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Randomized trial of a calling-infused career workshop incorporating counselor self-disclosure ☆

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ABSTRACT

A randomized controlled trial was used to test (1) the efficacy of a two-session career development workshop for college student participants; (2) the effect of counselor self-disclosure on outcomes; and (3) the effect of infusing calling and vocation concepts on outcomes. Both standard (person–environment fit) and calling/vocation-infused interventions improved career decision self-efficacy relative to a wait-list control. Counselor self-disclosure also increased participant career decision self-efficacy in both conditions and increased appraisals of meaning in life for participants in calling/vocation-infused workshops. Incorporating considerations of calling and vocation neither detracted from nor added to workshop effectiveness. Career development workshops were supported, as was the use of moderate counselor self-disclosure. Suggestions for career counseling practice and intervention research are discussed.

1. Introduction

Career decision-making workshops offer a number of advantages relative to other short-term interventions for clients experiencing career concerns (Halasz & Kempton, 2000). Workshops encourage participants to discuss their concerns, set goals, and practice relevant skills with peer support, feedback, and accountability. Further, workshop interventions serve multiple participants simultaneously and thus are efficient, reducing participant costs and counselor time constraints. Such advantages help explain the widespread popularity of workshops: 94.3% of career centers responding to the 2005 National Association of Colleges and Employers survey reported offering workshops, with per site averages of 71.4 workshops a year serving 1913 clients (M. Collins, personal communication, October 3, 2006).

Career decision-making workshops appear effective. Whiston (2002) combined prior meta-analytic results comparing career interventions to no-intervention controls (Oliver & Spokane, 1988; Whiston, Sexton, & Lasoff, 1998) and reported a "moderately effective" (Cohen, 1988) mean effect size[2] of (unweighted) $\Delta = .56$ for workshops and structured groups.

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[2] Because Oliver and Spokane (1988) reported their results using only delta, this was the method Whiston (2002) used to combine results from the Oliver and Spokane (1988) and Whiston et al. (1998) meta-analyses. Both delta and Cohen's *d* (weighted or unweighted) are standard mean difference effect sizes; although they use different sources of variance in standardizing mean differences (delta uses the control group standard deviation, *d* uses the pooled standard deviation across both groups), both are interpreted in standard deviation units.

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Although smaller than observed effect sizes for some modalities (e.g., Δ = .92 for individual counseling), this effect is in the high end of the .40 to .60 range typically found for career interventions and is comparable to effects reported in meta-analyses of psychological, educational and behavioral treatment studies (Lipsey & Wilson, 1993). Importantly, workshops and structured groups had the largest effects relative to the number of clients served, an index of efficiency (Whiston, 2002). In a meta-analysis of direct comparison studies, workshop and structured group interventions produced better outcomes than other group-based interventions, such as less structured group counseling (weighted d = .35) or group test interpretation (d = .33) (Whiston, Brecheisen, & Stephens, 2003). No studies compared workshops to individual or class interventions. Thus, career workshops appear to effectively catalyze client change. However, little is known about specific factors that may enhance workshop effectiveness.

Most studies (14 of 21 in Whiston et al.'s (2003) meta-analysis) comparing different workshops have used adult samples rather than high school or college students. This is surprising in light of the prevalence of workshop interventions offered by college career centers, but is consistent with Halasz and Kempton's (2000) earlier assessment that "hardly any journal-based information exists on the use or effectiveness of these types of group interventions" (p. 165) with college students. In cultures that allow youth a prolonged period of independence, most college students fall within the developmental period of "emerging adulthood" (Arnett, 2000), in which issues of career choice and cultivating meaning are salient to people's efforts to form their identities. Thus, there is a need to extend previous research to college student samples. The purpose of the present investigation is to evaluate, using randomized controlled trial methodology, a career decision-making workshop for college students, with special attention paid to the possible additive effects of counselor self-disclosure and content promoting work as a calling or vocation.

