Research report

Interpersonal functioning deficits: temporary or stable characteristics of depressed individuals?

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Abstract

Background: Interpersonal skill deficits are associated with depression; however, the nature of the relationship is not clear. This study examined whether interpersonal skill deficits are a temporary symptom of depression or a stable characteristic of depression-prone individuals, in a large adult general population sample (N=4749). Methods: Interpersonal functioning (IF) was compared among never depressed individuals and three groups of individuals with a history of depression: current depressives, recently remitted, and remitted depressives. Results: State effects of depression were clearly observed and a strong association between IF difficulties and current depression was found. Individuals with an early onset of depression showed some indication of an ‘interpersonal scar’; but, in general, we did not find evidence that repeated depression ‘scarred’ the individual. Limitations: The cross-sectional methodology limited our ability to examine whether interpersonal deficits were more the result of a depressive episode or were present beforehand. In addition, it would have been more informative to follow participants over the course of several months in order to examine the relation between depression and interpersonal functioning deficits as it unfolded longitudinally. Conclusions: Our findings suggest that interpersonal functioning deficits are in some regards a stable feature among people with a history of depression; however, they possess temporary features as well. Depression may scar interpersonal functioning, but only if it occurs early in life.

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1. Introduction

One of the most consistent findings in research on depression is the association of interpersonal difficulties and mood disorders (Joiner and Coyne, 1999; Brown and Harris, 1978; Weissman and Paykel, 1974); however, the nature of the relationship is not clear. Are interpersonal skill deficits a temporary symptom of depression or do they represent a more stable characteristic of depression-prone individuals? If interpersonal deficits comprise a stable characteristic of depression-prone individuals, are the skill deficits a pre-existing vulnerability factor for depression or are they more likely a consequence of depressive illness?

The ‘scar’ hypothesis (Lewinsohn et al., 1981) suggests that depressive episodes leave a psychological scar in much the same way that a cut may leave a physical scar. There is some limited evidence to
support this view (Rhode et al., 1990; Lynch et al., 2001). On the other hand, some researchers have failed to show an association between lasting interpersonal difficulties functioning and depressive disorder, casting doubt on the scar hypothesis. Shea et al. (1996) found no evidence of negative change from premorbid to postmorbid assessment in any of the examined personality traits while Zeiss and Lewinsohn (1988) found that individuals who had recovered from a depressive episode had no significant interpersonal deficits compared to normal controls.

While it may appear that depression has ‘scarred’ the individual, lingering sub-syndromal symptoms of depression, remaining after remission from a depressive episode, may result in continued interpersonal difficulties. Studies have shown that an elevated, subsyndromal level of depressive symptoms characterizes individuals prone to depression during periods of remission (Lewinsohn et al., 1988; Rhode et al., 1990). These continued sub-clinical symptoms have been shown to negatively impact interpersonal functioning (Wells et al., 1989; Judd et al., 1996).

In summary, interpersonal difficulties could be temporary symptoms of the depressive illness that remit along with the depressive episode; or, interpersonal difficulties may be a stable characteristic of depression-prone individuals. One possibility is that depressive illness leaves an interpersonal ‘scar’ that may affect the subsequent course of the depressive illness. An alternate possibility is that interpersonal skill deficits may precede the onset of depression and represent a pre-morbid vulnerability factor that affects the onset of the depressive illness as well as the persistence and recurrence of the illness.

Given that it is unclear as to whether interpersonal deficits are a temporary or stable characteristic of depression-prone individuals, in the current study we examined levels of interpersonal functioning among individuals who never had a depressive episode and compared them to three groups of individuals with a history of major depression: Currently Depressed, Recently Depressed, and Remitted (individuals who had been in remission for over 1 year). Consistent with previous literature, we expected to find the most interpersonal functioning difficulties among Currently Depressed individuals and Recently Depressed individuals. If interpersonal skills deficits are a stable characteristic of depression-prone individuals, we would expect that individuals with a history of depression, even though they have been in remission for a substantial period of time, should show deficits in interpersonal functioning even when controlling for sub-clinical symptoms of depression, gender, and age.

