Published in final edited form as:

Psychiatry. 2014 ; 77(3): 247–262. doi:10.1521/psyc.2014.77.3.247.

Interpersonal Change Following Intensive Inpatient Treatment

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Abstract

Objective: Persons admitted for inpatient psychiatric care often present with interpersonal difficulties that disrupt adaptive social relations and complicate the provision of treatment. Whereas domains of psychosocial functioning in this population demonstrate clear growth in response to intervention, the impact of treatment on more complex patterns of interpersonal behavior has been largely overlooked within the existing literature. Interpersonal profiles characteristic of psychiatric inpatients were identified in the current study to determine rates of transition to adaptive functioning following hospitalization.

Methods: Personality disturbance was assessed in 513 psychiatric inpatients using the Inventory of Interpersonal Problems. Scores were analyzed within a series of latent profile models to isolate unique interpersonal profiles at admission and at discharge. Longitudinal modeling was then employed to determine rates of transition from dysfunctional to adaptive profiles. Relationships with background characteristics, clinical presentation, and treatment response were explored.

Results: Normative, Submissive, and Hostile/Withdrawn profiles emerged at both admission and discharge. Patients in the Normative profile demonstrated relatively moderate symptoms. Submissive and Hostile/Withdrawn profiles were related to known risk factors and elevated psychopathology. Approximately half of patients identified as Submissive or Hostile/Withdrawn transitioned to the Normative profile by discharge. Transition status evidenced modest associations with background characteristics and clinical presentation. Treatment engagement and reduction of clinical symptoms were strongly associated with adaptive transition.

Conclusion: Maladaptive interpersonal profiles characteristic of psychiatric inpatients demonstrated categorical change following inpatient hospitalization. Enhanced therapeutic

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Declaration of Interests:

Drs. Clapp, Grubaugh, Allen, Oldham, Fowler, Hardesty, and Frueh have no conflicts of interest to disclose.

Footnotes

engagement and overall reductions in psychiatric symptoms appear to increase potential for interpersonal change.

Interpersonal Change Following Intensive Inpatient Treatment

Interpersonal functioning increasingly has been recognized as an important component of mental health assessment given robust associations with severity of clinical symptoms and overall quality of life (e.g., Gladis, Gosch, Dishuk, & Crits-Christoph, 1999; Markowitz, Bleiberg, Christos, & Levitan 2006). Problematic interpersonal style may be a particularly salient issue for persons receiving inpatient psychiatric care. Subsets of this population evidence interpersonal behaviors that interfere with basic functioning and limit the potential for adaptive social relations (Morin & Seidman, 1986). Within the context of hospitalization, interpersonal difficulties are predictive of disruptive on-unit behaviors including verbal aggression and physical violence (e.g., Daffern et al., 2010; Doyle & Dolan, 2006). Interpersonal style also has been shown to influence therapeutic alliance, process, and outcome among persons receiving inpatient care (e.g., Dinger, Strack, Leichsenring, & Schauenburg 2007; Haase et al., 2008). A number of treatment modalities have documented positive interpersonal change among individuals presenting with a history of psychiatric hospitalization (e.g., Bartak et al., 2009; Creed et al., 1990; Latini et al., 2009; Leising, Grande, & Faber, 2010; Sledge et al., 1996; Wilberg, Karterud, Urnes, Pedersen, & Friis, 1998) but few studies have evaluated alterations in more complex patterns of dysfunction. Aims of the current study were to identify profiles of interpersonal difficulty characteristic of psychiatric inpatients and to evaluate adaptive shifts in potentially maladaptive profiles following brief (i.e., several-week) intensive inpatient treatment.

Interpersonal difficulties in psychiatric research are commonly assessed using scores from the Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988; Horowitz, Alden, Wiggins, & Pincus, 2000). Scales index eight intercorrelated traits - Domineering/Controlling, Vindictive/Self-Centered, Cold/Distant, Social Inhibited, Nonassertive, Overly Accommodating, Self-Sacrificing, and Intrusive/Needy - structured around a circumplex model of interpersonal behavior (see Sodano & Tracey, 2011 for a review). Although scores evidence sensitivity to psychosocial intervention (e.g., Dinger et al., 2007; Haase et al., 2008; Renner et al., 2012; Watzke et al., 2012), analysis of mean-level response across individual scales fails to consider the possible impact of more complex patterns of dysfunction. For example, patients marked by elevations on both Nonassertive and Vindictive/Self-Centered scales may interact with clinicians, fellow patients, and the therapeutic milieu in ways that differ from those characterized by elevations on Nonassertive and Overly Accommodating scales. The clinical and conceptual limitations of single-dimension analyses have long been noted (Horowitz et al., 2000; Wiggins & Trobst, 1997), but more comprehensive assessments of interpersonal functioning remains largely absent from the existing inpatient research.

