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Group-Based Treatment for Internalized Stigma among Persons with Severe Mental Illness: Findings from a Randomized Controlled Trial

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Abstract

Elevated internalized stigma is common and is linked to subjective and objective outcomes for severe mental illness. The authors developed a manualized group-based intervention (Narrative Enhancement/Cognitive Therapy; NECT) to address internalized stigma in severe mental illness. The purpose of the present study was to evaluate the feasibility and effectiveness of NECT. 144 individuals were screened at two sites to evaluate if they met criteria for “elevated” internalized stigma; 39 and were eligible were randomized to NECT or to treatment as usual (TAU) and were assessed at baseline, post-treatment, and 3-month follow-up. Fifteen of the 21 individuals assigned to NECT were classified as “exposed” to treatment. Intent-to-treat analyses found no significant difference between the NECT and TAU groups. A comparison of exposed vs. unexposed participants noted trends for exposed participants to have improved more in two aspects of self-stigma as well as insight. We conclude that NECT is feasible and tolerable, but findings did not support the hypothesis that NECT was more effective than TAU, although small sample size and significant dropout may have restricted the ability to detect an effect.

Keywords

Self-stigma; severe mental illness; narrative

Internalized stigma, or self-stigma, refers to the process by which people with severe mental illness adopt stigmatizing views (e.g., dangerousness, incompetence) widely held by the general public. Evidence suggests that roughly one-third of people with severe mental illness exhibit elevated internalized stigma (Brohan et al., 2010; West et al., 2011) and that it is linked to hopelessness, diminished self-esteem, and restricted social relationships (Yanos et al., 2008; Muñoz et al., 2011; Livingston & Boyd, 2010; Watson et al, 2007).

It has been argued that ignoring internalized stigma in comprehensive treatment programs for people with SMI may leave difficult roadblocks to recovery unmoved (Yanos et al., 2010). Specifically, Yanos et al. (2010) argued that individuals with severe mental illness who accept that they have a mental illness but believe that having a mental illness means that one is incompetent and incapable of recovering may respond less well to evidence-based interventions such as supported employment and illness self-management programs. However, with recent exception (Lucksted et al., 2011; Fung et al., 2011), few efforts have been made to develop professionally-led treatments to address this issue. We therefore developed a manualized group-based intervention called Narrative Enhancement/Cognitive Therapy (NECT) which combines psychoeducation to help replace stigmatizing views about severe mental illness with empirical findings, cognitive restructuring geared toward teaching skills to challenge negative beliefs about the self, and strategies focused on enhancing a person's abilities to reflect upon and deepen their personal narrative (Yanos et al., 2011). Although other recent treatment approaches for internalized stigma (Lucksted et al., 2011; Fung et al., 2011) have discussed using primarily cognitive restructuring based methods to address negative beliefs about the self related to self-stigma, our treatment approach is unique in that it added "narrative enhancement," which features engaging participants in sharing and examining stories about themselves. A previous qualitative report with 18 individuals participating in NECT revealed participants perceived improvement in several domains: experiential learning, positive change in experience of self, acquiring cognitive skills, enhanced hope, coping, and emotional change (Roe et al., 2010).

In this article, we describe findings from a small randomized controlled trial designed to evaluate the feasibility and effectiveness of the intervention. Studies of feasibility aim to establish procedures for implementing and evaluating an intervention in a controlled outcome study (e.g., by providing information methods for training clinicians and assessing treatment fidelity, appropriate measures, and sample sizes needed for adequate power to test effects) (NIH, 2003). We hypothesized that: 1) NECT would be tolerated by the majority of individuals who attended the intervention and could be implemented with fidelity by clinicians, 2) NECT would be more effective than treatment as usual in decreasing internalized stigma over time, and 3) that NECT would be more effective than treatment as usual in improving self-esteem, hopelessness, and social functioning over time.