2. Method

2.1. Participants

This study included data from 4745 participants obtained from the Colorado Social Health Survey (Ciarlo et al., 1992). A random sample of Colorado residents was interviewed by trained lay interviewers for the study during 1985 and 1986. Detail regarding the sampling procedures can be found in Ciarlo et al. (1992).

The sample consisted of 43% men and 57% women, the majority of whom were Caucasian (80%), followed by Hispanic (12%), African-American (6%), and other (2%). The mean ages of men and women were 42.81 and 44.58, respectively. Fifty-five percent of the participants were married, while 19% were never married, 3% were separated, 13% were divorced, and 10% were widowed at the time of the study. Exactly half had at least a high school education.

2.2. Depression groups

Based on participants’ responses on the depression section of the Diagnostic Interview Schedule, participants were divided into four groups: (1) the Never Depressed group (93.1%, \( n = 4418 \)) included individuals who never had an episode of DSM-III (American Psychiatric Association, 1980) major depression in their lifetime; (2) the Currently Depressed group (2.1%, \( n = 101 \)) included individuals who met the criteria for a major depressive episode in the last month, prior to the interview; (3) the Recently Depressed group (1.2%, \( n = 59 \)) included individuals who had had at least one episode of major depression within the last year; and (4) the Remitted (3.5%, \( n = 166 \)) group included individuals who had had at least one episode of major depression.
but had not met the criteria for an episode of major depression for more than 1 year.

2.3. Materials

2.3.1. Diagnostic Interview Schedule (DIS)

The DIS (Diagnostic Interview Schedule; Robins et al., 1981) was administered to obtain DSM-III Axis I diagnoses and one Axis II diagnosis, antisocial personality disorder. The DIS provides structure and probing opportunities designed to elicit accurate assessment of mental disorders, and it has acceptable reliability and validity (Helzer and Robins, 1988). For DSM-III depression they reported sensitivity of 80% and specificity of 84%. The DIS included items to determine the recency of the last episode of a disorder, the age of onset of the disorder, and number of episodes of the disorder the individual had experienced over his or her lifetime.

2.3.2. The Center for Epidemiologic Studies, Depression Scale (CES-D)

The Center for Epidemiologic Studies, Depression Scale (CES-D; Radloff, 1977) includes 20 items assessing depressive symptoms during the last week. Subjects are given a five-point Likert-type response scale anchored by Rarely or never (scored 0), and Most or all of the time (scored 4). Scores can range from 0 to 80, with higher scores reflecting more symptoms; CES-D scores in this sample ranged from 0 to 63. The overall mean CES-D scales score was 7.4 (S.D. = 8.8). CES-D scores were used in some analyses as a covariate to control for level of depressive symptoms.

2.3.3. Interpersonal functioning

The Interpersonal Functioning Scale included in the CSHS consisted of 6 items that were designed to assess both interpersonal skill and interpersonal conflict. Participants endorsed how frequently they had engaged in each behavior within the past month using a Likert type scale anchored by Never (scored 1) and Always (scored 5). Examples of scale items include; ‘During the past month, have you had difficulty getting along with other people?’ and ‘During the past month, have you had fights or arguments with people?’.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean (S.D.)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never depressed</td>
<td>4418</td>
<td>9.1 (3.5)</td>
<td>6–48</td>
</tr>
<tr>
<td>Current depressed</td>
<td>101</td>
<td>14.7 (5.2)</td>
<td>6–28</td>
</tr>
<tr>
<td>Recent depressed</td>
<td>59</td>
<td>12.6 (3.5)</td>
<td>6–20</td>
</tr>
<tr>
<td>Depressed remitters</td>
<td>166</td>
<td>10.1 (3.5)</td>
<td>6–20</td>
</tr>
<tr>
<td>Total</td>
<td>4744</td>
<td>9.3 (3.6)</td>
<td>6–48</td>
</tr>
</tbody>
</table>

*Note: The overall N for the study is 4745. The N for specific analyses is lower because the participant refused to answer, responded ‘Don’t Know’ or ‘Not Applicable’.