Person-centered analyses e.g., cluster analysis, latent class analysis, latent mixture modeling) have been used to evaluate complex patterns of interpersonal behavior in other literatures. Procedures are used to assess heterogeneity in a population through identification of subgroups sharing common profiles of response (Nylund, Asparouhov, & Muthén, 2007).

In one example, Leihener and colleagues (2003) evaluated interpersonal patterns among women diagnosed with borderline personality disorder. Cluster analysis indicated two patient subtypes, one marked by detached/aloof behavior (i.e., Autonomous profile) and another marked by passivity and conflict avoidance (i.e., Dependent profile). Results indicated profiles to be stable over time with few differences in demographic characteristics or overall symptom severity.

Person-centered methods have also been extended to evaluate categorical shifts in response profiles over time. In a clinical trial of eating disorder patients, Sysko, Hildebrandt, Wilson, Wilfley, & Agras (2010) noted differential response to interpersonal, behavioral, and self-help interventions based on pre-treatment symptom profiles. Latent class analysis at pre-treatment isolated four distinct patient profiles whereas post-treatment assessment identified only Remission and Non-Responder classes. Longitudinal modeling revealed that one pre-treatment profile (identified by frequent binge eating, body image concerns, high compensatory behavior, and depression) transitioned to the post-treatment Remission class at greater rates following interpersonal psychotherapy. Patients in an alternate profile (identified by frequent binge eating but lower depression and compensatory behavior) evidenced greater transition to Remission following self-help. Person-centered methods in this research expand traditional analyses of change (a) by isolating distinct patient subtypes based on a common symptom presentation and (b) by identifying categorical shifts from pathological to adaptive profiles in response to intervention.

Despite the heterogeneity of individuals seeking inpatient care, characteristic patterns of interpersonal functioning and their relation to clinical outcome have not been widely examined in this patient population. Isolation of clinically relevant profiles and their impact on transition to health could inform treatment selection, case conceptualization, and policy impacting the provision of psychiatric care. As such, the aims of the present study were (a) to identify profiles of interpersonal difficulty characteristic of psychiatric inpatients; (b) to examine the association of interpersonal profiles with background characteristics, clinical presentation, and treatment response, and (c) to determine rates at which patients transition from dysfunctional to normative profiles following brief, interpersonally-focused inpatient intervention.

Methods

Participants

Data were collected from psychiatric inpatients ($N = 513$) hospitalized at a private, not-for-profit facility in the southwestern United States. Patients were consecutively admitted between April 2008 and December 2010. Programming at this facility begins with a multidisciplinary assessment targeting both psychiatric symptoms and global psychosocial functioning. Medical, neuropsychological, and vocational evaluations are provided as relevant. Baseline intervention for all patients includes twice-weekly group psychotherapy and twice-weekly individual sessions drawing content from both psychodynamic to cognitive-behavioral models. Psychoeducational groups targeting trauma, shame resilience, attachment, skills training, goal formulation, and wellness planning are provided as an adjunct to formal therapy. Specialized treatments also are offered for patients presenting

with substance abuse, eating disorders, and/or suicidality. Opportunities for fitness training and leisure activities are provided throughout admission. All components of treatment are delivered within a therapeutic milieu designed to foster positive relations between patients, clinicians, and staff. Response to intervention is monitored through a series of computerized measures administered biweekly over the course of treatment. Mean length of hospitalization for the current sample was 35 days.

Assessment

Interpersonal problems—Interpersonal problems were assessed using the 32-item form of the IIP (IIP-32; Horowitz et al., 2000). The IIP-32 is based on interpersonal circumplex models with subscales addressing Domineering/Controlling, Vindictive/Self-Centered, Cold/Distant, Social Inhibited, Nonassertive, Overly Accommodating, Self-Sacrificing, and Intrusive/Needy domains (see Figure 1). Individual items detail behaviors identified by respondents as either difficult (e.g., It's hard for me to socialize with other people) or excessive (e.g., I try to control other people too much). Scores are calculated as item sums (range = 0-16) with larger values indicating greater interpersonal difficulty. Clinical research provides evidence in support of the construct validity, internal consistency, and test-retest reliability of circumplex versions of the IIP (Horowitz et al., 2000; Salazar, Martí, Soriano, Beltran, & Adam, 2010). IIP scores were collected both at admission and prior to discharge.

Background information—Background characteristics were obtained at admission. Relations with patient gender were examined given evidence for robust sex differences in interpersonal difficulties (e.g., Hyde, 2005). Additionally, prior hospitalization was evaluated given known associations between psychiatric recidivism and poor interpersonal functioning (e.g., Olfson et al., 1999). Prior hospitalization – not limited to this facility – was coded as a dichotomous variable (0=absent, 1=present).

