Original Article

Personality Disorder Traits as a Moderator of Poor Social Problem-Solving Skills and Depressive Symptoms

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Abstract. This investigation examined whether Cluster B and Cluster C personality disorder symptoms moderate the relationship between social problem-solving skills and depressive symptoms. Participants were 102 young adults, assessed for personality disorder traits and depressive symptoms. Participants completed a novel performance-based assessment and a self-report measure of social problem-solving skills. Multiple regression models indicated that at moderate to lower levels of personality pathology, social problem-solving deficits were associated with depressive symptoms, whereas at higher levels of personality pathology there was not a similar relationship. These findings highlight the importance of both social problem-solving approaches and personality characteristics in understanding the complex network of risk factors for depression.

Keywords: social problem-solving, personality, depression, interpersonal problems, emerging adulthood

Social problem-solving (SPS) refers to the self-directed, cognitive-behavioral process of identifying and implementing successful strategies to resolve difficult interpersonal situations. Effective interpersonal problem-solving contributes to positive coping skills, which prevent or reduce emotional distress (Nezu, Nezu, & Clark, 2008). Conversely, a sequence of unsuccessful interpersonal strategies may contribute to greater negative affect and eventual depression. Extensive research confirms that individuals who are less effective in solving interpersonal problems tend to have higher levels of depressive symptoms than effective interpersonal problem-solvers (Anderson, Goddard, & Powell, 2011; Gotlib & Asarnow, 1979; Haugh, 2006; McCabe, Blankstein, & Mills, 1999). Similarly, depressed individuals display impaired SPS skills relative to anxious individuals and controls, suggesting that this characteristic contributes to higher risk for depression (Anderson, Goddard, & Powell, 2009; Marx, Williams, & Claridge, 1992; Williams, Barnhofer, Crane, & Beck, 2005). The present study examined whether the established association of SPS skills on depressive symptoms differs across levels of personality disorder symptoms.

D'Zurilla and Maydeu-Olivares (1995) distinguished between two types of SPS assessment: process measures and outcome measures. Process measures assess the general attitudes and activities that enable a person to identify solutions, while outcome (or performance-based) measures evaluate the quality of chosen solutions, or specific aspects of problem-solving performance. It is recommended to use both types of assessment in investigations of SPS; thus, the present study included a process measure, the Social Problem-Solving Inventory-Revised: Short Form (SPSI-R; D'Zurilla, Nezu, & Maydeu-Olivares, 2002) and a recently designed outcome measure, the Social Problem-Solving Test (SPST; Nock, 2010). The majority of prior investigations of SPS have included the SPSI-R and/or the Means-Ends Problem-Solving Procedure (MEPS; Platt & Spivack, 1975), as process and outcome measures, respectively. In the MEPS, participants are asked to identify strategies (means) to reach a desired end goal, with the number of relevant means serving as the dependent variable. While this assesses one's ability to produce problem-solving steps, the measure has been criticized for not providing data on the quality of the proposed strategies (Marx et al., 1992). It is possible for two participants to identify a similar number of relevant means that differ greatly in their effectiveness and likely outcomes. Improving upon this limitation, the SPST presents participants with social situations for which they generate solutions, rated on the participant's reaction and likely outcome, and role-play an ideal solution, rated on effectiveness and other behavioral variables. This study is the first to combine the SPSI-R, a process measure,

DOI: 10.1027/1614-0001/a000132

and the SPST, a novel outcome measure, in an examination of SPS deficits and depressive symptoms.

