Interpersonal Circumplex Profiles of Persistent Depression:

Goals, Self-Efficacy, Problems, and Effects of Group Therapy

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Abstract

Objectives: We assessed severely and persistently depressed patients' interpersonal self-efficacy, problems, and goals, plus changes in interpersonal functioning and depression during 20 weeks of group therapy.

Method: Outpatients (32 female, 26 male, *M* age = 45 years) completed interpersonal circumplex measures of goals, efficacy, and problems before completing 20 weeks of manualized group therapy during which we regularly assessed depression and interpersonal style.

Results: Compared to normative samples, patients lacked interpersonal agency, including: less self-efficacy for expressive/assertive actions; stronger motives to avoid conflict, scorn, and humiliation; and more problems with being too submissive, inhibited, and accommodating. Behavioral Activation and especially Cognitive Behavioral Analysis System of Psychotherapy (CBASP) interventions produced improvements in depression and interpersonal agency, with increases in "agentic-and-communal" efficacy predicting subsequent decreases in depression.

Conclusions: While severely and persistently depressed patients were prone to express maladaptive interpersonal dispositions, over the course of group therapy they showed increasingly agentic and beneficial patterns of cognitions, motives, and behaviors.

Keywords: depression, treatment outcome, interpersonal circumplex, goals, self-efficacy, problems

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Depression is currently the leading cause of disability and is expected to soon be the second greatest contributor to global disease burden (WHO, 2008). Of patients suffering from a first depressive episode, approximately 50% experience a recurrence and only 15% never again experience a year without depression (Eaton et al., 2008). About one third of episodes of major depression take a persistent form in which symptoms persist for at least two years without remission. Because persistent forms of depression are linked to poorer functioning and increased suicidality, preventing recurrence is a key focus of treatment (Hellerstein, Agosti, Bosi, & Black, 2010; Torpey & Klein, 2008).

Supportive relationships can help alleviate and prevent the recurrence of depressive episodes, but depressed individuals are prone to interpersonal dispositions and behaviors that undermine such relationships (Segrin, 2011). They tend to be interpersonally shy and timid, and have insecure attachment styles. During conversations, depressed individuals show less lively speech, make less eye contact, and express more self-derogations (Segrin, 2011). They may also seek negative feedback from others that confirms their negative self-image (Swan, Wenzlaff, Krull, & Pelham, 1992) or relentlessly seek assurance that they are lovable and worthy (Joiner, Metalsky, Katz, & Beach, 1999). Self-derogating and excessively seeking negative feedback or reassurance tend to evoke dislike and rejection from others (Hames, Hagan, & Joiner, 2013; Horowitz et al., 1991). Collectively, the research suggests that individuals with depression—especially persistent depression—tend towards a passive, self-absorbed interpersonal style lacking in warm engagement, which may eventually evoke irritated dominating or dismissing reactions from others (Horowitz, 2004; McCullough, 2000).

Depicting Depression on the Interpersonal Circumplex

The current study uses the interpersonal circumplex (IPC) to advance our understanding of the interpersonal dispositions associated with severe, recurrent, and persistent depression. The IPC, a popular model for organizing and assessing interpersonal dispositions, is defined by a vertical axis of dominance, assertiveness, decisiveness, or (most broadly) *agency* and a horizontal axis of friendliness, sincerity, warmth, or (most broadly) *communion* (Wiggins, 2003). Hundreds of studies support the centrality of agency and communion in understanding social cognition, motivation, and behavior (Locke, 2015). As Figure 1 shows, the IPC is typically divided into eight octants. Moving around the circle, each octant reflects a progressive blend of the two axial dimensions.

There are multiple inventories designed specifically to assess qualities reflecting each IPC octant (Locke, 2011). The current paper uses three such inventories: The Inventory of Interpersonal Problems (IIP; Horowitz, Alden, Wiggins, & Pincus, 2003), the Circumplex Scales of Interpersonal Values (CSIV; Locke, 2000), and the Circumplex Scales of Interpersonal Efficacy (CSIE; Locke & Sadler, 2007). Interpersonal problems are interpersonal actions that one does *too much* or *not enough* and that consequently cause one distress (Horowitz, Rosenberg, Bauer, Ureno, & Villasenor, 1988). The IIP assesses interpersonal problems associated with each IPC octant. Values or goals refer to the importance one ascribes to obtaining particular outcomes (Mischel & Shoda, 1998); thus, interpersonal values or goals are the importance one ascribes to particular interpersonal outcomes (e.g., appearing confident). The CSIV assesses interpersonal values or goals associated with each IPC octant. Self-efficacy is one's confidence in one's ability to perform a specific task or behavior successfully (Bandura, 1997); thus, interpersonal self-

efficacy is a one's confidence in one's ability to perform a specific type of interpersonal behavior (e.g., expressing an opinion). The CSIE assesses interpersonal efficacy associated with each IPC octant. Table 1 shows sample items from the CSIE, CSIV, and IIP.

Several studies have used the IIP to map the interpersonal problems of depressed patients onto the IPC. Unsurprisingly, depressed patients report being more distressed by interpersonal problems than do normative samples, with the most pronounced and reliable differences being in the unagentic and uncommunal-and-unagentic regions (Barrett & Barber, 2007; Grosse Holtforth et al., 2014; Vittengl, Clark, & Jarrett, 2003). Depressed patients are prone to try to escape interpersonal conflicts and withdraw from interpersonal relations, even with significant others. Although interpersonal problems decline over the course of treatment, it is unclear if those declines are greater in some regions of the circumplex than others (Quilty et al., 2013; Vittengl et al., 2003).

In the only previous study that has mapped depressed patients' interpersonal goals onto the IPC, Thomas et al. (2012) administered the CSIV and a measure of general psychological distress to inpatients (most of whom had a mood disorder) before and at the end of treatment. They found that unagentic goals were elevated in their patient sample, predicted greater interpersonal and general psychological distress, declined significantly during treatment, and that these declines predicted declines in interpersonal and general distress.

