Decided and Undecided Students: Career Self-efficacy, Negative Thinking, and Decision-Making Difficulties

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The career concern differences between undecided and decided college students (N = 223) are examined. Undecided college students (n = 83) reported lower career decision-making self-efficacy, higher incidences of negative career thoughts, and more career decision-making difficulties than their decided peers (n = 143). Results reveal that undecided students are as ready to make a career-related decision as their decided counterparts but may lack or be receiving inconsistent career information. Academic advising implications include ways to more effectively serve these populations. Practical suggestions from social-cognitive career theory and the cognitive information-processing approach are provided.

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The choice of a major, and in essence a future career, for many college students, constitutes an understood and necessary part of progress toward a degree. However, a subset of these students, for one reason or another, experience difficulty making a commitment to a major and a potential career. In 2005 and based on an interview with Fritze Grupe at the University of Nevada, an NBC online news report noted that up to 80% of matriculants enter college undecided on a major and up to 50% change majors at some point during their enrollment (Ronan, 2005). The number of undecided students varies across institutions and sources but the volume it represents highlights the large impact and importance of understanding and assisting the undecided.

Despite the multitude of undecided college students, the amount of research conducted on this unique student group has diminished in recent years. Kelly and Lee (2002) found that instances of empirical studies investigating career indecision in the 1990s (16 articles) decreased by 50% from those published in the 1980s (38 articles). Recently, however, due to the current economic climate and other institution-specific goals, universities nationwide have reignited an interest in student retention. Specifically, they have directed special attention to undecided students and provided them with access to services designed to promote confidence in choosing a major (Lepre, 2007). To put a more positive spin on the state of undecidedness, many universities and advisors now refer to this student group as *undeclared* or *exploring* (Lorenzetti, 2011). We acknowledge the importance of both terms but use the term *undecided* in this paper for consistency.

Previous publications describe an understanding of undecided students and their specific needs concerning career decision making. Researchers have investigated many different variables including, but not limited to, self-efficacy in decision making (Betz & Hackett, 1986), general anxiety (McGowan, 1977), locus of control (Taylor, 1982), identification of different subgroups according to career needs (Jones & Chenery, 1980), and career maturity (Walsh & Hanle, 1975).

Previous literature also offers definitions on the state of undecidedness. McAuliffe (1992) concluded that the undecided often experience a normal and expected developmental process without possessing adequate amounts of information with which to make an informed decision. Salomone (1982) described undecidedness as a temporary state during which the individual collects information about him or herself and potential careers as well as gains confidence about making the decision or choosing to wait until a decision is necessary. Sampson, Reardon, Peterson, and Lenz (2004) outlined three types of undecided individuals. Persons described as *undecided-deferred choice* deliberately put off a necessary decision for defendable reasons; for example, some college freshmen take a few courses as a means of exploration before declaring a major. Those in the *undecided-developmental* category struggle with choosing due to a lack of self, occupational, or decision-making knowledge. Those considered *undecided-multipotential* possess an overabundance of talents, interests, and opportunities

and thus feel overwhelmed with viable options. Sampson et al. differentiated the undecided from the indecisive, defining the latter as those with a maladaptive, anxiety-ridden approach to decision making. Students who are undecided often benefit from increased access to information and knowledge pertaining to career options and typical career counseling techniques and interventions (Vondracek, Hostetler, Schulenberg, & Shimizu, 1990). In summary, previous researchers have demonstrated that undecidedness about a career or college major can be a healthy and expected process, but should not persist as a permanent status for college students. Career development variables contributing to the undecided status and techniques for working with undecided students need to be understood.

Ability to identify students' needs and commonly experienced barriers to choosing a major will assist advisors and career counselors in offering more intentional and effective advising and counseling techniques on decision making. Also, advisors need to obtain a high level of knowledge about the decision-making process and explanations for students' undecided status to choose appropriate techniques for helping them gain direction. Therefore, to clarify previous research and explore possible unique career concerns and decision-making processes of undecided college students, we examine differences between decided and undecided college students by specifically exploring career decision-making self-efficacy, negative career thinking, and career decision-making difficulties.

Self-efficacy

Self-efficacy as related to career decision making constitutes topical concerns of much of the college decidedness literature. It is defined as "the belief in one's ability to successfully perform a given behavior which is required to produce certain outcomes" (McAuliffe, 1992, p. 26) or "people's beliefs in their capabilities to produce given attainments" (Bandura, 2012, p.15).