1.1. Self-disclosure as a critical ingredient

Although group interventions appear promising compared to other modalities, evidence from another meta-analysis suggested that modality may be less important than the specific elements included in an intervention (Ryan, 1999). Based on their additive effects on career intervention outcomes, several "critical ingredients" have been identified: written exercises, individualized interpretations and feedback, attention to building social support, up-to-date occupational information, and modeling opportunities (Brown & Ryan Krane, 2000). Modeling opportunities have received scant research attention, despite meta-analytic evidence of the particular effectiveness of modeling performed by "experts" (Ryan, 1999). Such results led Brown et al. (2003) to hypothesize that interventions with moderate levels of self-disclosure would be particularly effective. For example, counselors or past participants could share how they approached their own career decisions and the obstacles they overcame in effectively making those decisions; this type of self-disclosure was labeled "coping/mastery" by Watkins and Savickas (1992). This hypothesis also was informed by the social comparison literature (e.g., Wheeler, Martin, & Suls, 1997), which suggests that modeling may be most effective when clients perceive themselves as similar to the model on key attributes and have information that the model successfully coped with career development challenges that clients must confront.

An analog study by Watkins and Savickas (1992) examined participant evaluations of counseling climate, counselor comfort, client satisfaction, and counselor credibility after listening to an audio recording of a counselor using coping/mastery self-disclosure or empathic responses not involving self-disclosure. No differences in participant appraisals were found across groups. However, the effects of counselor self-disclosure can be more directly examined in an actual career intervention study rather than using an analog design. Evidence from psychotherapy process and outcome research suggests that, when used judiciously, counselor self-disclosure can have beneficial effects, such as enhancing client insight and improving the therapy relationship (Knox & Hill, 2003). To our knowledge, the effects of counselor self-disclosure in a career workshop intervention have not been evaluated experimentally prior to the present investigation.

1.2. Calling and vocation in career interventions

The desire to experience meaning and purpose in one's career is an important (Pratt & Ashforth, 2003) and understudied (Ryff & Singer, 1998) factor that may motivate people to utilize career counseling services. This component of work life has been highlighted by cross-disciplinary scholarship on the constructs *calling* and *vocation* (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1986; Colozzi & Colozzi, 2000; Hall & Chandler, 2005; Hardy, 1990; Placher, 2005; Schuurman, 2004; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). However, consensus definitions of calling and vocation are elusive, and existing definitions often are vague or confounded. To address these limitations, Dik and Duffy (in press) defined calling as an inclusive, cross-culturally relevant construct consisting of (1) a "transcendent summons" originating beyond the self; (2) an approach to work aimed at connecting work role activity with a broader sense of life purpose and meaning; and (3) "other-oriented" values and goals as a key source of motivation. Vocation focuses on internal, rather than external, reasons for pursuing meaningful, prosocial work and thus encompasses only the second and third dimensions of calling (Dik & Duffy, in press). The limited research on calling and vocation has indicated consistently that people who perceive work to be a calling or vocation report greater work and life satisfaction (Davidson & Caddell, 1994; Wrzesniewski et al., 1997), greater meaning in life, intrinsic work motivation, and career decision self-efficacy (Dik, Sargent, & Steger, in press), greater occupational commitment (Serow, Eaker, & Ciechalski, 1992), greater career decidedness, comfort, self clarity, and choice-work salience (Duffy & Sedlacek, 2007), and more adaptive coping strategies (Treadgold, 1999).

Some have suggested that calling and vocation contribute to the deepest forms of work satisfaction (Hall & Chandler, 2005), and a number of programs have been implemented to foster the development of these constructs among students. For example, the Lilly Foundation awarded $171.3 million to 88 colleges and universities for the purpose of promoting calling and vocation.[3] However, the literature is devoid of efforts to examine the efficacy of interventions designed to incorporate calling and vocation in the career decision-making process.

1.3. Summary and hypotheses

The purpose of the present investigation was to address limitations of previous research in three principal ways. First, the study attempted to replicate, using a sample of college students, the result that participants in career decision-making workshops experience better outcomes compared to participants in a wait-list control group. To accomplish this, an experimental design using randomized trial methodology in which four workshop conditions are tested against a no-intervention control group was employed. Second, the present study used a dismantling approach (Heppner, Kivlighan, & Wampold, 1999) to assess the unique effect of incorporating counselor self-disclosure, which has been hypothesized to be particularly effective with populations for whom career choice concerns are salient (Brown et al., 2003), such as college students. Finally, given the importance of issues related to meaning and purpose among college students (e.g., Steger, Frazier, Oishi, & Kaler, 2006), the present study tested the effectiveness of infusing content related to *calling* and *vocation* into a "standard" (person–environment fit-based) career intervention. We predicted that (a) workshops would create better outcomes than a wait-list control condition in terms of career decision self-efficacy and meaning in life; (b) workshops including counselor self-disclosure would be particularly effective; and (c) participants in the calling/vocation workshops would report higher meaning in life appraisals relative to those in the standard workshops.