No studies have mapped depressed patients' efficacy beliefs onto the IPC. However, a number of studies have examined the link between depression and general social efficacy, typically defined as self-confidence for engaging in agentic-and-communal behaviors such as forming relationships and managing conflicts. Not surprisingly, overall social efficacy is

negatively correlated with concurrent symptoms of depression (Bandura, 1997; Fiori, McIlvane, Brown, & Antonucci, 2006; McFarlane, Bellissimo, & Norman, 1995; Smith & Betz, 2002). Moreover, even controlling for current depression, social efficacy predicts less subsequent depression both directly and indirectly through its positive impact on positive social behavior and social connections (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Holahan & Holahan, 1987; Wei, Russell, & Zakalik, 2005).

Another IPC inventory (not used in the current study) is the Impact Message Inventory (IMI; Kiesler & Schmidt, 2006), which assesses a person's interpersonal style indirectly, by asking others what reactions the target typically evokes in them (e.g., he/she makes me feel "bossed around" or "in charge"). IMI studies of therapists' impressions of their depressed patients suggests that depressed—especially persistently depressed—patients are perceived as more unagentic and uncommunal (–A and –C) than other patients or non-patients, but that differences decrease over the course of therapy, with the patients who show greater decreases in being perceived as –A and –C showing greater decreases in depression (Constantino et al., 2008, 2012; Grosse Holtforth et al., 2012). That is, patients who with the help of psychotherapy can move out of a socially avoidant position also show improvements in depressive symptoms.

The research reviewed above suggests that depressed individuals tend to exhibit less agentic or less communal interpersonal behaviors, goals, efficacy, and problems. This conclusion is supported by clinical reports from patients whose complaints focus on such issues as inability to assert themselves, a fear of appearing "lazy" for being on disability, and a lack of meaning and goals in their life. Furthermore, within samples of depressed patients, those with the most severe or intractible distress about their life tend to be those with least agentic or

least communal interpersonal traits, goals, and problems. These patients tend to hold global

negative thoughts about themselves and their future, and see little possibility for change.

Overview of Current Study

In the current study we assessed the interpersonal goals, self-efficacy, and problems of

severely or persistently depressed outpatients prior to beginning group therapy. Group therapy

is a very suitable setting for depressed patients to practice and develop interpersonal self-

efficacy which then helps them to modify their interpersonal goals. Self-efficacy and goals are

key components of social-cognitive models and interventions because people are only likely to

attempt and sustain actions that they expect to perform successfully and find personally

rewarding (Bandura, 1997; Mischel & Shoda, 1998). Yet, there is almost no research on how

depression relates to the comprehensive spectrum of goals and efficacy depicted by the IPC.

The current study will help fill that lacuna in the literature.

We monitored patients' interpersonal functioning and depressive symptoms as they

underwent manualized group therapy for depression employing either a Cognitive Behavioral

Analysis System of Psychotherapy (CBASP) or a Behavioral Activation (BA) approach. BA focuses

on replacing the passive, avoidant behaviors that maintain depression with active, adaptive

behaviors by increasing their relative reinforcement value (Dimidjian, Barrera, Martell, Munoz,

& Lewinsohn, 2011; Hopko, Lejuez, Ruggiero, & Eifert, 2003; Kanter et al., 2010). The treatment

includes daily activity monitoring, activity scheduling, and progressively and incrementally

meeting specific, measurable goals in multiple life domains. Meta-analytic reviews indicate that

Behavioral Activation is as effective as other established approaches to treating depression

(Cuijpers, van Straten, & Warmerdam, 2007; Ekers et al., 2014; Mazzucchelli, Kane, & Rees, 2009).

CBASP is a structured, integrative cognitive-behavioral-interpersonal intervention designed specifically for persistently depressed patients (McCullough, 2000; McCullough, Schramm, & Penberthy, 2014). In CBASP, the persistently depressed patient is conceptualized as different from the patient with acute depression. For example, patients with persistent depression are more likely to have a younger age of onset, a family history of mood disorders, co-morbid anxiety, substance abuse, and personality disorders (Hölzel, Härter, Reese, & Kriston, 2011; Kornstein & Schneider, 2001; Sonawalla & Fava, 2001; Thase, 1997; Thase, Friedman, & Howland, 2001). They also have more problems with their social environment (e.g., low social integration, low social support, negative social interaction) (Hölzel et al., 2011). CBASP is designed specifically to address these unique needs of the persistently depressed patient.

A key component involves patients and therapists closely and collaboratively analyzing linkages between thoughts, actions, and actual and desired outcomes in specific, recent interpersonal encounters. Appreciating the interpersonal consequences of their attitudes and behaviors, patients practice ways of thinking and behaving that will increase the likelihood of achieving realistic, attainable, personally rewarding social outcomes. A number of studies indicate that CBASP is an effective treatment for persistent depression (Keller et al., 2000; Schramm et al., 2015; Wiersma et al., 2014), with several studies specifically suggesting increases in interpersonal agency or communion (Constantino et al., 2008; Sayegh et al., 2012; Swan et al., 2014). However, only one previous study has reported outcomes for CBASP adapted to a group modality for depressed outpatients (Sayegh et al., 2012).

Method

Participants

The participants were 58 outpatients (55.2% female; *M* age = 45.3 years, *SD* = 10.4, range = 23-63) who consented to participate in research evaluating the effectiveness of group treatment for depression. Almost all patients were Caucasian; 16.7% were employed, 3.7% were students, 42.6% were on sick leave, and 37.0% were unemployed; 53.4% were in a marital or long-term relationship, and 46.6% were single or divorced. Patients were evaluated and treated in the adult wing of the Douglas Mental Health University Institute's Depressive Disorders Program, an outpatient clinic in Montreal, Canada, serving adults with Major Depressive Disorder.

All patients underwent a comprehensive psychiatric evaluation before admission; diagnoses were made by staff psychiatrists. All study participants had a primary DSM-IV-TR diagnosis of major depression, unipolar, and were judged to have or be at risk for persistent depressive disorder based on clinical history; specifically, 82.8% had a previously diagnosed depressive episode (median number of previous episodes = 3) and the minimum duration of the current depressive episode was 6 months (median duration = 24 months).