Method

Procedures

Sites—Study participants were drawn from two sites: three assertive community treatment teams in New York City and a partial hospital program affiliated with a Veterans Affairs center in Indianapolis, Indiana. Study sites were selected based the investigators' prior affiliations and experience conducting research in these settings. Institutional Review Board approval was received for the study.

Screening—Participants were initially approached to participate in a screening study to assess if they met criteria for "elevated" internalized stigma. Potential participants were approached at the treatment sites and were asked if they were interested in completing a brief interview. After providing informed consent, participants completed a demographics form (eliciting information on ethnicity, age, education, age at first hospitalization and number of past hospitalizations) and the Internalized Stigma of Mental Illness Scale (ISMI; described in measures). Participants were compensated \$5 for the screening; 144 individuals (70 from Indianapolis and 74 from New York) completed the screening.

Clinical trial participants—All screened individuals scoring higher than a mean of 1.5 on the ISMI were approached for participation in the larger study (this cutoff had been established in previous research [Ritsher and Phelan, 2004]). Overall, 56 participants (38.8%; 31.1% in New York and 41.1% in Indiana) had elevated ISMI scores following this criterion. Findings from the screening study are described elsewhere (West et al., 2011).

Recruitment flow—Figure 1 describes the flow of participants through phases of the study. Participants were considered eligible for the clinical trial if they met criteria for elevated internalized stigma, met criteria for a DSM-IV diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, or major depression (determined by the SCID) and could provide informed consent to participate in the treatment study. Forty participants meeting internalized stigma criteria were available and were interviewed for the study. Following assessment, one participant was found to not meet diagnostic criteria; thus, the final study sample included 39 persons (roughly even numbers came from each site- 20 from Indiana and 19 from New York).

Randomization—Following the baseline interview, participants were randomized into either the experimental or control conditions using a computerized number generating system which assigned conditions based on client ID numbers. Separate randomization was conducted for each study site. Participants assigned to the experimental group were invited to attend NECT while those in the control group received treatment as usual.

Interventions

NECT—NECT is a structured, group-based intervention facilitated by two clinicians that lasts 20 sessions (see Yanos et al., 2011). NECT consists of four major segments: 1) introduction (1 week), 2) psychoeducation (3 weeks), 3) cognitive restructuring (8 weeks), and 4) narrative enhancement (8 weeks). Narrative enhancement focuses on the process of telling and sharing personal narratives about oneself and one's mental illness, many of which address themes of hope which contrast with stigmatizing views. Each group meeting lasted roughly one hour and featured a check-in and a review of the previous week.

Training, supervision and fidelity monitoring—A total of six clinicians provided the NECT treatment, including four clinical psychology doctoral students and two masters-level clinicians. Study clinicians were trained by the three principal investigators in a one day training, which included an overview of the treatment and the treatment manual, and role plays. In addition, the two site supervisors provided one hour of weekly on-site supervision for each group. Fidelity to the intervention was assessed by the site supervisors in three observed group sessions for each group (one from each major phase of the intervention- psychoeducation, cognitive restructuring and narrative enhancement) using a fidelity scale developed for the study. The scale rates fidelity to a number of aspects of the intervention on 1–5 (“poor” to “excellent”), and includes an overall session rating. Average ratings of 3.5 were a priori considered to be indicative of acceptable fidelity. Overall fidelity ratings across the sites ranged from 4 to 5 and averaged 4.4.

Treatment as usual—Participants in both conditions continued to receive standard services at their site, including comprehensive assessment, medication monitoring, case management, and rehabilitation services. Neither of the sites offered any services focused on internalized stigma, and such services were not introduced during the course of the study.

Participants

The characteristics of the participants who participated in the randomized controlled trial are described in Table 1. Participants were predominantly African-American men in their late

40's, diagnosed with schizophrenia-spectrum disorders, with no more than a high school education. Participants randomized to study conditions did not differ on demographic characteristics, with the exception of age at first hospitalization, which was significantly lower for participants assigned to the experimental group.