Found significant in affecting career decision making (Betz & Hackett, 1986), self-efficacy primarily influences a student's ability and confidence in identifying and choosing appropriate career pathways (Lent, Brown, & Larkin, 1986). Research indicates that individuals with low career decision-making self-efficacy tend to limit their career alternatives and goals because they perceive poor odds for achieving specific career aspirations (Betz & Hackett, 1986; Lent et al., 1986); the description may apply to the perceptions of undecided college students.

Alternatively, research also suggests persons possessing a strong sense of career decision-making self-efficacy are more likely to engage in investigative behavior to discover career alternatives and subsequently view them as viable courses of action. They also may be more open to determining their abilities to perform certain job tasks (Solberg, Good, Fischer, Brown, & Nord, 1995). Results from a 2009 dissertation study demonstrated a significant increase in undecided students' career decision-making self-efficacy after taking a career exploration course, thus suggesting a reciprocal relationship between investigative behavior engagement and career decision-making self-efficacy (Bollman, 2009). Career decision self-efficacy not only affects an individual's ability to recognize and choose potential careers; it also influences a person's belief that she or he is behaviorally capable of making a proper career decision. Lack of self-confidence can lead to career decision-making paralyzation and a further lowering of self-esteem (Nota & Soresi, 2003). Although career decision-making self-efficacy is a frequently researched construct in the vocational psychology literature, information regarding the specific relationship between undecided students and their level of career decision-making self-efficacy is lacking.

Negative Career Thoughts

Closely tied to the research on career decision-making self-efficacy, the literature exploring the effect of dysfunctional career thinking focuses on an individual's inability to make a career decision (Osipow, 1999; Vondracek et al., 1990). Similar to career decision-making self-efficacy, negative career thoughts include conceptualizations or beliefs that arise during the career decision-making process, but they exert a unique impact. Specifically, negative career thoughts may affect an individual's ability to accurately assess self-knowledge. They may also influence a person's capacity to brainstorm possible career choices and choose a major (Kleiman et al., 2004; Sampson et al., 2004).

The cognitive information processing approach (CIP) (Sampson et al., 2004) describes career thinking as *metacognition*s that control the selection of cognitive strategies used to solve a career problem. It includes three modes in the executive processing domain: self-talk, self-awareness, and monitoring and control. *Self-talk* refers to the silent, typically subconscious, conversations people conduct with themselves; the conversation

often contains some level of evaluative or judgmental quality by which the person articulates a self-assessment of a specific task. For example, undecided students may engage in dysfunctional self-talk with phrases such as, "I will never be able to pick a major. So, I may as well drop out," or positive self-talk such as, "I know I can make a good decision even though I have not chosen a college major yet."

Self-awareness refers to the extent to which one is aware of self-talk and the impact it exerts on his or her own behavior. *Monitoring and control* are described as the processes by which people can detect their dysfunctional self-talk and actively attempt to replace these thoughts with more positive self-talk.

Negative career thoughts explain variance in career decision-making self-efficacy (Bullock-Yowell, Andrews, & Buzzetta, 2011) and have been associated with increased career indecision (Saunders, Peterson, Sampson, & Reardon, 2000) and difficulty choosing a major field of study (Kilke, 1997). Negative career thinking has been positively correlated with career decision-making difficulties (Kleiman et al., 2004). In the study of Saunders et al. (2000), negative career thoughts explained 61% of the variance in career indecision.

Negative career thoughts are identified through examination of an individual's perceived career behaviors, thoughts, and decision-making processes. The CIP approach suggests that an individual's level of negative career thinking may affect readiness for engaging in the career decision-making process or render her or him less prepared to make a decision or commitment to potential careers. Individuals experiencing this struggle, such as undecided college students, may need to obtain additional career counseling or advising to overcome their lack of readiness (Sampson et al., 2004).

Career Decision-Making Difficulties

In addition to career decision-making self-efficacy and negative career thinking, another variable of interest in vocational research involves career decision-making difficulties. In fact, research suggests that one of the most common vocational setbacks individuals experience and one of the most cited reasons for seeking professional career counseling regards decision making difficulties (Amir & Gati, 2006; Osipow, 1999). Amir and Gati (2006) defined career decision-making difficulties as the internal and external conflicts faced before and during the determination process. Decision making of any type has been described as a thought-provoking function that requires a selection of an alternative among several options (Ferreira & Lima, 2010). Osipow (1999) noted that making a career-related choice can be particularly anxiety provoking and stressful, which can exacerbate decision-making difficulties.