In the SPSI-R model, SPS comprises two components: problem orientation consists of one's beliefs and emotional reactions to problems, while problem-solving style includes the cognitive-behavioral activities in which one engages to cope with interpersonal difficulties (Nezu et al., 2008). Positive problem orientation (PPO) includes a tendency to view problems as challenges and to believe that problems are solvable. Negative problem orientation (NPO) indicates a tendency to view problems as threats to well-being and to become frustrated when confronted with problems. Rational problem-solving style (RPS) reflects an adaptive, deliberate use of effective problem-solving techniques. Impulsivity/carelessness style (ICS) indicates a pattern of hurried, careless solution implementation. Lastly, avoidance style (AS) reflects a pattern of procrastination, passivity, or overdependence on others to cope with interpersonal problems. Both problem-solving orientation scales have been associated with depressive symptoms, with higher positive orientation inversely related to depression and higher negative orientation consistently predictive of greater depression (Anderson et al., 2009; Haugh, 2006; McCabe et al., 1999). RPS is minimally correlated with depression. Higher AS is associated with greater depressive symptoms, while findings on the association of ICS have been inconclusive (Anderson et al., 2009; Haugh, 2006; McCabe et al., 1999).

Outcome measures of SPS have established similar associations of interpersonal problem-solving deficits with depressive symptoms. Early research indicated that depressive symptoms were uniquely related to interpersonal rather than general problem-solving skills (Gotlib & Asarnow, 1979). Subsequent investigations confirmed that individuals who produce fewer relevant means in the MEPS task were more likely to be currently depressed or prone to depression (Anderson et al., 2011; Marx et al., 1992). Moreover, investigators' ratings of the (in)effectiveness of MEPS strategies predicted current and future depression status (Marx et al., 1992), as did effectiveness ratings for real-life interpersonal problems (Anderson et al., 2009, 2011).

Although poor SPS has been established as a risk factor for depression, it is unclear what psychological characteristics moderate this association. Bivariate associations have been established between SPS, personality pathology, and depression. Ineffective problem-solving skills may foster broader dysfunctional patterns of behavior, particularly in emotional contexts (McMurran, Oaksford, & Christopher, 2010). Over time, persistent social dysfunction may stabilize and expand into personality disorder symptoms. Furthermore, personality disorder symptoms have proven consistently to predict earlier onset of depression, longer periods of depression, and poorer treatment prognosis (e.g., Fava et al., 1996; Melartin et al., 2004; Newton-Howes, Tyrer, & Johnson, 2006). Continuous measures of personality pathology, even at subclinical levels, predict future depressive episodes (e.g., Hart, Craighead, & Craighead, 2001; Ilardi, Craighead, & Evans, 1997). It is unknown, however, whether greater personality pathology amplifies the influence of SPS skills deficits on depression, whether it is only independently related to depression, or whether personality pathology's effects are so broad that they nullify the specific association of SPS and depression.

One study to date has examined the relationship of SPS skills with personality disorders (McMurran, Duggan, Christopher, & Huband, 2007). Participants from a treatment-seeking sample were assessed by clinical interview for both personality disorder diagnoses and dimensional level of personality pathology. Analyses at the diagnostic level only revealed one significant difference: individuals with a borderline personality disorder diagnosis reported greater ICS, as measured by the SPSI-R, than those without the diagnosis. However, dimensional measurement was more fruitful. Dimensional scores on Cluster B (dramatic/emotional/erratic) disorders were associated with higher PPO, lower AS, but also higher ICS. Dimensional scores for Cluster C (anxious/fearful) disorders were associated with higher NPO but lower ICS. RPS deficits were not associated with personality disorder traits, analogous to findings that RPS does not predict depression. Cluster A (odd/eccentric) scores were not associated with SPS skills. Similarly, Cluster A has not been found to be a consistent risk factor for depression (e.g., Ilardi et al., 1997); therefore the present study focuses on Cluster B and C symptoms. This study extends this initial research on the problem-solving profiles associated with personality disorders to examine how both variables are associated with depression.

The aim of this study was to examine whether the importance of SPS skills in influencing depressive symptoms differs across levels of personality disorder symptoms. Cluster B and Cluster C personality disorder symptoms were examined as moderators of the association of depressive symptomatology with process ratings of SPS skills (assessed with the SPSI-R) and performance-based ratings of SPS skills (assessed with the SPST). Based on prior evidence, we hypothesized personality disorder symptoms would moderate the associations of PPO, NPO, and AS with depressive symptoms. Similarly, we hypothesized that, within the SPST, personality disorder symptoms would moderate the associations of negative content in chosen solutions, likely negative outcomes for chosen solutions, lower assertiveness, and lower effectiveness with depressive symptoms. Because RPS and ICS are not clearly associated with depression, we did not expect significant relationships with depressive symptoms regardless of level of personality disorder symptoms.

