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INTERPERSONAL COMPETENCE ACROSS DOMAINS: RELEVANCE TO PERSONALITY PATHOLOGY

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Interpersonal problems are significant markers of personality disorders (PDs). There is little research examining the specific interpersonal problems which lead to social impairment in PD. This study used canonical correlation analyses to examine the relationship between interpersonal competence and PDs, first as categorized by DSM-IV diagnoses, then as categorized by empirically-derived factors, in a sample at risk for recurrence of major depression. The most significant sources of shared variance were social inhibition and self-disclosure competence. The empirically-derived PD categories accounted for more variance in interpersonal competence than the DSM-IV diagnostic categories. Social skills training in initiation and self-disclosure may be useful for treating individuals with PD who experience interpersonal problems. Empirically-derived categories of PD symptoms may capture interpersonal problems experienced by individuals with PD which DSM-IV categories do not.

Personality pathology has been repeatedly linked with enduring impairment in social functioning (Skodol et al., 2005), putatively due to rigid and persistent adherence to maladaptive patterns of interpersonal behavior (Sim & Romney, 1990). There is a line of evidence which suggests that impaired interpersonal functioning is common to all personality pathology and can be used as an observable marker of personality disorders (Kim, Pilkonis, & Barkham, 1997). Despite the significant link between personality disorder (PD) pathology and interpersonal difficulties, there is little

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research on the specific PD symptoms that are associated with social impairment. There is little empirical information regarding the interpersonal skills deficits (deficits in interpersonal competence) that lead to the troubled relationships that PD patients experience.

One reason for the dearth of data in this area is that social functioning in PDs has generally been measured by using a global assessment of impairment. A number of studies have described social functioning in PDs in terms of maladaptive interpersonal styles employing a two-factor interpersonal circumplex model. These studies have shown that certain dysfunctional interpersonal styles occur across different PDs; that is, they are not unique to specific diagnoses (Pincus & Wiggins, 1990; Sim & Romney, 1990; Soldz, Budman, Demby, & Merry, 1993). Similarly, interpersonal problems within PD diagnoses may be quite heterogeneous. This evidence suggests that interpersonal impairment in PDs does not clearly map onto DSM-IV (American Psychiatric Association, 2000) PD diagnoses, and it may be useful to classify interpersonal problems in PD by some means other than conventional diagnostic categories.

The present study had two aims: to more rigorously characterize the relationship between personality pathology and interpersonal competence than in past studies; and, to explore the usefulness of an alternative (empirically-derived) PD symptom classification system to describe interpersonal skills deficits in PDs.

Interpersonal competence may be conceptualized according to interpersonal task domains. Based on a comprehensive literature review (Buhrmester, Furman, Wittenberg, & Reis, 1988), investigators identified five conceptually significant interpersonal task domains: initiating relationships, self-disclosure, asserting displeasure with others' actions, providing emotional support, and managing interpersonal conflict. Proficiency in each of these interpersonal tasks contributes uniquely to success in initiating and maintaining different types of interactions and relationships (Lipton & Nelson, 1980).

The Interpersonal Competence Questionnaire (ICQ) is a 40-item self-report measure which assesses interpersonal competence in each of the five aforementioned task domains (Buhrmester et al., 1988). Each item describes a common interpersonal situation, and subjects are asked to rate (on a five-point scale) their own self-perceived competence in handling each situation. Confirmatory factor analysis of this scale revealed the same five distinguishable, moderately correlated, and internally consistent domains (Cronbach alphas ranged from 0.77 to 0.87). ICQ scores have been positively related to measures of social activities, well-being, dating skills, assertion, and relationship satisfaction in dating couples, but negatively correlated with measures of anxiety, depression, loneliness, social reticence, interpersonal stress, insecure attachment cognitions, and poor quality of family and peer relationships (Buhrmester et al., 1988; Eberhart & Hammen, 2006; Herzberg et al., 1998; Lamke, Sollie, Durbin, & Fitzpatrick, 1994).

