items were selected a priori by the authors as having content validity for the CDS with respect to vocational clarity. Vocational clarity scores ranged from 0 (all true) to 3 (all false), with $M = 2.49$, $SD = .81$. Higher scores indicate greater clarity toward a career goal. The vocational clarity scores were significantly related to MVS scores ($r = .72$, $p < .001$). Thus, the vocational clarity scale of the CDS can be viewed as a brief measure of the MVS (see Note 1).

CTI. The CTI measures career thoughts (Sampson et al., 1996a, 1996b) and is a 48-item self-report inventory. The CTI measures negative or dysfunctional thoughts that impede career decision making using a 4-point Likert-type scale (strongly disagree to strongly agree). The instrument includes items such as “I’ll never find a field of study or occupation I really like,” “I’m so confused, I’ll never be able to choose a field of study or occupation,” “I need to choose a field of study or occupation that will please the important people in my life,” and “I’m afraid if I try out my chosen occupation, I won’t be successful.” Higher scores on the respective scales indicate more negative or dysfunctional career thinking.

The CTI yields three subscale scores: DMC (14 items), CA (10 items), and EC (5 items). The ranges of scores, means, and standard deviations for the current participants were as follows: DMC, 0–39 ($M = 12.40$, $SD = 8.01$); CA, 0–29 ($M = 14.74$, $SD = 5.62$); EC, 0–14 ($M = 4.67$, $SD = 2.91$). Sampson et al. (1996b) reported internal consistency for the CTI subscales in a sample of college students as .82 for DMC, .79 for CA, and .74 for EC. Test–retest reliability was measured for college and high school students across 4 weeks and ranged from .74 to .82 (Sampson et al., 1996b).

Results

The findings of this study are reported in light of the four questions guiding the study.

Measurement of the CDS

Research Question 1: Is the CDS, as a higher order construct, measured by career decidedness, career choice satisfaction, and vocational clarity (three items from the MVS)?

To answer this research question, a principal components analysis was conducted on the following five items: career decidedness, career choice satisfaction, and the three items that entail vocational clarity. Both undergraduate and graduate student samples were combined in this analysis to enhance generalizability of the measure. Our primary objective was to identify the factor structure of the CDS variables. Our criterion for extracting factors was simply to select those with an eigenvalue greater than one or equal to 1.0. A principal components analysis was conducted using oblique rotation because any emerging factors were presumed to be correlated. Although the procedures produced nearly identical results, we used the results of the oblique rotation for our analysis because this type of analysis usually produces factor solutions that are more realistic (Gorsuch, 1983; Portney & Watkins, 1993); that is, having uncorrelated factors related to these career issues is highly unlikely.

The analysis of these five items yielded two factors that accounted for approximately 67% of the variance in CDS matrix. Factor 1 consisted of MVS Clarity Items 6, 8, and 9, whose loadings on this factor were .77, .76, and .72, respectively; together, they accounted for over 39.2% of the variance in CDS. Factor 2 consisted of two items, OAQ and Satisfaction With Choice, with factor loadings of .90 and .89, respectively; together, they accounted for about 27.5% of the variance in CDS. The correlation between the two constructs was $r = -.16$, $p < .01$. While the correlation between the two factors was statistically significant ($p < .05$), the strength of the relationship ($r^2 = .026$) is interpreted to lack practical significance. Therefore, the CDS is regarded as a bidimensional entity with vocational clarity (MVS items) constituting one dimension and certainty (OAQ) and satisfaction with choice the other.