IPC Measures

Interpersonal problems reflecting each IPC octant were assessed using the 32-item (4-item per octant) IIP (Horowitz et al., 2003); respondents rated how distressed they were by each problem on 0 (not at all) to 4 (extremely) scales. Interpersonal goals reflecting each IPC octant were assessed using the 64-item (8-item per octant) CSIV (Locke, 2000); respondents rated the importance of each goal on 0 (not important) to 4 (extremely important) scales. Self-

efficacy for interpersonal actions from each IPC octant were assessed using the 32-item (4-item per octant) CSIE (Locke & Sadler, 2007); respondents rated their confidence for performing each action on 0 (not at all confident) to 10 (absolutely confident) scales, but we transformed their responses to 0-to-4 scales to make them comparable to the IIP and CSIE scales. When completing the CSIE and CSIV, patients were asked to imagine themselves in the group therapy setting. The IIP, CSIV, and CSIE scales have all demonstrated good psychometric and circumplex properties (Hopwood et al., 2011; Locke, 2011). In the current sample at the start of treatment, the median Cronbach αs for the CSIE, CSIV, and IIP scales were, respectively, .66, .76, and .75.

The normative samples for the IPC scales consisted of English-speaking citizens of the United States and Canada who were recruited from the general population using Amazon's Mechanical Turk (MTurk) website (Buhrmester, Kwang, & Gosling, 2011) in exchange for a small monetary reward (ranging from $0.12 - $0.35 USD). Studies of MTurk samples generally conclude that such samples are adequate alternatives to other sources of normative samples, although they sometimes tend to be more educated, introverted, and anxious than the general population (for an overview, see Paolacci & Chandler, 2014). The analyses below only used MTurk respondents who completed all questionnaire items and—to maximize comparability with the patient sample—described their ethnicity as White/Caucasian. The CSIE normative sample contained 750 respondents (63.2% female; *M* age = 37.2 years, *SD* = 13.8). The CSIV normative sample contained 910 respondents (59.2% female; *M* age = 36.0 years, *SD* = 13.7). The IIP normative sample contained 361 respondents (52.1% female; *M* age = 33.5 years, *SD* = 12.0). We did not assess for the presence of psychopathology in the normative samples.

Depression Measures

We employed two self-report and two clinician-report measures of current depressive symptoms. The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item self-report measure of attitudes and symptoms frequently displayed by depressed patients. Respondents rate items on 0 to 3 scales, with higher scores indicating greater depression. The Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) is a 17-item depression measure completed by a clinician. Each item is rated based on its severity as experienced by the patient over the past week, with higher scores indicating greater depression. The Inventory of Depressive Symptomatology (IDS; Rush, Gullion, Basco, Jarrett, & Trivedi, 1996) is a 30-item measure of symptoms of depression experienced during the previous week. Items are scored on 0 to 3 scales, with higher scores reflecting greater depression. Adequate or good levels of validity and internal reliability have been found for the BDI (Beck, Steer, & Garbin, 1988), HRSD (Bagby, Ryder, Schuller, & Marshall, 2004), and the IDS in both clinician-rated (IDS-CL) and self-report (IDS-SR) formats (Rush, Carmody, & Reimitz, 2000). For the current sample at the start of treatment, Cronbach αs for the BDI, HRSD, IDS-CL, and IDS-SR were, respectively, .85, .81, .84, and.86; and mean scores for the BDI, HRSD, IDS-CL, and IDS-SR were, respectively, 29.0 (SD = 10.0), 27.3 (SD = 8.8), 39.1 (SD = 12.2), and 38.7 (SD = 13.2), all of which indicate severe levels of depressive symptomatology.

Procedure

Patients completed 20 weeks of group therapy. While participating in the study, patients continued to receive pharmacological treatments (including SSRIs and/or other classes of antidepressants) and routine clinical management appointments assessing symptomatology and medication tolerance. All patients had two individual therapy sessions prior to beginning

group treatment to identify an interpersonal issue that would be the focus of their work in group therapy. The group treatment consisted of one two-hour session each week for 20 weeks. The groups followed procedures detailed in either the Group-CBASP manual (Sayegh & Penberthy, in press-a, -b) or the BA manual developed by Lejuez, Hopko, and Hopko (2001), modified to accommodate the 20-week group treatment protocol. Patients were randomly assigned to groups, but more patients completed CBASP (*n* = 36) than BA (*n* = 22) treatment. Each group had a maximum of six patients, with the median and modal group size being five patients. All groups were conducted by a senior clinical psychologist (CBASP-certified in CBASP groups) with a clinical psychology graduate student as co-therapist.

To assess changes in depressive symptoms and interpersonal dispositions, we administered an assessment battery consisting of the CSIV, CSIE, IIP, BDI, HRSD, IDS-CL, and IDS-SR four times at approximately 10-week intervals: at the beginning of group treatment (baseline), the 10th week of treatment (mid-treatment), the 20th week of treatment (termination), and approximately 12 weeks post-termination (follow-up). At each time, there was at most one missing assessment, with two exceptions: (a) one BA and two CBASP groups (*n*=15 patients) never completed the BDI and (b) three IDS-CL were not completed at termination. The clinicians who administered the HRSD and IDS-CL were unaware of the treatment group to which the patients were assigned.

Patients also completed a *Weekly Journal* at the beginning of each session. The weekly journals contained 20 items, which patients answered on 5-point scales ranging from "never/not at all" to "consistently/every day". Eight items assessed interpersonal self-efficacy, each item capturing a different CSIE octant scale; for example, the +C item was "This week in

the group I can be helpful, I can take an active part in the group, I can ease the pain of others, and I can understand their feelings". Six items assessed healthy *activity* (e.g., "I have completed my household chores and/or professional/student work"). Six items assessed *depressive* symptoms (e.g., "I have been in a sad, depressed mood"). Whereas the *self-efficacy* items referred to expectations for the coming week, the *activity* and *depression* items referred to experiences over the preceding week.

Results

Do Depressed and Normative Interpersonal Dispositions Differ?

Table 2 shows the mean scores for each IPC inventory for the normative sample and the depressed sample at the beginning of treatment. Consider first the average ratings across all octants. Compared to the normative sample, depressed patients expressed weaker interpersonal self-efficacy (on the CSIE), stronger interpersonal goals (on the CSIV), and much greater interpersonal distress (on the IIP). That is, compared to the general population, depressed patients felt more concerned about having or avoiding various specific interpersonal experiences, less confident that they could control their interpersonal outcomes, and more distressed about having various types of interpersonal experiences too much or not enough.

