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# Do Dependency and Social Skills Combine to Predict Depression? Linking Two Diatheses in Mood Disorders Research

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**ABSTRACT** - This study tested the hypothesis that an individual's level of social skills moderates the relationship between level of interpersonal dependency and risk for depression. Using a mixed-gender sample of undergraduates ($N = 141$), we found that the combination of trait dependency scores and scores on certain dimensions of social skills accounted for significantly more variance in Beck Depression Inventory (BDI) scores than did trait dependency scores alone. When SCID-II dependent personality disorder symptoms were examined in lieu of trait dependency levels, observed relationships among social skills, dependency, and depression also increased. Statistically significant moderation effects were detected for the interaction of SCID II dependent personality scores and two components of social skills.

**Key Words: Dependency, Social Skills, Depression**

In recent years, clinicians and researchers have reached consensus regarding the core elements of a dependent personality orientation. Researchers in this area (e.g., Birtchnell, 1988; Bornstein, 1992; Pincus & Gurtman, 1995) concur that high levels of interpersonal dependency reflect a combination of four factors: a) motivational (i.e., a marked need for guidance, support, and approval from others); b) cognitive (i.e., a perception of oneself as powerless and ineffectual); c) affective (i.e., a tendency to become anxious when required to function

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autonomously); and d) behavioral (i.e., a tendency to seek help and reassurance, and yield to others in interpersonal interactions). These factors, alone or in combination, not only explain the varied interpersonal behavior of the dependent person, but also account for findings indicating that dependent individuals are at increased risk for a broad array of psychopathologies (Blatt & Homann, 1992; Bornstein, 1993; Overholser, 1996; Pincus & Gurtman, 1995).

Numerous studies have documented the relationship between dependent personality traits and risk for depression (APA, 1994; Fisher & Greenberg, 1996; Greenberg & Bornstein, 1988). Between 10 and 20 percent of the variance in depression scores can be accounted for by participants' dependency scores, a finding which is robust across different measures of depression and dependency, and across different participant categories (e.g., psychiatric inpatients, psychiatric outpatients, college students, community members; see Bornstein, 1992, 1993). Studies further suggest that the relationship between dependency and depression is more complex than researchers originally thought: Although pre-existing dependency functions as a diathesis which—when coupled with high levels of interpersonal stress—predicts subsequent depression risk (Blatt & Homann, 1992), chronic depression also leads to increases in dependency that persist even after depression remits (Akiskal, Hirschfeld & Yerevanian, 1983).

Numerous variables beyond dependency are thought to predict depression onset, and researchers have speculated that social skills deficits may be a particularly important risk factor. Lewinsohn and his colleagues proposed that poor social skills prevent an individual from receiving positive social reinforcement from others (Lewinsohn, 1975; Lewinsohn, Weinstein, & Shaw, 1968; Libet & Lewinsohn, 1973; Youngeren & Lewinsohn, 1980); as a result, the individual withdraws and becomes increasingly isolated. As the person becomes more withdrawn and his/her mood decreases, s/he becomes more likely to elicit negative reactions from others. A downward spiral ensues, as social interaction becomes increasingly linked with punishment, and the person becomes more depressed and withdrawn. Consistent with Lewinsohn's theoretical framework, Segrin (1990) found that depressed individuals speak less, have a lower activity level, gesture and gaze at others less frequently, and exhibit more prolonged silences than those who are not depressed. Similar social skills—depression links have been found in children (Blechman, McEnroe, Carella, & Audette, 1986) and adolescents (Dalley, Bolocofsky, & Karlin, 1993).

Scrutiny of findings in this area suggests that while these two variables independently predict likelihood of depression, high levels of dependency and poor social skills might also interact to determine depression risk. In fact, Bornstein (1993) and Overholser (1996) both argued that level of social skills should moderate risk for depression in the dependent individual: Good social skills should minimize interpersonal stress and relationship disruption, whereas poor social skills should have the opposite effect, exacerbating interpersonal stress and conflict.

