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# A Pilot Study of a Brief Inpatient Social-Skills Training for Young Adults With Psychosis

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**Objective:** Psychotic disorders are serious illnesses that are most amenable to early intervention. Though inpatient units are typically the first care setting for young people with psychosis, almost all early intervention work has been limited to outpatient settings. Social difficulties are a core feature of psychotic illnesses, and despite need for empirically supported social-skills treatments there are few interventions intended specifically for the developmental phase during which psychosis manifests (i.e., late teenage to early adult years). **Method:** Our group implemented an adapted social-skills training intervention (SST) designed for young adults on a psychiatric inpatient unit. Nineteen young adult inpatients (aged 18–35) with psychosis participated. Psychiatric symptoms and aspects of social functioning, including reported social self-efficacy and performance on social skills role-plays, were assessed before and after SST participation. **Results:** Preliminary data demonstrate improvements in both self-report and performance-based measures of social functioning after SST participation. **Conclusions and Implications for Practice:** These findings, though preliminary, support additional, larger-scale investigations of this SST among young adults with psychosis. Further, multidisciplinary collaborations are valuable in providing specialized care for young adults with psychosis who are receiving inpatient psychiatric care.

## Impact and Implications

Our findings suggest that young adults receiving inpatient care for psychosis can benefit from group social skills training during their psychiatric admission. This work is important in highlighting the potential of using collaborative, interdisciplinary teams to bring specialized care for psychosis into the inpatient setting, and further promote even earlier engagement and access to crucial psychosocial services.

**Keywords:** psychosis, inpatient psychiatry, social skills training

Psychotic disorders are serious illnesses that impact numerous individuals worldwide and schizophrenia—the prototypical psychotic disorder—has been identified as the most debilitating health-related event that one can experience (Salomon et al., 2012). Though research suggests that early intervention for psychosis positively augments illness course and outcome (Birchwood et al., 1997; Killackey & Yung, 2007) and clinical programs providing specialized care for recent-onset psychosis are increasingly available, many young adults who develop psychosis experience a substantial delay in the receipt of specialized care (Srihari et al., 2014). Further, clinical outcomes for young adults with psychosis remain suboptimal (Breitborde & Moe, 2017), in part

due to aspects of illness which tend to remain impaired even when psychiatric symptoms have remitted (e.g., social functioning) as well as a lack of interventions intended specifically for young adults (Breitborde & Moe, 2018).

Notably, the inpatient psychiatric setting is typically the first treatment contact for most individuals with first-episode psychosis (Anderson et al., 2010) but few specialized psychosocial interventions for psychosis tend to be available during inpatient care (Moe et al., 2018). For example, the current gold-standard early intervention approach for psychosis (i.e., specialized care/Coordinated Specialty Care; Kane et al., 2016)—which has been shown to contribute to significant enhancement in symptomatic reduction, educational attainment, and occupational functioning (Breitborde et al., 2015; Correll et al., 2018; Nossel et al., 2018)—is designed to be delivered in the outpatient setting. Providing inpatient access to these specialized services may be an important strategy to provide specialized care more quickly following illness onset. Given the acuity of the inpatient setting, medication is often the frontline treatment and the availability of other psychosocial treatments tends to be limited (Haddock et al., 1999). Though limited in scope, recent research has demonstrated the feasibility and clinical efficacy of evidence-based psychosocial inpatient care for people with more longstanding psychosis (Gaudiano & Herbert, 2006;

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Owen et al., 2015) as well as those earlier in the course of illness (Lewis et al., 2002). Further, another published study demonstrated that social-cognitive training delivered in an inpatient setting produced improvements in social cognition and social relationships among individuals within the more chronic phase of psychotic illness (Combs et al., 2007).