The size and direction of the differences in efficacy, goals, and problems was different for different IPC octants. On the CSIE, compared to the normative sample, depressed patients expressed much less confidence that they could be listened to (+A+C), assertive (+A), aggressive (+A-C), and cold (-C) when necessary, but slightly more confidence that they could be meek (-A). On the CSIV, depressed patients placed slightly more importance on being authoritative (+A) and embraced (+C), moderately more importance on avoiding humiliation (-A-C), and much

more importance on avoiding conflict (-A). On the IIP, depressed patients were more bothered

by almost every type of problem, especially problems with being too unassertive (-A) and

accommodating (-A+C).

Figure 2 graphs the mean IIP, CSIV, and CSIE octant scores of the depressed sample

(standardized relative to normative sample Ms and SDs) on the IPC. The figure visually

highlights the results summarized above. Compared to the normative sample, depressed

patients generally showed depressed self-efficacy (closer to the center than the circumference

of the circle) and elevated interpersonal goals and problems (closer to the circumference than

the center). In addition, depressed patients reported stronger unagentic than agentic

interpersonal dispositions as evidenced by scores being closer the circumference in the lower

than the upper half of the circumplex.

What Changes Over the Course of Treatment?

As explained above, patients completed an assessment battery (containing depression

and interpersonal circumplex measures) at the start of group treatment (time 0), mid-

treatment (time 1), termination (time 2), and approximately 12 weeks post-termination (time

3). They also completed weekly journals during the 20 weeks of group treatment. Because

patients provided data at multiple time points—and various patients had missing data at

various time points—we analyzed the data using multilevel modeling. To test the effect of time

on each outcome, the within-patient level (Level-1) model was:

$$Outcome_{ij} = \beta_{0j} + \beta_{1j}(Time_i) + r_{ij} , \tag{1}$$

where $Outcome_{ij}$ is patient j's outcome (for example, HRSD rating) at time i; β_{0j} is the intercept

or expected value of patient j's outcome when $Time = 0$ (the beginning of treatment); β_{1j} is the

change in patient j's outcome per increment of time; and r_{ij} is residual (within-patient) error.

For the weekly journal measures, $Time_i$ ranged from 0 (baseline) to 20 (final session), with each

unit change in $Time_i$ corresponding to 1 week. For the assessment battery measures, $Time_i$

ranged from 0 to 3, with each unit change in $Time_i$ corresponding to 10-12 weeks. At the

between-patient level (Level-2), the model was:

$$\beta_{0j} = \beta_{00} + u_{0j} \tag{2}$$

$$\beta_{1j} = \beta_{10} + u_{1j}, \tag{3}$$

where β_{00} is the average outcome across all patients, β_{10} (the effect of interest) is the average

effect of time across all patients, and u_{0j} and u_{1j} represent residual (between-patient) error.

Table 3 (left side) shows the results for depression and activity levels. Across all

measures, depressive symptoms decreased and healthy activity increased over time. Table 4

shows the effects of time on the IPC measures. Over the course of treatment, the weekly

journals showed increases in agentic (+A), communal (+C), and agentic-and-communal (+A+C)

self-efficacy, and decreases in unagentic (-A) self-efficacy. The CSIE (administered

approximately every 10 weeks) similarly showed increases in agentic (+A) and agentic-and-

communal (+A+C) self-efficacy as well as in agentic-and-uncommunal (+A-C) self-efficacy. Thus,

patients expressed increasing confidence for being warm, influential, assertive, and aggressive

when necessary, and decreasing confidence for being meek and withdrawn. With respect to

interpersonal values, there were significant decreases in uncommunal (-C) and unagentic-and-

uncommunal (-A-C) goals—i.e., wanting to create distance and avoid humiliation. With respect

to interpersonal problems, distress over almost every type of interpersonal problem tended to

decline over time, but the decline was smallest (and not significant) for +A and +A-C problems, and was greatest for -A+C problems (being too exploitable).

Do the Changes Over Time Differ for the Different Treatments?

We also tested if the type of treatment group moderated the effect of time on outcomes by adding treatment type (dummy coded: BA = 0, CBASP = 1) as a predictor to the Level-2 regression equations as follows:

$$\beta_{0j} = \beta_{00} + \beta_{01}*(Treatment_j) + u_{0j} \tag{4}$$

$$\beta_{1j} = \beta_{10} + \beta_{11}*(Treatment_j) + u_{1j}, \tag{5}$$

where $Treatment_j$ is the type of treatment group experienced by patient j, and β_{11} is the effect of type of treatment on change in the outcome (i.e., the effect of interest). Table 3 (right side) shows the results for depression and activity levels. Type of treatment did not moderate self-reported changes in depression and activity levels. However, clinician (HRSD and IDS-CL) ratings of depression improved more for patients in CBASP groups than patients in BA groups. Analyzing each condition separately confirmed that depression improved in both conditions, but improved more in CBASP groups (*b*s for HRSD and IDS-CL = -4.197 and -5.697, *SE*s = .507 and .688) than BA groups (*b*s = -2.471 and -2.880, *SE*s = .710 and 1.019), all *p*s ≤ .01.

We did not create a table showing the moderating effects of treatment on changes in interpersonal outcomes, because type of treatment significantly (*p* < .05) moderated only six effects. First, type of treatment moderated the effect of time on weekly journal ratings of -A+C self-efficacy (*b* = -.020, *SE* = .009); analyzing each treatment type separately, -A+C self-efficacy increased in BA groups (*b* = .015, *SE* = .006) but not in CBASP groups (*b* = -.006, *SE* = .006). Second, treatment type moderated the effect of time on the CSIE +A and +A-C octant scales (bs

= .155 and .134, *SE*s = .071 and .057); +A and +A-C self-efficacy increased in CBASP groups (*b*s =

.163 and .116, *SE*s = .043 and .036) but not in BA groups (*b*s = .008 and -.019, *SE*s = .059 and

.047). Third, treatment type moderated the effect of time on the IIP +A and -A+C octant scales

(*b*s = -.108 and -.214, *SE*s = .055 and .084); +A and -A+C problems decreased in CBASP groups

(bs = -.094 and -.209, SEs = .037 and .047) but not in BA groups (*b*s = .014 and .004, *SE*s = .039

and .079). Finally, treatment type moderated the effect of time on CSIV -A-C goals (*b* = -.162, *SE*

= .006); -A-C goals decreased in CBASP groups (*b* = -.161, *SE* = .038) but not in BA groups (*b* =

.001, *SE* = .056).