In an integrated, empirically-based model of the dependent personality,

Bornstein (1993) provided a conceptual framework for examining the dependency—social skills—depression link. Bornstein's (1993) framework contends that good social skills act as a buffer, minimizing interpersonal conflict and relationship disruption. Thus, dependent individuals with good social skills are no more likely to become depressed than the average nondependent person. In contrast, dependent individuals with poor social skills should experience high levels of relationship conflict and disruption—experiences that should be particularly upsetting to the dependent person. As a result, dependent persons with poor social skills should be prone to depression, and to an array of stress-mediated physical illnesses as well (see Bornstein, 1998a).

The present study examined the dependency—social skills—depression link in a mixed-gender undergraduate sample, using well-established measures of each key variable. Following Bornstein's (1993) framework, we predicted that level of social skills would moderate the relationship between dependency and depression, such that dependent persons with higher levels of social skills would report less depression than dependent persons with lower levels of social skills.

## Method

### *Participants*

Participants were recruited over four academic semesters from a sample of 1,881 undergraduates who completed mass testing sessions as part of a course requirement for introductory psychology. As a departmental guideline, the mass testing sessions were used to identify individuals for participation within a given study. As such, not all data could be collected at this time. Individuals were selected based upon their scores on measures of dependency, depression, and social skills (described below). The guiding principle in this selection process was to ensure that a wide range of scores was obtained on each measure. By focusing upon the entire range of scores obtained, it was hoped that subsequent analyses could be conducted with minimal concern regarding skewed data on any one measure (e.g., the BDI, wherein most undergraduates tend to score in the non-elevated range).

Once individuals were identified as potential participants from the mass screening, one hundred fifty-six individuals were contacted for participation in Phase II of the study. Fifteen people declined to participate, because they had earned all of the required experimental credit allowed for the course, leaving a total of 141 participants. The final sample ranged in age from 17 to 52, with a mean of 19.2 years (SD = 4.0). Seventy-eight percent of participants self-identified as Caucasian, 17% as African American, 1% as Hispanic, and 2% as Asian. The remaining 2% reported other ethnic identities. Seventy-five percent of the sample were female and 25% were male.

### *Procedure*

During a mass testing session, participants were randomly administered the Dependent Personality Style Scale (DPSS; Overholser, 1992); the Structured Clinical Interview for DSM-IV Axis II disorders self-report (SCID-II; First,

Spitzer, Gibbon, Williams, & Benjamin, 1996); and the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). These questionnaires were embedded in a packet of other measures that were part of the mass testing process. At the end of this testing, researchers examined participants' scores and recruited individuals for further participation.

A follow-up session was conducted 1-6 weeks after mass testing was completed. In this session, participants were asked to complete the following questionnaires, which were administered in random order: the Social Skills Inventory (SSI; Riggio, 1986); the Social Avoidance and Distress Scale (SAD; Watson & Friend, 1969); and the Social Interaction and Self-Statement Test (SISST; Glass, Merluzzi, Biever, & Larsen, 1982). For this portion of the study, participants received additional experimental credit or monetary compensation (if they had completed their required experimental credits).

***Mass Testing Measures***

*Dependent Personality Style Scale* (DPSS; Overholser, 1992). The DPSS is a 20-item self-report questionnaire that assesses dependent personality features in respondents. Each question has four responses, with scores ranging between 0 and 3 (0 = Absence of the feature in question; 3 = Extreme degree of the feature in question). A total DPSS score is computed by summing the scores to each question. In the present sample, Cronbach's alpha for this measure was computed to be .72. The DPSS has been reported to have satisfactory reliability and validity (Overholser, 1992, 1996).