Method

Participants

Participants were 102 young adults (69% female; 69% Caucasian) enrolled at a college in the northeastern United States. Participants were recruited through email announcements and the psychology student subject pool. Participants were not selected for clinical symptomatology. There were no psychiatric or other exclusion criteria. The only

inclusion criterion was that they must be at least 18 years of age in order to provide informed consent rather than assent (mean age = 19.73 years, *SD* = 1.44). Participants were compensated $10 or partial course credit. Per Cohen's recommendations, a medium effect size requires *n* of 85. Practical considerations related to staffing led us to aim for a sample of 100, which we reached with a final *n* of 102.

Measures

Clinical Variables

The Personality Diagnostic Questionnaire-4 (PDQ-4; Hyler, 1994) is a 99-item true-false, self-report inventory used to assess DSM-IV personality disorder symptoms. DSM-IV personality disorder cluster scores can be calculated, along with a total score or individual personality disorder scores. Higher scores indicate greater personality pathology. Limited variability at the level of individual personality disorders was anticipated in this nonclinical sample; therefore the study focused on cluster scores. Means were comparable to similar nonclinical samples (Chabrol, Amélie Callahan, & Hyler, 2007; Gardner & Qualter, 2009). Internal consistency for the cluster scales was adequate in this study (Cluster B Cronbach's $\alpha = 0.75$; Cluster C Cronbach's $\alpha = 0.74$). The previous version of the measure demonstrated good test-retest reliability and validity as a screening instrument (Hyler, Skodol, Kellman, Oldham, & Rosnick, 1990; Uehara, Sakado, & Sato, 1997).

The Beck Depression Inventory-II (BDI; Beck, Steer, & Brown, 1996) is a 21-item self-report inventory used to measure depressive symptom severity. Higher scores indicate greater depressive symptomatology. Although the sample mean was in the minimal depression range, individual scores ranged from minimal to severe depression (see Table 1). The scale had good internal consistency (Cronbach's $\alpha = 0.87$). Considerable data support the construct and predictive validity of this measure (Beck, Steer, & Garbin, 1988).

Social Problem-Solving Variables

The Social Problem-Solving Inventory-Revised: Short Form (SPSI-R; D'Zurilla et al., 2002) is a 25-item measure used to assess Positive Problem Orientation (PPO), Negative Problem Orientation (NPO), Rational Problem-Solving (RPS), Impulsivity/Carelessness Style (ICS), and Avoidance Style (AS). Higher scores on PPO and RPS indicate adaptive problem-solving skills, whereas higher scores on NPO, ICS, and AS indicate maladaptive problem-solving. Standardized scores were used; scores approaching 100 are within the norm group average. The internal consistency of the subscales was adequate with Cronbach's α between 0.75 and 0.83. Substantial evidence supports the reliability and validity of this measure (D'Zurilla et al., 2002).

The Social Problem-Solving Skills Test (SPST; Nock, 2010) is a performance-based measure of interpersonal problem-solving. This task consisted of listening to audio recordings describing eight problematic social scenarios: two involve a boyfriend/girlfriend, two involve a parent, two involve friends, one involves a professor, and one involves a coworker. The phrasing of scenario descriptions was slightly altered from the original adolescent version to be appropriate for young adults. Four participants completed a pilot version and therefore were not included in SPST analyses. After each recording, participants were asked to generate multiple solutions within a 30-s time span and to identify the solution that they would most likely implement. They were then presented with a model response, asked to rate their self-efficacy in performing that response, and then asked to role-play the response to an empty chair for 30 s. Participants gave self-efficacy ratings on a 0–4 scale, with 4 indicating highest self-efficacy. Each SPST task was video-recorded and later coded by the SPST interviewer and another trained research assistant. Research assistants coded the "content" of the selected solution as a positive reaction (3), neutral reaction (2), or negative reaction (1) to the problem, and the selected solution's outcome as positive (3), neutral (2), or negative (1). The model response role-play was rated for assertiveness of communication and effectiveness, on scales ranging from 1 to 4, where 4 indicated highly assertive or highly effective behavior. Four participants requested to be audio- rather than video-recorded; their assertiveness could not be coded. In analyses each SPST variable was the average across the eight scenarios, for example, average effectiveness (Nock & Mendes, 2008). Intraclass correlations demonstrating interrater reliability (Case 1; Shrout & Fleiss, 1979) ranged from moderate agreement to substantial agreement: 0.63 for Average Effectiveness; 0.66 for Average Assertiveness; 0.91 for Average Selected Solution Content; 0.92 for Average Selected Solution Outcome; and 0.98 for Average Number of Solutions. The construct validity of the SPST as a measure of social skills has been previously demonstrated (Nock & Mendes, 2008).