To summarize, compared to patients in BA groups, patients in CBASP groups showed

greater reductions in clinician-rated depression, -A-C (socially avoidant) goals and problems, +A

(domineering) problems, and greater increases in +A and +A-C (assertive and aggressive) self-

efficacy. Also, -A+C (agreeable) self-efficacy was slightly more likely to increase in BA than

CBASP groups. Thus, CBASP may have had more influence than BA on depression and

interpersonal outcomes, particularly with respect to reducing interpersonal timidity and

promoting assertiveness without creating overbearing behavior. However, given the small

samples sizes and large number of possible moderating effects, pending replication these

results should be treated as tentative.

Does interpersonal self-efficacy predict affect and behavior over the subsequent week?

The weekly journals assessed self-efficacy for behavior in the group during *that day's*

upcoming group, but assessed mood and activity *over the preceding week*. Therefore, we tested

if mood and activity over the preceding week (assessed at time *t*) was predicted by the patient's

interpersonal self-efficacy assessed at the preceding group session (assessed at time $t-1$).

Specifically, the Level-1 equation was:

$$Outcome_{ij} = \beta_{0j} + \beta_{1j}(Time_i) + \beta_{2j}(Efficacy_{i-1j}) + r_{ij} , \qquad (6)$$

where $Outcome_{ij}$ is patient j's mood or activity during the week preceding time i; $Efficacy_{i-1j}$ is

patient j's self-efficacy (for example, +A efficacy) at time $i-1$; β_{2j} is the degree to which

variations over time in patient j's self-efficacy predict variations over time in patient j's

outcomes; and r_{ij} is residual (within-patient) error. We centered $Efficacy_{ij}$ within-patient by

subtracting the patient's average self-efficacy across all measurement times from the patient's

self-efficacy at each particular measurement time. Thus, we tested if variations in self-efficacy

predicted variations in mood and activity within each patient. Including time as a predictor

controlled for associations simply due to both self-efficacy and outcomes increasing or

decreasing over the course of treatment. The between-patient (Level-2) model was:

$$\beta_{0j} = \beta_{00} + u_{0j} \qquad (7)$$

$$\beta_{1j} = \beta_{10} + u_{1j} , \qquad (8)$$

$$\beta_{2j} = \beta_{20} + u_{2j} , \qquad (9)$$

where β_{20} (the effect of interest) is the average effect of self-efficacy on outcomes across all

patients.

The results showed that when patients expressed greater than expected +A+C self-

efficacy they tended to experience less depression and more activity over the subsequent week

(bs = -.076 and .072, SEs = .034 and .030, ps < .05). Moreover, there were similar, marginally

significant ($p < .07$) effects showing that when patients expressed greater than expected +A

self-efficacy they tended to experience more activity over the subsequent week ($b = .079$, $SE =$

.042), whereas when patients expressed greater -A-C self-efficacy they tended to experience more depression over the subsequent week (b = .058, SE = .030). Because the predictors (self-efficacy) and the outcomes (mood and activity) were assessed during different group sessions, these associations cannot be attributed to a bias to give generally positive or generally negative responses on a particular day. Instead, the results suggest that agentic-and-communal self-efficacy (confidence that one can effectively communicate with and influence others) predicts healthy activity, engagement, and affect during the subsequent week.

Discussion

The current study compared the interpersonal characteristics of a sample of severely and persistently depressed patients with those of a general population sample, and assessed changes in patients' interpersonal characteristics and depressive symptoms resulting from 20 weeks of manualized group therapy.

Differences between Depressed versus Normative Interpersonal Dispositions

Compared to normative samples, depressed patients reported experiencing less interpersonal confidence, stronger interpersonal goals, and more interpersonal distress. Depressed patients' greater interpersonal distress was expected based on past research (Barrett & Barber, 2007; Grosse Holtforth et al., 2014). Depressed patients' weaker interpersonal confidence was also expected based on previous findings of negative associations between social efficacy and concurrent and future depression (Bandura, 1997; Bandura et al., 1999; Wei et al., 2005), although those studies conceptualized social efficacy more narrowly than we did (essentially, as the ability to work and play well with others). Perhaps most intriguing—given the lack of prior relevant research on interpersonal goals—was that

depressed patients placed more importance on goals reflecting diverse segments of the circumplex, including goals both to avoid negative reactions and to receive positive evaluations from others.

Within each circumplex measure, depressed patients endorsed some octants more strongly than others. Compared to the normative sample, depressed patients were especially prone to place more importance on avoiding conflict and social humiliation, to lack confidence that they could be clear, strong, and assertive (even in situations requiring a forceful response), and to experience more problems associated with being too meek, inhibited, and accommodating. Thus, depressed patients doubted their ability to be agentic and worried about being humiliated and rejected, and perhaps consequently had problems with being too unagentic (submissive, agreeable, and self-silencing). In short, across all measures, depressed patients were either less agentic or more unagentic than the general population.

Effects of CBASP and BA Group Treatment

In accord with previous studies showing CBASP and BA to be effective treatments for moderate to severe depression (Ekers et al., 2014; Keller et al., 2000), patients in the current study undergoing either CBASP or BA interventions evidenced significant increases in healthy activities and reductions in self-reported and clinician-rated symptoms of depression. The current study advances previous research by being the second study to report outcomes for Group-CBASP (Sayegh et al., 2012), and the first to directly compare CBASP and BA. Interestingly, while self-ratings of depression improved over the course of treatment to the same degree in both types of groups, ratings of depression made by clinicians (unaware of which treatment group patients had been assigned to) improved more for patients in CBASP

than in BA groups. Thus, presumably self-ratings and clinician-ratings were sensitive to different

indicators of improvement.

Another distinctive feature of the current study is the assessment of changes in

interpersonal goals, efficacy, and problems associated with every IPC octant. Several changes in

interpersonal outcomes were evident across both types of treatment. First, there were

reductions in almost every type of interpersonal problem, but the decline was steepest for

problems with being too exploitable and weakest for problems with being too vindictive.