Deficits in social skills are a core feature of psychotic illnesses (Blanchard et al., 1998) that may hinder the ability of young adults with psychosis to access social supports that positively influence the early course of illness (e.g., reduced psychotic symptoms and lower rates of re-hospitalization; Erickson et al., 1989; Norman et al., 2005). Moreover, social deficits may increase the susceptibility of young adults with psychosis to environmental stressors (i.e., bullying, peer rejection, and hostility; Campbell & Morrison, 2007; Trotta et al., 2013) that can exacerbate symptoms and distress (Campbell & Morrison, 2007). Youth with psychosis benefit most when social support comes from peers outside of their own families (Erickson et al., 1989), further highlighting the need to address deficits in skills related to forming and maintaining peer relationships. Further, given the age at which psychotic disorders tend to emerge (i.e., late teens to early 20s; Häfner et al., 2003) many affected individuals may have been derailed from the normative development of interpersonal and social skills that characteristically occurs during this developmental phase (Arnett, 2000).

Despite the clear need for empirically supported social skills treatments for young adults with psychosis, such interventions remain limited. While a robust literature supports the effectiveness of social skills training (SST) for psychotic disorders (Kurtz & Mueser, 2008; Turner et al., 2018), available treatments targeting social functioning in psychosis tend to be designed for “middle-aged or older outpatients” (Granholm et al., 2005) and have only more recently been explored for use with younger individuals (Herman et al., 2016). Though some early intervention programs do include SST, this tends to be imbedded within the context of larger psychosocial programming interventions (i.e., optional modules within the Individual and Resiliency Training protocol utilized in the RAISE trial and subsequently the OnTrackNY program; Bello et al., 2017; Kane et al., 2016). Further, existing social skills treatments that have been explored among younger individuals with psychosis tend to focus on improving social cognition (Bartholomeusz et al., 2013; Penn et al., 2007) or illness management (Lecomte et al., 2008) as opposed to focused development of specific behavioral skills for making and keeping friends. Though the observed benefits of these interventions on their targeted domains (e.g., improved emotion perception and social cognition, improved symptom management) are clinically important, given the relevance of peer relationships during early adulthood (Arnett, 2000) and the protective nature of these relationships in early psychosis (Erickson et al., 1989), interventions targeting peer relationship development specifically may have potential to further supplement or bolster the impact of social skills interventions for young adults with psychosis.

Adaptation of existing evidence-based therapies for use with new populations with similar or overlapping needs is recognized as an effective strategy for improving access to care (adaptation of HIV interventions for varied at-risk populations; Wingood & DiClemente, 2008), and adaptation of existing psychosocial treatments is a promising approach to meeting varied population-specific

needs (Holmes et al., 2018). As research has noted the significant overlap in social difficulties among individuals with psychosis and those with autism (Couture et al., 2010), a social skills intervention for individuals with autism is an appropriate candidate for adaptation for individuals with psychosis. The Program for the Enrichment and Education of Relational Skills (PEERS; Laugeson, 2017) is an empirically-supported, manualized social skills intervention designed to meet the developmental needs of young people with autism (e.g., making and maintaining friendships, responding to bullying). PEERS was developed with particular attention toward social cues, rules, and etiquette intended to remediate common social errors that may contribute to social isolation or peer rejection (Laugeson, 2017), and is thus designed to assist young people in making and keeping friends by teaching developmentally-appropriate skills in specific, concrete steps. PEERS sessions contain didactic skill instruction, opportunities for behavioral rehearsal, and live role-play demonstrations followed by social cognitive processing via directed, Socratic questioning. The PEERS intervention has been extensively studied and adapted for different developmental phases of life (Laugeson, 2017; Laugeson & Frankel, 2011; Laugeson et al., 2012) and cultures (Rabin et al., 2018; Yamada et al., 2020). Research has demonstrated that youth with autism participating in PEERS experience increases in social skills knowledge, frequency of socialization with peers, and number of friendships (Gantman et al., 2012; Laugeson et al., 2015; McVey et al., 2016) that are durable for up to 5 years post-treatment (Mandelberg et al., 2014).

