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Positive living: A pilot study of group positive psychotherapy for people with schizophrenia

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Positive psychology interventions target positive emotions in order to increase happiness, engagement in life, and well being while also ameliorating the impact of symptoms on a person's life. We examined an adapted version of group positive psychotherapy for people with schizophrenia (Positive Living (PL)) in a pilot study. Sixteen participants were recruited to participate in two separate PL groups and were assessed at baseline, post-intervention and at 3-month follow-up. We examined feasibility of this intervention in addition to a preliminary exploration of well-being outcomes including psychological well-being, hope, savoring, and self-esteem as well as clinically related outcomes including symptoms, psychological recovery, and social functioning. Findings indicate that the PL group was feasible and associated with possible improvements in psychological well-being, hope, savoring, psychological recovery, self-esteem, and psychiatric symptoms.

Keywords: intervention; positive psychology; recovery; schizophrenia

Introduction

Schizophrenia is most often characterized by positive symptoms including hallucinations and delusions, negative symptoms including blunted affect and social withdrawal, and a long enduring course of illness. Standard treatments for people with schizophrenia have focused on a combination of psychopharmacologic medications and psychosocial treatments (Kreyenbuhl, Buchanan, Dickerson, & Dixon, 2010). The psychosocial treatments typically have revolved around treating the common symptoms and functional deficits associated with schizophrenia, which can include mood impairments, hallucinations, delusions, social and occupational functioning deficits, and cognitive impairments. Relapse prevention interventions have focused on the identification of early warning signs and triggers in conjunction with developing a relapse prevention plan that outlines specific coping strategies that can be used when these symptoms arise (Mueser et al., 2002). In short, the current state of the treatment for people with schizophrenia is based primarily around the removal of symptoms; however, some researchers have suggested that there may be some benefit to enhancing well-being and building strengths, as these could be associated with longer periods between relapses and symptomatic

improvement for people coping with a mental illness (Fava & Tomba, 2009).

The concept of psychological recovery (from now on referred to as recovery) has become increasingly important in the treatment of schizophrenia and has broadened the traditional medical definition of remission beyond the removal of symptoms. Recovery is based on a personally meaningful definition provided by the person receiving treatment, who is actively involved in identifying personal treatment goals for recovery (Deegan, 1992; Madera, 1988). Important recovery themes that have emerged for people with mental illness include: hope and optimism, self-determination and self-respect, coping, and openness to discovery and new experiences (Ralph, 2000). Studies have found that the removal of symptoms with medications may benefit some, while others have poor outcomes either from treatment resistant symptoms, side effects from the medication, or a lack of improvement in well-being and functioning (Lambert et al., 2006; Robinson, Woerner, McMeniman, Mendelowitz, & Bilder, 2004; Ruini & Fava, 2004). Although the removal of symptoms may lead to remission, it does not always result in improvements that lead to recovery (Bellack, 2006). Maintaining recovery and possibly preventing a relapse requires

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both a removal of the distressing symptoms and an improvement in functioning.

The use of positive psychology interventions to target recovery in schizophrenia

As discussed earlier, treatment in this area has focused on the common deficits associated with schizophrenia. These types of interventions aim to help people improve their functioning and work toward something meaningful in their lives, one important aspect of recovery (Meyer & Mueser, 2011; Mueser et al., 2002). Progress in recovery is achieved through restoring and improving role functioning. However, the return of role functioning may not always result in a full and meaningful level of recovery.

Interventions aimed primarily at restoring deficits are less likely to teach people how to live life in a more meaningful or gratifying way or to specifically target well-being, which could lead to a more full and possibly longer lasting recovery (Davidson, 2010). Positive psychology interventions (PPIs) offer one way to address recovery through experiencing positive emotions and living a more fulfilling and gratifying life. PPIs address recovery from a new perspective targeting well-being, while at the same time building strengths and resources that could potentially help a person better manage the symptoms and deficits associated with schizophrenia. Thus, PPIs are well positioned to fill an unmet need in this population to help people achieve a more complete recovery, which has the potential to lead to decreased relapses and increased periods of time between relapses.

Positive psychology interventions

Positive psychology interventions (PPIs) are aimed at improving psychological well-being and building positive feelings, behaviors, and cognitions (Sin & Lyubomirsky, 2009). This nontraditional approach to the treatment of mental health symptoms suggests that the building of positive emotions will be associated with reductions in symptoms. These interventions focus on enhancing strengths while at the same time understanding weaknesses. Participants are taught strategies to re-focus their attention and memory on the positive aspects and attributes of life (Rashid, 2009). Early studies have provided some evidence that positive emotions do indeed counteract or buffer against negative emotions (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Tugade & Fredrickson, 2004).