The Interpersonal Functioning (IF) scale scores ranged from 6 to 30 across all groups, with higher scores reflecting the most deficits. The overall mean IF scales score was 9.3 (S.D. = 3.6). Table 1 shows the IF Scale means, standard deviations, and range for each group of participants. The reliability of the scale was adequate (α = 0.78).

3. Results

3.1. State effects on interpersonal deficits: do currently depressed people report more interpersonal deficits than never depressed, recently depressed, and remitted people

Not surprisingly, Currently Depressed individuals reported the most deficits in interpersonal functioning (M = 14.6), followed by the Recently Depressed group (M = 12.6), then the Remitted group (M = 10.1), and finally the Never Depressed group (M = 9.3). The differences between the Currently Depressed group and each of the other three groups were statistically significant. Clearly, there were ‘state’ effects of current depression on interpersonal deficits.

3.2. Were there any other effects besides ‘state’ effects?

Because the Recently Depressed, Remitted, and Never Depressed groups were not currently depressed, ‘state’ influences would not fully explain differences between these three groups. And such differences did occur. In fact, there were significant differences in the interpersonal functioning scores...
between each of these three groups (between-group contrasts were conducted by performing ANOVA and using the post hoc Scheffe multiple comparisons test), including, importantly, between the Remitted and Never Depressed groups \((F(1, 4582) = 12.8, p < 0.01)\). Table 2 summarizes these significant differences.

3.3. Ruling out sub-clinical depressive symptoms as an explanation.

To examine the possibility that observed differences in interpersonal functioning between the Remitted group and the Never Depressed group could be related to sub-clinical symptoms of depression, the CES-D was used to control for depressive symptoms in the group comparisons.

CES-D scores were found to be significantly different among the four groups \((F(3, 4625) = 246.9, P < 0.01)\) and post hoc Scheffe multiple comparison tests showed each of the four groups to be significantly different from the others. The mean CES-D scores for each group were as follows: Currently Depressed group \((M = 29.0, \text{S.D.} = 15)\), Recently Depressed group \((M = 12.7, \text{S.D.} = 8.3)\), Remitted group \((M = 9.1, \text{S.D.} = 8.8)\), and Never Depressed group \((M = 6.8, \text{S.D.} = 7.9)\). Since the Never Depressed group and the Remitted group were found to differ on present level of depressive symptoms, the CES-D was used to control for depressive symptoms in a comparison of the two groups on interpersonal deficits. Even after controlling for present level of depressive symptoms, the Remitted group reported more deficits in Interpersonal Functioning compared to the Never Depressed participants \((F(1, 4568) = 5.04, P < 0.05)\).

3.4. Ruling out gender differences as an explanation

The three groups having a history of current or past depression had a higher percentage of women than the Never Depressed group \((73.3\% \text{ vs. } 55.5\%; \chi^2 = 39.6, p < 0.01)\). Additionally, women reported having more interpersonal functioning difficulties than did men \((9.4 \text{ vs. } 9.1; F(1, 4742) = 5.87, P < 0.01)\). Therefore the differences between the Remitted Group and the Never Depressed group on interpersonal functioning could be an artifact of gender. To examine this possibility we compared the level of interpersonal functioning between the Never Depressed and Remitted groups controlling for gender. Controlling for gender, the differences between the groups on interpersonal functioning remained significant \((F(1, 4466) = 5.9, P < 0.05)\).