*Structured Clinical Interview for DSM-IV Axis II disorders self-report* (SCID-II; First, Spitzer, Williams, Gibbon, & Benjamin 1996). The SCID-II is a 119-item yes-no format questionnaire that asks participants about symptoms of each of the DSM-IV personality disorders.This questionnaire has been found to have satisfactory levels of reliability and validity among psychiatric patients, with kappa ranging between .40 and .71 (Dreesen, Hildebrand, & Arntz, 1998; First, Spitzer, Gibbon, Williams, Davies, Borust, Howes, et al., 1995). Temporal stability has also been reported in a nonclinical sample, with test-retest correlations ranging between .52 and .82 (Ouimette & Klein, 1995). In the present study, individuals' scores on only dependent personality disorder were included in the analysis; these scores were used as one measure of dependency.

*Beck Depression Inventory* (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item, self-report measure that asks individuals about depressive symptoms. Individuals answer each question on a scale of 0 to 3, where *0 = Absence of the symptom* and *3 = Extreme degree of the symptom*.[1] A total score for the BDI is computed by summing the individual's score on each question. The reliability and validity of the BDI has been well-established (Beck, Steer, & Garbin, 1988).

***Follow-Up Measures***

*Social Skills Inventory* (SSI; Riggio, 1986, 1989). The SSI is a 90-item self-report measure of social skills in six domains. The SSI also provides a total score

to reflect an individual's global level of skill development (i.e., overall social competence or social intelligence). The six SSI scales assess emotional expressivity (EE), emotional sensitivity (ES), emotional control (EC), social expressivity (SE), social sensitivity (SS), and social control (SC). In the present study, Cronbach's alphas for each scale were as follows: .66 (EE), .64 (ES), .73 (EC), .57 (SE), .74 (SS), and .61 (SC). Cronbach's alpha for the total SSI score was .60.

*Social Avoidance and Distress Scale* (SAD; Watson & Friend, 1969). The SAD is a 28-item True-False measure that assesses anxiety in social situations. A total score is computed by summing scores to each question, although several items are reversed scored so that higher scores reflect greater levels of social avoidance and distress. The scale focuses upon social anxiety and avoidance of social situations, but is considered a unidimensional measure that does not have subscales. In undergraduate students, reliability and validity have been found to be satisfactory (Watson & Friend, 1969). In the present study, Cronbach's alpha for this measure was .91.

*Social Interaction Self-Statement Test* (SISST; Glass, Merluzzi, Biever, & Larsen, 1982). The SISST is a 30-item, Likert-type questionnaire that measures positively and negatively-oriented thoughts reflective of anxiety in social interaction. Total scores are computed for both positive and negative self-statements by summing the scores to individual items on each dimension. The questionnaire was developed with criterion groups of low- and high- socially anxious undergraduates and was found to have good reliability and validity (Glass et al., 1982). The SISST discriminates social phobics whose primary fear involves social interaction from those whose primary fear is public speaking (Dodge, Hope, Heimberg, & Becker, 1988). It also correlates as expected with the MMPI Social Introversion scale (Merluzzi, Burgio, & Glass, 1984), and with measures of irrational beliefs, fear of negative evaluation, social anxiety, and behavioral ratings of social anxiety (Glass & Furlong, 1990). Preliminary studies support the reliability and validity of the instrument in an alternative format (Zweig & Brown, 1985), and in another language (Yao, Cottraux, Mollard, Albuisson, Note, Jalencques, et al., 1998). In the present study, Cronbach's alpha for total SISST score was .80.

## Results

Descriptive statistics for all variables are reported in Table 1.

### *Intertest Correlations*

To examine associations among the key variables assessed in this study, a series of correlations were computed across the dependency, depression, and social skills measures. DPSS score was negatively correlated with SSI Social Expressivity (SE; $r = -.24$, $p = .004$), Social Control (SC; $r = -.33$, $p < .001$), and Total SSI scores ($r = -.21$, $p = .012$), and was positively correlated with SSI Social Sensitivity (SS; $r = .37$, $p < .001$) scores. DPSS score was also negatively

correlated with positive self-statements of social interaction (SISSTPOS; $r$ = -.25, $p$ = .003), and was positively correlated with negative self-statements of social interaction (SISSTNEG; $r$ = .29, $p$ < .001), Social Avoidance and Distress score ($r$ = .35, $p$ < .001), and BDI.