Thus, the goal of the current study was to examine the impact of an existing, novel application of a social skills intervention among young adults receiving inpatient care for psychosis. Though current research on specialized psychosocial care for young adults with psychosis in the inpatient psychiatric setting is scant, the likelihood of these young adults to present in this setting indicates that this approach is important in extending the availability of such care. We assessed social functioning before and after SST participation as our primary outcome of interest. As previous evidence demonstrates the positive impact of PEERS among youth with autism (Laugeson et al., 2015; McVey et al., 2016), we hypothesized that social functioning would improve after SST participation. Finally, we also measured psychiatric symptoms before and after SST participation. Though the SST intervention was not designed to address these symptoms specifically and thus we did not hypothesize a symptomatic decrease secondary to SST participation, symptoms were assessed to better understand how psychiatric symptoms may change when SST occurs within the greater context of receiving inpatient psychiatric care.

## Method

### *Participants*

Nineteen individuals receiving treatment for a psychotic disorder on an adult psychiatric inpatient unit in an academic medical center were recruited. Inclusion criteria for participation were (a) being between the ages of 18 and 35, (b) a psychiatric diagnosis of a primary psychotic disorder as determined by the participant's attending psychiatrist during the current psychiatric admission, (c) the ability to provide written informed consent, and (d) willingness to participate in the research. All potential participants were

informed that their research participation was voluntary, that research participation had no influence on their date of discharge or their ability to attend the SST group, and that they were free to discontinue their research participation at any time.

### **Recruitment**

Eligible participants were identified through discussion with the inpatient treatment teams and/or their expressed interest in the social skills group; potentially eligible participants were provided with verbal and written information about the study. Written informed consent was obtained from all participants following successful completion of a brief “quiz” regarding the content of the informed consent form prior to signing (passing rate = 80% correct); this was done to ensure that potential participants had adequate understanding of the study and related procedures before choosing to participate. Over a period of approximately 1 year, 32 inpatients who expressed interest in the social skills group were identified as being eligible to take part in the study. Of these participants, 10 declined to provide informed consent following an explanation of the study and procedures. An additional three participants were excluded as they were unable to demonstrate current capacity to provide informed consent via passing a brief quiz on the content of the consent form. Thus, 19 individuals receiving treatment for a psychotic disorder on an adult psychiatric inpatient unit in an academic medical center provided informed consent and participated in the study. Prior to the collection of any data, the study protocol, including the informed consent form and informed consent quiz, was approved by the university Institutional Review Board.

### **Procedure**

All participants completed two assessments comprised of the same measures with a study researcher. The first session took place prior to participation in the social skills groups, and the second session was completed prior to the participant’s scheduled discharge from the psychiatric hospital.

### **Measures**

#### **Social Functioning**

Social functioning was assessed via both a self-report questionnaire of perceived social abilities (i.e., social self-efficacy) and a performance-based measure of social behavior.

The Self-Efficacy Scale for Schizophrenia (SESS; McDermott, 1995) is a self-report questionnaire designed to assess one’s perceptions about their ability to manage psychiatric symptoms and navigate social situations. Each item is rated on a scale of 0–100, with 0 representing lack of confidence and 100 conveying complete confidence. For the present study, we utilized the 19-item social skills self-efficacy subscale. Scores on this subscale are calculated by averaging the responses across items.

The Social Skills Performance Assessment (SSPA; Patterson et al., 2001) is a brief performance-based, clinician-rated behavioral assessment of social skills. As part of this task, participants are asked to complete three role-play demonstrations of imagined social situations (e.g., starting a conversation with a new neighbor, making plans to go out with a friend) and performance is then rated

for multiple elements of effective social skill performance (e.g., interest, clarity, affect, and appropriateness). For the present study, an average sum of scores across role-plays was used. A trained research assistant administered and scored all SSPAs immediately following completion. The first five SSPA administrations were completed and co-rated by both the research assistant and the study PI and scored to consensus, as guided by the SSPA manual, for any discrepancies.

#### **Psychiatric Symptoms**

Current psychiatric symptoms were assessed using the Brief Symptom Inventory (BSI; Derogatis, 1992)—Inpatient version. The BSI is a 53-item, self-report measure designed to assess psychiatric symptoms broadly and developed specifically for use with individuals currently receiving inpatient psychiatric care. For the purpose of the present study, the Global Severity Index (GSI) T-score—which is a composite score of all items—was utilized.