INTERPERSONAL DYSFUNCTION IN PD

As previously mentioned, there is evidence to suggest that specific interpersonal problems in PDs do not clearly map onto DSM-IV diagnostic categories. Two sets of studies which have begun to explore the way in which interpersonal problems tend to cluster in subjects with PD, have found evidence for a latent construct representing general interpersonal dysfunction (Clifton, Turkheimer, & Oltmanns, 2005; Kim et al., 1997). Clifton et al. (2005) used a canonical correlation procedure to examine the relationship between self ratings of personality pathology and interpersonal problems. PD symptoms were positively correlated with a pattern of interpersonal hostility and social inhibition. The Clifton et al. (2005) and Kim et al. (1997) studies, along with two factor analyses (Nestadt et al., 2006; Sheets, 2009) of a widely used interview measure of personality pathology, the International Personality Disorder Examination (Loranger, Sartorius, Andreoli, & Berger, 1994) reveal four main categories of interpersonal problems in PD: social anxiety/inhibition (feeling inferior, inhibited, and anxious in social interactions), interpersonal sensitivity (heightened sensitivity to rejection), interpersonal hostility (aggression and exploitation), and social avoidance (a lack of interest in relationships and mistrust of others).

One of the aforementioned factor analyses of the International Personality Disorder Examination (IPDE) is of particular relevance to the present study as it also sampled previously depressed college students. Indeed, the subjects included in the current study comprised part of the factor analysis sample. In that study, previously depressed college freshmen completed the IPDE during the first semester of college. An exploratory factor analysis of the IPDE items was conducted to identify empirically-derived factors of personality pathology, which were then examined as predictors of future depressive eposides. The analysis produced an eight-factor solution (Sheets, 2009). The six interpersonally relevant factors included Social Anxiety (social inhibition, feeling inferior to others, and anxiety in social interactions), Interpersonal Hypersensitivity (heightened sensitivity to criticism, fears of rejection and abandonment), Identity Disturbance (narcissism, poor sense of self, deceitfulness, and interpersonal exploitation), Unscrupulousness (disregard for others' safety, impulsivity), Social Avoidance (preference for solitary activities), and Suspiciousness (paranoia and a lack of interest in social relationships).

The first aim of the present study was to examine the relationship between self-reported interpersonal competence and clinician-rated PD symptoms as measured by the IPDE, which produces a dimensional score for each of the ten DSM-IV PD diagnoses. A canonical correlation was conducted using the ten DSM-IV PD dimensional scores from the IPDE and the five domain scores from the ICQ. It was hypothesized that this analysis would reveal two pairs of canonical variates which would respectively represent a general interpersonal dysfunction factor and a social inhibition factor, replicating previous findings (Clifton et al., 2005).

The second aim of the present study was to determine whether Sheets (2009) empirically-derived categorization of PD symptoms better accounted for variance in interpersonal competence when compared to the DSM-IV categorization of PD symptoms in a population vulnerable to depression. A canonical correlation was conducted with the five ICQ domains and the eight IPDE factors delineated by Sheets (2009). It was hypothesized that three sources of shared variance would emerge: social anxiety/inhibition, interpersonal sensitivity/hostility, and social avoidance.

METHOD

OVERVIEW

Subjects were 135 participants enrolled in a study assessing the efficacy of a group intervention in the prevention of recurrence in depression at University of Colorado at Boulder (CU). Full-time first semester freshman students between 18–21 years old who met DSM-IV criteria (American Psychiatric Association, 2000) for past major depressive disorder (MDD) but were in recovery at the time of the study were enrolled.[1] Participants completed two assessment sessions which included clinical interviews and the completion of self-report measures.

ASSESSMENT MATERIALS

Structured Clinical Interview for DSM-IV, Nonpatient Version (SCID). The SCID (First, Spitzer, Gibbon, & Williams, 2001), a semi-structured interview which provides current and lifetime diagnoses of DSM-IV Axis I disorders, was used to determine eligibility. In the current study, MDD diagnosis reliability was moderately satisfactory (kappa = 0.66 in a random 20% of interviews).