**Table 1**

***Means, Standard Deviations, and Range of All Measures***

| Measure | *M* | *SD* | Range |
|---|---|---|---|
| Age | 19.2 | 4.0 | 17, 52 |
| BDI | 10.1 | 8.0 | 0, 44 |
| DPSS | 21.3 | 8.7 | 3, 48 |
| SSI-Emotional Expressivity | 38.0 | 6.5 | 20, 56 |
| SSI-Emotional Sensitivity | 50.2 | 11.1 | 31, 129 |
| SSI-Emotional Control | 44.0 | 7.6 | 18, 62 |
| SSI-Social Expressivity | 43.2 | 12.3 | 19, 74 |
| SSI-Social Sensitivity | 50.1 | 8.8 | 27, 69 |
| SSI-Social Control | 45.9 | 10.4 | 19, 74 |
| Total SSI | 271.4 | 28.7 | 199, 350 |
| SISST-Positive | 45.4 | 9.9 | 23, 71 |
| SISST-Negative | 41.1 | 12.2 | 17, 68 |
| SAD | 7.9 | 6.7 | 0, 28 |

*Note.* BDI = Beck Depression Inventory; DPSS = Dependent Personality Style Scale; SSI = Social Skills Inventory (SSI); SISST = Social Interaction and Self-Statement Test; SAD = Social Avoidance and Distress Questionnaire.

The SCID-II self-report score for dependent personality disorder was negatively correlated with Social Control ($r$ = -.22, $p$ = .009) and Emotional Expressivity ($r$ = -.21, $p$ = .012). Total BDI score was negatively correlated with Emotional Expressivity ($r$ = -.25, $p$ = .003), Social Control ($r$ = -.35, $p$ < .001), Total SSI score ($r$ = -.23, $p$ = .007), and positive self-statements of social interaction ($r$ = -.26, $p$ = .002), and was positively correlated with Social Sensitivity ($r$ = .22, $p$ = .009), negative self-statements of social interaction ($r$ = .36, $p$ < .001), and Social Avoidance and Distress ($r$ = .50, $p$ < .001) scores.

Measures of dependent personality (DPSS, SCID-II) were also positively correlated with each other ($r$ = .19, $p$ = .03).[2] The DPSS and SCID-II dependency scale were positively correlated with BDI ($r$ = .21, $p$ = .015 and $r$ = .26, $p$ = .002 respectively). Several of the SSI subscales were also positively correlated with each other and/or the total SSI score. Overall, these results suggest that modest—but statistically significant—relationships exist between dependency and depression, between depression and social skills, and between dependency and social skills.

***Regression Analyses: Social Skills, Dependency, and Depression***

To examine more closely the relationship among social skills, dependency, and depression, a series of hierarchical multiple regression analyses were

## Table 2

*Intertest Correlations*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 DPSS | --- | | | | | | | | | | | | |
| 2 SCID-II DPD | **19** | --- | | | | | | | | | | | |
| 3 BDI | **21** | **26** | --- | | | | | | | | | | |
| 4 SSI Total | **-21** | -13 | **-23** | --- | | | | | | | | | |
| 5 Emotional Expressivity | -15 | **-21** | **-16** | **55** | --- | | | | | | | | |
| 6 Emotional Sensitivity | -04 | 08 | 00 | **61** | 11 | --- | | | | | | | |
| 7 Emotional Control | **-21** | -03 | -11 | 09 | **-30** | -04 | --- | | | | | | |
| 8 Social Expressivity | **-24** | -04 | **-25** | **78** | **42** | **20** | -06 | --- | | | | | |
| 9 Social Sensitivity | **37** | -04 | **22** | 10 | -04 | **22** | **-17** | **-22** | --- | | | | |
| 10 Social Control | **-33** | **-22** | **-35** | **71** | **52** | 15 | -05 | **71** | **-40** | --- | | | |
| 11 SISST Positive | **-25** | -03 | **-26** | **29** | 14 | 07 | 06 | **39** | **-21** | **32** | --- | | |
| 12 SISST Negative | **29** | 14 | **36** | **36** | **-23** | -01 | 04 | **-35** | **40** | **-45** | **-20** | --- | |
| 13 SAD | **35** | 16 | **50** | **-23** | **-26** | 08 | 00 | **-59** | **31** | **-47** | **-40** | **58** | --- |