Gati, Kraus, and Osipow (1996) proposed methods of understanding and classifying career decision-making difficulties in a taxonomy that describes three major categories of career decision-making difficulties: lack of readiness, lack of information during the decision-making process, and inconsistent information throughout the career decision-making process. By specifically identifying potential areas of career decision-making difficulty, this taxonomy allows clinicians and advisors to assess and focus on an individual's specific needs and areas for improvement.

Career decision-making difficulties are related to low career decision-making self-efficacy as well as high levels of negative career thinking (Fouad, Cotter, & Kantamneni, 2009; Peterson, Sampson, Reardon, & Lenz, 1996). In turn, lack of confidence in career decision making due to career-related difficulties has been linked to increased anxiety (Peterson, Sampson, & Reardon, 1991). Such difficulties and anxiety can sometimes compel individuals to slow down the process or avoid making a career decision (Gati & Amir, 2010). These avoidance behaviors tend to yield negative consequences for the individual, such as financial difficulties, lack of employment, and lowered self-esteem and self-efficacy. Therefore, one of the most important steps in effective advising is identifying students' specific areas of struggle and helping him or her to find a way to work through these difficulties.

Present Study

In the current study, we examine career concerns among both decided and undecided college students to determine the extent to which undecided students may be dealing with self-efficacy issues, career-related negative thinking, or decision difficulties. Understanding the level of career concerns experienced by the undecided student can help inform targeted advising interventions. To build upon past research and relevant literature that highlights the possible effects of low self-efficacy, negative career thoughts, and difficulties with career decision-making, we posed four research hypotheses:

Table 1. Demographic characteristics of the sample

	Decided Sample (n = 143)		Undecided Sample (n = 83)	
Characteristics	***n***	**%**	***n***	**%**
Gender				
Male	28	19.6	30	36.1
Female	115	80.4	53	63.9
Ethnicity				
African American	78	54.5	39	47.0
Caucasian	58	40.6	43	51.8
Hispanic/Chicano/Latino	3	2.1	0	0.0
Asian/Pacific Islander	2	1.4	0	0.0
East Indian	0	0.0	0	0.0
Native American	1	0.6	1	1.2
Other	1	0.6	0	0.0
Classification				
Freshman	55	38.1	46	56.0
Sophomore	36	25.0	19	23.2
Junior	24	16.7	13	15.9
Senior	29	20.1	4	4.8

H1. Undecided college students will report lower career decision-making self-efficacy than decided students.

H2. Undecided college students will report more overall negative career thinking than decided students.

H3. Undecided college students will report more overall career decision-making difficulties than decided students.

H4. Undecided students will report more overall (a) lack of readiness, (b) lack of information, and (c) inconsistent information than decided students.

We developed H4 because we wanted to utilize measures that will more clearly reveal characteristics of undecided students, including the reasons for or more specific details of undecidedness.

Method

Participants

We recruited 226 undergraduates from a mid-sized, southeastern university. The participant sample was divided into two groups. Decided college students were defined as participants who had a declared major at the time of the study and reported a first choice for their future career on the *Occupational Alternatives Questionnaire* (OAQ) (Zener & Schnuelle, 1972). Undecided students were defined in two ways: participants who had either (a) not declared a major or (b) reported being undecided on their first choice for their future career on the OAQ. That is, undecided students had either officially not chosen a major within the university or had declared a major but indicated uncertainty and consideration of other options before committing to a choice. Demographic information for both sample groups is provided in Table 1.

The decided group was comprised of 143 participants and the undecided group was made up of 83 participants. The decided sample consisted of 115 females and 28 males (80.4 and 19.6%, respectively), ranging in age from 18 to 42 years (M = 20.57, SD = 3.15); they reported the most common majors as psychology (32%) and nursing (18%). The undecided student sample consisted of 53 females and 30 males (63.9 and 36.1%, respectively) ranging in age from 18 to 30 years (M = 19.68, SD = 2.42). Analyses of career decision-making self-efficacy (Betz, Klein, & Taylor, 1996) included a 110 (62 decided, 48 undecided) subsample of all participants because some failed to complete the *Career Decision Self-Efficacy Scale–Short Form* (CDSE-SF) in their packet of research instruments thus limiting the data collected.