2. Methods

2.1. Participants

Participants were recruited from a mid-sized, Midwestern Catholic university using flyers, presentations by research assistants, and a university-wide electronic newsletter. All means of recruitment informed prospective participants that the counseling and career services center at the university was testing a new two-session career development workshop and that participants would be paid $25 at the completion of the workshop. A total of 91 individuals (68 women, 21 men, two not identified; *M* age = 20.32 years, *SD* = 3.90; range of 18–48) consented to participate and completed pre- and post-intervention measures. (This excludes only four participants who attended one of the first workshop sessions but failed to return for the second; thus, attenuation did not appear to be a significant concern.) The sample was predominantly White/European American (89%); 4.4% of participants ($n = 4$) identified as Asian American and the remaining 6.6% identified as African American, African, Asian or Pacific Islander, Latino, and Middle Eastern (two non-responders); this breakdown reflected the demographics of the university from which participants were recruited. Roughly half (51.6%) self-identified as Catholic, 35.2% identified with another Christian denomination, 9.8% were non-religious, one participant identified as Jewish and two did not respond. Roughly half (51.6%) were freshmen, 20.9% were sophomores, 13.2% were juniors, 7.7% were seniors, and 5.5% were "other." All participants were offered $25 cash for participating.

Although participants were not clients presenting for counseling, their mean pre-intervention career decision self-efficacy total score (*M* = 88.3) was lower by approximately a half-*SD* than scores found in the non-client student samples reported by Betz, Hammond, and Multon (2005) as well as the sample of career-undecided students reported by Uffelman, Subich, Diegelman, Wagner, and Bardash (2004). This suggests that many participants may have self-selected into the sample due to a perceived need for services.

2.2. Counselors

Two master's-level counselors were trained to implement the workshops by the first author using detailed outlines of the workshop sessions as a guide. Both counselors had previous training and experience with the person–environment fit model used in the workshops, but found the calling and vocation content to be relatively novel. Both counselors facilitated two workshops, each two sessions in length. Each counselor also implemented both experimental factors under examination in the study (i.e., calling/vocation-infused vs. standard and presence vs. absence of self-disclosure). Counselors were told that both workshops were expected to help participants with their career decisions but were not told the specific outcomes measured in the study. The counselors, both women, were employed by the counseling center at which this study was conducted, one as pre-doctoral intern and the other as staff counselor. The first, age 48, identified as biracial and reported 5 years of counseling experience, little of it in career development. The second, age 45, identified as White and reported 14 years of counseling experience, most of it in career development.

[3] More information about this initiative is available at www.ptev.org. Some programs developed using with these funds are intended to promote overtly religious career paths (e.g., ministry and mission work), but most are designed to cultivate the view that all careers can be approached as a calling or vocation.

2.3. Instruments

2.3.1. Career decision self-efficacy

Career decision self-efficacy (CDSE) refers to confidence in one's ability to successfully navigate the career decision-making process (Betz, Klein, & Taylor, 1996). Given the developmental relevance of CDSE among college students and the persuasive evidence that CDSE is related to adaptive career decision-making (Betz et al., 1996; Luzzo & Day, 1999; Robbins, 1985), we examined differences in scores for overall CDSE and its facets (self-appraisal accuracy, gathering occupational information, goal selection, future planning, and problem solving) as primary outcomes of interest in the present investigation, while controlling for pre-intervention scores on these same variables. We assessed CDSE using the 25-item, short-form of the Career Decision Self-Efficacy Scale (CDSE-SF; Betz et al., 1996; Taylor & Betz, 1983). Participants responding to CDSE-SF items are asked to rate their confidence in their abilities to successfully complete career decision-making tasks (e.g., "Prepare a good resume," "Identify some reasonable alternatives if you are unable to get your first choice"). The version employing five-level item response continua (1 = no confidence at all, 2 = very little confidence, 3 = some confidence, 4 = considerable confidence, 5 = complete confidence) was administered at pre-intervention because of its higher internal consistency reliability (Betz, Hammond, and Multon (2005) reported coefficients ranging from .94 to .95) and was used to provide covariate scores to partial pre-intervention variance from post-intervention results. The original 25-item version (Betz et al., 1996) was administered at post-intervention because its 10-level (0–9) response format provided a more fine-grained approach to detecting between-group differences. Evidence for the reliability and validity of CDSE-SF scale scores are well established (e.g., Betz et al., 1996; Betz et al., 2005), with scale scores correlating in expected directions with measures of career decision variables, hope, goal stability, positive and negative affect, and vocational identity. Total score internal consistency reliabilities (αs) for the present sample were .92 pre-intervention and .93 post-intervention. Pre-intervention and post-intervention coefficient αs for the subscales were: Self-appraisal (.69 and .68); Gathering occupational information (.74 and .82); Goal selection (.81 and .82); Planning (.76 and .78); and Problem Solving (.79 and .82).