To further examine the factor structure of the five CDS items, we replicated the above procedures for the undergraduate and graduate students independently. The results of the analyses revealed that the same two factors emerged in both subsamples with highly similar loadings on the respective factors. The two factors explained 64.3% and 70.6% of the variance in the matrices for undergraduates and graduates, respectively. Furthermore, the two factors were correlated at $r = -.12$ for undergraduates and $r = -.17$ for graduates. Therefore, we concluded that these five items can be used to assess the CDS for both undergraduate and graduate students enrolled in rehabilitation counselor education courses.
Table 1. Comparison of Undergraduate and Graduate Majors on the Assessed Variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certainty (OAQ)</td>
<td>2.13 (0.75)</td>
<td>1.94 (0.70)</td>
<td>0.19*</td>
</tr>
<tr>
<td>Student has a first choice</td>
<td>122/152 (80.3%)</td>
<td>99/111 (89.2%)</td>
<td>8.9%†</td>
</tr>
<tr>
<td>Satisfaction with choice</td>
<td>1.96 (1.50)</td>
<td>1.65 (1.25)</td>
<td>0.31</td>
</tr>
<tr>
<td>Vocational clarity (MVS)</td>
<td>2.30 (0.89)</td>
<td>2.77 (0.31)</td>
<td>0.47***</td>
</tr>
<tr>
<td>CTI Total</td>
<td>33.31 (22.97)</td>
<td>21.42 (17.42)</td>
<td>11.89***</td>
</tr>
<tr>
<td>Students above the M, CTI Total</td>
<td>62/152 (40.8%)</td>
<td>22/111 (19.8%)</td>
<td>21.0%***</td>
</tr>
<tr>
<td>Decision-making confusion</td>
<td>6.64 (6.87)</td>
<td>3.66 (4.84)</td>
<td>2.99***</td>
</tr>
<tr>
<td>Commitment anxiety</td>
<td>9.72 (6.20)</td>
<td>6.48 (5.01)</td>
<td>3.24***</td>
</tr>
<tr>
<td>External conflict</td>
<td>2.72 (2.52)</td>
<td>1.95 (2.36)</td>
<td>0.77*</td>
</tr>
</tbody>
</table>

Note. Numbers within parentheses are standard deviations, unless otherwise noted. High scores on the above scales denote high levels of difficulty making a career decision, dissatisfaction with one’s career choice, negative career thinking, decision-making confusion, commitment anxiety, and external conflict. OAQ = Occupational Alternatives Question; MVS = My Vocational Situation; CTI = Career Thoughts Inventory.

Student Level and the Decision State

Research Question 2: Are there differences between undergraduate and graduate students with respect to CDS?

Graduate and undergraduate rehabilitation counseling students were compared in terms of their responses to the individual components of the CDS, namely, OAQ, Satisfaction With Choice, and MVS—Vocational Clarity. In each instance, the scales were keyed such that lower scores indicated more career difficulty (e.g., less career choice certainty, satisfaction, and clarity). The multivariate test of the CDS variables was significant: Wilks’s λ = .91, F(3, 259) = 8.86, p < .001, ηp2 = .093. On the OAQ, undergraduates had a significantly lower mean score than graduate students, F(1, 261) = 4.53, p = .034, d = .26 (see Table 1). On the Satisfaction With Choice Question, undergraduates had a mean score that was not significantly different from the mean score for graduate students, F(1, 261) = 3.20, p = .075, d = .23. On the three MVS—Vocational Clarity items combined in a single scale measuring vocational clarity, undergraduates had a mean score that was significantly lower than the mean score for graduate students, F(1, 261) = 23.44, p < .001, d = .78. Therefore, the graduate and undergraduate students were significantly different with respect to career choice certainty and clarity, but they were not different with respect to satisfaction with career choice. Thus, there is partial support for the criterion-related validity of the CDS variables.

CDS and Career Thinking

Research Question 4: Does the CDS predict career thinking in counseling students?

A clinically effective model explains a large amount of variance with a parsimonious, small number of predictors. In our study, we wished to examine the extent to which the variables comprising the CDS predict dysfunctional career thoughts, which in turn would possibly call for further career assessment. Thus, the CTI Total score was used as the dependent variable in constructing a regression model with the three components of the CDS: certainty, satisfaction, and clarity. In the model, we defined the three components of the CDS (see Table 2) in the following ways:
Table 2. Regression Analysis for Variables Predicting Negative Career Thoughts (CTI Total).