**N ote**: Decimals have been removed to facilitate presentation. All boldface correlations are significant at $p < .05$. Items 5 - 10 are subscales of the Social Skills Inventory. DPSS = Total score on Dependent Personality Style Scale; SCID-II DPD = SCID-II interview scores for dependent personality disorder; BDI = Beck Depression Inventory; SSI Total = Total score on Social Skills Inventory (SSI); SISST Positive = Positive self-statements of social interaction score; SISST Negative = Negative self-statements of social interaction score; SAD = Social Avoidance and Distress Questionnaire.

**Table 3**

***Hierarchical Regression: Predicting Depression from SCID-II Self-Report Dependent Personality Scores and the SSI***

| | Std. β | *t* | *p* | $R^2$ |
|---|---|---|---|---|
| *Predictors: SCID-II, SSI-EE* | | | | |
| Constant | | 3.3 | <.01 | .08* |
| SCID-II | .23 | 2.8 | <.01 | |
| SSI-EE | -.12 | -1.4 | .16 | |
| *Predictors: SCID-II, SSI-EE, Interaction* | | | | |
| Constant | | 1.0 | .30 | .12* |
| SCID-II | 1.3 | 2.9 | <.01 | |
| SSI-EE | .06 | -.53 | .60 | |
| Interaction | -1.0 | -2.4 | .02 | |
| *Predictors: SCID-II, SSI-ES* | | | | |
| Constant | | 2.8 | <.01 | .07* |
| SCID-II | .26 | 3.1 | <.01 | |
| SSI-ES | -.02 | -.23 | .82 | |
| *Predictors: SCID-II, SSI-ES, Interaction* | | | | |
| Constant | | 2.0 | <.05 | .07* |
| SCID-II | .26 | .65 | .52 | |
| SSI-ES | -.02 | -.15 | .88 | |
| Interaction | .00 | -.01 | .99 | |
| *Predictors: SCID-II, SSI-EC* | | | | |
| Constant | | 3.1 | <.01 | .08* |
| SCID-II | .25 | 3.1 | <.01 | |
| SSI-EC | -.09 | -1.1 | .26 | |
| *Predictors: SCID-II, SSI-EC, Interaction* | | | | |
| Constant | | 1.6 | .11 | .08* |
| SCID-II | .63 | 1.5 | .12 | |
| SSI-EC | -.01 | -.11 | .91 | |
| Interaction | -.39 | -.94 | .35 | |
| *Predictors: SCID-II, SSI-SE* | | | | |
| Constant | | 6.2 | <.01 | .13* |
| SCID-II | .25 | 3.1 | <.01 | |
| SSI-EE | -.25 | -3.0 | .03 | |
| *Predictors: SCID-II, SSI-SE, Interaction* | | | | |
| Constant | | 3.2 | <.01 | .14* |
| SCID-II | .69 | 2.6 | .01 | |
| SSI-SE | -.08 | -.68 | .50 | |
| Interaction | -.48 | -1.7 | .08 | |
| *Predictors: SCID-II, SSI-SS* | | | | |
| Constant | | -.57 | .57 | .12* |
| SCID-II | .26 | 3.3 | <.01 | |
| SSI-SS | .22 | 2.8 | <.01 | |
| *Predictors: SCID-II, SSI-SS, Interaction* | | | | |
| Constant | | -.24 | .82 | .12* |
| SCID-II | .13 | .26 | .79 | |
| SSI-SS | .21 | 1.9 | .06 | |
| Interaction | .14 | -.29 | .77 | |