Second, the interpersonal goals to create distance and avoid humiliation declined over time.

Finally, both the CSIE (administered approximately every 10 weeks) and the patient's weekly

journals showed increases in patients' self-efficacy for being expressive, assertive, and

influential. The latter finding is particularly encouraging because we found that whenever a

patient was experiencing relatively (for that patient) high levels of +A+C efficacy, that patient

tended to experience relatively (for that point in treatment) high levels of healthy activity and

low levels of depression over the subsequent week. Thus, +A+C efficacy beliefs—confidence

that one can effectively communicate and exert influence—may constitute an important focus

of psychotherapeutic interventions.

Whereas the preceding interpersonal outcomes were similar across treatment conditions,

other interpersonal outcomes differed across treatment type. Specifically, while patients in BA

(but not CBASP) groups reported increased self-efficacy for being agreeable, patients in CBASP

(but not BA) groups reported increased self-efficacy for being assertive/aggressive, and

decreased problems with being too assertive or agreeable and goals to avoid humiliation. Thus,

CBASP influenced more interpersonal outcomes, particularly those involving feeling more

comfortable with assertion and less worried about making mistakes. Perhaps Group-CBASP influenced these outcomes because Group-CBASP explicitly teaches patients how to attain desired interpersonal outcomes through adaptive behavioral responses. Furthermore, Group-CBASP employs the interpersonal circumplex to help patients appreciate the interconnections among their interpersonal beliefs, goals, impacts, and problems. Unfortunately, lacking observer ratings (e.g., by clinicians or other group members), the current study cannot determine if others would corroborate these self-reported changes in interpersonal style.

Limitations

The current study has several limitations. First, regarding the differences between the depressed and normative samples, because we did not include a non-depressed psychiatric control group, these differences may not be specific to depression. Second, the lack of a no-intervention control group creates uncertainty regarding to what extent the observed improvements during treatment were attributable to the group interventions per se. Third, due to the modest sample size, the results—especially the differences between the outcomes of CBASP and BA—should be considered tentative pending replication with larger samples. Finally, we only included self-report measures of interpersonal goals, self-efficacy, and problems, and therefore the outcomes from those measures may partly reflect depressive or other self-report biases.

Conclusions

The severely depressed patients' elevated scores on measures of interpersonal goals and problems suggest that they were quite concerned about their social interactions and relationships. Thus, the social isolation many experience presumably typically reflects a failure

to obtain what they want from others rather than a lack of social interest. Depressed

individuals are prone to maladaptive patterns of thinking and acting that can contribute to their

social frustrations (Hames et al., 2013; Segrin, 2011), which include the patterns of

interpersonal goals, efficacy beliefs, and problems highlighted by the current study. Specifically,

the severely depressed patients in this study were extremely concerned with not provoking

negative reactions—especially anger or scorn—from others, and were very insecure about their

ability to express and assert themselves clearly and effectively in social situations. These strong

avoidance motives and weak efficacy expectancies presumably contributed to patients'

interpersonal problems, particularly problems with being excessively accommodating,

submissive, and withdrawn. The syndrome of inefficacious self-perceptions, avoidance motives,

and submissive behavior is consistent with excessive, chronic activation of an "involuntary

defeat" reaction (Taylor, Gooding, Wood, & Tarrier, 2011). Unfortunately, passive, inhibited,

self-derogating, and needy interpersonal styles are likely to evoke dominating and (eventually)

rejecting reactions from others (Horowitz et al., 1991; McCullough, 2000), reactions which are

in turn likely to perpetuate the depressed patients' interpersonal difficulties and frustrations.

Fortunately, the current results also provide further evidence that group interventions,

including Group-CBASP (Sayegh & Penberthy, 2016-a, -b), can be an effective modality for

working with severely and persistently depressed patients. Participating in 20 weeks of

manualized BA (Hopko et al., 2003) or CBASP (McCullough et al., 2014) group therapy was

associated with significant reductions in depressive symptoms and interpersonal distress along

with increases in beneficial activity. Depressed patients may initially resist entering—and their

passive interpersonal style may deter clinicians from suggesting—group therapies, but group

treatments offer depressed patients unique opportunities to learn and practice social skills, and

consequently to reduce their excessive self-evaluative concerns and increase their agentic self-

efficacy (Sayegh et al., 2012).

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Table 1

Examples of Items from Each Octant of the CSIE, CSIV, and IIP

Octant	Example CSIE Items *How confident are you that you can…*	Example CSIV Items *When with others, how important is it that…*	Example IIP Items *It is hard for me to…*
Communal (+C)	…be helpful	…I feel connected to them	…let myself feel angry at somebody I like
Agentic & Communal (+A+C)	…express myself openly	…they respect what I have to say	…keep things private from other people
Agentic (+A)	…be assertive	…I appear confident	…take instructions from people who have authority over me
Agentic & Uncommunal (+A-C)	…tell them when I am annoyed	…I keep the upper hand	…really care about other people's problems
Uncommunal (-C)	…get them to leave me alone	…I keep my guard up	…show affection to people
Unagentic & Uncommunal (-A-C)	…hide my thoughts and feelings	…I <u>not</u> say something stupid	…join in on groups
Unagentic (-A)	…let others take charge	…I <u>not</u> make them angry	…be firm when I need to be
Unagentic & Communal (-A+C)	…get along with them	…they like me	…say "no" to other people