PPIs that focus on strengths and building positive emotions may be able to more directly impact an individual's recovery and specifically the factors associated with recovery that could lead to a longer and more sustainable period between relapses. Early results

from PPIs, mainly focused only on people with depression, indicate that people with mental illnesses of mild to moderate severity have benefited from a PPI (Fava & Tomba, 2009; Sin & Lyubomirsky, 2009). In a meta-analysis of PPIs, researchers found that these types of interventions improve well-being and can effectively treat the symptoms of depression (Sin & Lyubomirsky, 2009).

Well-being therapy (WBT) is one PPI that is based on cognitive behavioral therapy and Ryff's model of psychological well-being (Ryff, 1989). Treatment focuses on teaching the techniques of cognitive restructuring to increase well-being and then using those skills to integrate the six dimensions of psychological well-being into participants' lives while using strategies to decrease interference based on errors in thinking (Fava, Rafanelli, Cazzaro, Conti, & Grandi, 1998; Fava & Ruini, 2003). WBT has been found to have a significant impact on mood and functioning in different populations including people with major depressive disorder, generalized anxiety disorder, obsessive compulsive disorder, and post-traumatic stress disorder (Fava & Tomba, 2009).

Another particularly promising PPI is positive psychotherapy (PPT) (Seligman, Rashid, & Parks, 2006). PPT includes a series of behaviorally based exercises such as writing a gratitude letter and using one's personal strengths (e.g., humor). PPT focuses explicitly on increasing well-being through increasing positive emotion and pleasure, engagement, and meaning in life. In nonclinical populations, completion of PPT exercises over the internet was associated with greater happiness and less depression (Seligman, Steen, Park, & Peterson, 2005). Further, when group PPT was used with college students who reported mild to moderate depression, participants in the PPT group reported a significant decrease in depressive symptoms and increase in life satisfaction compared to the no-intervention control group. The gains made by the participants in the PPT group remained stable for at least one year (Seligman et al., 2006, Study 1). Lastly, in a randomized controlled trial of individual PPT for people with severe depression, individuals receiving PPT showed greater reductions in symptoms and remission from depression than participants in the treatment as usual (TAU) group or the TAU with an antidepressant medication group (Seligman et al., 2006, Study 2).

The aim of this article is to describe the first adaptation of PPT for persons with schizophrenia, which we call 'Positive Living', and to present data from a pilot study. We chose to implement PPT because it provides a unique opportunity to address recovery, an area of treatment that the standard array of interventions have only begun to address, while at the same time building well-being, strengths, and resources that could potentially help a person better

manage the symptoms and deficits associated with schizophrenia. Additionally, the delivery and implementation of PPT is similar to other evidence-based interventions such as illness management and recovery (IMR) (e.g., group format, structured sessions, and practicing skills in and out of sessions). Adaptations were made to the intervention to address cognitive impairments including using more in session demonstration and practice, adding a positive goal to help connect the exercises to the participant's situation, and adding a mindfulness exercise to introduce a specific practice of a form of savoring. The specific details of the intervention as it was adapted for people with schizophrenia are described in "Methods" section.

In this pilot study, we were interested in (1) exploring whether the intervention could be implemented with the people with schizophrenia and (2) providing a preliminary examination of the intervention on both well-being outcomes and more traditional clinical outcomes. We hypothesized that the Positive Living group would be feasible and well-received among people with schizophrenia such that people would attend a high number of sessions (greater than 50%, which is similar to other interventions for schizophrenia (Roberts & Penn, 2009; Waldheter et al., 2008)), and report that the material was understandable and useful. We further hypothesized that participation in the group would lead to improvements in overall well-being, self-esteem, savoring, and hope. We were unsure of the impact of Positive Living on clinical outcomes of psychological recovery, symptoms, and social functioning. Lastly, we conducted exploratory analyses to evaluate the effects of the Positive Living group on subscales from both the well-being and clinical outcome measures to investigate where the Positive Living group may be having the greatest impact.