Procedure

This study was approved by the college's Institutional Review Board (IRB). After completing the IRB-approved informed consent form, participants provided demographic information and completed self-report measures on a computer. Next, a trained research assistant administered the SPST. After completing the SPST, participants were compensated and debriefed on the aims of the study.

Data Analysis

Prior to analysis, all variables were screened for skewness and kurtosis. A square-root transformation was used on BDI scores to reduce positive skewness. Table 1 presents

Table 1. Means, standard deviations, and ranges for social problem-solving variables, personality disorder symptoms, and depressive symptoms

Variable	*M (SD)*	Range
Social Problem-Solving Inventory (SPSI-R)		
Positive Problem Orientation (PPO)	99.79 (14.72)	66–131
Negative Problem Orientation (NPO)	98.33 (11.71)	77–129
Rational Problem-Solving (RPS)	99.96 (16.06)	64–136
Impulsivity/Carelessness Style (ICS)	91.76 (15.63)	73–134
Avoidance Style (AS)	94.98 (12.22)	78–132
Social Problem-Solving Skills Test (SPST)		
Average No. of Solutions	3.35 (0.87)	1.50–6.13
Average Selected Solution Content	2.46 (0.36)	1.50–3.00
Average Selected Solution Outcome	2.48 (0.34)	1.50–3.00
Average Self-Efficacy	2.94 (0.42)	1.88–3.75
Average Assertiveness	3.27 (0.43)	2.25–4.00
Average Effectiveness	3.37 (0.40)	1.88–4.00
Personality Diagnostic Questionnaire-4 (PDQ-4)		
Cluster B Symptoms	7.88 (4.41)	0–19
Cluster C Symptoms	8.20 (3.92)	1–17
Beck Depression Inventory-II (BDI)	9.72 (7.17)	0–41

the means and standard deviations for the SPS variables, personality disorder symptoms, and depressive symptoms.

To determine whether personality disorder symptoms moderated the relationship between select SPS skills and depressive symptoms, a series of multiple regression models were analyzed. The first set of analyses examined the self-report process ratings: the five SPSI-R scales. The second set of analyses examined the performance-based (outcome) ratings from the SPST: three solution generation variables – average number of solutions generated, content of the selected solution, and outcome of the selected solution – and three role-play variables – self-efficacy, assertiveness, and effectiveness. One SPS variable, one personality disorder scale, and their interaction were entered simultaneously into each separate model; depressive symptoms was the criterion variable. All predictor variables were mean-centered prior to computing interaction terms (Aiken & West, 1991). In this approach, each significant interaction would support our hypotheses regarding the moderating effect of personality disorder symptoms.

Results

The main effects of Cluster B and Cluster C symptoms were significant in every model ($p < .01$); therefore, findings regarding SPS variables and the interaction terms are emphasized below.