2.3.2. Meaning in life

To evaluate the workshops in terms of their effects beyond career-specific functioning, we examined participants' appraisals of meaning in their lives at post-intervention (controlling for pre-intervention scores) using a three-item short form of the Presence of Meaning subscale (MLQ-P-SF) of the Meaning in Life Questionnaire (MLQ; Steger et al., 2006). MLQ items (e.g., "I understand my life's meaning," "My life has a clear sense of purpose") use a 7-level response continua (1 = absolutely untrue, 2 = mostly untrue, 3 = somewhat untrue, 4 = cannot say true or false, 5 = somewhat true, 6 = mostly true, 7 = absolutely true), and previous research with college student samples has demonstrated the reliability, test–retest stability and convergent, discriminant, and structural validity of MLQ scores (Steger, Kashdan, Sullivan, & Lorentz, 2008; Steger et al., 2006). For example, presence of meaning scores have been found to correlate in predicted directions with other meaning scales, and correlations between self- and informant-ratings range from .28 to .39 (Steger et al., 2006). Data from another sample (Steger, 2008) indicate a $r = .97$ correlation between the MLQ-P-SF and MLQ-P. Furthermore, MLQ-P-SF scores correlate in predicted directions with measures of criterion variables such as search for meaning, satisfaction with life, and depression (Steger, 2008). Internal consistency reliabilities (αs) for the three-item MLQ-P-SF in the present sample were .75 pre- and .76 post-intervention.

2.3.3. Satisfaction with counselors

Six items, developed for this study, assessed participants' satisfaction with the counselors. Items (e.g., "My presenter was genuinely interested in helping me make career decisions successfully," and "My presenter did an excellent job") were rated using a 5-level scale (1 = very strongly agree, 2 = strongly agree, 3 = moderately agree, 4 = somewhat agree, 5 = disagree). Alpha reliability was .88.

2.3.4. Intervention integrity checklist

An essential prerequisite in outcome research is ensuring intervention adherence (i.e., the extent to which the treatment is implemented as designed) and differentiation (i.e., the extent to which competing treatments differ in prescribed ways) (Kazdin, 1994). To assess intervention integrity using these criteria, two trained research assistants viewed videotapes of the workshops and independently rated counselor adherence to prescribed intervention contents using 35 items. These items assessed the presence of elements required (a) across all four intervention conditions (20 items); (b) only in the two Calling/Vocation workshops (4 items); (c) only in the two Standard workshops (i.e., additional exercises reiterating person–environment fit principles; 3 items); (d) only in the two Self-Disclosure workshops (6 items); and (e) self-disclosure of calling/vocation-related content for the Calling/Vocation Plus Self-Disclosure workshop (2 items).

2.4. Procedure

Over 2 weeks (two 1-h long sessions), we conducted four intervention conditions: Calling/Vocation Plus Self-Disclosure (CV + D; $n = 15$); Calling/Vocation, No Self-Disclosure (CV − D; $n = 13$); Standard Plus Self-Disclosure (S + D; $n = 15$); and Standard, No Self-Disclosure (S − D; $n = 18$) plus a control condition ($n = 30$). One counselor facilitated the CV + D and S − D conditions; the other facilitated the CV − D and S + D conditions.