International Personality Disorder Examination (IPDE). The IPDE (Loranger et al., 1994) is a 99-item semi-structured clinical interview which provides both dimensional and categorical scores for each of the DSM-IV Axis II diagnoses. In the present study, the intraclass correlation across six interviewers for the IPDE total dimensional score was 0.95, and the intraclass correlations for the dimensional scores on each DSM-IV personality disorder ranged from 0.75 to 0.98 in a random 20% of interviews, except for the intraclass correlation for the schizotypal PD dimensional score, which was 0.46 (Sheets, 2009).

Beck Depression Inventory, 2nd Edition (BDI-II). The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report measure in which items assess the presence of symptoms of depression over the past 2 weeks. The BDI-II has strong internal consistency (mean coefficient alpha = 0.93 for college students), test-retest reliability (0.93 for a 1-week interval), and construct validity (Beck, Steer, & Brown, 1996).

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1. For detailed inclusion and exclusion criteria, see Sheets (2009).

Interpersonal Competence Questionnaire (ICQ). The ICQ (Buhrmester et al., 1988) is a 40-item self-report questionnaire which assesses social skills in five interpersonal task domains. Four week test-retest reliability was 0.78 for total ICQ score and ranged from 0.69 to 0.89 for each of the domain scales. ICQ self ratings and ratings by close friends showed a moderate correlation (ranging from 0.31–0.50 for the five domain scales; Buhrmester et al., 1988).

RECRUITMENT AND ASSESSMENT SESSIONS

For three consecutive years, a survey was sent by mail to all matriculating freshman at CU. Phone screens were conducted with all ethnic minority respondents and a randomly selected sample of the Caucasian respondents with a history of MDD. Eligible individuals attended two assessment sessions of approximately two hours each. The first session included informed consent, the BDI-II and the ICQ,[2] and a SCID assessment. Final decisions about study eligibility occurred in a consensus conference that included the clinical interviewers and an experienced Ph.D. level clinical psychologist. Treatment referrals were provided to participants as needed. The second assessment session included the completion of the IPDE with a clinical interviewer, usually the same interviewer who conducted the SCID with the subject.

RESULTS

Ethnic background of the participants and clinical data are reported by gender in Table 1. BDI-II scores were, on average, in the mildly symptomatic range, similar to other studies which have sampled a remitted depressed adult population (Hart, Craighead, & Craighead, 2001; Ilardi, Craighead, & Evans, 1997). IPDE total dimensional scores were somewhat lower than found previously in a similar population (Hart et al., 2001). IPDE total dimensional scores were significantly higher in males than females, apparently due to the presence of significantly more antisocial PD symptoms in the males. This difference was not unexpected as antisocial PD is more prevalent in males (American Psychiatric Association, 2000). No other significant gender differences were present. Total ICQ scores and ICQ domain scores were very similar to those reported in previous studies of college students (Buhrmester et al., 1988). Intercorrelations of IPDE scores and ICQ scores are reported in two correlation matrices (Tables 2 and 3).

After controlling for BDI-II scores (to account for variance due to current depressive symptoms), two canonical correlation analyses were conduct-

2. Participants completed several self-report measures at this assessment. However, only the BDI-II and ICQ are relevant to the current study, so the other self-reports were not included in the present analysis.