Table 2

Interpersonal Self-Efficacy, Goals, and Problems in the Depressed and Normative Samples

| | Interpersonal Self-Efficacy (CSIE) | | | | | | Interpersonal Goals (CSIV) | | | | | | Interpersonal Problems (IIP) | | | | | |
| | Depressed | | Normative | | | | Depressed | | Normative | | | | Depressed | | Normative | | | |
Scale	*M*	*SD*	*M*	*SD*	*t*	*d*	*M*	*SD*	*M*	*SD*	*t*	*d*	*M*	*SD*	*M*	*SD*	*t*	*d*
+A	1.96	0.81	2.53	0.88	-4.73**	-.64	2.26	0.66	1.89	0.77	3.54**	.48	0.71	0.67	0.63	0.66	0.90	.13
+A-C	1.52	0.78	2.16	0.83	-5.73**	-.78	1.19	0.74	1.04	0.81	1.38	.19	1.02	0.96	0.80	0.80	1.86	.26
-C	1.86	0.90	2.15	0.87	-2.43*	-.33	1.45	0.82	1.27	0.84	1.66	.23	1.45	0.92	0.99	0.84	3.87**	.55
-A-C	2.68	0.63	2.62	0.70	0.71	.10	2.20	0.73	1.66	0.89	4.62**	.63	2.39	0.98	1.66	1.07	4.84**	.69
-A	2.74	0.54	2.49	0.72	2.56*	.35	2.36	0.74	1.53	0.85	7.24**	.98	2.48	0.97	1.75	0.97	5.37**	.76
-A+C	3.27	0.53	3.11	0.63	1.83	.25	2.50	0.74	2.32	0.84	1.61	.22	2.42	0.87	1.67	0.88	5.98**	.85
+C	2.65	0.67	2.77	0.68	-1.34	-.18	2.36	0.74	2.10	0.87	2.22*	.30	2.16	0.99	1.76	0.97	2.89**	.41
+A+C	1.86	0.88	2.44	0.80	-5.26**	-.72	2.30	0.66	2.39	0.72	-0.95	-.13	1.12	0.97	0.77	0.74	3.13**	.44
Mean	2.32	0.45	2.53	0.50	-3.22**	-.44	2.08	0.53	1.77	0.56	4.04**	.55	1.72	0.49	1.25	0.55	6.02**	.85

*Note. N*s = 58 depressed patients, 750 normative efficacy, 910 normative goals, and 361 normative problems. Ratings are on 0-to-4 scales; ratings by depressed patients were made prior to their first treatment session. Standard deviations are in italics. The *t*-values test the difference between depressed and normative samples. By convention, Cohen's *d* values exceeding .2, .5, and .8 reflect small, medium, and large effect sizes, respectively.

* *p* < .05 ** *p* < .005

Table 3

Effect of Time and Interaction of Time x Treatment Type on Activity and Depression Levels

	Effect of Time		Effect of Treatment x Time	
	b_{10}	*SE*	b_{11}	*SE*
Weekly Journal Measures				
Depression	-0.030**	*0.007*	0.005	*0.015*
Activity	0.015*	*0.005*	-0.017	*0.011*
Assessment Battery Measures				
HRSD	-3.544**	*0.425*	-1.725*	*0.853*
IDS-CL	-4.633**	*0.599*	-2.821*	*1.186*
BDI	-2.120**	*0.594*	-0.525	*1.216*
IDS-SR	-2.205**	*0.600*	-0.929	*1.241*

Note. HRSD = Hamilton Rating Scale for Depression. BDI = Beck Depression Inventory. IDS = Inventory of Depressive Symptomatology (CL = clinician-rating, SR = self-rating). Time effects reflect changes over either 1 week (for the journal measures) or approximately 10 weeks (for the assessment battery measures). Treatment was dummy-coded: BA = 0, CBASP = 1.

* $p < .05$ ** $p < .005$

Table 4

Effect of Time since Starting Group Treatment on Interpersonal Self-Efficacy, Goals, and Problems

| | Weekly Journal | | Assessment Battery | | | | | |
| | Efficacy | | Efficacy | | Goals | | Problems | |
Octant Scale	b_{10}	SE	b_{10}	SE	b_{10}	SE	b_{10}	SE
+A	0.017*	.008	0.105*	.036	-0.025	.027	-0.053	.027
+A-C	0.012	.008	0.065*	.029	0.013	.029	-0.042	.038
-C	-0.001	.008	-0.033	.036	-0.080*	.037	-0.078*	.037
-A-C	-0.015	.008	-0.075	.039	-0.100**	.033	-0.128**	.043
-A	-0.018*	.007	-0.021	.034	-0.048	.030	-0.109*	.041
-A+C	0.002	.005	-0.043	.025	-0.006	.031	-0.135**	.033
+C	0.020**	.006	0.029	.029	0.008	.025	-0.126**	.036
+A+C	0.023*	.008	0.104**	.034	-0.005	.024	-0.078*	.036
Mean	0.005	.004	0.016	.019	-0.030	.022	-0.094**	.021

Note. Coefficients indicate estimated change per week in the weekly journal measures or change per approximately 10-weeks for the assessment battery measures.
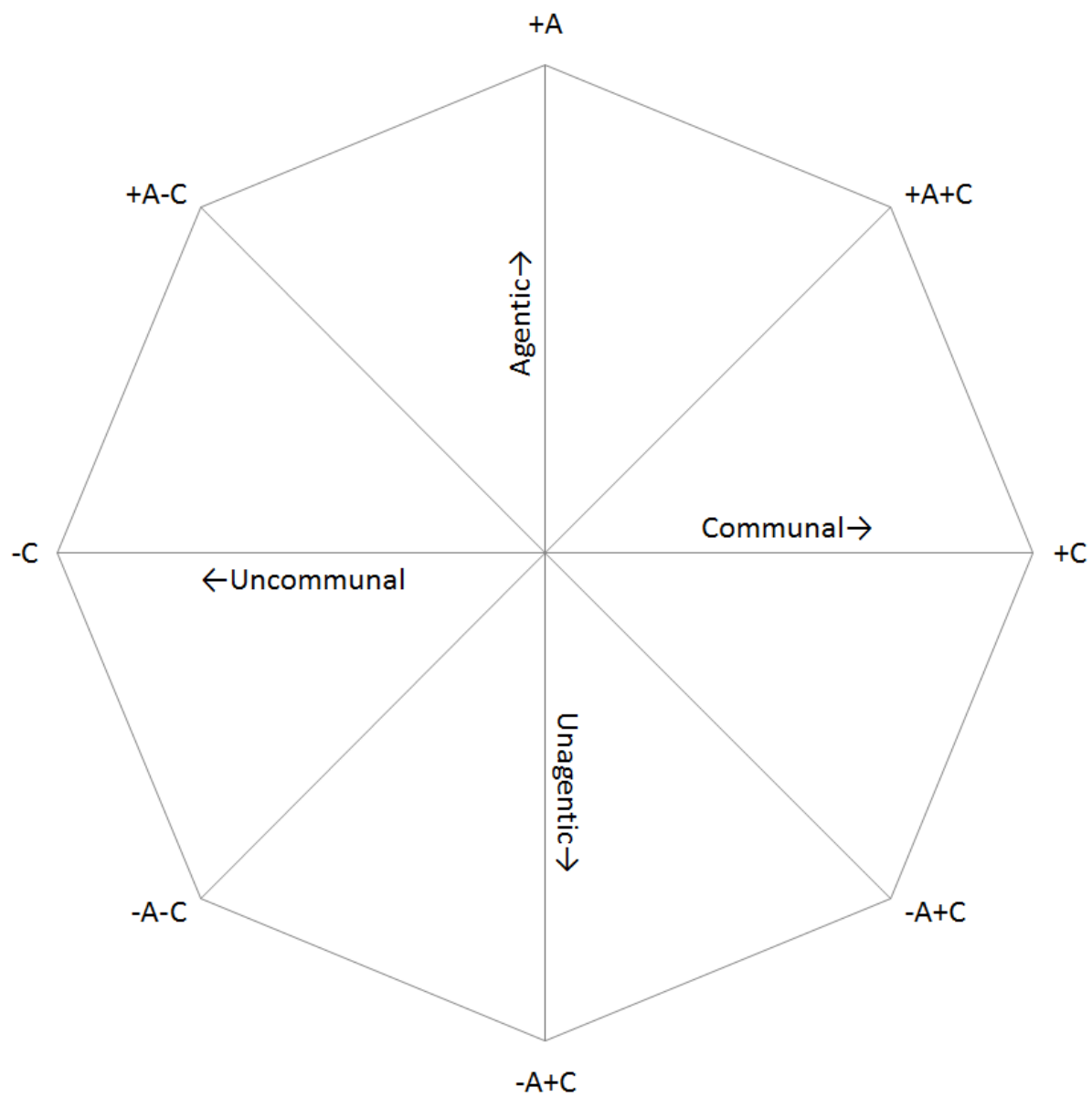
* $p < .05$ ** $p < .005$