Measures

Rationale for selection of measures—Measures were selected based on prior research in the areas of internalized stigma and its relationship to psychiatric symptoms, insight, and subjective and objective indicators of outcome (see Livingston & Boyd, 2010, for a review).

Assessment schedule—Interviews were conducted at baseline, post-treatment, and 3-month follow-up. Participants were paid \$35 for completing the baseline interview and \$25 each for the post-treatment and at 3-month follow-up interviews.

Training and inter-rater reliability—Training was provided to clinical interviewers on the assessment battery by site project directors. Interviewers initially demonstrated acceptable levels of inter-rater reliability on rating scales using training videos. After training, inter-rater reliability checks were performed on 10% of the interviews, based on simultaneous rating of the same interview (see below for specific scale findings).

Severe Mental Illness Diagnoses—The Mood and Psychosis modules of the Structured Clinical Interview for DSM-IV (SCID; Spitzer et al., 1993) were used to assess primary diagnosis at baseline only.

Internalized Stigma—The ISMI is a 29-item self-report questionnaire designed to assess subjective experience of stigma (Ritsher & Phelan, 2004). It has five subscales: Alienation, which reflects feeling devalued as a member of society, Stereotype Endorsement, which reflects agreement with negative stereotypes of mental illness, Discrimination Experience, which reflects current mistreatment attributed to the biases of others, Social Withdrawal, which reflects avoidance of others because of mental illness, and Stigma Resistance, which reflects ability to deflect stigma. All subscales were calculated as averages and range from 0–3 (mean imputation procedures were used to account for missing data; less than .01% of all items across the waves of the study were replaced using this method). Evidence of good construct validity and reliability have been reported (Ritsher & Phelan, 2004). In the present study, internal consistency was good across all three time points (alphas ranged from .75 to .91).

Hopelessness and Self-Esteem—The Beck Hopelessness Scale (BHS; Beck et al., 1974) is a 20-item scale that measures pessimistic expectations of the future. Individual items are summed to provide an overall index of hope or its absence. In the present study, internal consistency ranged from .90 to .93. The Rosenberg Self-Esteem Schedule (RSES; Rosenberg, 1989) is a ten-item self-report questionnaire that was used to measure self-esteem. Individual items are summed such that higher scores indicate higher self-esteem. In the present study, internal consistency ranged from .81 to .92. Mean imputation procedures were used to account for missing data for both the BHS and the RSES (less than .01% of all items across the waves of the study were replaced using this method).

Coping with symptoms—The Coping with Symptoms Checklist (CSC; Yanos et al., 2003) was used to assess the use of problem-centered, neutral, and avoidant coping strategies to deal with a variety of psychiatric symptoms commonly experienced by people with psychiatric disabilities. Evidence has been found for its construct validity (Yanos et al., 2003).

Psychosocial function—The Quality of Life Scale (QLS; Heinrichs et al., 1984) is a 21-item rating scale that was used to assess psychosocial functioning. The QLS has 4 factors: “Interpersonal Relations,” “Intrapsychic Foundations,” “Instrumental Functioning,” and “Commonplace Objects and Activities.” High to excellent inter-rater reliability was found; intraclass correlations for blind raters observing the same interview were .96 in the Indiana site and .94 in the New York site.

Psychiatric symptoms and insight—The Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987) is a 30-item rating scale with five factor analytically derived components: Positive Symptoms, Negative Symptoms, Cognitive Symptoms, Hostility, and Emotional Discomfort. High inter-rater reliability was found with intraclass correlations for blind raters observing the same interview at both sites (.91 in the New York site and .88 in the Indiana site). The Scale for Assessing Unawareness of Mental Disorder (SUMD; Amador & Strauss, 1991) is a 3-item scale used to assess insight. High inter-rater reliability was found; intraclass correlations for blind raters observing the same interview were .92 in the New York site and .95 in the Indiana site.