Participants first contacted the researchers via e-mail to express interest in the study. They were randomly assigned to conditions and e-mailed a link to the consent form, online pre-intervention questionnaires and instructions for participation. Workshop participants completed the questionnaires and a Strong Interest Inventory (SII; Donnay, Morris, Schaubhut, & Thompson, 2005) and then attended each session of their assigned workshop. Research assistants administered post-intervention questionnaires after the counselors departed following each workshop. Control participants completed the pre-intervention questionnaire and then completed post-intervention questionnaires at a meeting held on the same day as the second workshop sessions. They were offered participation in a CV + D workshop after the study's conclusion.

2.5. Intervention design

All four workshop conditions were designed on the basis of person–environment (P–E) fit principles, with attention to the critical ingredients in career interventions identified in Brown and Ryan Krane (2000). For all conditions, session one included an explanation of a P–E fit model of career decision-making, a goal-setting exercise, a group interpretation of the SII, and brief exposure to online sources of occupational information (e.g., the *Occupational Outlook Handbook* website), along with homework designed to guide integration of SII results with occupational information before the second session. Session two included informal abilities and needs/values self-assessments, a written exercise to integrate self-assessment information and identify best-fitting work environments, a group exercise designed to elicit peer support for possible career options, discussion of possible next steps, a written goal-setting exercise, and an exercise designed to identify sources of support for career decisions. Thus, three of the critical ingredients identified by Brown and Ryan Krane (2000)—written exercises, attention to support building, and current occupational information—were included in all workshop conditions.

Beyond the main content described above, the two workshops in the Standard condition prescribed additional group exercises designed to help participants apply P–E fit principles with greater depth (this ensured that the Standard workshop took the same amount of time as the Calling/Vocation workshops). The Calling/Vocation workshops reframed Standard workshop content (e.g., "choosing a career" was recast as "discerning a calling or vocation") and included information and group activities designed to help participants incorporate the following: (a) the idea that a calling or vocation is relevant in any honest area of work; (b) discerning one's calling or vocation often requires active participation in "traditional" career development activities (e.g., self-assessment and information gathering); and (c) pursuing work as a calling or vocation goes beyond occupational choice and includes the question of how one's work might, directly or indirectly, promote the common good. For example, one exercise prescribed participants to read four case examples of individuals who approach their work as a calling or vocation, discuss the cases in groups of three or four, and collaboratively brainstorm ways in which they might apply the themes of calling and vocation in their own respective careers. The calling and vocation content was designed to help participants identify avenues for infusing their work with significance and purpose.

The two workshops comprising the Self-Disclosure condition required counselors to self-disclose aspects of their own career decision-making process at several points. Specifically, they engaged in "coping/mastery" (Watkins & Savickas, 1992) self-disclosure by sharing that they experienced and successfully managed the career concerns currently experienced by many of the intervention participants. Furthermore, they used their personal experiences as illustrative examples of the career development concepts they were introducing in the workshops (e.g., P–E fit principles, calling and vocation). At those same points, the No Self-Disclosure condition prescribed use of hypothetical examples (e.g., describing the experience of fictitious people instead of the counselors themselves) or no example.

3. Results

Data first were collapsed across the four workshop conditions to create the Workshop Factor, with Calling/Vocation ($n = 33$) and standard ($n = 28$) intervention groups, which were compared to the control group ($n = 30$). Next, the control group was eliminated from the analysis and data were collapsed across the workshop conditions to create the Self-Disclosure factor, with Self-Disclosure ($n = 30$) and No Self-Disclosure ($n = 31$) conditions (five participants—two from S + D and one each from S − D, CV − D, and the control group—provided incomplete CDSE data and were dropped from all CDSE analyses in the study). This factorial design allowed main effect comparisons in which the effects of the other factor (i.e., either the Workshop Factor or Self-Disclosure factor), as well as possible facilitator effects, were balanced approximately equally across the factor under analysis.

3.1. Preliminary analyses

3.1.1. Potential pre-intervention differences

Results from two one-way ANOVAs revealed no pre-intervention differences across levels of the Workshop factor (Control, Standard workshop, Calling/Vocation workshop) on CDSE or meaning in life, $F(2,83) = 0.41$ and 0.63. Two 2 (Self-Disclosure) × 2 (Workshop) ANOVAs, conducted using only workshop participants (i.e., the control group was eliminated), revealed no pre-intervention differences across levels of the Self-Disclosure factor ($F[1,53] = 0.00$ for CDSE and 0.03 for meaning in life) and no Self-Disclosure × Workshop interactions ($F[1,53] = 1.32$ for CDSE and 1.79 for meaning in life).