Social Problem-Solving Process Ratings and Personality Disorder Symptoms

PPO was negatively associated with depressive symptoms when entered with Cluster B scores ($\beta = -0.22$, $p = .02$), but not when entered with Cluster C scores ($\beta = -0.05$, $p = .57$); the interactions were not significant. NPO was positively associated with depressive symptoms in both models (Cluster B: $\beta = 0.50$, $p < .001$; Cluster C: $\beta = 0.33$, $p = .002$); the interactions were not significant. As expected, there were no significant main effects or interactions for RPS or ICS. Finally, AS interacted with both Cluster B and Cluster C symptoms in predicting depressive symptoms ($p = .008$ and $p = .002$, respectively). After decomposing the simple slopes following the procedures of Aiken and West (1991), we found that, for individuals who were 1 *SD* below the mean ($\beta = 0.44$, $p < .001$) or at the mean of Cluster B symptoms ($\beta = 0.23$, $p = .008$), greater AS was associated with higher depressive symptoms. At 1 *SD* above the mean, there was no relationship between AS and depressive symptoms ($\beta = 0.03$, $p = .79$; see Table 2 and Figure 1). Similarly, for individuals with low Cluster C symptoms, greater AS was associated with greater depressive symptoms ($\beta = 0.39$, $p = .003$), while there was no relationship between AS and depression at higher levels of Cluster C symptoms ($\beta = -0.11$, $p = .28$).

Social Problem-Solving Performance and Personality Disorder Symptoms

As would be expected, average number of solutions generated, when examined irrespective of quality, did not predict depressive symptoms and did not interact with personality disorder traits. However, average content of the selected solution (choosing either a positive, neutral, or negative response) was moderated by Cluster B symptoms ($p = .04$). Simple slope analyses indicated that, for individuals 1 *SD* below the mean of Cluster B symptoms, more negative content in their preferred solution was associated with greater depressive symptoms ($\beta = -0.37$, $p = .02$);

Table 2. Multiple regression models in which personality disorder symptoms moderate the social problem-solving depression association

	Cluster B				Cluster C			
Variable	*b*	*β*	*t*	Model R^2	*b*	*β*	*t*	Model R^2
PD cluster score	0.12	0.42	4.79***	0.27	0.17	0.54	6.51***	0.41
Avoidance style	0.02	0.23	2.70**		0.01	0.14	1.64	
Interaction	−0.005	−0.24	−2.72**		−0.006	−0.25	−3.11**	
PD cluster score	0.11	0.42	4.29***	0.21	0.18	0.59	7.12***	0.39
Avg. selected solution content	−0.55	−0.16	−1.63		−0.41	−0.12	−1.42	
Interaction	0.16	0.21	2.11*		0.14	0.15	1.84†	
PD cluster score	0.11	0.42	4.29***	0.22	0.18	0.59	7.06***	0.38
Avg. selected solution outcome	−0.55	−0.16	−1.60		−0.42	−0.12	−1.42	
Interaction	0.18	0.21	2.14*		0.12	0.13	1.53	
PD cluster score	0.11	0.41	4.30***	0.18	0.19	0.61	7.59***	0.40
Avg. effectiveness	−0.20	−0.07	−0.69		−0.30	−0.10	−1.21	
Interaction	0.08	0.13	1.38		0.13	0.19	2.29*	

Notes. PD = personality disorder. †$p < .10$; *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$. All *p*-values are two-tailed.

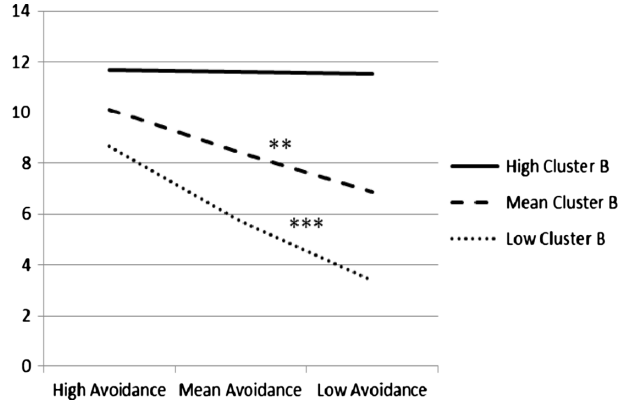

Figure 1. Cluster B symptoms moderate the association of SPSI-R avoidance style and depressive symptoms. **Simple slope analysis *p*-value ≤ .01; ***$p \leq .001$. All *p*-values are two-tailed.