Method

Participants

Two cohorts of eight participants each (total $n = 16$) were recruited from two outpatient clinics at UNC Hospitals and local community mental health centers in central North Carolina. A total of 36 people were contacted about participating in the group for both cohorts. Twenty people were excluded or were not interested in participating. Inclusion criteria were: (1) between the ages of 18–60, (2) full scale IQ of 80 or above, (3) a current diagnosis of schizophrenia or schizoaffective disorder, (4) no current diagnosis of substance dependence, and (5) no psychiatric hospitalization in the last 6 months. Participants were recruited from referrals from case managers, therapists, and

psychiatrists as well as through fliers that were posted at the community mental health centers and outpatient clinics. Participants were told that the study was measuring the effects of positive psychotherapy on the symptoms of schizophrenia. All participants were currently stable but receiving some form of mental health treatment that included a combination of medications, case management, individual therapy, and/or group therapy to address the common symptoms associated with schizophrenia including hallucinations, delusions, disorganized thinking, cognitive impairments, anxiety, and depression. We did not collect information about the number or type of services that each participant was currently receiving. The mental health treatment was considered standard care for persons with severe mental illness who were not at a high risk for hospitalization. The 16 participants had a mean age of 39.6 ($SD = 12.0$) and a mean of 13.1 years of education ($SD = 1.2$); 56% were female, 81% were Caucasian (the remaining 19% were African-American), 81% were single/never married. The average number of psychiatric hospitalizations was 5.6 ($SD = 5.8$). When the two cohorts were compared on demographic and clinical variables, age was the only significant difference between the groups: participants in cohort 1 ($M = 31.4$, $SD = 7.6$) were significantly younger than participants in cohort 2 ($M = 47.8$, $SD = 10.0$), ($t = 3.7$, $p < 0.01$). This difference was anticipated since the first cohort was primarily recruited from a clinic that provided treatment for people with first episode psychosis, while the second cohort was recruited from local mental health centers.

Design and procedure

All participants received group PPT in an uncontrolled pre–post design in order to test the feasibility and possible benefits of this intervention for this population. This method is based on a stepwise process in the development of manualized treatments that includes three phases: (1) treatment conceptualization, (2) treatment standardization, and (3) pilot testing (i.e., open feasibility trial and small randomized controlled trial) (Mueser & Drake, 2005). We adapted an existing manual based on Seligman's conceptualization of well-being and conducted a pilot test to determine the feasibility of this intervention for people with schizophrenia. We conducted two groups of Positive Living with eight participants in each group. Each group had ten sessions that lasted 1.5 h for each session as well as one booster session 6 weeks after the group ended. Participants were assessed at baseline, post-intervention, and 3 months after the intervention ended.

Intervention

As described in the introduction, the Positive Living group is adapted from group positive psychotherapy. The original intervention, reported by Seligman et al. (2006), included six behavioral exercises (using your strengths, three good things, biography, gratitude visit, active/constructive responding, and savoring) designed to increase positive emotions, as well as build character strengths and meaning. In a revised version of the manual, Parks and Seligman (2007) added an additional exercise (Positive Service) designed to encourage participants to use their strengths in service of something larger than themselves. In the adapted version of PPT, participants completed a weekly exercise where they were expected to use strength, write down at least one good thing each day, and utilize savoring on a daily basis. In addition, participants were instructed to look for opportunities throughout the week to use active/constructive responding, while the gratitude visit and life summary were only done a single time during the intervention.

We added two additional elements to the adapted version of group PPT (positive goal and mindfulness minute) and added two additional sessions – one to give participants time to complete a strengths test in-session, and one to give participants additional practice with the positive service activity. The positive goal, in which participants were asked to select one positive goal to review in the group for the next 7 weeks, was introduced in session 3. Progress toward the positive goal was followed up at the beginning of the remainder of the sessions. The establishment of personally meaningful goals has been a common feature associated with psychosocial treatments for schizophrenia focused on increasing hope and recovery (Clarke, Oades, Crowe, & Deane, 2006; Meyer, Gingerich, & Mueser, 2010). By adding a positive goal to this intervention, we hoped to increase active participation in treatment and to promote self-determination by framing the goal within the context of pursuing something positive in the person's life. The mindfulness minute was included because mindfulness has been linked to positive emotions, increased well-being, and savoring, which is a closely related concept to mindfulness (Brown & Ryan, 2003; Bryant & Veroff, 2007). Second, mindfulness has been shown to be helpful and useful in the management of psychosis (Tai & Turkington, 2009). In Positive Living, we hoped to help participants learn and practice mindfulness while later linking it to the savoring exercise in the group. Each session began and ended with a brief mindfulness exercise instructing participants to focus their attention on a specific sensation.