3.1.2. Intervention integrity

Of the 140 total checklist items (35 items × 4 conditions), the two raters provided identical responses for 133 (95%). Coefficient kappa values for the four conditions were .84 (CV + D), .90 (CV − D), .92 (S + D), and .87 (S − D), and the overall kappa, averaged across conditions, was .88. To resolve the 7 items in which disagreement occurred, two new trained, independent raters provided ratings for the relevant portions of videotape. A comparison across the four raters revealed a possible response bias by one of the first raters toward "present" ratings; final ratings were determined by consensus of the two new raters and the first author. Elements were generally implemented as prescribed: CV + D, 97% (34 of 35); CV − D, 100% (35 of 35); S + D, 94% (33 of 35); and S − D, 100% (35 of 35). Apart from one prescribed instance of self-disclosure omitted by the counselor in one of the self-disclosure workshop conditions, all workshop elements in categories (b)–(e) of the intervention integrity checklist (see Section 3.1) were rated as present in prescribed conditions and absent in conditions for which they were not prescribed. Thus, the workshops demonstrated both good treatment adherence and good treatment differentiation.

3.1.3. Potential counselor effects

Two one-way (Counselor) ANCOVAs with pre-intervention scores as the covariates revealed no significant counselor effects on CDSE ($F[1,54] = 0.76$) or meaning in life ($F[1,54] = 2.14$). A 2 (Workshop) × 2 (Self-Disclosure) ANOVA on post-intervention ratings of satisfaction with the counselor revealed a significant effect for the interaction, $F(1,57) = 4.12$, $p < .05$, partial $\eta^2 = 0.07$, observed power = .51, but not for workshop or self-disclosure ($F[1,57] = 0.78$ and 2.74, respectively). The most favorable counselor satisfaction ratings were provided by CV+D participants ($M = 11.47$) followed by those in the Standard conditions ($M = 12.50$ for S − D and $M = 13.00$ for S + D) and the CV-D condition ($M = 16.38$). The overall mean satisfaction score was 13.20 ($SD = 5.34$), indicating very favorable appraisals of the counselors.

3.2. Intervention effects

Given the absence of pre-intervention differences, evidence of treatment integrity, and favorable consumer report data (i.e., satisfaction with counselor), we proceeded to analyze intervention effects. The effects of Workshop condition (Control, Standard, Calling/Vocation) on outcomes were assessed using one-way ANCOVAs for CDSE-SF-Total and meaning in life and a one-way MANCOVA for CDSE subscales. The effects of counselor self-disclosure (Self-Disclosure vs. No Self-Disclosure) and Self-Disclosure × Workshop interactions were assessed with two-way ANCOVAs using only workshop participants (i.e., control group excluded). In each analysis, pre-intervention scores were covariates for post-intervention scores on the same variables. Between-group differences were explored using Bonferroni corrected ($\alpha = .05$) post-hoc tests.

3.2.1. Workshop effects

Analyses (see Table 1) revealed a large (Cohen, 1988) significant effect for workshop conditions on CDSE-SF-Total. Bonferroni corrected ($\alpha = .05$) post-hoc tests indicated that participants in Standard and Calling/Vocation workshops did not differ, but reported higher CDSE than did the control group with medium to large effects ($d = 0.63$ for the Standard condition; $d = 0.65$ for the Calling condition). No significant differences were found across levels of the Workshop factor on post-intervention meaning in life. The MANCOVA revealed significant effects, ranging from moderate to large (Cohen, 1988), on all CDSE subscales. Bonferroni corrected ($\alpha = .05$) post-hoc tests revealed that for Occupational Information, Goal Selection, and Problem Solving, participants in the Standard and Calling/Vocation conditions did not differ, but participants in both workshop groups reported higher levels of these outcomes than did control participants. For Decision Planning scores, a significant difference was found only between the Calling/Vocation condition and control group, $t(53) = 2.52$, $p < 05$, with higher scores for the former. Finally, for Self-Appraisal, a significant difference was found only between participants in the Standard workshop and control group, $t(58) = 3.19$, $p < .01$, with higher scores for the former.