<table>
<thead>
<tr>
<th>Variable</th>
<th>M (SD)</th>
<th>B</th>
<th>SE</th>
<th>95% CI</th>
<th>β</th>
<th>R²</th>
<th>Adjusted R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.35***</td>
<td>.34***</td>
<td></td>
</tr>
<tr>
<td>Vocational clarity (MVS)</td>
<td>2.49 (.81)</td>
<td>-12.88</td>
<td>1.38</td>
<td>[-15.59, -10.17]</td>
<td>-.48***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certainty (OAQ)</td>
<td>0.84 (.37)</td>
<td>-9.56</td>
<td>3.04</td>
<td>[-15.84, -3.86]</td>
<td>-.17***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with choice</td>
<td>0.56 (.50)</td>
<td>-6.59</td>
<td>2.28</td>
<td>[-11.09, -2.11]</td>
<td>-.15**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. First choice (0 = no first choice, 1 = first choice); satisfaction (0 = not well satisfied with career choice, 1 = well satisfied with career choice); MVS–Vocational Clarity is composed of Items 6, 8, and 9 from the MVS Vocational Identity Scale (0 = did not answer false to any statements, 1 = answered false to one statement, 2 = answered false to two statements, 3 = answered false to all statements). Answering false to an item suggests greater vocational clarity. CTI = Career Thoughts Inventory; CI = confidence interval; MVS = My Vocational Situation; OAQ = Occupational Alternatives Question.

1. Certainty: Because of the distribution of responses to the OAQ by the entire sample, responses to the 4-point scale of the original OAQ were collapsed into two categories: (a) have identified a first career choice or (b) have not identified a first choice (scored 1 and 0, respectively).
2. Satisfaction: As above, because of the distribution of responses by the sample, responses to the 6-point scale of the Satisfaction With Choice Question were collapsed into two categories: (a) well satisfied with career choice and (b) not well satisfied with career choice (scored 1 and 0, respectively).
3. Vocational clarity: This composite variable is the summed score of MVS Items 6, 8, and 9 (0 = true and 1 = false for each item). Vocational clarity scores ranged from 0 (low vocational clarity, all true) to 3 (high vocational clarity, all false).

An optimal regression equation was derived for predicting CTI Total scores from the three scores listed above: CTI Total = B_o + B_certainty*X_certainty + B_satisfaction*X_satisfaction + B_clarity*X_clarity. To enhance generalizability of the CDS (and its form used practice, the CDSS) to both undergraduate and graduate students, the entire sample (N = 263) was used to test the model. For the combined sample of undergraduate and graduate master’s degree rehabilitation counseling students, the three predictor variables accounted for 35% of the variance in CTI Total scores (adjusted R² = .35). This model was significant, F(3, 259) = 46.48, p < .001. In addition, each of the three predictor variables captured significant independent variation in the model with certainty (B = −9.56, β = −.17, p = .001), satisfaction (B = −6.59, β = −.15, p = .004), and clarity (B = −12.88, β = −.48, p < .001; see Table 2). As can be seen by the standardized beta coefficients (β), the vocational clarity component was the most powerful predictor. Nevertheless, all three are important for counselors and advisors to consider in using the CTI as a follow-up measure to undergraduate and graduate students who demonstrate evidence of lack of certainty, satisfaction, and clarity in pursuit of their educational and career goals.

Discussion

Discussion of these research findings first examines the nature and structure of the CDS concept, followed by an examination of the CDS and career thinking in relation to undergraduates and graduates in rehabilitation counseling. It concludes by discussing the use of the CDS components for identifying students encumbered by negative career thoughts with implications for career interventions in orientation and student advising in rehabilitation counselor education programs.

The CDS

Findings in this study indicate that the CDS can be viewed as a higher order construct consisting of two dimensions: (a) career certainty and satisfaction and (b) vocational clarity. This study confirms the findings of the earlier study by Bullock-Yowell et al. (2011) regarding the CDS and career certainty and satisfaction, and enhances the conceptual foundation of this construct by adding the dimension of vocational clarity. Thus, at this time, these components entail the “state of the science” regarding the theoretical concept of CDS. Looking to the future, additional elements could be added or substituted such as stress or urgency in making a career decision (Bullock-Yowell et al., 2011), self-efficacy as a career decision maker (Bullock-Yowell, Katz, Reardon, & Peterson, 2012), or goal instability (Bertoch, Reardon, Lenz, & Peterson, 2014). Furthermore, while there may be additional components to be formulated and tested, the existing five elements, three components, and two dimensions of the present conceptualization of CDS represent parsimony, effectiveness, and efficiency.