Table 1. Sample Characteristics: Demographic and Clinical Variables

Variable	Females (*N* = 105) *N* (%)	Males (*N* = 30) *N* (%)
Race		
Caucasian (non-Hispanic)	76 (72.4)	22 (73.3)
African-American	2 (1.9)	0 (0.0)
Latino	6 (5.7)	2 (6.7)
Asian	10 (9.5)	4 (13.3)
Native American	2 (1.9)	0 (0.0)
Did not identify	9 (8.6)	2 (6.7)
	M **(*SD*)**	***M*** **(*SD*)**
BDI-II	13.55 (8.09)	11.03 (7.27)
IPDE Total Dimensional*	7.69 (6.70)	11.43 (9.87)
Paranoid dim	0.30 (0.73)	0.57 (1.01)
Schizoid dim	0.41 (0.91)	0.87 (1.41)
Schizotypal dim	0.09 (0.28)	0.27 (0.83)
Antisocial dim*	1.50 (2.16)	3.23 (4.30)
Borderline dim	1.74 (1.86)	1.30 (1.39)
Histrionic dim	0.71 (1.22)	0.63 (1.25)
Narcissistic dim	0.39 (0.78)	0.80 (1.65)
Avoidant dim	1.00 (1.72)	1.87 (2.54)
Dependent dim	0.33 (0.72)	0.40 (0.81)
OC dim	1.01 (1.70)	1.20 (1.86)
IPDE Factor 1[a]**	0.24 (0.56)	1.03 (1.45)
IPDE Factor 2[a]	0.08 (0.39)	0.47 (1.87)
IPDE Factor 3[a]	1.02 (1.51)	1.77 (2.18)
IPDE Factor 4[a]	0.86 (1.41)	1.13 (1.57)
IPDE Factor 5[a]	0.50 (1.08)	0.50 (0.82)
IPDE Factor 6[a]	0.11 (0.40)	0.20 (0.55)
IPDE Factor 7[a]	0.30 (0.68)	0.60 (1.63)
IPDE Factor 8[a]	0.15 (0.39)	0.53 (1.25)
ICQ Total Score	137.98 (18.65)	132.80 (20.91)
Initiation	26.18 (6.09)	24.80 (7.55)
Self disclosure	26.11 (5.76)	25.33 (5.71)
Conflict management	26.82 (4.14)	26.60 (5.10)
Emotional support*	34.14 (4.28)	32.57 (5.12)
Negative assertion	24.72 (5.76)	23.50 (5.05)

Note. BDI-II = Beck Depression Inventory (2nd ed.); IPDE = International Personality Disorder Examination; ICQ = Interpersonal Competence Questionnaire; dim = dimensional score.

[a]IPDE Factor scores as delineated by Sheets and colleagues (2008): Factor 1 = Interpersonal Hypersensitivity, Factor 2 = Antisocial Conduct, Factor 3 = Unscrupulousness, Factor 4 = Social Anxiety, Factor 5 = Identity Disturbance, Factor 6 = Suspiciousness, Factor 7 = Misperception, Factor 8 = Social Avoidance.

*Significant difference between males and females, $p < 0.05$

**Significant difference between males and females, $p < 0.01$

ed. Canonical correlation analyses extract multiple variate pairs from two sets of variables in order to maximize the shared variance between the two sets. All variables were standardized before being entered into the analyses. For each significantly correlated canonical variate pair ($p < 0.01$), the canonical *r* and the scales which were highly correlated with the variate pair are reported (correlations higher than 0.30). The cumulative variance

TABLE 2. Bivariate Correlations- IPDE Dimensional Scores with ICQ Domains

	P	Sz	St	As	B	H	N	Av	D	OC	Total dim
In	−.164	−.343**	−.259**	.099	−.039	.128	.002	−.482**	−.090	−.096	−.192*
NA	−.143	−.212*	−.214*	.132	−.138	.004	−.096	−.325**	.014	−.073	−.165
Dis	−.317**	−.248**	−.137	−.007	−.213*	.014	−.051	−.422**	−.043	−.101	−.282**
ConM	−.142	−.025	−.026	−.010	−.100	−.198*	−.153	−.138	−.217*	−.002	−.173*
Emo	−.076	−.163	−.105	−.104	−.138	−.049	.004	−.290**	−.124	−.024	−.225**
Total ICQ	−.241**	−.295**	−.221**	.043	−.172*	−.008	−.076	−.481**	−.117	−.090	−.289**

Note. IPDE = International Personality Disorder Examination; ICQ = Interpersonal Competence Questionnaire; P = Paranoid PD; Sz = Schizoid PD; St = Schizotypal PD; As = Antisocial PD; B = Borderline PD; H = Histrionic PD; N = Narcissistic PD; Av = Avoidant PD; D = Dependent PD; OC = Obsessive-Compulsive PD; Total dim = Total IPDE Dimensional Score; In = Initiation Competence; NA = Negative Assertion Competence; Dis = Self-disclosure Competence; ConM = Conflict Management Competence; Emo = Emotional Support Competence; Total ICQ = Total ICQ Score.
*Correlation is significant at the 0.05 level
**Correlation is significant at the 0.01 level

accounted for in each set of variables by the significant variates in the opposite set of variables is also reported.