Procedure

The associated university's institutional review board approved this study. All of the decided group and a few members of the undecided group agreed to participate through the university online SONA system, which offers extra credit for

participation in research studies. The participants signed up for available times to complete the 25 to 35 minute survey in person. They received an informed consent document and were asked to complete a demographic form and all study measures.

We solicited the majority of the undecided participants in collaboration with their advisors as well as recruited those attending the yearly major exploration fair. Advisors requested that their advisees complete the survey packet while waiting for or after completing their advising appointment or participating in the major exploration fair. Those who could not claim academic extra credit, mostly undecided students not recruited through SONA, were entered into a drawing for an on-campus dining gift card to be distributed after study completion.

Measures

The Demographic Form solicited basic information from the participants on age, gender, college classification (e.g., freshman, junior), major, satisfaction with that major (an item rated on a 1–6 satisfaction-level scale), and the highest level of education completed by each parent. The form states, "if undecided, write undecided." Fifty percent of the participants classified as undecided wrote *undecided* on this form.

The OAQ (Slaney, 1980) is a measure of an individual's career decidedness used in the current study to aid in the categorization of decided and undecided participants. The OAQ consists of two items: "List all the occupations you are considering right now" and "Which occupation is your first choice? If undecided, write undecided." The OAQ is scored as follows: 1 = a first choice is listed with no alternatives; 2 = a first choice is listed with alternatives; 3 = no first choice is listed, just alternatives; and 4 = neither a first choice nor alternatives are listed. Thus, the higher the OAQ score, the greater the degree of indecision.

The CDSE-SF (Betz et al., 1996) is a 25-item inventory measuring an individual's belief that he or she can successfully complete tasks necessary when making career decisions. The measure consists of five items from each of the five scales from the full-length measure (Taylor & Betz, 1983). Although the CDSE-SF provides five subscales (i.e., self-appraisal, occupational information, goal selection, planning, and problem solving), we only used the total score in our study. Higher total scores indicate a higher level of confidence in one's ability to competently engage in activities necessary for making career decisions. Item responses are on a 5-point confidence continuum ranging from *no confidence at all* (1) to *complete confidence* (5). The total score is calculated by summing responses from all scales; they range from 25 to 125. Betz et al. (1996) reported an internal consistency $\alpha = .94$ for the total score.

The CDSE-SF shows moderate construct validity when compared to measures of vocational identity and career indecision. Significant relationships have been demonstrated with indecision ($r = -.56$) (Betz et al., 1996) and commitment fear ($r = -.50$) (Betz & Sterling, 1993). Taylor and Popma (1990) discovered that the CDSE can be used to differentiate between undecided, possibly decided, and decided undergraduates. Betz et al. (1996) established concurrent validity for the CDSE-SF by comparing scores to the Career Decision Scale (CDS) (Osipow, Carney, Winer, Yanico, & Koschier, 1987), which yielded statistically significant correlations between the total score of the CDSE-SF and the CDS indecision subscale (−.19 to −.66) as well as the CDS certainty subscale (−.03 to −.76).

The Career Thoughts Inventory (CTI) (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996a) is used to assess content and degree of dysfunctional or negative career thinking in adults, undergraduates, and high school students. The CTI includes items such as, ''I don't know how to find information about jobs in my field'' and ''I can't trust that my career decisions will turn out well for me.'' The CTI measures responses on a 4-point Likert scale ranging from *strongly disagree* (0) to *strongly agree* (3). The CTI yields a total score and three subscale scores on decision- making confusion, commitment anxiety, and external conflict. Because we are primarily interested in overall negative career thinking, we only utilized the total score from the CTI . Raw total scores range from 0 to 144 ($M = 47.01$, $SD = 20.9$) with higher total scores indicating higher levels of dysfunctional negative career thinking and lower readiness to commit to a career choice. The internal consistency of the CTI total score was found to be $\alpha = .96$ in a sample of 595 college students (Sampson et al., 1996a). Items related to common career decision- making barriers, as identified by the CIP approach (Sampson et al., 2004), were used to

test the validity of the CTI. Specifically, Sampson et al. (2004) demonstrated concurrent validity by showing that the CTI total score is correlated with the indecision subscale of the CDS as well as negatively correlated with the CDS certainty subscale of Osipow et al. (1987).