We adapted the exercises to fit this population by building in-session skills practice and helping participants make a specific and detailed plan to use the

exercises outside the session. For example, one skill taught in PPT is active/constructive responding, where participants are taught to respond to good news in an enthusiastic and positive way that is noticeable to the other person. When teaching this skill, we used techniques from skills training, which include: breaking the skill into smaller steps, providing a demonstration to show the participants what the skill looks like, doing a role play to have the participants practice the skill, and providing a homework assignment to help the participants set up a way to practice active/constructive responding based on situations they could encounter before the next session.

The Positive Living groups were conducted with two clinicians facilitating the groups. The groups were lead by a licensed clinical psychologist (PSM) and either an advanced clinical psychology graduate student (DJ) or a licensed clinical social worker.

Measures

Measures were included to assess the feasibility, tolerability, and possible benefits of the intervention. Feasibility was assessed using group attendance. Tolerability data was collected from a satisfaction and feedback form that each participant was asked to complete at the end of the intervention. Self-report questionnaires were included in the study to assess the clinical and exploratory outcomes.

Psychological well-being was measured using a 54-item version of the scales of psychological well-being (SPWB; Ryff, 1989). Each item is rated using a six-point scale from (1) strongly disagree to (6) strongly agree. This measure includes a total score and six subscales (environmental mastery, personal growth, purpose in life, autonomy, self-acceptance, and positive relations with others) with higher scores indicating higher self-ratings of each construct. The SPWB has been validated in many different samples (Ryff & Keyes, 1995). Internal consistency (alpha) for the total scale was 0.94.

The savoring beliefs inventory (SBI) (Bryant, 2003) was used to measure the capacity to savor positive experiences and includes three subscales: reminiscing about past positive experiences, savoring positive experiences in the present, and anticipating upcoming positive experiences. Items are rated on a five-point scale from 1 (I agree a lot) to 5 (I disagree a lot). The SBI had adequate internal consistency (alpha) for the total scale (0.86).

Hope was assessed using the dispositional hope scale (DHS; Snyder et al., 1991). This measure contains a total score and two subscales, the agency scale (goal-directed determination), which includes four items, and the pathways scale (goal-directed planning), which includes four items. Responses are rated on a four-point scale from (1) definitely false to (4) definitely

true. This scale demonstrated good internal reliability (α) for the total scale of 0.70.

Self-esteem was measured using the self-esteem rating scale-short form (SERS-SF; Lecomte, Corbiere, & Laisne, 2006). The SERS-SF is a shortened version of the self-esteem rating scale (Nugent & Thomas, 1993) that has been abbreviated as a valid measure of self-esteem for people with severe mental illness. The SERS-SF contains 20 items rated using a seven-point Likert scale, 10 scored positively and 10 scored negatively. The scale had good reliability (α) ranging from 0.84 to 0.94 for the positive and negative scales in the current study.

Recovery was measured using the recovery assessment scale (RAS; Corrigan, Salzer, Ralph, Sangster, & Keck, 2004), a 41-item scale that assesses perceptions of recovery from severe mental illness using a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The RAS includes five factors: personal confidence and hope, willingness to ask for help, goal and success oriented, positive reliance on others, and not dominated by symptoms. The internal consistency (α) in the current study was 0.90 for the total scale.

Symptoms were assessed using the brief symptom inventory (BSI), a 53-item scale used to evaluate psychiatric symptoms (Derogatis, 1993). We focused on three of the nine symptom subscales (depression, paranoid ideation, and psychoticism) and the global severity index (GSI). Each item is rated with a five-point scale that ranges from 0 (not at all) to 4 (extremely). The BSI has been used in schizophrenia and found to have sufficient convergent validity with quality of well-being and self-reported health and mental health functioning (Long, Harring, Brekke, Test, & Greenberg, 2007; Wetherell et al., 2003). The global severity index had an internal consistency (α) of 0.96.

The social functioning scale (SFS) was included to measure social functioning (Birchwood, Smith, Cochrane, & Wetton, 1990). This scale assesses seven domains of social functioning: social engagement, interpersonal behavior, pro-social activities, recreation activities, independence competence, independence performance, and occupational/productive activities. The SFS is a well-validated measure of community functioning that has been used with people with severe mental illness. The total scale had an internal consistency (α) of 0.88.