Clinical presentation—Clinical diagnoses were established by the treating psychiatrist as indicated by *DSM-IV* criteria. Depressive, bipolar, psychotic, alcohol/substance use, and anxiety-related disorders were examined. Symptom severity at admission was evaluated using the Behavior and Symptom Identification Scale (BASIS-24; Eisen, Normand, Belanger, & Spiro, 2004). BASIS-24 total scores were calculated using a weighted-average algorithm with higher values indicating greater symptom severity. Research with both clinical and community samples provide evidence of factorial, convergent, and discriminant validity (Eisen et al., 2004; Cameron et al., 2007).

Response to treatment—Change in BASIS-24 total served as the primary indicator of treatment response. Patient-rated treatment engagement also was considered given relations between interpersonal difficulties and therapeutic process (e.g., Dinger et al., 2007; Haase et al., 2008). Engagement was based on items taken from a standardized discharge survey (Allen et al., 2009). Engagement items (I talk openly about my problems; I work hard to achieve my goals; I am making good progress; I am feeling stuck) were rated on a 1 (*Definitely False*) to 5 (*Definitely True*) Likert scale. Values were averaged to form an overall index of therapeutic engagement.

Analytic Approach

Interpersonal profiles were evaluated using a stepped approach consistent with recommendations by Nylund, Muthén, & Nishina (2012). First, latent profile analyses (LPA) were conducted to identify patterns of interpersonal difficulty at both admission and prior to discharge. Subpopulations in this study were identified through unique configurations of IIP-32 scores. Models specifying 1 to 6 subgroups were evaluated at each assessment-point. Theory, substantive interpretation, and formal indices of fit all were considered during final model selection (Nylund et al., 2007). Fit indices included AIC, BIC, and sample size adjusted BIC (aBIC) criteria; the Lo-Mendell-Rubin test (LMR); and entropy criterion. AIC, BIC, and aBIC are standard information criteria wherein lower values represent incremental improvement of fit. The LMR, by contrast, offers a comparison of an estimated model with a solution containing one fewer classes. Significant *p*-values indicate improved fit relative to the more parsimonious model. Entropy provides an index of the degree to which profiles are uniquely characteristic of a given class. Values range from 0 to 1 with entropy $\geq .80$ suggestive of adequate separation (Lubke & Muthén, 2007).

Following selection of pre- and post-treatment models, analyses were combined to evaluate transition of profiles over the course of intervention. Specifically, class membership at Time 2 was regressed onto class membership at Time 1 consistent with procedures for latent profile transition analysis (LPTA; Muthén, & Muthén, 1998-2010). Analyses were designed to estimate rates of transition from disruptive to more adaptive profiles following inpatient psychiatric care.

Finally, admission profile and transition status were examined with respect to a series of external covariates. Differences in background characteristics, clinical presentation, and treatment response were examined with regard to both admission profile and transition status.¹

Results

Sample characteristics

IIP-32 scales and diagnostic information were available for 574 individuals. Of these, 61 cases were excluded given incomplete information. Relative to the final sample ($N = 513$), patients with incomplete data were younger ($p = .004$) and more likely to be female ($p = .032$). Excluded patients also were less likely to present with a psychotic disorder ($p = .026$), reported higher BASIS-24 scores at intake ($p = .003$), and evidenced greater BASIS-24 reductions at discharge ($p = .034$). Exclusion was unrelated to race, treatment engagement, or other clinical diagnoses ($p = .197$).²

Characteristics of the final sample are provided in Table 1. As expected, patients evidenced substantial psychiatric comorbidity. With regard to primary diagnoses, depressive disorders were most common (55.0%), followed by bipolar (13.6%), anxiety (11.1%), psychotic

¹Classification for these analyses was determined using posterior probabilities established during LPTA. Simulation research supports analyses based on most-likely membership in cases where latent class separation is high (i.e., entropy $\geq .80$; Clark & Muthén, 2012).

²Latent profile and latent profile transition analyses also were examined using the larger patient sample ($N = 574$). Models were functionally identical to those presented in the text.

(9.6%), and alcohol/substance use (2.9%) disorders (see Table 1 for full comorbidity data). Severity of clinical symptoms in the full sample was consistent with published inpatient norms. BASIS-24 scores at admission were within the 47th – 48th percentile of psychiatric inpatients (95th – 96th percentile of community samples; Cameron et al., 2007). IIP-32 scores were consistent with those observed in previous psychiatric samples (Salazar et al., 2010).

Interpersonal profiles

LPA were conducted using MPlus 6.1 software. Model specification assumed conditional independence, consistent with examples provided by Muthén and Muthén (1998-2010). Fit indices for 1- to 6-class solutions are presented in Table 2. For admission data, AIC, BIC, and aBIC values decreased across successive models although reductions stabilized following the 3-class solution. Entropy was acceptable for all models. LMR indicated statistical improvement with the inclusion of 2, 3, and 4 classes.