Results

Treatment Attendance

Of the 21 participants who were assigned to the treatment, 15 attended at least 6 group meetings or had completed at least one of the treatment modules (e.g., psychoeducation) and were classified as being “exposed” to the treatment. This criterion was selected based on the expectation that attendance of at least 6 sessions or completion of at least one treatment module would provide participants with enough exposure to the intervention to expect there to be some effect. Of the 6 individuals who were assigned to the experimental condition but classified as “unexposed,” 5 never attended any sessions of the intervention, and only 1 had attended 2 sessions. Among the 15 individuals classified as being exposed, the mean number of sessions attended was 13.8 (14.7 in the Indiana site and 13.1 in the New York site); thus, on average, exposed participants attended 69% of treatment sessions. The number of participants exposed to treatment was roughly equal across sites (8 in New York and 7 in Indiana).

Baseline Comparisons

Two-tailed t-tests were used to compare TAU and NECT groups at baseline. There were no significant differences in outcome measures between groups at baseline. Although the participants in the TAU group had significantly higher ages at first hospitalization, this variable was not found to be significantly related to any of the study outcome variables.

Site Differences at Baseline

Two-tailed t-tests were used to compare participants in the New York and Indiana sites at baseline. There were a number of significant differences between participants at the two sites at baseline. Participants in New York had significantly lower internalized stigma at baseline, and had significantly lower hopelessness and PANSS negative symptoms scores, and higher overall QLS scores.

Predicting Treatment and Interview Completers versus Dropouts

Two-tailed t-tests were conducted to evaluate whether or not there were any significant differences in baseline scores between participants who dropped out versus completed treatment, and between participants who missed an assessment time (e.g., missed one or more of the follow-up interviews) and those who did not. The only significant difference

between participants who completed treatment and those who did not was in the Instrumental Functions subscale of the QLS, such that individuals who dropped out of treatment had lower scores ($t = 4.53$, $p = .0004$). There were no significant differences between treatment completers and dropouts in other study measures.

Comparing participants who missed interviews versus those who did not, a total of 29 participants had data for all assessment times, and 10 participants missed one or more assessment time (all of whom missed the third, final assessment time). There was a significant group difference in BHS scores, such that participants who dropped out of assessments had lower BHS scores ($t = 3.20$, $p = .0031$). There was also a trend such that individuals who dropped out of assessments had lower mean total QLS scores ($t = 2.00$, $p = .0524$). There were no significant differences between interview dropouts and other participants in other measures.

TAU versus NECT: Intent to Treat Analyses

An intent to treat analyses, which involves comparing all participants assigned to treatment in one group regardless of exposure to treatment, was first conducted. Analysis of variance (ANOVA) tests were conducted to investigate possible differences in change scores between TAU and NECT groups at each follow-up interview. No significant differences or trends were evident when comparing the NECT and TAU groups.

Exposed vs. Non-Exposed Participants

Supplemental analyses were also conducted examining the relationship between exposure to treatment and change in the outcome variables. First, we conducted analysis of variance (ANOVA) tests to investigate possible differences in change scores for the primary outcome variables between the exposed and unexposed groups at each follow-up interview. Findings from these analyses are summarized in Table 2. As can be seen in Table 2, there were no significant differences between exposed and unexposed participants in any of the outcome variables at the .05 level, however, there were trends for exposed participants to have decreased more in the ISMI Stereotype Endorsement between time 1 and 2, to have decreased in ISMI Stigma Resistance (indicating more stigma resistance) between times 2 and 3, and to have decreased in SUMD (indicating improved insight) between time 1 and 2. There was some evidence for a site effect, with New York participants exposed to treatment improving more than Indiana participants, however, this finding was not statistically significant.