Undergraduate and Graduate Students in Rehabilitation Counseling

CDS. The students in rehabilitation counseling courses at the undergraduate and graduate levels were significantly different with respect to mean scores of career decidedness and vocational clarity, but not different with respect to satisfaction with their level of decidedness. Undergraduates
indicated less certainty and less clarity and confidence in their career goals than the graduates with effect sizes of .26 and .78, respectively. Thus, the difference in certainty is regarded as practically small whereas the difference in vocational clarity is considered as moderate. Furthermore, when comparing the percentage of undergraduates and graduates with respect to those indicating a first choice (certainty), 80.3% of the undergraduates had identified a first choice while 89.2% of the graduates had a first choice, which was not statistically different, \( \chi^2 = 3.841, df = 1, p > .05 \). The outcomes of these analyses suggest that the two levels are not practically significant with respect to certainty and satisfaction regarding their choice of educational and career goals, but different in terms of clarity and confidence. An interpretation of this finding is that many undergraduates in rehabilitation, while having a first choice, are still in a state of career exploration or tentativeness regarding their choice of major or occupation and are accepting of it. Graduate students in rehabilitation courses, however, are mainly confident in their educational and career choice. However, 10.8% of the graduate students in our sample did not have a first choice, which should be of concern to faculty in graduate rehabilitation counseling training programs.

**Career thoughts.** As hypothesized, undergraduate students had significantly \((p < .05)\) higher mean scores on the CTI than graduate students for all dimensions (i.e., Total scores, DMC, CA, and EC). The effect sizes, estimated in terms of Cohen’s d, were .59, .51, .58, and .32, respectively, thus reflecting moderate differences between samples. Furthermore, using norms of the CTI Manual (Sampson et al., 1996b) reveals that 40.8% of the undergraduates scored above the mean for total scores for college students, whereas only 19.8% of the graduates scored above the mean, which is a statistically significant difference, \( \chi^2 = 13.06, df = 1, p < .001 \). Thus, undergraduates indicate a greater propensity for negative or dysfunctional career thoughts. Finally, although there were significant differences between undergraduate and graduate students in terms of career thinking, the mean scores relative to norms indicate most students are performing below the mean for college students. For example, converting the mean CTI Total scores to T-scores for college students, the undergraduates earned a mean T-score of 43, whereas the graduates earned a mean T-score of 38. Therefore, the sizable majority of both undergraduate and graduate student samples demonstrate low levels of negative career thoughts. Nevertheless, one must be mindful that endorsing even a single item as either agree or strongly agree can impede effective career problem solving and decision making.

**The CDS and Career Thoughts**

While the findings thus far reveal that both the CDS and career thoughts vary according to the level of training, the more practical issue concerns the predictability of the CDS regarding the propensity for negative career thoughts in individuals. The results of regressing career thoughts on the three components of the CDS indicated that all three components are important in making the prediction. In addition, the analysis underscores the importance of adding the dimension of clarity (three MVS items) to the CDS, as evidenced by its strong contribution to the prediction of CTI Total scores. Furthermore, the regression analysis revealed that individual students who do not have a first choice of major or occupation, who are not well satisfied with their career choice, and who endorse at least one of the MVS items as true should be encouraged to take the CTI to ascertain the extent of possible negative career thinking. It may well be that dysfunctional career thoughts are interfering with effective career exploration and career decision making as they enter or progress through a rehabilitation counselor education program.

**Limitations**

Several limitations should be noted in reviewing these results. First, due to the indirect and multiple methods proposed to gain access to students at long-distance sites (i.e., student mailboxes, various courses), response rates and completeness of returned protocols varied. Students in this sample volunteered to participate, and it is possible that they differed from other students in rehabilitation counseling programs. Second, the self-report nature of the measures required students to respond in an open and honest manner, a potential limitation. Finally, this study examined the CDS of undergraduate and graduate students taking classes in 10 rehabilitation counseling programs in the southeast, and these students may not be representative of students in counselor education programs elsewhere.