In the first canonical correlation analysis, the first variable set consisted of the five ICQ domains and the second variable set consisted of the ten IPDE PD dimensional scores. Only one significant variate pair was extracted (canonical $r = 0.589$, $p < 0.001$, see Table 4). The IPDE variate explained approximately 13% of the variance in the ICQ, while the ICQ variate explained approximately 5% of the variance in the IPDE. This variate pair was characterized by high scores on the avoidant, schizoid, and schizotypal IPDE scales, and low scores on the initiation, negative assertion, emotional support, and self disclosure scales of the ICQ.

In the second analysis, the first variable set again consisted of the five ICQ domains, but the second variable set consisted of the eight IPDE factors as delineated by Sheets (2009). Two significant variate pairs were extracted in this analysis (canonical $r = 0.561$, $p < 0.001$; canonical $r =$

TABLE 3. Bivariate Correlations- IPDE Factor Scores with ICQ Domains

	1	2	3	4	5	6	7	8
In	−.198*	.113	.051	−.503**	.063	−.172*	−.166	−.306**
NA	−.186*	.136	.121	−.386**	−.063	−.189*	−.164	−.124
Dis	−.108	.098	−.079	−.480**	−.187*	−.381**	−.072	−.203*
ConM	−.168	−.040	−.056	−.226**	−.214*	−.125	−.113	.050
Emo	−.177*	.020	−.112	−.282**	−.003	−.020	−.132	−.125
Total ICQ	−.233**	.103	.015	−.542**	−.102	−.259**	−.182*	−.217*

Note. IPDE= International Personality Disorder Examination; ICQ = Interpersonal Competence Questionnaire; Factor 1 = Interpersonal Hypersensitivity; Factor 2 = Antisocial Conduct; Factor 3= Unscrupulousness; Factor 4 = Social Anxiety; Factor 5 = Identity Disturbance; Factor 6 = Suspiciousness; Factor 7 = Misperception; Factor 8 = Social Avoidance; In = Initiation Competence; NA = Negative Assertion Competence; Dis = Self-disclosure Competence; ConM = Conflict Management Competence; Emo = Emotional Support Competence; Total ICQ = Total ICQ Score.
*Correlation is significant at the 0.05 level
**Correlation is significant at the 0.01 level

TABLE 4. Canonical Correlation Analyses

Variate	*p*	Cumulative variance explained		Canonical *r*	Variable ($r > |.30|$) composing significant variates	
		IPDE	ICQ		IPDE	ICQ
IPDE Dimensional Scores and ICQ Domains						
1	<.001	.046	.127	.589	Avoidant (.785) Schizoid (.552) Schizotypal (.438) *Histrionic (–.343)*	*Initiation (–.949)* *Negative assertion (–.588)* *Self-disclosure (–.640)* *Emotional support (–.412)*
IPDE Factor Scores and ICQ Domains						
1	<.001	.054	.142	.561	Factor 1 (.338) Factor 4 (.926) Factor 6 (.300) Factor 8 (.407)	*Initiation (–.942)* *Negative assertion (–.679)* *Self-disclosure (–.763)* *Emotional support (–.510)*
2	.005	.078	.162	.452	*Factor 3 (–.327)* *Factor 5 (–.523)* *Factor 6 (–.610)*	Self-disclosure (.625)

Note. IPDE = International Personality Disorder Examination; ICQ = Interpersonal Competence Questionnaire; Factor 1 = Interpersonal Hypersensitivity; Factor 2 = Antisocial Conduct; Factor 3 = Unscrupulousness; Factor 4 = Social Anxiety; Factor 5 = Identity Disturbance; Factor 6 = Suspiciousness; Factor 7= Misperception; Factor 8 = Social Avoidance. Italicized = negative correlation.