Given these data, profiles were examined for 3- and 4-class solutions. The first profile of the 3-class solution indicated a patient subgroup endorsing relatively low levels of interpersonal difficulty (see Fig. 2). Scores from this group fell in the average range of normative samples (45th to 70th percentile; Horowitz et al., 2000). The second profile marked a subgroup of patients with elevations across Nonassertive, Overly Accommodating, and Self-Sacrificing scales (97th to 99th percentile of normative samples). This pattern of submissive behavior suggests poor self-esteem, an inability to establish boundaries, and a tendency to sacrifice personal needs for the preferences of others. The final profile was characterized by relative elevations across Vindictive/Self-Centered, Cold/Distant, and Socially Inhibited subscales (95th to 99th percentile of normative samples). Scores in this hostile/withdrawn subgroup suggest difficulties marked by hostility, suspicion, and detachment. Normative, Submissive, and Hostile/Withdrawn profiles were replicated in the 4-class solution along with an intermediate profile containing average to high-average scores across all IIP-32 subscales.

LPA of scores at discharge scores produced similar results. Contrasting previous analyses, LMR indicated no statistical improvement beyond the 3-class solution. Discharge profiles in the 3-class solution were functionally identical to those observed at admission, aside from a general reduction in elevation (see Fig. 2). Given the evidence of consistency, conceptual clarity, and adequate fit, the 3-class model was selected for further investigation.

Transition status

LPTA was conducted to examine categorical shifts in interpersonal profile over the course of hospitalization. Profiles were constrained to equality across assessment periods with modifications for accommodating continuous indicators taken from Muthén & Muthén (1998-2010).³ Analysis specifying 3-class models at admission and discharge indicated adequate separation (AIC = 41938.28, BIC = 42141.81, aBIC = 41989.45, Entropy = .90). In this model, 35.5% (n=182) of patients initially were identified as Normative with nearly

³An alternate model was examined in which constraints on item profiles were relaxed. Results of this model did not differ meaningfully from the more constrained model. As such, the more parsimonious solution assuming measurement invariance is presented.

every individual maintaining Normative status to discharge (see Table 3). Forty percent ($n=205$) of patients initially were classified as Submissive. In this subgroup, 48.3% retained Submissive status to discharge with an additional 48.3% transitioning to adjustment. Finally, 24.6% ($n=126$) of patients were identified as Hostile/Withdrawn. Over half (57.1%) transitioned to adjustment whereas 37.3% maintained classification as Hostile/Withdrawn.

Associations with admission profile and transition status

Associations with external covariates were examined using SPSS 15.0. Effect sizes are reported as d (small = .20, medium = .50, large = .80) and Φ (small = .10, medium = .30, large = .50) for continuous and categorical outcomes, respectively.

Admission profile

Background information: Sex differences were noted at admission ($p=.004$; $\Phi=.15$) with males more frequently identified as Hostile/Withdrawn and females more frequently identified as Submissive. Prior hospitalization was unrelated to admission profile.

Clinical presentation: Depressive diagnosis was associated with admission profile such that depressed patients were more frequently identified as Submissive and less frequently identified as Normative ($p=.011$; $\Phi=.13$). An identical pattern emerged with respect to anxiety-related diagnoses ($p=.011$; $\Phi=.13$). Other diagnostic categories were unrelated to profile at admission. Profiles also were associated with BASIS-24 scores ($p < .001$) such that Normative patients endorsed lower levels of psychopathology ($M = 1.33$; $SD = .66$) relative to Submissive ($M = 1.88$; $SD = .54$; $d = .91$) and Hostile/Withdrawn groups ($M = 1.97$; $SD = .56$; $d = 1.05$).

Transition Status—Factors associated either with transition to adjustment or non-response (i.e., no change from admission profile) were examined independently for Submissive and Hostile/Withdrawn subgroups. Conceptual and methodological considerations determined this approach. First, evidence of unique interpersonal profiles suggests that factors associated with transition to adjustment could differ across patient groups. Independent evaluation within each class assured specific effects would not be obscured by combining heterogeneous subgroups. Second, the overwhelming majority of Submissive and Hostile/Withdrawn patients either maintained their initial profile or transitioned to adjustment by discharge (see Table 3). Given that nearly every individual (98.4%) classified as Normative maintained this status, group-based analyses were restricted to Submissive and Hostile/Withdrawn subgroups.

Submissive: Background characteristics, clinical presentation, and treatment response variables were examined as predictors of transition among patients identified as Submissive at admission. Background characteristics including gender and prior psychiatric hospitalization were unrelated to transition in this subgroup.

Aspects of clinical presentation were associated with transition. Patients with anxiety-related pathology were more likely to maintain Submissive status relative to those with no anxiety diagnosis ($p = .046$, $\Phi = .14$). By contrast, diagnoses of alcohol/substance use ($p = .023$, Φ

= .16) were associated with greater transition to adjustment. Patients transitioning to adjustment also evidenced lower BASIS-24 scores at admission ($M = 1.79$; $SD = .54$) relative to those maintaining Submissive classification ($M = 1.97$; $SD = .52$; $p < .001$; $d = .34$).