**Table 3 *continued***

| | Std. β | *t* | *p* | $R^2$ |
|---|---|---|---|---|
| *Predictors: SCID-II, SSI-SC* | | | | |
| Constant | | 6.3 | <.01 | .16* |
| SCID-II | .19 | 2.3 | .02 | |
| SSI-SC | -.31 | -3.8 | <.01 | |
| *Predictors: SCID-II, SSI-SC, Interaction* | | | | |
| Constant | | 3.6 | <.01 | .18* |
| SCID-II | .70 | 2.4 | .02 | |
| SSI-SC | -.16 | -1.4 | .15 | |
| Interaction | -.52 | -1.8 | .08 | |
| *Predictors: SCID-II, SSI-TOTAL* | | | | |
| Constant | | 3.7 | <.01 | .11* |
| SCID-II | .23 | 2.8 | <.01 | |
| SSI-TOTAL | -.20 | -2.5 | .02 | |
| *Predictors: SCID-II, SSI-TOTAL, Interaction* | | | | |
| Constant | | .92 | .36 | .14* |
| SCID-II | 1.7 | 2.4 | .02 | |
| SSI-TOTAL | .00 | -.01 | .99 | |
| Interaction | -1.5 | -2.1 | .04 | |

Note. SCID-II = Score on Dependent Personality Disorder Scale of the SCID-II; SSI-EE = Score on SSI Emotional Expressivity dimension; SSI-ES = Score on SSI Emotional Sensitivity dimension; SSI-EC = Score on SSI Emotional Control; SSI-SE = Score on SSI Social Expressivity dimension; SSI-SS = Score on SSI Social Sensitivity dimension; SSI-SC = Score on SSI Social Control dimension; SSI-TOTAL = Total score on Social Skills Inventory (SSI). * $p < .001$.

conducted. The results of these analyses are presented in Tables 3 and 4. In step 1, dependency score was entered. In step 2, social skills score was entered. In step 3, the interaction term of dependency and social skills was entered. The interaction term was of particular interest, since it tested the moderation effect of social skills on dependency as related to level of depression (Baron & Kenny, 1986).

All but two regression equations were statistically significant. The amount of variance accounted for by the combination of dependency and social skills was generally low (with $R^2$ ranging from .04 to .18), although a greater amount of variance was predicted when SCID-II self-reports of dependent personality disorder features were used to assess level of dependency (with $R^2$ ranging from .07 to .24). Furthermore, the hypothesis that overall level of social skills moderates levels of depression within highly dependent individuals was supported in two equations. That is, the Emotional Expressivity-SCID II dependent personality interaction and total SSI score-SCID II dependent personality interaction terms were both statistically significant.

Although the relationship between overall level of social skills and depression was modest, certain combinations of dependency and specific dimensions of social skills were more strongly related to level of depression. Both SCID-II dependent personality features and Social Expressivity, when considered in linear combination, significantly predicted BDI scores as did the combination of