**Implications for Practice**

This research study was undertaken with an eye toward using the concept of the career decision space and measures of it as another tool for the orientation and ongoing advising of students enrolled in rehabilitation counseling courses. The measures of the CDS are viewed as unobtrusive, effective, and efficient, and the five items comprising the CDS can be easily included in a routinely administered background data form at orientation or in a classroom. The items are not copyrighted and thus free for use. The five items taken together in a paper-and-pencil or computer format are labeled the Career Decision State Survey (CDSS).

In practice, we envision the CDSS as a convenient screening device to identify rehabilitation counseling students, undergraduates and graduates, who may be experiencing uncertainty and doubt regarding their choice of college major or field of employment. Students who
indicate a first choice only, who are highly satisfied with the choice, and who indicate a high degree of vocational clarity may focus on choosing appropriate electives or on the characteristics of an environment in which to eventually provide counseling services to clients. However, students who indicate no first choice, dissatisfaction with the choice, and doubts about their competency to make an appropriate career decision may be approached by an advisor to discuss their career goals and future as a rehabilitation counselor as an initial step.

A second step, supported by our data, could be to administer the CTI to ascertain the extent of negative thinking about students’ career goals. An advisor could then follow up on items endorsed as agree or strongly agree for exploration and cognitive reframing of negative career thoughts. The CTI Workbook (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996c) may be useful in assisting students in the cognitive reframing process (Beck, 1976). We view the process of identifying, challenging, altering, and acting (ICAA) to change negative thoughts as essential in attaining readiness for making appropriate educational and career decisions. Finally, a lack of first choice along with highly elevated scores on the CTI could signal the presence of mental health issues in addition to career choice difficulties that should be investigated (Walker & Peterson, 2012).

Following the use of the CDSS and the CTI, rehabilitation counselor educators might consider the use of interest measures to explore congruence between one’s interests and the goals of a rehabilitation program. For example, the Strong Interest Inventory (Donnay, Morris, Schaubhut, & Thompson, 2004) could be used to derive a student’s rehabilitation counselor interest profile. Leierer, Blackwell, et al. (2008) and Leierer, Strohmer, et al. (2008) indicated that vocational interests of rehabilitation counselors as measured by the Strong Interest Inventory might be used to identify and recruit students with interests similar to those successfully employed in the field. We suggest that the concept and measurement of career decision state be added to this idea.

Implications for Future Research

In some respects, this research could be thought of as investigating the construct validity of the CDSS by identifying the items comprising the career decision state that support the theoretical definition (content validity), its factor structure (factor validity), differences between undergraduate and graduate samples (criterion-related validity), and its association with scales of the CTI (concurrent validity). Further investigations could include documenting the stability of the CDS over time given certain personality characteristics (e.g., neuroticism vs. conscientiousness) or intervening life events. Another could be to conduct an inquiry regarding the prediction of academic performance, retention, and graduation from a counseling program based on one’s CDS at entry into a program. A third avenue of research could entail investigating career interventions that have promise for altering the CDS from lower levels of certainty, satisfaction, and clarity to higher levels. Finally, replicating this study in other rehabilitation counselor education programs is needed to explore generalizability of these findings.

Conclusion

This study is an initial foray into the theoretical entity that we refer to as the CDS and its potential application, as the CDSS, to help rehabilitation counselor educators identify individuals who may be experiencing confusion and dissatisfaction with respect to their educational and career goals at any point in time. We believe the assessment of the CDS can be effective and efficient in working with student counselors in training. The “early returns” from the present investigation appear to be encouraging and promising. In practice, our wish is that rehabilitation counselor educators will routinely incorporate the CDSS into their orientation and advising practices.

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Note

1. The complete My Vocational Situation (MVS) may be downloaded for free at the following website: http://www.education.umd.edu/CHSE/resources/Assessment/schoolasess/Tools/MVS/MVS.pdf

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