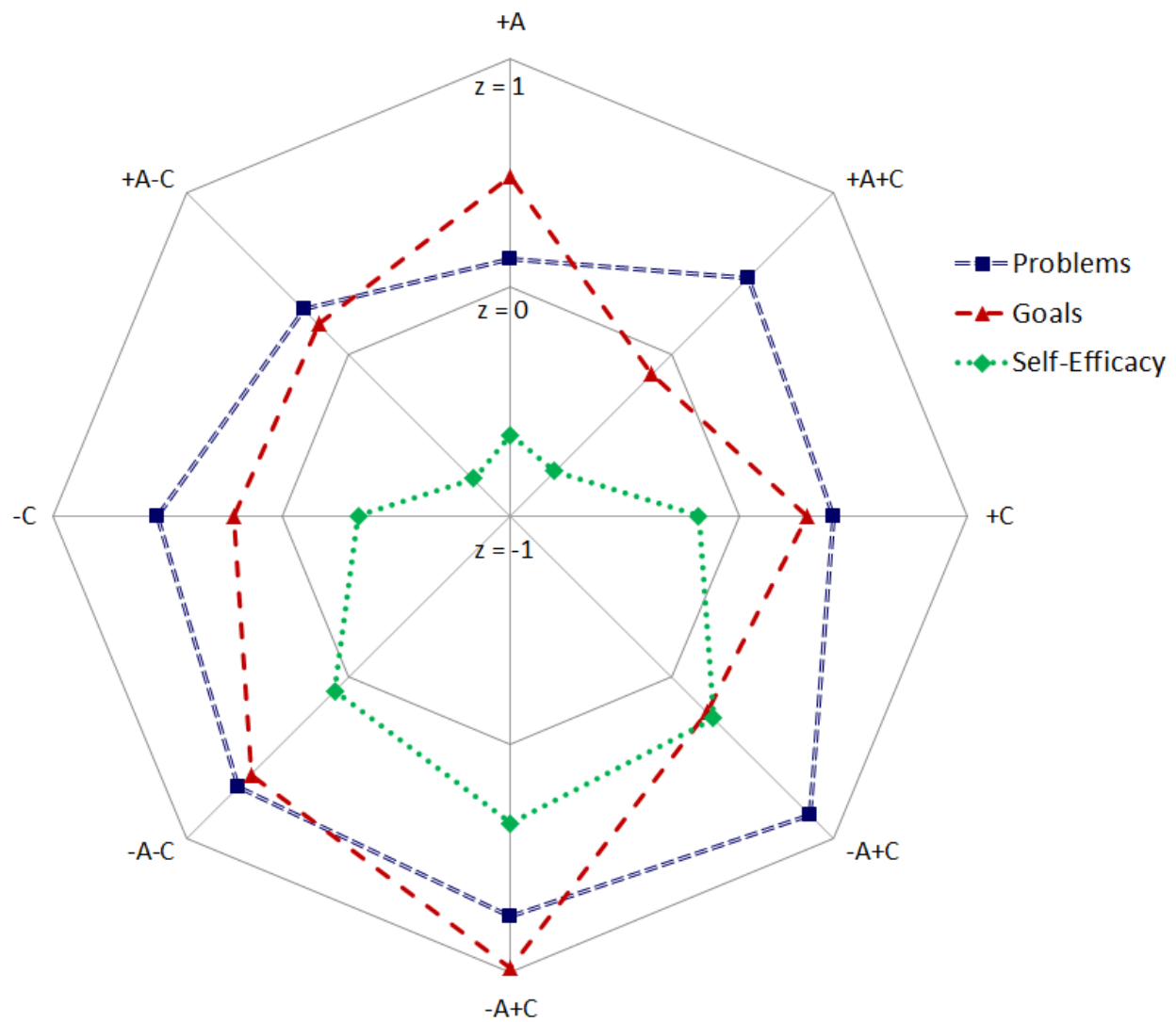*Figure 1.* The Interpersonal Circumplex.

Figure 2. Mean self-reported interpersonal problems, goals, and self-efficacy of depressed patients. Octant scores were z-scored relative to normative sample scores. Thus, along each octant scale, a score 1 SD below the normative sample average would be at the midpoint of the circle; a score 1 SD above average would be at the circumference; and an average score would be located midway between midpoint and the circumference.