3.5. Ruling out age differences as an explanation

Age was related to interpersonal functioning \((N = 4737, r = -0.22, p < 0.05)\); younger subjects reported more interpersonal deficits than older subjects. However, the Never Depressed and the Remitted groups did not differ with respect to age \((M = 44)\). Therefore, between-group differences on interpersonal functioning appeared unrelated to age.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Interpersonal functioning: ANOVA contrasts by depression groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean difference ((I – J))</td>
</tr>
<tr>
<td>Never depressed vs. Current depressed</td>
<td>-5.62*</td>
</tr>
<tr>
<td>Never depressed vs. Recent remitters</td>
<td>-3.47*</td>
</tr>
<tr>
<td>Never depressed vs. Remitters</td>
<td>-1.00*</td>
</tr>
<tr>
<td>Current depressed vs. Recent remitters</td>
<td>2.14*</td>
</tr>
<tr>
<td>Current depressed vs. Remitters</td>
<td>4.62*</td>
</tr>
<tr>
<td>Recent remitters vs. Remitters</td>
<td>2.48*</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level using the Scheffe multiple comparison tests.
3.6. Slowly fading ‘state’ effects?

Because currently depressed people report more interpersonal deficits than recently depressed people, who in turn, report more deficits than remitted people, who in turn, report more deficits than never depressed people, we considered the possibility that interpersonal deficits represent slowly fading ‘state’ effects of depression. The time, in weeks, since the individuals were last depressed was assessed for all participants with a current or past history of depression. The correlation between time since last depressed and interpersonal functioning was significant ($N=325$, $r=-0.35$, $P<0.01$).

That is, as the time since the last episode of depression increased, the level of interpersonal deficits decreased, consistent with the possibility that interpersonal deficits represent ‘slowly fading state effects’ of depression (i.e. a negative consequence of depression that ameliorates with time). We reasoned that if interpersonal deficits represented ‘slowly fading state effects’ of depression, then covariance of time since depression may reduce or eliminate differences between the time-defined groups of Currently Depressed, Recently Depressed, and Remitted. However, even when controlling for both time since last depressed and participant’s age, there was a significant group effect on interpersonal functioning ($F(4,320)=17.5$, $P<0.01$).

Post-hoc comparisons, still controlling for the time since the last depression and the participant’s age, were conducted. Interestingly, results indicated no differences between the Currently Depressed and the Recently Depressed groups, suggesting that these groups were essentially similar on interpersonal functioning, except that the latter group’s ‘state’ deficits had had time to fade. Also of interest, there were significant differences in interpersonal functioning between the Currently Depressed and Remitted groups ($F(3,262)=32.0$, $P<0.01$), and between the Recently Depressed and the Remitted groups ($F(3,220)=9.2$, $P<0.01$). These continued group differences, even controlling for time since last depression, suggest that slowly fading state effects of depression do not constitute a full explanation.

In summary, because there were reliable differences between the three non-depressed groups, and because these differences were not explained by such factors as sub-clinical depressive symptoms, gender, age, and time since last depressed, we conclude that there may be stable, depression-related influences on interpersonal deficits—-influences that are not fully explained by ‘state’ effects of depression. What were these influences? We turn to this question next.

3.7. Interpersonal deficits: antecedent or consequence of depression in general, or consequence of early depression specifically?

We reasoned that if interpersonal deficits were a consequence of depression in general, there should be an association between interpersonal functioning deficits and the number of episodes of depression experienced by the individual in their lifetime. That is, if depression ‘scars’ interpersonal functioning, repeated depression should particularly ‘scar’ interpersonal functioning. However, this was not the case. Specifically, we examined participants who were in remission from depression ($N=164$) on the relation between number of episodes of depression and interpersonal functioning. There were no significant differences between level of interpersonal functioning between individuals with one episode ($M=9.9$, S.D. = 3.5) and those with multiple episodes ($M=10.3$, S.D. = 3.5; $F(1,162)=0.44$, $P=ns$).

Another possibility is that depression does ‘scar’ interpersonal functioning, but only if depression occurs early in life, perhaps during key times when interpersonal skills are developing. In fact, consistent with this possibility, among individuals with a current or past history of depression, there was a significant negative correlation ($N=325$, $r=-0.21$, $P<0.01$) between the age of onset of depression and interpersonal functioning, reflecting that the earlier the first episode of depression, the more deficit in interpersonal functioning. This relationship remained significant when the number of past episodes was controlled ($pr=-0.13$, $P<0.05$).