Given the high number of participants with at least one missing observation, we also conducted mixed effects regression analyses using the PROC MIXED command with SAS 9 software, to evaluate whether exposure to treatment predicted outcome variables over time (across interviews). Mixed effects regression analyses have the advantage of allowing for missing data, and accounting for random effects, or effects that are different for each participant. The best fitting model was one that allowed slope to vary randomly across individuals and an unstructured within-subjects error covariance pattern. Including demographic variables, including race, diagnosis, gender, and age, did not impact the trajectory of ISMI over time, so they were excluded from analyses.

Findings from mixed effects regression analyses are presented in Table 3. As can be seen in Table 3, there were no significant group differences in change across interview times for most variables, although there were two trends. First, there was evidence that there was a greater decrease across interview times in ISMI Stigma Resistance subscale scores for exposed vs. unexposed participants. Similarly there was a trend such that individuals in the NECT group had a greater decrease in SUMD scores across interview times.

Discussion

With regard to our first hypothesis, the NECT intervention was found to be feasible and tolerable. With regard to feasibility, we found that master's level practitioners and doctoral trainees could be trained to conduct the intervention and implement it with a high degree of fidelity with routine supervision. With regard to tolerability, although 5 individuals assigned to the treatment never attended the program, the remaining participants attended nearly 70% of the group sessions on average.

On the whole, findings did not support the hypothesis that NECT was more effective than treatment as usual in leading to statistically significant improvements in internalized stigma and related outcomes over time. However, there are indications that the small sample size of this exploratory clinical trial and significant dropout between the time two and time three assessment from the unexposed participants may have restricted our ability to detect an effect. Specifically, exposed participants showed marked reductions in the ISMI Stereotype Endorsement subscale, which were maintained at 3 month follow-up. Reductions also occurred for the ISMI Stigma Resistance scale for exposed participants which were detected across the 3 time periods. While these reductions were not statistically significant at the .05 level, they demonstrated a robust effect size (roughly .6). This suggests that a trial with better power would likely detect a significant effect in these areas. It should be noted that one of the purposes of the present study, as feasibility study, was to develop power estimates so that appropriate sample sizes could be targeted in future research.

An additional effect was noted for insight, with exposed participants also showing marked improvements in insight that were maintained at 3 month follow-up. Although insight was not a variable initially hypothesized to be impacted by NECT, the relationship observed might have been due to a reduction in self-stigma generated by the psychoeducation section, which focuses on replacing myths about mental illness with facts, followed by the extensive work that participants perform elaborating on how mental illness impacted their lives in the narrative enhancement component of the intervention. It is also possible that, with reduced self-stigma, people might be able to more carefully consider whether they have a mental illness.

It is noteworthy that there was evidence that the NECT intervention impacted the Stereotype Endorsement and Stigma Resistance subscales of the ISMI. Stereotype Endorsement specifically reflects agreement with stigmatizing views regarding mental illness such as dangerousness and incompetence; it is plausible that these views would be reduced by the psychoeducation and cognitive restructuring aspects of the intervention. Conversely, Stigma Resistance reflects endorsement of positive views regarding mental illness (e.g., "I can have a good, fulfilling life, despite my mental illness") that the cognitive restructuring and narrative enhancement portions of the intervention seek to instill.

With regard to two other key variables, self-esteem and hopelessness, findings did not suggest that NECT had an effect that was not detected due to power limitations. NECT participants showed no improvement in self-esteem and only modest improvements in hopelessness. This suggests that, at least in the short-term, the cognitive restructuring work may have a limited impact on broader aspects of self-representation beyond those related to self-stigma. This suggests that a revised version of the treatment manual may need to more explicitly address these types of self-representations in order to have a greater impact. There was also no evidence for a relationship between participation in treatment and the social functioning variable (the QLS), suggested that participation in NECT may not impact social functioning.