The Career Decision Difficulties Questionnaire (CDDQ) (Gati et al., 1996) is a 34-item inventory used to identify and delineate the areas of career decision difficulty. It includes items such as "I expect that through the career I choose I will fulfill all my aspirations" and "I find it difficult to make a career decision because I still do not know which occupations interest me." It measures item responses on a 9-point degree-of-fit continuum ranging from *does not describe me well* (1) to *describes me well* (9).

The CDDQ provides a total score representative of the overall level of career decision-making difficulties reported by the individual as well as three subscales that can be used to illuminate the areas of specific challenge: lack of readiness, lack of information, and inconsistent information. We utilized the overall total score as well as subscale scores provided by the CDDQ as both general levels of career decision-making difficulties and as information about the specific difficulties participants report experiencing. Gati et al. (1996) reported test-retest reliabilities of 0.67, 0.74, 0.72, and 0.80 for the three major categories and the total score, respectively.

Researchers have established construct validity for the CDDQ (Gati et al., 1996) by correlating the total score to those used to assess vocational indecision, the CDS (Osipow et al., 1987), and decision-making self-efficacy as measured through the *Career Decision-Making Self-Efficacy Scale* (CDMSES) of Taylor and Betz (1983). Osipow and Gati (1998) found a significant positive correlation (.77) between the CDDQ and the CDS that demonstrates CDDQ construct validity. Additionally, the CDDQ demonstrated a moderate negative correlation (–.50) with the CDMSES.

Results

We calculated descriptive statistics for pertinent total and subscale scores for all variables of interest including variable correlations (Table 2a) and means, standard deviations, and alpha reliability levels (Table 2b). We used one-way analysis of variance (ANOVA) to investigate demographic differences among participants' scores on the variables of interest (Table 3). Career decision-

Table 2a. Correlations of self-efficacy (CDSE-SF), negative career thoughts (CTI), and career difficulty variables (CDDQ)

Variable	CDSE_Total	CTI_Total	CDDQ_Total	CDDQ_LackInfo	CDDQ_InconsInfo	CDDQ_Readiness
CDSE Total	———	–.53**	–.61**	–.60**	–.61**	–.37**
CTI_Total	–.43**	———	.69**	.66**	.71**	.41**
CDDQ_Total	–.37**	.75**	———	.94**	.91**	.78**
CDDQ Lack Info	–.38**	.71**	.95**	———	.73**	.58**
CDDQ Incons Info	–.34**	.67**	.94**	.87*	———	.67**
CDDQ Readiness	–.20**	.51**	.73**	.52**	.57**	———

Note. Values above the diagonal represent correlations for the undecided sample and those below it represent correlations for the decided student sample. The CDSE sample size was 110 students. *$p < .05$. **$p < .01$.

Table 2b. Means and standard deviations on measures of self-efficacy (CDSE-SF), negative career thoughts (CTI), and career difficulty variables (CDDQ)

Measure	CDSE_Total	CTI_Total	CDDQ_Total	CDDQ_LackInfo	CDDQ_InconsInfo	CDDQ_Readiness
Undecided						
Mean	3.55	97.72	3.92	3.97	3.59	4.30
SD	.664	25.15	1.52	2.06	1.76	1.12
Reliability (α)	.93	.96	.95	.96	.89	.60
Decided						
Mean	4.18	79.92	2.99	2.64	2.46	4.02
SD	.482	19.93	1.33	1.65	1.63	1.13
Reliability (α)	.90	.94	.94	.95	.92	.63

Note. The CDSE sample size was 110 students.