The overall pattern of findings leads us to several inferences: (a) depression has ‘state’ effects on interpersonal functioning, because currently depressed people report more deficits than others, including even recently depressed people; (b) in the short-term (i.e. the transition from currently to recently depressed, defined here as within the last year), the passage of time accounts for the ‘fading’ of ‘state’ effects.
effects on interpersonal functioning; (c) however, in the long-term (i.e. the transitions from currently and recently depressed to remitted), the passage of time alone did not account for improved interpersonal functioning. Something not linearly related to time (e.g. skill building; accrual of social support) may be at play; (d) remitted people report more deficits than never depressed people, indicating a stable aspect (perhaps a ‘scar’) to the relation between interpersonal deficits and depression; (e) if a ‘scar’ model holds, it does not include an element in which more episodes of depression result in more interpersonal deficits; (f) if a ‘scar’ model holds, it may be that early onset depression is particularly influential; and (g) if an ‘antecedent’ model holds, it may not include an element in which more deficits lead to greater episodes of depression.

4. Discussion

State effects of depression on interpersonal functioning were clearly established in this study. Individuals who were currently depressed demonstrated poorer interpersonal functioning than individuals with a past history of depression. The Never Depressed group exhibited the least deficits in interpersonal functioning.

We would expect that being in a depressive episode would interfere with pro-social behaviors, leading to interpersonal conflicts (Joiner and Coyne, 1999). Several processes may be instrumental in explaining how depressed individuals may generate interpersonal stress (Joiner, 2000). For example, currently depressed individuals may increase their interpersonal stress, thereby encouraging further depression, via excessive reassurance-seeking. Excessive reassurance-seeking is a process described by Joiner and colleagues (e.g. Joiner and Metalsky, 2001) in which depression-prone individuals may excessively seek reassurance in the face of negative events. Joiner et al. (1993) demonstrated that depressed people are particularly likely to elicit interpersonal rejection if they engage in excessive reassurance-seeking. If excessive-reassurance seeking is a characteristic exhibited by currently depressed individuals, it follows that currently depressed individuals would report the most interpersonal functioning deficits when compared to individuals who are no longer depressed or who have never been depressed. This is the pattern of findings demonstrated in this study.

Another important finding from this study is that the Remitted group reported significantly more interpersonal functioning deficits than the Never depressed group, indicating that individuals who were in remission from depression for at least 1 year still had significantly more interpersonal problems than did individuals with no history of depression. Currently depressed people may report the most deficits in interpersonal functioning followed by recently depressed people, then remitted individuals, then the never depressed people, because of slowly fading ‘state’ effects of depression. Indeed when time since last depressive episode and interpersonal functioning was correlated, there was a significant relationship between the two variables, such that the longer the time span since the last depressive episode, the fewer interpersonal functioning deficits reported. After controlling for time since last depressive episode, there was no significant difference in interpersonal functioning level between the Currently Depressed group and the Recently Depressed group, suggesting that between these two groups, the passage of time was a crucial factor for the increase in interpersonal functioning evident in the Recently Depressed group. On the other hand, there were significant differences in interpersonal functioning between the Currently Depressed and Remitted groups and between the Recently Depressed and the Remitted groups. These results provide evidence that in the long-term (i.e. the transitions from currently and recently depressed to remitted), the passage of time alone does not account for improved interpersonal functioning. This finding suggests that something not linearly related to time (e.g. skill building; accrual of social support) may be at play.

One possible explanation for this pattern of findings is that the remitted individuals show global improvements in many areas as compared to currently depressed or recently depressed individuals, and some of these improvements may occur quite abruptly. With regard to interpersonal functioning, as a depressive episode completely lifts, individuals may experience abrupt behavioral changes that are tied to improved interpersonal functioning. For example, formerly depressed individuals would be expected to make more
eye contact (e.g. Youngren and Lewinsohn, 1980), to communicate more clearly (?), and to exhibit increases in smiles and facial animation as their emotional state improves (Ellgring, 1986).