In addition to reduced statistical power and participant dropout, another factor that reduced ability to detect an effect for the intervention was that there was an overall trend in reduction for ISMI scores in both the exposed and unexposed groups. This suggests that, when selecting participants for a study such as this based on elevated initial scores, there is some degree of “regression to the mean” that occurs. Future attempts to deliver interventions to those with elevated internalized stigma may account for this possibility by either using a higher initial cutoff for eligibility, or including a retest before inclusion in a trial to determine if the initial “elevated” ISMI score is “stable.” A related issue concerns a suggestion that there was a site effect, whereby NECT participants at the New York site improved more than participants at the Indiana site. This might have been related to participants at the New York site having lower baseline internalized stigma scores. In general, it appeared that New York site participants experienced less severe forms of internalized stigma, and may have also responded better to the intervention. However, due to lack of power to investigate moderation effects, this finding needs to be investigated further in future research.

In conclusion, future research is needed to further examine the efficacy of NECT as a treatment for internalized stigma among persons with severe mental illness. Future studies should include more adequate samples, based on the effect sizes estimated in the present study, and should consider other modifications such as repeated assessment of internalized stigma to establish stability, as well as modifications to the treatment manual to more fully address negative self-representations.

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Appendix

FIDELITY ITEMS FOR THE NECT

For each item, assess the group facilitator(s) on a scale of 1–5 and record the rating on the line next to the item number. Rate all appropriate items depending on what phase of treatment the group is in (i.e., psychoeducation, cognitive restructuring or narrative enhancement).

1 2 3 4 5 NA

Poor Borderline Satisfactory Good Excellent Not Applicable

1. Structural issues

- A. Provide in a group of 8 consumers or less
- B. Group lasts roughly 1 hour

2. Group leader activities

- A. Sets an agenda
 - Articulates specific agenda
 - Identifies other issues
 - Implements specific agenda

- Explicitly connects the daily agenda to the more general goal of the program
- B. Adheres to manual and uses educational materials**
 - Follows session format
 - Uses of manual rationale & teaching strategies
 - Shows flexibility in face of problems
 - Utilizes handouts & worksheets
 - Distributes & reviews materials
 - Elicits & answers questions
- C. Teaches effectively**
 - Instills motivation to learn information & skills
 - Teaches information & skills
 - Moderates/Practices skills
 - Reinforcement of small steps/Shaping
 - Encourages
 - Get help from group members to facilitate learning
- D. Is Interpersonally Effective***
 - Facilitates communication (empathic nature)
 - Uses client's own language & phrases
 - Warm/Confident/Professional
 - Provides hope
- E. Efficiently uses time**
 - Session length kept to 1 hour
 - Efficient structuring of time
 - Tactful limiting of peripheral & unproductive discussion
- F. Reduces Client Distress**
 - Identifies & responds to client distress
 - Empathy to show understanding
 - Uses education or CBT skills to reduce distress
 - Makes plan to address persistent distress
- G. Encourages active exploration of stigma and self stigma issues**
 - Conveys interest and curiosity
 - Accepting and nonjudgmental
 - Reinforces exploration efforts

3. Psychoeducation

- Stigma and its impact

- Self-stigma and its impact
- Myths about mental illness
- Encourages sharing of personal experience to illustrate and demonstrate relevance of these issues
- Practitioners balances between teaching information and exploring clients personal experiences with these issues

4. **Cognitive Restructuring**

Thought-feeling model

- Connect negative feelings to thoughts
- Challenge thoughts
- Generate alternative thoughts
- Practice alternative thoughts
- Incorporating the above into every day life
- Using positive self talk

5. **Narrative enhancement**

- Group members write and share the story writing assignments
- The group leader sets a tone of interest and excitement about the stories and respects participants' choice to share their story and/or respond to those of others.
- The group leaders help the participants identify themselves as actors within their own stories
- The group leaders uses "Tips on Storytelling" (there is no single or "correct" way to describe an event, there can be different stories for different audiences, stories can be told from multiple angles/ perspectives, stories one tells about oneself and one's mental illness can help cope, reject stigma and feel connected to other people, stories have many parts and some of them can be expected to change over time)
- The group leader uses the feedback guide to elicit group members' responses to shared narratives.