Table 3. Summary of hierarchical multiple regression analyses

Variable	β	R^2	ΔR^2
CDSE-SF***			
Step 1		.085**	.085**
Age	.201*		
Gender	−.219*		
Step 2 (Main Effects)		.257**	.172**
Undecided-Decided	.439**		
CTI			
Step 1		.082**	.082**
Age	−.183**		
Gender	.150*		
Ethnicity	.169*		
Step 2 (Main Effects)		.171**	.088**
Undecided-Decided	−.311**		
CDDQ			
Step 1		.092**	.092**
Age	−.172*		
Ethnicity	.256**		
Step 2 (Main Effects)		.157**	.065**
Undecided-Decided	−.259**		

Note. CDSE-SF = *Career Decision Self-Efficacy Scale–Short Form*; CTI = *Career Thoughts Inventory*; CDDQ = *Career Decision-Making Difficulties Questionnaire*. Decided students coded as 2 and undecided coded as 1 in the related data set.
*$p < .05$.**$p < .01$.***Sample size (n) = 110.

making self-efficacy, as measured by the CDSE-SF total score, differed significantly as a result of age and gender. Negative career thoughts, as measured by the CTI total score, differed significantly as a result of age, gender, and ethnicity. Career decision-making difficulties, as measured by the CDDQ, differed by age and ethnicity with significant differences seen between scores of Caucasian and African American respondents. We controlled the demographic variables in subsequent analyses in which variables of interest significantly differed across a demographic variable.

To address H1, we used hierarchical multiple regression to understand the role of undecided-decided status on overall level of career decision-making self-efficacy. We entered age and gender into the first step of the regression model and next we entered participants' undecided-decided status as an individual predictor. We used the total level of career decision-making self-efficacy, from the

Table 4. One-way analysis of variance for effects of undecided versus decided on CDDQ subscales

Variable	Variance	*SS*	*df*	*MS*	*F*
CDDQ-Lack of Information	Between Groups	89.417	1	89.417	27.424*
	Within Groups	701.030	215	3.261	
	Total	790.447	216		
CDDQ-Inconsistent Information	Between Groups	63.590	1	63.590	22.579*
	Within Groups	597.065	212	2.816	
	Total	660.655	213		
CDDQ-Readiness	Between Groups	3.921	1	3.921	3.082
	Within Groups	272.218	214	1.272	
	Total	276.139	215		

Note. CDDQ = *Career Decision-Making Difficulties Questionnaire*
*$p < .01$.

CDSE-SF, as the criterion in the hierarchical multiple regression. The total model explained 25.7% of the variance in the career decision self-efficacy criterion: $R^2 = .257$, $F(3, 106) = 12.227$, $p < .001$. Undecided-decided status emerged as a unique, significant predictor of career decision-making self-efficacy, explaining 17.2% (i.e., effect size) of the variance. The β weight (.439) for the decided-undecided variable indicates that undecided students reported lower levels of career decision-making self-efficacy than decided students. Details of these findings are presented in Table 3.

To address H2 and understand the role of undecided-decided status on overall level of negative career thoughts while controlling for the effects of age, ethnicity, and gender, we used a hierarchical multiple regression. We entered age, ethnicity, and gender into the first step and the undecided-decided status as an individual predictor in the second step. The total model explained 17.1% of the variance in the overall negative career-thinking criterion: $R^2 = .171$, $F(3, 205) = 10.359$, $p < .001$. Undecided-decided status emerged as a unique, significant predictor of negative career thoughts, explaining 8.8% of the variance (i.e., effect size). The β weight (−.311) for the decided-undecided variable indicates that undecided students reported higher levels of negative career thinking than did decided students.

To address H3 and understand the role of undecided-decided status on career decision-making difficulties while controlling for the effects of age and ethnicity, we used hierarchical multiple regression. We entered age and ethnicity first and then entered undecided-decided status as an individual predictor in the second step. The total model explained 15.7% of the variance in the career decision-making difficulty criterion: $R^2 = .157$, $F(3, 205) = 12.496$, $p < .001$. Undecided-decided status emerged as a unique, significant predictor of career decision-making difficulty, explaining 6.5% of the variance (i.e., effect size). The β weight (−.259) indicates that undecided students reported greater decision-making difficulties than decided students. Details of these findings are presented in Table 3.

We posed H4 to further explore differences in decision-making difficulties and used an ANOVA to analyze the subscales of the CDDQ. Results presented in Table 4 reveal that undecided students significantly differed from decided students by not only displaying more overall career decision- making difficulty as illustrated by the hierarchical regression results but also by scoring significantly higher on the subscales measuring lack of information (undecided $M = 3.97$, $SD = 2.06$; decided $M = 2.64$, $SD = 1.65$) and difficulties related to inconsistent information (undecided $M = 3.59$, $SD = 1.76$; decided $M = 2.46$, $SD = 1.63$). However, the two groups did not differ significantly on the subscale assessing the participants' readiness to make a decision.