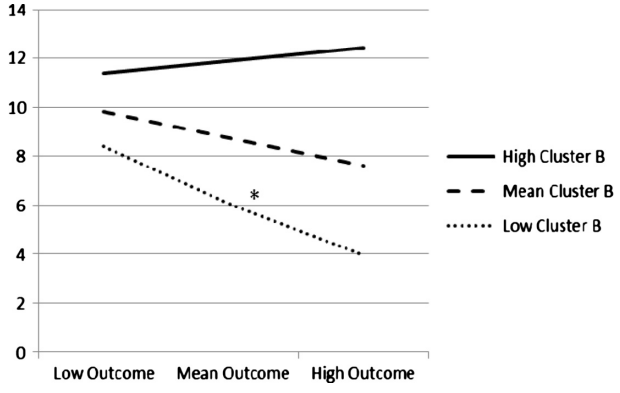

Figure 2. Cluster B symptoms moderate the association of SPST average selected solution outcome ratings and depressive symptoms. *Simple slope analysis *p*-value < .05 (two-tailed).

solution content and depressive symptoms were not associated for individuals at 1 *SD* above the mean of Cluster B symptoms ($\beta = 0.05$, $p = .69$; see Figure 2). A similar moderation pattern was seen with likely outcome of the selected solution and Cluster B symptoms (interaction term $p = .04$); at 1 *SD* below the mean of Cluster B symptoms, a more negative outcome predicted greater depressive symptoms ($\beta = -0.38$, $p = .02$) while the predictor variables were not associated at 1 *SD* above the mean ($\beta = 0.06$, $p = .61$). Effectiveness in the solution role-play did not predict depressive symptoms, when entered with Cluster B symptoms.

Average content and average outcome of the selected solution were not significant predictors when entered with Cluster C symptoms. However, level of Cluster C symptoms moderated effectiveness as a predictor of depressive symptoms ($p = .02$), in a pattern similar to the other simple slopes analyses. For individuals 1 *SD* below the mean of Cluster C symptoms, ineffectiveness was associated with greater depressive symptoms ($\beta = -0.27$, $p = .03$); there was no association of effectiveness and depressive symptoms for individuals 1 *SD* above the mean ($\beta = 0.07$, $p = .48$). Self-efficacy and assertiveness did not predict depressive symptoms and did not interact with personality disorder traits.

Discussion

The present study is the first to link process and outcome measures of SPS skills with both personality disorder traits and depressive symptoms. As hypothesized, level of personality disorder symptoms moderated the associations

of greater avoidance, more negative solution content, more negative solution outcomes, and demonstrated ineffectiveness with depressive symptoms. Lower PPO and higher NPO were associated with depressive symptoms but these were not moderated by personality pathology. RPO and ICS were not associated with depressive symptoms as expected, but hypotheses regarding self-efficacy and assertiveness were not supported. Overall, select impairments in problem-solving style and ability are more likely to contribute to depressive symptoms in individuals with moderate to low levels of personality disorder symptoms compared to individuals with significant Cluster B and C pathology. The lack of association in individuals with increased Cluster B and Cluster C symptoms suggests that personality disorders' effects on mood disturbance are so broad that this set of more nuanced interpersonal behaviors no longer stands out as a risk factor among the characteristics contributing to depression. Additionally, the results support recommendations to include both process and outcome SPS measures in research and clinical assessment because they assess different aspects of the skills; AS was closely associated with depression while the associated behavior of assertiveness was not.

This study is the first to use the SPST, rather than the MEPS, to examine the association of SPS deficits and depression. This study extends similar findings with the MEPS (e.g., Marx et al., 1992) and indicates that the ability to respond positively to interpersonal problems, to develop effective strategies, and to perform successfully in difficult social situations are inversely related to depression but may be more relevant for those without personality disorder traits. Participants' reactions to interpersonal problems and the likely outcome of their preferred responses were associated with greater depression, for those with minimal Cluster B symptoms. Additionally, participants' performed effectiveness in coping with social problems was associated with depressive symptoms, for those with lower Cluster B and Cluster C symptoms. Overall, this study provides evidence that the association of depression with SPS skills, whether assessed through self-report or performance methods, differs across levels of personality disorder symptoms.