Although the association between interpersonal functioning deficits and depression is evident, there is no clear evidence in the literature as to whether social skills deficits are present before depression or whether they are the result of depression. Consistent with the antecedent model, we did in fact find that remitted individuals reported more deficits than the never depressed participants, even when controlling for current depressive symptoms, gender and age. Though both groups reported being currently depression-free, individuals with a history of depression continued to have more problems with interpersonal functioning. This continued difference between the groups, even after controlling for time since last depression, suggests that there are stable interpersonal deficits among depression-prone individuals, a notion which is supported elsewhere in the literature (Lewinsohn et al., 1988; Rhode et al., 1990).

On the other hand, it is equally likely that this finding supports a scar notion of depression. One could argue that if interpersonal functioning deficits were a consequence of depression, interpersonal difficulties should be related to the number of episodes of depression experienced by an individual. However, this hypothesis was not supported by our study. Among individuals within the Remitted group there were no significant differences between the interpersonal functioning level of individuals with only one depressive episode and those with multiple episodes. Therefore, it cannot be concluded that multiple depressive episodes are repeatedly scarring individuals. The lack of a relationship between interpersonal deficits and number of episodes could not be fully explained by an antecedent model either, because interpersonal deficits that precede depression should also be related to an index of disease severity such as number of episodes.

The present study has several strengths including a large sample, and the use of a semi-structured diagnostic interview as well as a well-validated measure to assess for depression. However, there are some limitations that should be considered. One such shortcoming is that the cross-sectional methodology limited our ability to examine the antecedent versus the ‘scar’ hypotheses. We did not have access to pre-morbid measures of interpersonal deficits, and therefore could not fully study this issue, because an evaluation of interpersonal functioning prior to the onset of depression was not possible. Along the same lines, it would have been more illuminating if we had followed participants over the course of several months in order to examine the relation between depression and interpersonal functioning deficits as it unfolded longitudinally. An additional limitation of this study is that the IF scale is used here for the first time and there are no validity data for this measure.

Our findings suggest that interpersonal functioning deficits are in some regards a stable feature among people with a history of depression; however, they possess temporary features as well, in that formerly depressed individuals show significantly better interpersonal functioning than do those who are currently depressed. Because there were significant differences in interpersonal functioning between each of the groups (not just the currently depressed vs. the others), ‘state’ influences do not fully explain these differences. Importantly, the Remitted group reported significantly more interpersonal functioning deficits than did the Never Depressed group, even after controlling for present level of depressive symptoms. Furthermore, neither gender nor age differences explained the interpersonal functioning differences between the groups. The passage of time accounted for the increase in interpersonal functioning for the transition from Currently Depressed to Recently Depressed; however, significant differences in interpersonal functioning remained between the Recently Depressed and Remitted groups and the Currently Depressed and Remitted Groups, when controlling for time since last depression. Thus, the passage of time alone did not explain the improvement in interpersonal functioning in the long term.

In light of these findings, we conclude that there could be stable, depression related influences on interpersonal deficits that are not fully explained by ‘state’ effects of depression. Finally, there were no significant differences in interpersonal functioning between individuals with one episode of depression or those with multiple episodes. However, there was a significant correlation between age of onset of depression and interpersonal functioning, such that the earlier the first episode of depression the more inter-
personal functioning problems. These findings do not support the notion that repeated episodes of depression scar interpersonal functioning, but instead suggest that depression scars interpersonal functioning only if it occurs early in life. On the other hand, an antecedent view cannot fully explain this pattern of findings. A prospective, longitudinal study design is needed to determine with more certainty whether the stable interpersonal deficits associated with a history of depression are more a cause or consequence of depressive episodes, or whether both processes are simultaneously at work.

References