Differences in response to intervention also were noted. Transition to adjustment was associated with greater BASIS-24 reductions ($M = -1.14$; $SD = .62$) relative to patients maintaining Submissive classification ($M = -.74$; $SD = .59$; $p < .001$; $d = .66$). Engagement also was greater among patients transitioning to health ($M = 4.65$; $SD = .46$) compared to non-responders ($M = 4.06$; $SD = .73$; $p < .001$; $d = .97$).

Hostile/Withdrawn: Associations with background characteristics, clinical presentation, and treatment response variables also were examined within the Hostile/Withdrawn subgroup. Hostile/Withdrawn patients reporting prior psychiatric hospitalization were less likely to transition to adjustment relative to those with no previous hospitalization ($p = .004$, $\Phi = .26$). Patient gender, diagnostic status, and BASIS-24 scores at admission were unrelated to transition in this subgroup.

Associations with treatment response variables were similar to those noted previously. Patients transitioning to adjustment evidenced greater BASIS-24 reductions ($M = -1.30$; $SD = .60$) than non-responders ($M = -.67$; $SD = .57$; $p < .001$; $d = 1.08$). Engagement also was greater among patients transitioning to adjustment ($M = 4.56$; $SD = .51$) relative to those persisting as Hostile/Withdrawn ($M = 3.69$; $SD = .98$; $p < .001$; $d = 1.11$).

Discussion

Problematic patterns of interpersonal functioning has long been associated with psychological and psychiatric disorders. While symptom reduction has been the dominant focus of treatment outcome studies, a considerable literature has developed over several decades indicating concomitant improvement in both psychiatric and interpersonal functioning across a number of modalities and treatment settings (Bartak et al., 2009; Creed et al., 1990; Dinger et al., 2007; Haase et al., 2008; Kecmanovic, 1985; Latini et al., 2009; Leising et al., 2010; Schene, Van Wijngaarden, Poelijoe, & Gersons, 1993; Sledge et al., 1996; Watzke et al., 2012; Wilberg et al., 1998). For the current study, heterogeneous patterns of interpersonal behavior were assessed at both admission and at discharge. Three distinct profiles were observed. Patients in the Normative subgroup endorsed relatively few interpersonal difficulties with scores comparable to those observed in non-psychiatric settings. Submissive patients, by contrast, were characterized by elevations in Overly Accommodating, Nonassertive, and Self-Sacrificing scores, suggesting difficulties marked by low self-worth and exploitability. Finally, Hostile/Withdrawn patients were marked by elevations in Vindictive/Self-Centered, Socially Inhibited, and Cold/Distant scales, suggesting a pattern of detachment, suspicion, and restricted social affiliation. Replication of profiles across both assessments offers evidence for the stability of this 3-class solution.

Associations with background characteristics and clinical presentation provide further support for the validity of observed profiles. Normative patients evidenced lower rates of

depressive disorders, anxiety pathology, and overall symptom severity at intake relative to Submissive and Hostile/Withdrawn groups. Differences in BASIS-24 scores at admission were consistent with large effects, suggesting comparatively higher functioning within this subgroup. By comparison, Submissive patients evidenced greater depressive- and anxiety-related comorbidity relative to other subgroups. Elevations in scales characterizing the Submissive profile (Nonassertive, Overly Accommodating, Self-Sacrificing) previously have been noted in anxious and depressive samples (Kachin, Newman, & Pincus, 2001; Ley et al., 2011). Finally, sex differences across Submissive and Hostile/Withdrawn profiles are consistent with research positing an interpersonal “gender axis”, with difficulties among men characterized by High Dominance/Low Affiliation and difficulties among women characterized by High Affiliation/Low Dominance (Hyde, 2005; Sodano & Tracey, 2011).

Clinical Implications

In addition to evidence for the reliability and validity of extracted profiles, results indicate meaningful shifts in interpersonal disturbances following intensive psychiatric care. As with previous studies, absolute reductions were noted across each IIP domain (e.g., Haase et al., 2008; Leising et al., 2010; Renner et al., 2012; Watzke et al., 2012; Wilberg et al., 1998).⁴ However, the present data are the first to indicate categorical shifts away from dysfunctional Submissive and Hostile/Withdrawn profiles following intervention.

Nearly half of Submissive patients (48.3%) transitioned to the Normative profile by discharge. Patients demonstrating positive transition evidenced lower BASIS-24 scores at intake, were more likely to be diagnosed with an alcohol/substance use disorder, and were less likely to present with an anxiety-related diagnosis. Results suggest that more moderate levels of psychopathology and restricted access to problematic substances increases the likelihood of addressing submissive interpersonal patterns. With respect to anxiety diagnoses, it is possible that the compounding of anxiety and submissive traits interfered with productive engagement in group-based interventions and/or the therapeutic milieu more generally. Previous research with outpatient samples indicates timid and/or exploitable patients may be differentially receptive to skills-training targeting adaptive social interaction and the development of reciprocal friendships (Alden & Capreol, 1993). Interpersonal profiles noted in the current study suggest that a similar skills-based approach could be used to promote assertiveness and positive social relations among inpatients identified as characteristically anxious and Submissive.