Data analysis

Results from cohorts 1 and 2 were combined and repeated measure ANOVAs were conducted to measure changes between: (1) baseline and post-intervention and (2) baseline and 3-month follow-up. We conducted a repeated measure ANOVA because

this type of design controls for individual differences that were expected due to the different groups that were recruited and associated age difference reported earlier. Primary analyses included changes in total scores for each of the measures and the exploratory analyses were conducted using the subscales from each of the measures.

Results

Feasibility

Feasibility results are reported for 15 participants because one participant was unable to be located for post-intervention and 3-month follow-up interviews. Of the original 16 participants, three (19%) dropped out of the group after the first session and are considered 'noncompleters' (one participant dropped out from cohort one and two participants dropped out from cohort 2). One person had to drop out because of family commitments, another person dropped out because of personal reasons, and the third person could not be located after the first group. Of the 13 participants who stayed in the group after the first session, 6 (62%) attended nine of the 10 sessions. The attendance rate was 77% for the intent to treat (total) sample and 87% for completers. Including the booster session, a mean of 5.8 ($SD = 0.2$) participants attended each session (of the expected eight participants in each group). Participants attended a mean of 7.7 sessions ($SD = 2.9$) out of a total of 10 sessions possible. At the end of the 10 sessions, participants reported that they were practicing the exercises 2.8 days per week ($SD = 2.1$) for an average of 33.5 minutes/exercise ($SD = 37.2$). Those who attended the booster session ($n = 11$) reported that they were practicing 3.3 days per week ($SD = 2.1$) for an average of 33.5 minutes/exercise ($SD = 29.8$). At the 3-month follow-up assessment, completers reported practicing 3.8 days per week ($SD = 2.9$) for an average of 48.1 min/exercise ($SD = 98.9$; $MDN = 15.0$) (Note: there was one outlier who reported 6 h). We did not collect specific data on which exercises the participants were using at the booster session or 3-month follow-up assessment.

Most participants reported a favorable response to the intervention on the satisfaction questionnaire at the end of group (Table 1). The majority of completers reported that they very much enjoyed the group, the group was very useful, the group helped them look forward to being around people, and the group helped them enjoy more in their life. Interestingly, 69% ($n = 9$) of completers reported that the exercises were only somewhat easy to understand.

Primary analyses

Table 2 provides a summary of the results for the total scores from baseline to post-intervention and baseline

to 3-month follow-up. Results suggest that at both the end of the group and 3-months after the group, participants showed significant improvements in overall well-being, hope, and savoring. Self-esteem improved from baseline to post-intervention but the improvement was not maintained at the 3-month follow-up. Participants also showed improvements in symptoms at the post-intervention and 3-month follow-up assessments but not in the total score for social functioning.

Exploratory analyses

The third aim of the study was to explore the impact of the group on more specific outcomes as shown in Table 3. On the SPWB, participants reported improvements at post-intervention that were maintained through the 3-month follow-up for environmental mastery, personal growth, positive relationships, and self-acceptance. The only significant difference that was not maintained at the 3-month follow-up was purpose in life. The agency subscale of the dispositional hope scale improved over the course of the study suggesting an improvement in goal directed determination. Savoring positive experiences in the future improved at both post-intervention and the 3-month follow-up while significant improvements were only

found at the 3-month follow-up for savoring in the present. Collectively, these results offer support to the hypothesis that group PPT could have an impact on outcomes associated with well-being.

Exploratory analyses of specific clinical outcomes revealed significant improvements at both post-intervention and 3-month follow-up in recovery, symptoms, and social functioning. For psychological recovery, there were significant improvements in hope/confidence and goal orientation at both post-intervention and 3-month follow-up, while the improvements in relying on others were significant only at the 3-month follow-up. Participants reported a decrease in symptom severity on the paranoid ideation and psychoticism subscales of the BSI at both post-intervention and the 3-month follow-up assessments while there was only a significant decrease in depression at the 3-month follow-up. Participants also showed improvements in social functioning on the social engagement and interpersonal communication subscales on the SFS both post-intervention and at the 3-month follow-up. Improvements were noted on the recreation subscale of the SFS but only at post-intervention.