0.452, $p = 0.005$). The IPDE variates collectively explained approximately 16% of the variance in the ICQ, and the ICQ variates collectively explained approximately 8% of the variance in the IPDE. The first variate pair was characterized by high scores on the social anxiety, social avoidance, and interpersonal hypersensitivity IPDE factors, and low scores on the initiation, negative assertion, emotional support, and self disclosure scales of the ICQ. The second variate pair was characterized by low scores on the suspiciousness and identity disturbance IPDE factors, and by high scores on the self disclosure scale of the ICQ.

DISCUSSION

The present study had two main aims. The first was to identify specific interpersonal skills deficits associated with social impairment in PD. The second was to determine whether empirically-derived PD symptom categories would better account for variance in interpersonal competence when compared to the DSM-IV categorization of PD symptoms.

Self-reported interpersonal competence was related to clinician-rated PD symptoms, explaining between 5–8% of the variance in the IPDE. The largest source of shared variance, regardless of how PD symptoms were categorized, was social inhibition; that is, trouble initiating social interactions. This is consistent with previous findings (Clifton et al., 2005). Low initiation competence was accompanied by low emotional support, negative assertion, and self-disclosure competences. One reason for this might be that individuals who are poor at initiating social interactions have little opportunity to develop interpersonal skills in other domains.

DSM-IV PD CATEGORIES AND THE ICQ

Canonical correlation analysis of the DSM-IV PD scales of the IPDE and the ICQ domains extracted only one significant variate pair. This pair was characterized by low initiation competence and high scores on the schizoid, schizotypal, and avoidant PD scales. Low scores on the histrionic PD scale also contributed to this shared variance; that is, individuals with histrionic PD traits tended to perceive themselves as being more skilled in interpersonal interactions.

In contrast to previous findings (Clifton et al., 2005), a general interpersonal dysfunction factor did not emerge across PDs in this analysis. The ICQ appears to capture the interpersonal difficulties faced by the schizoid, schizotypal, and avoidant PDs (social anxiety and/or avoidance), but not the interpersonal difficulties faced by other types of PD such as chronic relationship instability or inability to empathize. There are two possible reasons for this. One is that the ICQ is a self-report measure, and individuals with certain PD traits may be less likely to perceive or report their own interpersonal deficits. Future studies might use a clinical interview or observational measure of interpersonal competence to circumvent this issue. The second possibility is that because the items on the ICQ were not developed specifically for individuals with PD, they do not tap the specific interpersonal skills which PD patients lack. In support of this idea, the ICQ conflict management scale did not account for any variance in the IPDE. Because interpersonal conflict is present in many PD diagnoses, this suggests that the ICQ conflict management scale does not capture the conflict management deficits experienced by people with PD. Thus, an interpersonal skills measure developed specifically for PD might be more appropriate to use in this type of analysis.

EMPIRICALLY-DERIVED IPDE FACTORS AND THE ICQ

Two significant canonical variate pairs were extracted to explain the relationships between Sheets (2009) eight IPDE factors and the ICQ. The first was characterized by high social anxiety, as well as high interpersonal hypersensitivity, and suspiciousness on the IPDE, and low initiation competence, as well as low competence in negative assertion, emotional support, and self-disclosure on the ICQ. Thus the first pair of variates describes a group of individuals who have generally low interpersonal competence, and who are socially inhibited, anxious, avoidant, mistrusting, unable to empathize, and fearful of rejection and abandonment.

The second variate pair extracted in this analysis comprised low self-disclosure competence and high scores on the IPDE factors suspiciousness, identity disturbance, and unscrupulousness. This variate pair appears to represent a group of people who are suspicious of others, only seek to connect with people for their own gain, disregard others' needs, but at the core, are insecure about their own identity; thus, they do not self-disclose or share themselves with others.