Table 1
Adjusted Means, Standard Deviations, and Effect Size for Workshop Conditions at Post-Intervention

Measure	Condition						*F*	Partial η^2
	Standard		Calling/Vocation		Control			
	M	*SD*	*M*	*SD*	*M*	*SD*		
CDSE-SF TOTAL	157.77_a	25.11	159.00_a	25.41	143.87_b	26.16	7.25^{**}	0.15
CDSE-SF Self-appr.	33.62_a	5.39	$32.50_{a,b}$	4.54	30.48_b	5.08	5.18^{**}	0.12
CDSE-SF Occ. info	34.65_a	6.79	34.93_a	5.97	30.93_b	7.17	6.01^{**}	0.13
CDSE-SF Goal select.	30.70_a	6.11	29.85_a	5.98	26.97_b	6.32	6.13^{**}	0.14
CDSE-SF Dec. plan	$29.81_{a,b}$	6.66	31.46_a	6.47	28.72_b	6.61	3.20^{*}	0.08
CDSE-SF Prob. solv.	29.83_a	6.71	29.97_a	6.21	26.14_b	6.18	7.41^{**}	0.16
MLQ-SF Presence	14.68	3.41	15.32	2.76	15.19	2.36	0.68	0.02

$^{*}p < .05$, $^{**}p < .01$.

Note. Degrees of freedom were 2, 82 for CDSE-SF-Total; 2, 78 for each of the five CDSE subscales, and 2, 87 for meaning in life. Means not sharing the same subscript are significantly different as established by Bonferroni corrected ($\alpha = .05$) post-hoc tests.

3.2.2. Self-disclosure effects

Results revealed a significant, moderate effect for Self-Disclosure on post-intervention CDSE, $F(1,52) = 4.26$, $p < .05$; partial $\eta^2 = 0.08$, observed power = .53, $d = .56$, with higher self-efficacy reported by participants exposed to counselor self-disclosure (adjusted Ms = 161.51 and 152.70). The Self-Disclosure × Workshop interaction effect on post-intervention CDSE was non-significant, $F(1,52) = 1.16$, as was the main effect for Self-Disclosure on meaning in life, $F(1,56) = 2.23$. However, a medium-sized, marginally significant effect was observed for the Self-Disclosure × Workshop interaction on meaning in life, $F(1,56) = 3.86$, $p = .06$, partial $\eta^2 = 0.06$, observed power = .49. CV + D participants reported the highest meaning in life scores ($M = 16.34$), followed by S − D participants ($M = 14.87$), S+D participants ($M = 14.56$), and CV − D participants ($M = 14.14$).

4. Discussion

Overall, workshop interventions had their most robust effects on the work-specific outcome, career decision self-efficacy, rather than the global outcome, meaning in life. Students participating in the workshops reported significantly higher career decision self-efficacy relative to participants in the wait-list control group. This effect was similar in magnitude to the aggregate effectiveness of workshops reported in Whiston (2002) and much larger than mean effect size ($d = .21$) reported by Brown and Ryan Krane (2000) in studies targeting CDSE as the outcome. Furthermore, results with CDSE subscales suggested that the effects of the interventions on CDSE were multidimensional, cutting across all areas of the domain rather than only some aspects. Although replication is needed, career development professionals may interpret this result to suggest that a person–environment fit approach, when presented even in a brief (2-session) workshop format, may provide a robust effect on students' confidence in their ability to successfully navigate the career decision-making process.

One reason the effect of the present study's workshops on CDSE was larger than is typically found in the literature may be the inclusion of self-disclosure. The effect of self-disclosure on post-intervention CDSE was statistically significant, and the effect size of $d = .56$ was also considerably larger than the average effect for CDSE reported by Brown and Ryan Krane (2000). This supports the theoretical assertion that vicarious learning is a key influence on self-efficacy (Bandura, 1997; Lent, 2005). Given the status of this study as the first to test for an additive effect of self-disclosure, we believe these results warrant attention and, ideally, replication using a larger sample. Although more research is needed to solidify this conclusion, this result supports the use of moderate amounts of counselor coping/mastery self-disclosure, in which disclosure consists of illustrating career decision strategies using examples from the counselor's own career development process that speak to the challenges that intervention participants are experiencing. Research also is needed to test this effect using other modalities (e.g., individual or group counseling). Nonetheless, we suggest that counselors use this information to temper the frequent internal struggles many practitioners experience regarding the appropriateness of self-disclosure. A growing body of evidence suggests that thoughtful use of moderate amounts of self-disclosure in individual psychotherapy can have powerful positive effects on clients (Knox & Hill, 2003); the present study suggests that the same may be true in the context of brief career workshops.