Figure 1.
Progression Through the Trial

Table 1

Comparison of Baseline Characteristics in Assigned Groups

Variable	<i>Assigned to NECT Group (n=21) % or Mean $\pm$ SD</i>	<i>Assigned to TAU Group (n= 18) % or Mean $\pm$ SD</i>	<i>Total (n = 39) % or Mean $\pm$ SD</i>
Gender: Male	66.7	77.8	71.8
Female	33.3	22.2	28.2
Ethnicity: European-American	14.3	27.8	20.5
African-American	81	55.6	69.2
Hispanic	4.8	16.7	10.3
Diagnosis: Schizophrenia	28.6	27.8	28.2
Schizoaffective	47.6	50	48.7
Bipolar I	14.3	11.1	12.8
Bipolar II	4.8	11.1	7.7
Major Depression	4.8	--	2.6
Education:	11.04 $\pm$ 2.13	12.11 $\pm$ 3.49	11.53 $\pm$ 2.85
Age:	47.14 $\pm$ 7.86	48.06 $\pm$ 6.78	47.56 $\pm$ 7.3
*Age at 1 st Hospitalization	20.9 $\pm$ 6.49	29.39 $\pm$ 9.85	24.82 $\pm$ 9.16

*
p < .05

Table 2

Comparison of Change Scores at Post Assessment and 3 Month Follow-up by Treatment Exposure

	Unexposed (n=20)			Exposed (n=15)			Cohen's D
	N	Mean Change	SD	n	Mean Change	SD	p
ISMI-Total							
Post-tx	20	-.14	.38	15	-.27	.33	1.06
3-mo	15	-.08	.29	14	-.07	.21	.03
ISMI-Stereotype Endorsement							
Post-tx	20	.03	.64	15	-.34	.56	2.92
3-mo	15	-.31	.33	14	-.09	.40	2.49
ISMI-Stigma Resistance							
Post-tx	20	.02	.61	15	-.10	.90	.19
3-mo	15	.03	.32	14	-.20	.36	3.23
SUMD							
Post-tx	20	.50	2.28	15	-.93	2.23	3.28
3-mo	15	-.20	2.93	14	.14	2.93	.10
CSC-Problem-Centered							
Post-tx	12	-.05	.61	8	.41	.63	2.6
3-mo	13	-.03	.50	13	-.13	.54	.24
PANSS-Positive							
Post-tx	20	-.05	4.34	15	1.71	4.66	1.28
3-mo	15	-.87	4.15	14	-.36	3.22	.14
QLS-Total							
Post-tx	20	-7.8	11.22	15	-5.0	16.25	.35
3-mo	15	3.6	13.08	14	-1.14	17.81	.67
BHS							
Post-tx	20	-.01	.28	15	-.06	.21	.34
3-mo	15	.00	.22	14	-.06	.16	.74
RSES							
Post-tx	20	-.01	.28	15	-.06	.21	.34
3-mo	15	.00	.22	14	-.06	.16	.74

	Unexposed (n=20)		Exposed (n=15)			
	20	.05	15	.02	.02	.899
<i>Post-tx</i>						-.06
<i>3-mo</i>	15	.07	14	.04	.05	-.07

Trend (*p < .10)

Table 3
Mixed Effects Regression Effects for Group (Exposed versus Unexposed) by Time Interaction

Outcome Variable	Estimate	Stand. Error	DF	t-value	P-value
ISMI-Total	.029	.059	33	.49	.63
ISMI-Stereotype Endorsement	.00066	.089	33	.01	.99
ISMI-Stigma Resistance	.20	.11	33	1.84	.076*
SUMD	.70	.36	33	1.94	.061*
CSC-Problem-Centered	-.060	.11	32	-.52	.60
PANSS-Positive	-1.05	.75	33	-1.40	.17
QLS-Total	-.0057	.10	33	-.06	.95
BHS	.050	.043	33	-1.60	.12
RSES	.035	.073	33	.54	.59

Trend (*p < .10)