This study replicates extensive evidence that individuals with Cluster B and/or Cluster C personality disorder traits are more likely to have heightened depression (e.g., Hart et al., 2001; Ilardi et al., 1997). In this sample, at lower levels of personality pathology, individuals with greater depressive symptoms tended to view problems as threats, to take an over-dependent or passive approach to interpersonal conflict, and to react negatively and ineffectively in their initial response to social problems. This replicates prior evidence that PPO is inversely related to depression, while greater NPO and AS predict depression (Anderson et al., 2009; Haugh, 2006; McCabe et al., 1999). This pattern has additional implications for treatment for depression, particularly suicidal behavior. In one investigation of moderators of treatment outcome, lower PPO, higher NPO, and higher AS predicted greater severity of depression following 12 weeks of treatment by antidepressant medication or by cognitive-behavior therapy (Becker-Weidman, Jacobs, Reinecke, Silva, & March, 2010). Furthermore, PPO and NPO moderated treatment outcome, such that treatment was more effective in reducing suicidality for those with higher positive and lower negative orientations. Similarly, Joiner and colleagues (2001) reported that positive attitudes regarding problem-solving enhanced treatment outcome for suicidality. These studies underscore the importance of attitudes toward interpersonal problems as both risk factors for depression and potential indicators of treatment response. On the other hand, our findings on the broad impact of personality pathology on depression suggest that clinicians also should assess these traits before developing treatment plans.

Research on SPS could be further developed with the use of ecologically valid measures of interpersonal problem-solving. Anderson and colleagues (2009) provide a model for extending research beyond the lab into "real-life." In their study, SPS outcome was assessed through daily diaries in which participants recorded the interpersonal problems they encountered and their actual problem-solving behavior. A group of depressed/anxious individuals performed less effectively than controls in real-life, yet were equally effective in responding to hypothetical scenarios on the MEPS task. While current process and outcome measures capture what individuals *believe* they would do in particular social situations, diary or ecological momentary assessment methods allow investigators to examine what participants *actually do*, in real-life, under emotional conditions. Patterns of how interpersonal responses impact emotional state and later relationship functioning, in those with and without personality pathology, could be modeled to further our understanding of the interplay of interpersonal problem-solving skills, personality traits, and mood disturbance.

A few limitations of the current study should be noted. Young adults may still be developing and improving upon their approach to interpersonal conflict, and thus these findings may not generalize to older adults with more established SPS patterns. Average intelligence in this college-attending sample may be higher than the general population, while total personality pathology is expected to be lower than the treatment-seeking, psychiatric population; the findings may not generalize to all clinical subgroups. Personality disorder symptoms were assessed by self-report measure rather than clinical interview. Finally, the study's cross-sectional design did not allow for investigation of SPS skills or personality disorder traits as causal predictors of depression. A future investigation adopting a longitudinal design with clinical assessments of depression and personality disorder symptoms is needed to confirm the reported role of personality disorder symptoms as a moderator of SPS skills and depression.

In conclusion, this study provides evidence of the moderating function of personality disorder traits on the association of poor SPS skills and depressive symptoms. These findings suggest that both SPS approaches and personality characteristics are important to consider in understanding the complex network of risk factors for depression. This study provides additional support for incorporating problem-solving therapy techniques into depression treatment plans, particularly supervised practice in problem-solving

around recent, real-life events (see D'Zurilla & Nezu, 2007). Therapists should consider modifying particular problem-solving patterns, such as avoidant coping and negative reactions. More broadly, this research supports the use of problem-solving training to bolster coping skills and prevent mood disturbance in potentially at-risk individuals.

Acknowledgments

We thank Rhiannon Archer, Jessica Blais, Kira Novak, and Stephanie Sienkiewicz for their assistance with data collection and coding.

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Date of acceptance: February 20, 2014
Published online: June 2, 2014

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