**Table 4**

***Stepwise Regression: Predicting Depression from DPSS Scores and the SSI***

| | Std. β | *t* | *p* | $R^2$ |
|---|---|---|---|---|
| *Predictors: DPSS, SSI-EE* | | | | |
| Constant | | 2.9 | <.01 | .06* |
| DPSS | .19 | 2.2 | .03 | |
| SSI-EE | -.14 | -1.6 | .10 | |
| *Predictors: DPSS, SSI-EE, Interaction* | | | | |
| Constant | | .11 | .91 | .07* |
| DPSS | .77 | 1.6 | .12 | |
| SSI-SE | .11 | .50 | .62 | |
| Interaction | -.61 | -1.2 | .23 | |
| *Predictors: DPSS, SSI-ES* | | | | |
| Constant | | 1.6 | .11 | .04* |
| DPSS | .21 | 2.5 | .02 | |
| SSI-ES | .01 | .10 | .92 | |
| *Predictors: DPSS, SSI-ES, Interaction* | | | | |
| Constant | | 1.4 | .15 | .05 |
| DPSS | -.22 | -.46 | .64 | |
| SSI-ES | -.21 | -.82 | .41 | |
| Interaction | .48 | .91 | .37 | |
| *Predictors: DPSS, SSI-EC* | | | | |
| Constant | | 2.0 | .05 | .05* |
| DPSS | .19 | 2.3 | .03 | |
| SSI-EC | -.07 | -.78 | .44 | |
| *Predictors: DPSS, SSI-EC, Interaction* | | | | |
| Constant | | .14 | .89 | .05 |
| DPSS | .59 | 1.2 | .23 | |
| SSI-EC | .10 | .46 | .65 | |
| Interaction | -.41 | -.83 | .41 | |
| *Predictors: DPSS, SSI-SE* | | | | |
| Constant | | 3.9 | <.01 | .08 |
| DPSS | .16 | 1.8 | .07 | |
| SSI-SE | -.21 | -2.5 | .02 | |
| *Predictors: DPSS, SSI-SE, Interaction* | | | | |
| Constant | | 1.6 | .11 | .08* |
| DPSS | .24 | .84 | .40 | |
| SSI-SE | -.14 | -.65 | .52 | |
| Interaction | -.10 | -.32 | .75 | |
| *Predictors: DPSS, SSI-SS* | | | | |
| Constant | | -.07 | .94 | .26* |
| DPSS | .14 | 1.6 | .11 | |
| SSI-SS | .17 | 1.9 | .06 | |
| *Predictors: DPSS, SSI-SS, Interaction* | | | | |
| Constant | | -.08 | .94 | .26* |
| DPSS | .14 | 1.6 | .11 | |
| SSI-SS | .17 | 1.9 | .07 | |
| Interaction | <.01 | 1.0 | .92 | |

**Table 4 *continued***

| | Std. β | *t* | *p* | $R^2$ |
|---|---|---|---|---|
| *Predictors: DPSS, SSI-SC* | | | | |
| Constant | | 4.9 | <.01 | .13* |
| DPSS | .10 | 1.2 | .23 | |
| SSI-SC | -.31 | -3.7 | <.01 | |
| *Predictors: DPSS, SSI-SC, Interaction* | | | | |
| Constant | | 1.9 | .06 | .13* |
| DPSS | .27 | .83 | .41 | |
| SSI-SC | -.21 | -1.0 | .31 | |
| Interaction | -.17 | -.53 | .60 | |
| *Predictors: DPSS, SSI-TOTAL* | | | | |
| Constant | | 3.1 | <.01 | .08* |
| DPSS | .16 | 2.0 | .05 | |
| SSI-TOTAL | -.19 | -2.3 | .02 | |
| *Predictors: DPSS, SSI-TOTAL, Interaction* | | | | |
| Constant | | .84 | .40 | .08* |
| DPSS | .50 | .71 | .48 | |
| SSI-TOTAL | -.10 | -.45 | .65 | |
| Interaction | -.33 | -.48 | .63 | |

Note. DPSS = Dependent Personality Style Scale; SSI-EE = Score on SSI Emotional Expressivity dimension; SSI-ES = Score on SSI Emotional Sensitivity dimension; SSI-EC = Score on SSI Emotional Control; SSI-SE = Score on SSI Social Expressivity dimension; SSI-SS = Score on SSI Social Sensitivity dimension; SSI-SC = Score on SSI Social Control dimension; SSI-TOTAL = Total score on Social Skills Inventory (SSI). *p < .05.

both SCID-II dependent personality with Social Sensitivity and Social Control. The standardized betas for Social Expressivity and Social Control were negative, suggesting that lower levels of these two aspects of social skills were associated with higher levels of depression. In contrast, the standardized beta for Social Sensitivity was positive, suggesting that higher levels of this dimension of social skills is associated with higher levels of depression.

Social Expressivity, Social Control, and Total SSI score each significantly contributed to the prediction of depression when used in linear combination with scores on the Dependent Personality Style Scale. The standardized betas for these variables were negative, suggesting that lower levels of social skills were associated with higher levels of depression.