Over half (57.1%) of patients identified as Hostile/Withdrawn transitioned to the Normative profile by discharge. Non-responders, by contrast, evidenced greater rates of prior hospitalization, supporting an association between psychiatric recidivism and an intractable pattern of suspicion, hostility, mistrust, and isolation. Effects from this study compliment previous research demonstrating a relation between Vindictive/Self-Centered traits and poor end-state functioning in outpatients receiving cognitive-behavioral therapy for generalized anxiety (Borkovec, Newman, Pincus, & Lytle, 2002). These data imply individuals presenting with a Hostile/Withdrawn interpersonal style may benefit from programming that

⁴Although not the focus of the present study, mean reductions in IIP-32 scores were significant across all subscales (all $p < .001$; average $d = .51$).

emphasizes an interpersonal approach to psychotherapy. Interventions structured specifically to target generalized hostility and interpersonal detachment in these patients could maximize immediate treatment gains, facilitate the maintenance of adaptive social networks post-discharge, and decrease the potential for subsequent psychiatric hospitalization.

Whereas transition status evidenced modest associations with background information and clinical presentation, moderate to large effects were noted for treatment response factors. Specifically, relations between treatment engagement (e.g., talking openly about problems and working hard to achieve goals) and adaptive transition are consistent with previous studies demonstrating the importance of therapeutic alliance to positive treatment outcome (e.g., Allen, Buskirk, & Coyne, 1988; Allen, Tarnoff, & Coyne, 1985; Horvath, Del Re, Flückiger, & Symonds, 2011). Effects in the present study are encouraging in that the largest correlates of transition are factors over which clinicians have the greatest degree of influence. Whereas identification of risk factors for maladaptive interpersonal patterns (e.g., gender, prior psychiatric hospitalization, anxiety-related pathology) may guide case conceptualization and treatment planning, these data suggest targeted efforts to enhance therapeutic engagement and to reduce specific psychiatric symptoms should enhance potential for categorical change in problematic interpersonal behavior.

Illustrative Vignettes

Case 1 – Submissive—Ms. S was admitted for treatment after episodes of non-suicidal self-injurious behavior (e.g., cutting, burning) came to the attention of supervisors at her place of employment. Ms. S described herself as a “perfectionist” who was eager to please but never felt she received the level of recognition she desired. She reported “always being there” for friends, family, and colleagues but always felt that she gave more than she got back. History obtained through treatment revealed a life-long pattern of perceived emotional neglect, exacerbated by a successful but distant father and a mother who struggled with chronic symptoms of withdrawal and depression. As an adult, efforts to match the professional success of her father produced unmanageable levels of anxiety and distress. Emotionally isolated and fearful of expressing negative emotion overtly, Ms. S. developed a pattern of self-injurious behavior. Episodes of self-harm were preceded by events causing her to feel rejected, unrecognized, and excluded. Self-injury was identified as “punishment” for failures and resentments and was described by Ms. S as the “perfect release.” Episodes of cutting and burning also provided perceptions of control and power. Ms. S reported pride in her ability to endure pain but recognized increasing physical and emotional risk as these behaviors became increasingly severe.

Ms. S’s role as the “perfect patient” in the initial days of hospitalization proved unfulfilling. She began to feel neglected by staff – particularly when she perceived other patients were being favored or receiving more care. Following episodes of superficial cutting, Ms. S was encouraged to explore feelings of neglect in psychotherapy and with members of the nursing staff. She had developed a close relationship with her roommate who also encouraged adaptive communication of her emotions. Gradually, Ms. S was able to express anger and frustration regarding her past and in response to current interactions perceived as unfulfilling. She came to realize others were more accepting when she expressed genuine

opinions and beliefs. Ms. S identified how rigid efforts to be the “perfect person” had alienated family and peers.

Case 2 – Hostile/Withdrawn—Mr. Y was admitted for treatment after disclosing suicidal intent to his spouse. An attorney in his late 40s, Mr. Y reported a year-long spiral of depression compounded by alcohol abuse. Recurrent work absences resulted in a confrontation with a senior partner that ultimately triggered contemplation of suicide.

Mr. Y reported following a career path similar to his father’s. Mr. Y acknowledged resentment towards his father as he perceived his father to be controlling and demeaning of his accomplishments. As his depression and alcohol abuse escalated, Mr. Y became increasingly demanding, critical, and volatile - alienating both his wife and his children. He reported becoming “a controlling and critical S.O.B.” This was of particular relevance as Mr. Y viewed this as a reflection of his father’s behavior. Interpersonal difficulties continued through the initial days of hospitalization with Mr. Y continually finding fault with staff and treatment programming. He routinely questioned providers’ investment in his care and accused them of being concerned only with “earning their pay.”