Discussion

Feasibility of positive living with people with SMI

These results are reported with caution since this was an uncontrolled design and participants continued to receive additional treatment as described above. Results indicate that the Positive Living group is feasible with people with schizophrenia as evidenced by the high rates of attendance and amount of practice outside the group reported by participants. The level of satisfaction with the group also was high with most participants reporting the group to be useful and helpful. However, participants did report that the exercises were only somewhat easy to understand. Overall, it appears from these findings that a PPI can be implemented successfully with people with schizophrenia.

Table 1. Participant feedback from treatment completers ($n = 13$).

	Very		Somewhat		Not at All	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Ease of understanding	4	31	9	69	0	0
Enjoyment of group	10	77	3	23	0	0
Usefulness of group	10	77	3	23	0	0
Group was respectful	11	85	2	15	0	0
Look forward being w/people	9	69	4	31	0	0
Group helped me enjoy life	7	54	5	39	1	8

Table 2. Mean scores on primary outcome variables at baseline, post-intervention, and 3-month follow-up ($n = 15$).

	Baseline		Post-intervention			3-month Follow-up		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>F</i>
Scales of psychological well-being-total	201.6	34.46	226.3	32.76	11.77**	226.0	27.10	7.37*
Savoring beliefs inventory-total	16.20	20.56	25.20	18.92	5.31*	27.27	22.89	6.54*
Dispositional hope scale-total	20.93	3.69	23.13	3.60	6.76*	23.20	4.57	5.48*
Self esteem rating scale-short form	1.57	20.00	12.47	19.28	4.95*	12.93	20.61	4.25
Recovery assessment scale-total	153.5	16.13	161.7	16.71	6.54*	162.2	11.95	7.37*
Brief symptom inventory-global severity index	1.27	0.66	0.84	0.58	6.51*	0.77	0.42	12.17**
Social functioning scale-total	122.7	22.02	131.8	18.77	4.15	130.3	25.66	2.48

Notes: * $p < 0.05$, ** $p < 0.01$.

Table 3. Mean scores for exploratory outcome measures at baseline, post-intervention, and 3-month follow-up with endpoint analysis ($n = 15$).

	Baseline		Post-intervention			3-month follow-up		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>F</i>
<i>Scales of psychological well-being</i>								
Autonomy	33.60	9.73	35.33	9.73	1.16	35.73	5.81	1.73
Environment mastery	31.00	8.00	36.47	7.72	9.69**	36.33	9.21	5.65*
Personal growth	39.87	5.26	43.53	4.72	8.22*	44.40	5.44	7.06*
Positive relationship	32.87	7.95	37.73	7.37	11.01**	37.67	6.40	5.17*
Purpose in life	35.33	7.79	40.00	7.77	12.94**	38.07	7.15	2.65
Self-acceptance	28.93	9.94	33.20	9.18	4.39	33.80	8.44	5.54*
<i>Savoring beliefs inventory</i>								
Past	8.40	7.65	10.00	7.14	1.09	10.20	7.80	1.90
Present	1.93	6.95	5.40	7.61	4.59	6.93	8.71	6.60*
Future	5.87	11.26	9.80	9.47	4.89*	10.13	10.15	5.16*
<i>Dispositional hope scale</i>								
Agency	9.87	2.80	10.87	2.20	8.08*	11.40	2.67	6.35*
Pathways	11.07	2.05	12.27	2.37	4.30	11.80	2.57	1.85
<i>Recovery assessment scale</i>								
Hope/Confidence	31.93	4.82	35.60	4.56	20.56**	34.60	3.87	5.63*
Willingness to ask for Help	12.73	1.28	13.13	1.41	0.94	13.07	1.39	0.52
Goal-oriented	18.93	2.40	20.53	2.72	4.73*	21.07	2.55	9.39**
Rely on others	16.67	2.38	17.20	2.91	1.11	17.47	2.20	5.09*
Not dominated by symptoms	10.47	2.85	10.87	2.50	0.47	11.13	2.23	0.92
<i>Brief symptom inventory</i>								
Depression	1.63	0.81	1.10	1.05	4.44	0.66	0.37	29.90**
Paranoid ideation	1.28	0.84	0.67	0.64	9.45**	0.56	0.48	17.49**
Psychoticism	1.48	1.05	0.77	0.54	8.46*	0.65	0.56	7.34*
<i>Social functioning scale</i>								
Social engagement	9.60	2.38	10.87	2.17	6.89*	11.07	1.62	8.11*
Interpersonal Communication	6.47	1.64	7.47	1.36	6.56*	7.93	0.88	9.08**
Independence/Performance	29.27	4.71	29.43	4.71	0.45	28.87	6.19	0.19
Recreation	19.87	5.99	22.60	7.20	6.62*	21.27	6.96	1.82
Independence/Competence	35.53	3.54	35.73	2.66	0.05	35.80	3.54	0.11
Prosocial	16.87	8.78	21.00	8.45	3.88	19.87	11.91	1.27
Employment	5.00	3.87	5.33	4.05	0.27	5.47	4.37	0.31

Notes: * $p < 0.05$, ** $p < 0.01$.