## Discussion

This study tested Bornstein's (1993) hypothesis that level of social skills moderates the relationship between dependency and depression. Correlations among measures of dependency, depression, and social skills revealed a modest positive correlation between depression and dependency, and modest negative correlations between depression and social skills, and between dependency and social skills. Hierarchical multiple regression analyses supported the hypothesis that the level of social skill moderates the dependency—depression link.

Moreover, it appears that certain aspects of social skills also affect level of depression, independent of dependency: Social Expressivity, Social Sensitivity, Social Control, and Total SSI score.

It should be noted that while the predicted moderation effect was obtained, its impact was relatively small in the regression equation that predicted depression scores. Given that the present study evaluated only undergraduate students, it may be that a larger moderation effect would be borne out when a clinical sample of highly dependent individuals is evaluated. Supporting this interpretation, stronger results were obtained for SCID-II scores (a measure of dependent personality disorder symptoms) than for DPSS scores (a measure of trait dependency). If dependent personality disorder symptoms are more strongly linked with depression than are dependent traits, replication of the present investigation with a psychiatric inpatient or outpatient population might yield even stronger results.

Alternatively, it is possible that self-reports of dependency and social skills are not the most fruitful way to evaluate the moderation hypothesis. Past research has found that the manner in which dependency is assessed (e.g., via the Rorschach Oral Dependency Scale [Masling et al., 1967] vs. traditional self-report) has a strong impact on the dependency-behavior relationship (Bornstein, 2001). Moreover, studies show that when observational measures of social skills (e.g., sensitivity to nonverbal cues) are assessed, the obtained relationship between dependency and social skills is particularly strong (Masling, O'Neill & Katkin, 1982). Thus, it may be that if dependency was assessed via the Rorschach Oral Dependency Scale and/or actual behavior was observed and measured, a stronger moderation effect would have been observed.

It should be noted that all three dimensions of the SSI that were related to dependency and depression fell in the "social" domain of the Social Skills Inventory. Riggio (1989, pp. 2-3) defines Social Expressivity as "skill in verbal expression and the ability to engage others in social discourse," Social Sensitivity as the "ability to interpret the verbal communication of others [and] sensitivity to and understanding of the norms governing appropriate social behavior," and Social Control as "skill in role-playing and self-presentation. Persons whose social control skills are well developed are generally adept, tactful, and self-confident in social situations and can fit in comfortably in just about any type of social situation".

Thus, the results of this study suggest that dependent individuals who do not communicate verbally in adaptive, relationship-facilitating ways are at increased risk for depression. In particular, deficits in social control appear to be most strongly associated with depression in dependent individuals. Additional research is needed to elucidate the pathways through which these social control deficits influence depressive symptoms, and the ways in which the onset of depression may alter preexisting social skills.

In light of the fact that previous studies (e.g., Juni & Semel, 1982; Masling et al., 1982) have found increased sensitivity to nonverbal cues in dependent

individuals, it is ironic that a modest negative correlation between dependency and social skills was found in the present sample. Further research is needed to examine more closely the interrelationships of different social skill domains, and the differential relationships of these skills to various dimensions of personality and psychopathology. To the extent that interpersonal stress and relationship disruption mediate the link between dependency and risk for physical illness (see Bornstein, 1998b), research examining the relationships of dependency and social skills to health status and illness risk may prove fruitful as well.

## Footnotes

1. All BDIs were inspected for their response to Item 9, which assesses suicidal ideation. If an individual endorsed response 2 ("I would like to kill myself") or 3 ("I would kill myself if I had the chance"), the examiner—a clinical psychology graduate student—explored this response with the participant and took appropriate action if necessary.
2. The small correlation between DPSS and SCID-II scores is consistent with previous findings showing that in a variety of participant groups, measures of trait dependency and dependent personality disorder are only modestly related, in part because the dependent personality disorder symptom criteria are not in line with empirical findings obtained with most trait dependency scales (Birtchnell, 1991; Bornstein, 1997).

## Author Notes

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