Although low self-disclosure competence contributes to both pairs of variates extracted in this analysis, each variate pair appears to represent a very different group. Neither group shares intimate information about themselves with the people in their lives. The first group fails to do so because they feel they are not good enough, while the second group fails to do so because they feel they are too good for everyone else. Although it is likely that this dichotomization is too simplistic (i.e., the core insecurity of the latter group indicates that they too, fear that they are inferior to others, which also contributes to their inability to self-disclose), it provides a framework to approach the treatment of individuals exhibiting symptoms characteristic of each of these groups.

DSM-IV PD CATEGORIES VS. IPDE FACTORS

Interestingly, the second low self-disclosure group described above did not appear when the DSM-IV PD scales were used to categorize PD symptoms. Thus, the IPDE factor categories captured an interpersonal problem present in individuals with PD which the traditional DSM-IV categories did not. However, it would be premature to state that the IPDE factor scales are a better representation of interpersonal problems in PD than the DSM-IV categories based on these data, especially given that the ICQ does not appear to capture inclusively all types of interpersonal difficulties experienced by individuals with PD.

TREATMENT IMPLICATIONS

There are a number of ideographic, skills-based approaches to the treatment of individuals with social impairment (Bellack, 2004; Nezu, D'Zurilla, Zwick, & Nezu, 2004), and additional characterization of the specific skills deficits present in individuals with PD will further inform these treatment models. The present study suggests that social skills training in not only initiation and assertiveness, but also in self-disclosure and providing emotional support, may be useful in treating individuals with PD traits such as social anxiety, inhibition, avoidance, and fear of rejection and abandonment. Individuals with PD traits such as an inclination to exploit others for personal gain and a disregard for others' safety, may benefit particularly from training in self-disclosure competence or revealing their true selves to others.

Because the sample in the present study was at risk for depression, the results also inform the prevention of depressive recurrence. Two of the factors which contributed significantly to variance in the ICQ (social anxiety and interpersonal hypersensitivity) predicted recurrence of MDD in a longitudinal follow-up (Sheets, 2009). This is consistent with the social skills-stress hypothesis, which posits that individuals with poor interpersonal skills are at risk for depression because they experience more interpersonal stress and are less able to reach out for social support in times of need (Herzberg et al., 1998). These results suggest that social skills train-

ing in various domains of interpersonal competence might be useful in preventing depression in vulnerable populations, corroborating previous findings of the effectiveness of social skills training for the treatment of depression (Becker, Heimberg, & Bellack, 1987).

LIMITATIONS

The present study has important limitations. First of all, these analyses were conducted in a very specific population, namely, first-year college students aged 18-19 with a history of prior major depressive disorder. The majority of the sample was Caucasian. Also, the level of PD symptoms is relatively low. Thus, these results may not generalize to other PD populations, particularly populations with more severe personality pathology. Secondly, to conduct an adequately powered canonical correlation, it is recommended that there be ten subjects for every variable entered in the analysis (Leech, Barrett, & Morgan, 2004). The first canonical correlation (fifteen variables, $n = 135$) falls just short of this mark, and thus might be slightly underpowered. These results should be considered preliminary and in need of replication with a larger subject pool. Additionally, because the sample studied in this paper was a subset of the full factor analysis sample used to derive the PD symptom categories, replication of these findings in an independent sample is necessary. Finally, future studies should consider the use of a behavioral observation or clinician report measure of interpersonal skills developed specifically to detect interpersonal skills deficits in PD.

CONCLUSION

In conclusion, this study examined the relationship between PD symptoms and interpersonal competence in a sample of young adults vulnerable to depression. The most significant source of shared variance was social inhibition accompanied by low competence in self-disclosure, providing emotional support, and negative assertion. An empirically-derived categorization of PD symptoms accounted for more variance in interpersonal competence than the traditional DSM-IV PD diagnostic categories. Individuals with PD symptoms who experience social impairment may benefit from training in initiation and self-disclosure.

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