Discussion

We examined career concern differences between decided and undecided students on overall career decision-making negative self-efficacy, career thinking, and decision-making career difficulties. Results indicate that undecided status predicted lower career decision-making self-efficacy, more overall negative career thinking, and more career decision-making difficulties. Specifically, findings involving the career decision-making difficulties, as measured by the CDDQ, indicated that the undecided participants

did not differ from decided participants on general levels of readiness to make a decision, but seemed to possess significantly more decision-making difficulties surrounding deficits in information (i.e., lack of and inconsistent information) throughout the career decision-making process. These results suggest that although undecided students generally experience more career decision-making difficulties, they do not appear less ready or motivated than decided students to make these decisions.

Previous researchers have posited that an undecided status can be a healthy and expected developmental stage in career decision making. However, undecidedness cannot be a permanent status for students. Our results suggest areas to target when working with students struggling to choose a major or career.

Implications for Advising

Professionals working with students in a variety of settings, especially academic advising, may find our findings particularly useful. Awareness of the specific and unique characteristics of undecided college students may help them provide advising assistance, especially in addressing student needs and concerns.

For instance, the social cognitive career theory (SCCT) (Lent, Brown, & Hackett, 1994) offers an effective framework for helping to increase career decision-making self-efficacy. As Bollman (2009) and Solberg et al. (1995) pointed out, higher career decision-making self-efficacy appears related to a tendency to explore options, which can be critical in choosing a major or career. Therefore, highlighting the critical nature of self-efficacy building may especially help students who lack this quality in career decision making. The SCCT utilizes Bandura's (2012) theory and the four methods he outlined by which self-efficacy can be increased: personal performance accomplishment, vicarious learning, social persuasion, and physiological and affective states. Personal performance accomplishments have been found to be the most influential of the four within the SCCT framework. Because our findings show that career decision self-efficacy is lower among undecided students, we recommend that advisors consider working to enhance undecided students' personal accomplishments by collaborating to form small, accomplishable goals. By increasing students' self-efficacy in career decision making, advisors also increase the probability that students will choose a major with confidence (Lent et al., 1994), and thus, ideally, help maintain student retention rates as well as student satisfaction with their career path.

Collaborating with students to set smaller, easily achievable tasks that demonstrate to them their ability to successfully navigate the decision-making process will incrementally boost their sense of personal accomplishment. For instance, advisors can ask students to research five possible careers and requirements to secure a position in business. The advisor can also discuss and explore tasks or goals that the student has successfully completed in the past. Both of these strategies potentially enhance the self-efficacy that Solberg et al. (1995) connected to a willingness to investigate alternatives and consider them viable options.

As the results indicated, undecided students appear to struggle with high levels of negative career thinking. As research from Kilke (1997) and Saunders et al. (2000) highlighted, negative career thinking creates substantial implications for general career indecision and difficulty choosing a major. The undecided students in our study seem to be especially at risk for negative thinking. Therefore, we strongly recommend interventions on negative career thoughts for this undecided group. The CIP approach to career decision making (Sampson et al., 2004) offers suggestions on ways to advise these students. For example, to reduce the deleterious effects of negative thinking on the career decision making or major choice process, college students need to identify, challenge, and alter negative career thoughts and then act upon the more realistic thoughts developed in this process. For instance, an advisor can help a student identify the expression "I'm so confused! I'll never be able to choose a major!" as a negative roadblock that interferes with the path to choice. The advisor may challenge the student: "Right now you may feel overwhelmed, but you can learn how to make a good choice about a major. Using the word 'never' may make you more anxious and confused." The advisor can then encourage the student to act upon a new way of thinking about the situation by suggesting the student seek help from professionals who can show the ways thoughts and feelings influence actions, learn more about ways to make a good career choice, and then explore the steps to take to select a plan.

University-offered career exploration courses offer another method of addressing negative career thoughts, which can be significantly

ameliorated through the focus on career development and decision making (Osborn, Howard, & Leierer, 2007; Reed, Reardon, Lenz, & Leierer, 2001). In addition, specific tools and assessments, such as the CTI and associated workbook as suggested in the CIP approach, aimed at negative career thinking typically contain helpful tips and interventions for identifying and intervening with students expressing negative thinking (Sampson et al., 1996a; Sampson et al., 2004; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996b).