Evaluation of primary outcomes associated with the Positive Living group

At the end of the Positive Living group, participants reported an increase in hope, well-being, savoring, and recovery. These gains were maintained up to three months after participating in the group. Participants in the study also reported a significant decrease in symptoms while there was a reported increase in self-esteem at the end of the intervention that was not maintained at the 3-month follow-up.

Evaluation of exploratory outcomes with the Positive Living group

Participants reported gains in both the broad areas of well-being and clinical functioning but also in several of the subscales associated with these measures.

These types of improvements could be associated with participants feeling more in control of their lives, realizing their potential and ability for growth, and feeling capable of having warm and trusting relationships with others. Similar findings were associated with recovery where participants reported feeling more hopeful about their recovery and their personal goals.

In a somewhat unexpected finding, participants reported a decrease in paranoid, psychotic, and depressive symptoms. In the Positive Living group, participants rarely discussed their symptoms instead focusing on increasing positive emotions. Although this is an uncontrolled study, these findings are similar to an earlier study of group PPT where participants showed a significant decrease in depressive symptoms along with improvements in satisfaction with their lives (Seligman et al., 2006).

Limitations

There are a number of limitations that are associated with the current study, which will be addressed and followed by suggestions for future studies. First, the sample was small, involving only volunteers that were self-selected, and the pilot study was implemented with an uncontrolled study design. This type of study does not allow for an inference about the efficacy of the Positive Living group, particularly as there was no control over other treatments that participants received during the study period. Despite the limitations in the sample, we were able to find statistically significant differences at post-treatment and follow-up. Similar pilot studies have used this method for testing interventions that are in the early stage of development and being implemented with novel populations (Fogarty, Happell, & Pinikahana, 2004; Gretchen-Doorly, Subotnik, Kite, Alarcon, & Nuechterlein, 2009; Johnson et al., 2011). Future studies need to include a larger sample with a comparison group that includes comparing Positive Living to treatment as usual and an active treatment control to determine the effectiveness of this intervention.

Second, the feedback form noted that participants were reporting that the exercises were only somewhat easy to understand. This is an important limitation because it may have limited the use and benefit of the exercises. Despite this report, all of the other feedback items were positive suggesting that participants still may have experienced some benefit from the intervention. Future studies may want to consider adding in more explanation, demonstration, and practice of each exercise to increase feelings of competence.

Third, the measures were self-report. We used a wide range of measures assessing well-being, psychological recovery, symptoms, and functioning to present a broad picture of psychological and functional outcomes given this was a pilot study aimed at a novel population. Participants may have been inclined to respond more favorably due to social desirability or demand effects. Future studies should consider semi-structured interviews to measure symptoms and quality of life as well as objective measures of social skill and social network.

Lastly, we did not control for multiple statistical tests, which may have increased the chance of the significant findings being due to chance. This study focused mainly on the feasibility and tolerability of Positive Living for people with schizophrenia and used exploratory analyses to examine outcomes outside of the initial hypotheses. Future studies may want to make specific hypotheses about the effects of this intervention on well-being, recovery, symptoms, and social functioning.

Conclusion

Based on a review of the current literature, this study appears to be the first systematic approach to applying a traditional positive psychology intervention to a population with schizophrenia. It provides evidence that the Positive Living group is not only feasible in this clinical population but that participants found the group to be useful and helpful in their recovery. Participants clearly responded to the Positive Living group with high satisfaction ratings and attendance, and low attrition. In addition, preliminary data suggests that participants in the group may be experiencing improvements in well-being and recovery along with other possible improvements in symptoms and functioning. The current results provide preliminary evidence that using these behavioral exercises may lead to the building of strengths and resources that encourage recovery and enhance social functioning while decreasing psychiatric symptoms in people with schizophrenia. Future studies need to be done with a larger sample and a control group to confirm these findings.

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