Therapy revealed Mr. Y’s overt hostility masked feelings of despair coupled with anguish over his failing relationships. He became increasingly aware of his sadness and loneliness and stated that he was “drowning his sorrows in the bottle.” Mr. Y began to recognize the emotional toll of chronic resentment towards his father and the impact of overworking on his family. In this case, treatment programming included group sessions developed specifically for managerial and administrative professionals. In one session, he confided with peers his feelings of shame over his marriage, expressing desire to form a closer relationship with his wife. Mr. Y and his spouse became more emotionally engaged following joint family sessions. His willing participation in substance abuse counseling also played a significant role in their reconciliation. Although he remained guarded with his father, Mr. Y’s father also took an interest in his son’s treatment and developed an increased appreciation for the seriousness of his difficulties.

Limitations and Future Directions

A number of methodological considerations should be considered in the interpretation of these data and in planning continued research. Analysis of interpersonal profiles among psychiatric inpatients is novel, and evidence of categorical shifts in patterns of disruptive interpersonal behavior extends previous research demonstrating mean-level change. However, the novelty of this approach precluded specification of strong a priori hypotheses, and conclusions regarding the malleability of dysfunctional interpersonal profiles await replication.

The sample available for this research also was racially homogenous, with a lower prevalence of psychotic disorders than would be expected in US community hospitals (Saba, Levit, & Elixhauser, 2011). Moreover, intensive inpatient programming provided to patients in this study remains accessible to only a select segment of the population given monetary costs and a limited number of providers. Psychiatric symptoms commensurate with published inpatient norms coupled with effects mirroring those observed in previous studies

offer preliminary evidence of generalizability. Incorporation of increasingly diverse samples will provide opportunities to determine the extent to which clinical setting and/or patient characteristics moderate effects noted in this research.

Access to information regarding specific components of received care could be expected to enhance analysis of specific effects. In this sample, individualized programs of intervention were tailored based on patient-specific needs. Details regarding the type, frequency, and timing of provided services would offer greater insight into observed patterns of response. Informant- and clinician-based indices of interpersonal functioning also would be useful in validating both interpersonal profiles and response to intervention.

Incorporation of informant-based indices of interpersonal functioning would offer further validation of both admission profile and transition status. Existing research indicates reasonable correspondence between self- and other-rated interpersonal difficulties (Ready & Clark, 2002), but the potential for bias remains a limitation of any research utilizing self-report assessments. Informant ratings could be particularly useful for aiding interpretation of the Normative profile. Conceptualization of this subgroup was based on a normative pattern of IIP scores and corroborated by clinical profiles indicating relatively moderate levels of psychiatric morbidity. Although counterintuitive to the setting, patient subsets endorsing normative levels of interpersonal difficulty have been identified - at equal proportions - in other inpatient samples (Haase et al., 2008). Report bias may contribute to low scores among some patients but is unlikely to account for the larger pattern of effects given (a) the frequency at which patients would be required to misrepresent symptoms and (b) that several corroborating factors were either clinician-based (e.g., diagnostic profile) or independently verifiable (e.g., prior hospitalization). Regardless, inclusion of clinician- and/or staff-based ratings in future research would enhance conceptualization of observed profiles and help confirm the authenticity of categorical shifts in interpersonal behavior.

Finally, the current data are unable to speak to the stability of observed interpersonal change. Previous outcome research using the IIP demonstrates maintenance of treatment gains from six months to one year among individuals receiving inpatient psychiatric care (Haase et al., 2008; Watzke et al., 2012). Follow-up research evaluating long-term response to outpatient cognitive behavioral, psychodynamic, and psychoanalytic interventions suggests maintenance of gains as far as three years post-treatment (Huber, Henrich, Clarkin, & Klug, 2013; Huber, Zimmermann, Henrich, & Klug, 2012). Research employing alternate measures of psychosocial functioning following various combinations of inpatient, outpatient, and day-treatment programs provide additional evidence of gains maintained one year post-treatment and beyond (Bartak et al., 2009; Creed et al., 1990). This literature provides compelling evidence for the continuation of gains although the extent to which mean-level reductions generalize to categorical shifts in behavior continues to remain unclear. Incorporation of longitudinal assessment in future research will help determine whether adaptive patterns are maintained and the extent to which categorical interpersonal change impacts longer-term adaptive functioning. Additional evidence of positive and persistent change could inform models of intervention and help to optimize delivery of costly inpatient care.

Acknowledgements

Research was supported in part by funding from the Menninger Foundation, the McNair Medical Institute, and the National Institute of Mental Health. Dr. Clapp was an NIMH-sponsored psychology intern at the Medical University of South Carolina (T32-MH18869) during the development of this project. Dr. Frueh is a McNair Scholar. We are grateful for the assistance of Steve Herrera MA and all the research assistants at The Menninger Clinic.

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Figure 1.