Finally, the results from our study suggest that although undecided students experience more general decision-making difficulties, they do not appear less ready or motivated to make career decisions. On the CDDQ students reported two types of obstacles to decision making: lack of information and inconsistent information. Advisors can help students obtain accurate information about the decision-making process, their own skills and interests (self-knowledge), possible occupations, and methods of gathering further information. In addition to ensuring information reliability, advisors can assess internal or external barriers or conflicts that may be negatively influencing the individual's career decision-making process. Specifically, they can encourage enrollment in career exploration courses, meetings with faculty and peer mentors, and participation in career-related assessments and individual and group career counseling. Advisors should closely monitor and keep updated on the curricula/courses offered as well as user-friendly college information web sites. Folsom, Peterson, Reardon, and Mann (2002) showed that more students who received interventions, such as career exploration classes, graduate and do so with fewer accrued credit hours than those who do not receive assistance with their decision-making difficulties.

Some students may experience significant anxiety, and sometimes depression, surrounding their undecided circumstances. These students may fall into the indecisive category and may need individual career and personal therapy (Sampson et al., 2004). Therefore, advisors must make good referrals as part of their effective practice.

Limitations and Future Research

We encourage readers to consider the limitations of our study when weighing the implications of results. The majority of the sample consisted of female participants. Although we controlled for gender in the analyses where it was found to confer a significant difference, the ability to confidently generalize the findings of the current study to a college student sample more inclusive of males remains in question. In contrast, the ethnicity of the participants appeared sufficiently representative of the student population at the university. In similar future studies, a sample consisting of a gender and ethnic makeup more representative of the entire college student population may promote the generalizability of findings.

Results show that undecided students appear as ready to engage in the career decision-making process as their decided peers. However, the internal consistency, or reliability, of the CDDQ readiness subscale used to measure readiness to engage in the decision-making process was lower than the other scales and subscales included in this study, dipping below the traditionally accepted threshold of $\alpha = .70$ (Table 2b). This may indicate some inconsistencies in the way the CDDQ measures readiness, leading to some uncertainty in the associated results.

The uneven number of participants in each group may also affect results. Due to recruiting challenges, the undecided participant sample was smaller than the decided participant sample. Fewer participants completed the CDSE-SF such that the analysis sample for understanding career decision-making self-efficacy was smaller than for the other variables of interest. Therefore, these findings should be interpreted with caution.

Additionally, the majority of the undecided students were recruited from those attending a university-sponsored event providing information about majors and in the waiting area for advising. Students seeking out these university resources may be a unique subset of undecided students, causing some difficulty with the generalizability of these findings to all undecided college students, especially those who may not be motivated to seek some assistance.

Although the regression methods chosen to analyze the data show the variables that an advisor can use to predict undecidedness on career concerns, the advisors cannot know if the career decision self-efficacy, negative career thoughts, or career decision-making difficulties affected the advisee prior to being undecided about careers or majors or as a result of the undecidedness. The exact nature of these relationships cannot be concluded from this study. Yet, the implications for advising are clear:

Undecided college students struggle in areas shown to affect career decision making, and intervention on these key variables may help the undecided student progress more confidently in the direction of decidedness.

In the future, advisors may want to explore the unique characteristics of undecided students as well as meet their specific needs through some of the methods shown effective by others. Also, researchers may pursue investigations into the effectiveness of career exploration courses with undecided students presenting specific needs such as gaining self-knowledge and accurate and consistent information. They can also address ways such classes offer assessment, discussion, and psychoeducation that help students efficiently make decisions. Those planning career exploration classes might incorporate knowledge already gained about the concerns and barriers of undecided students to provide the appropriate support and information. Determining the effectiveness of such a group intervention may help to provide a simultaneously time- and money-efficient solution to working to help undecided students in their career decision-making process.

We also suggest that researchers study a group psychotherapy experience exclusively for undecided students. In addition to receiving important information, the participants should openly discuss their concerns, worries, and fears as they engage in the decision-making process. These types of interventions for undecided students may not only provide professionals with further insight into the thoughts, concerns, and needs of this population, they yield objective data about the most effective methods of assistance. Efforts to help students with decisions transform into retention measures useful to the academy. Most important, the skills and outcomes will contribute to choices of satisfying careers.

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