Both workshop formats improved CDSE; however, contrary to expectations, the Calling/Vocation workshops did not increase meaning in life scores relative to the Standard workshop. These results suggest that incorporating content that encourages considerations of calling and vocation did not detract from nor add to workshop efficacy. Because basic research on the role of calling and vocation on career development is in its infancy (Dik & Duffy, in press), and because this study is the first to test an intervention incorporating calling and vocation, no immediate reasons for this equivocal result are readily available. One possibility is that considerations of calling and vocation simply fail to add any substantive benefit for participants, at least for the outcomes targeted in the present study. A second possibility, given the meta-analytic evidence suggesting that interventions lasting four to five sessions are especially effective (Brown & Ryan Krane, 2000), is that a two-session exposure to the idea of approaching work as a contribution to a meaningful life may not be sufficient for influencing individuals' global meaning in life. Third, the present calling/vocation interventions may need to be strengthened in order to observe effects on global well-being. Meaning in life is a fairly stable variable (Steger & Kashdan, 2007), and it may take fairly robust life events to substantially influence how meaningful people judge their lives to be. Although we hypothesized that being exposed to clear ideas about how to pursue a meaningful, socially valued work life would inspire people to perceive greater meaning in their lives as a whole, it may be that greater immersion and engagement with the ideas of calling and vocation is needed before benefits emerge on this global level. Fourth, it may be that moderating effects exist in which calling- and vocation-related content is more helpful for some individuals than for others. For example, evidence is emerging that people who are searching for meaning in life report especially enhanced well-being when they also experience their lives as meaningful (Steger, Kawabata, Shimai, & Otake, 2008). Similarly, people who are actively searching for meaning in life may derive greater benefit from viewing work as one path toward the meaning they seek than those low in search for meaning. Finally, it may be the case that issues of meaningfulness in the work role are more salient for individuals who are closer to implementing an occupational choice than for freshmen undergraduate students, who constitute the majority of the sample in the present study.

A particularly interesting result found in the present study was the moderate (although marginally significant) effect of the Self-Disclosure × Workshop interaction, which indicated that exposure to self-disclosure had little effect on meaning in life appraisals for participants in the Standard workshops but appeared to make a difference for participants in the Calling

condition. This result suggests that counselors may need to provide tangible and personal examples of the role of calling and vocation in their own career development processes to activate the benefits of considering career issues in this possibly novel way. Although these data provide only limited clarification of mechanisms that may explain this effect, they do suggest that self-disclosure of calling- and vocation-related content delivers a positive experience, with participants in the CV + D condition reporting the most favorable counselor satisfaction ratings. Self-disclosure of a trusted expert's experience of calling/vocation may increase the degree to which participants are able to view their own experiences with calling/vocation as concrete and beneficial. This explanation requires investigation using a design employing several counselors, since in the present study, the possibility that counselor differences account for the Self-Disclosure × Workshop interaction effect cannot be ruled out.

4.1. Limitations

Despite the strengths of the present investigation, a number of limitations require caution in interpreting results. First, our efforts to recruit participants did not result in a sample large enough to provide optimal levels of statistical power for some of our analyses. (A power analysis revealed that, to detect a $\Delta = .50$ effect at .80 power with $\alpha = .05$, approximately 128 participants were needed.) Second, although pre-intervention scores suggested that many students may have participated because of a perceived need for services, support for external validity is enhanced when intervention research uses actual clients. Third, White/European Americans and women were overrepresented in our sample. Most of the sample also consisted of freshmen, for whom career decision-making concerns may be less salient in comparison to advanced undergraduate students or employed adult participants. Furthermore, the fact that participants were drawn from a Catholic university and were predominantly (86.8%) Christian may limit generalizability. Our hope is that in subsequent research, investigators are more successful in obtaining representative samples. Finally, the present study unfortunately cannot provide evidence of longer-term benefits. Long-term follow-up is needed to assess maintenance and potential increased change over time.

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