IIP-32 subscales with structure indicated by circumplex models of interpersonal behavior ¹

Note: Domineering/Controlling = Manipulative, has difficulty relaxing control; *Vindictive/Self-Centered* = Mistrustful, preoccupied with revenge, readily expresses anger; *Cold/Distant* = Minimal affection or connection with others, difficulty maintaining relationships; *Socially Inhibited* = Introverted, avoidant, anxious in the presence of others; *Non-Assertive* = Low self-confidence, difficulty taking initiative and expressing needs; *Overly Accommodating* = Obliging, deferential, gullible, easily exploited by others; *Self-Sacrificing* = Overly caring and empathic, difficulty setting and maintaining boundaries; *Intrusive/Needy* = Histrionic, over-discloses personal information, poor sense of boundaries

¹ Scale interpretations drawn from the IIP manual (Horowitz et al., 2000).

Figure 2.

Conditional means for IIP-32 subscales at admission and discharge

Note: IIP-32 = Inventory of Interpersonal Difficulties - 32-item circumplex form; DOM= Domineering/Controlling, VIND= Vindictive/Self-Centered, DIST=Cold/Distant, INHB=Social Inhibited, NASS=Nonassertive, ACC=Overly Accommodating, SACR=Self-Sacrificing, NEED= Intrusive/Needy, NRM=Normative; SUB=Submissive; H/W=Hostile/Withdrawn.

¹ Variances for IIP-32 subscales are held constant across profiles within latent profile analysis.

SD estimates for IIP-32 scales at admission are 3.2, 2.6, 3.2, 3.5, 3.1, 2.7, 3.4, 3.6 respectively.

SD estimates at discharge are 2.6, 2.1, 2.2, 2.8, 2.6, 2.3, 2.9, 2.8.

Table 1

Sample characteristics

Age	<i>M</i> = 31.7	<i>SD</i> = 12.5
Sex (Female)	262	51.1%
White/Caucasian	465	90.6%
Hispanic	16	3.1%
Marital Status		
Never married	284	55.4%
Cohabiting	5	1.0%
Married	145	28.3%
Separated	29	5.7%
Divorced	40	7.8%
Widowed	5	1.0%
Employment		
Full-Time	136	26.5%
Part-Time	102	19.9%
Unemployed	239	46.6%
Retired	36	7.0%
Disability	51	9.9%
Previous Hospitalization	311	60.6%
Diagnoses ¹		
Depressive	347	67.6%
Bi-polar	82	16.0%
Psychotic	54	10.5%
ETOH/Sub	251	48.9%
Anxiety	194	37.8%
BASIS-24		
Admission	<i>M</i> = 1.7	<i>SD</i> = 0.7
Discharge	<i>M</i> = 0.8	<i>SD</i> = 0.5
Change	<i>M</i> = -0.9	<i>SD</i> = 0.7
Tx Engagement	<i>M</i> = 4.4	<i>SD</i> = 0.6
Length of Admission (days)	<i>M</i> = 35.0	<i>SD</i> = 14.3

Note: BASIS-24 = Behavior and Symptom Identification Scale-24; Tx Engagement = Your Treatment and Care items 10-13

¹ Diagnoses include all psychiatric disorders contained within the medical record. Percentages sum to greater than 100% given comorbidity

Table 2

Fit indices for IIP-32 latent profile models at admission and discharge

Model	Admission				Discharge			
	AIC	BIC	aBIC	Ent	LMR	AIC	BIC	aBIC
1-Class	23092.9	23160.7	23109.9	-	-	21715.4	21783.3	21732.5
2-Class	22301.0	22407.0	22327.7	0.83	<.001	20535.1	20641.1	20561.8
3-Class	21976.9	22121.0	22013.1	0.85	.022	20042.0	20186.2	20078.3
4-Class	21786.8	21969.2	21832.7	0.87	.004	19771.9	19954.2	19954.2
5-Class	21639.1	21859.6	21694.6	0.84	.768	19612.5	19833.0	19667.9
6-Class	21526.5	21785.2	21591.5	0.84	.065	19472.7	19731.3	19537.7

Note: IIP-32 = Inventory of Interpersonal Difficulties - 32-item circumplex form; AIC=Akaike information criterion; BIC=Bayesian information criterion; aBIC=Adjusted BIC=Bayesian information criterion; Ent=Entropy criterion; LMR= Lo-Mendell-Rubin test

Table 3

Transition status from admission to discharge

		<u>Discharge</u>			Total
		Normative	Submissive	Hostile/ Withdrawn	
<u>Admission</u>	Normative	179 (98.4%)	1 (.5%)	2 (1.0%)	182
	Submissive	99 (48.3%)	99 (48.3%)	7 (3.4%)	205
	Hostile/Withdrawn	72 (57.1%)	7 (5.6%)	47 (37.3%)	126

Note: Percentages are based on admission totals and represent proportion of individuals transitioning over the course of hospitalization