#### **Group Social Skills Training**

SST groups took place on the adult inpatient units at The Ohio State University Medical Center (OSUMC). The OSUMC CORE team—an interdisciplinary group that coordinates psychosocial and therapeutic inpatient programming—served as collaborators in the development and implementation of the SST intervention. Participants were invited to attend group SST offered two times per week during their inpatient hospitalization. Each group lasted approximately 45 min and focused on one of four PEERS topics (“trading information,” starting a conversation, maintaining a conversation, and handling verbal teasing) in a brief, manualized format. These topics were selected from the full PEERS intervention as they were able to (a) be covered in optimal duration for the inpatient setting (i.e., groups were designed to run for 45 min while the original PEERS model sessions are 90 min long and tend to contain multiple separate skills and strategies within a single session), (b) reasonably “stand alone” so that each lesson did not rely on information presented in a previous session and thus would be accessible to all attendees, and (c) offer session content that was complementary in its focus on basic social skills taught in a way that emphasizes making and keeping friends. The content of the skills selected for inclusion in the brief SST adaptation was preserved from the original PEERS intervention and no other modifications were made; wording of the skills, sequence of the behavioral steps, and content of the role-play demonstrations were unchanged. The selection of SST skills from the original intervention was supported via consultation with two social workers with a long history of coordinating and providing therapeutic programming services on the inpatient units (A.S. & M.M.). A team of doctoral psychology students, inpatient staff, and research assistants was trained and supervised to assist with the sessions by the study Principal Investigator (PI; A.M.M.). A total of five doctoral psychology students were trained to act as group facilitators. Each session was led by one facilitator, with either one or two additional staff present to assist with coordination of the session or role-play demonstrations. To ensure fidelity to the SST material, a member of the study team would monitor the sessions and would cue the facilitator to cover any missing information during the session in real-time.

**Table 1**  
*Participant Demographics*

	Mean ( <i>SD</i> )
Age	27.25 (3.76)
Gender (%)	
Male	14 (74)
Female	5 (26)
Race (%)	
African American or Black	10 (53)
Caucasian	3 (16)
Asian	4 (21)
Multi-racial	2 (10)
Ethnicity (%)	
Hispanic/Latino	3 (15)
Non-Hispanic/Latino	16 (85)
Psychiatric diagnosis (%) <sup>a</sup>	
Schizophrenia	12 (63)
Schizoaffective disorder	3 (15)
Bipolar disorder with psychotic features	3 (15)
Unspecified schizophrenia-spectrum or other psychotic disorder	1 (5)
Duration of inpatient stay in days	12.42 (6.10)

Note. <sup>a</sup> Psychiatric diagnosis was determined during the current psychiatric admission by the attending physician.

## Analyses

Missing data were addressed via multiple imputations. The fraction of missing information ( $\lambda$ ) was considered trivial for all analyses (i.e., all  $\lambda < .06$ ; Bodner, 2008). To assess changes in social functioning and psychiatric symptoms, dependent-samples *t*-test analyses were completed using pre- and post-SST scores on the SESS, SSPA, and BSI. Post-SST changes were further characterized using Cohen's *d* effect sizes.

## Results

Demographic data for all participants appear in Table 1, and descriptive data for the symptom and social functioning variables appear in Table 2. The number of SST sessions attended ranged from 2 to 7 sessions, with an average attendance of 3 sessions. The number of sessions attended was not significantly correlated with social functioning or symptom scores, either before or after SST.

### Psychiatric Symptoms

Scores on the BSI did not significantly change following SST ( $t = 1.17$ ;  $p = .24$ ,  $d = .6$ ).

**Table 2**  
*Pre- and Post-SST Symptoms and Social Functioning*

Measure	Pre-SST	Post-SST	Group difference statistics
	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	
Brief symptom inventory: Global severity index	56.13 (8.37)	51.00 (5.58)	$t = 1.17$ ; $p = .24$ , $d = .6$
Self-efficacy scale for schizophrenia: Social	64.61 (17.70)	80.46 (9.42)	$t = 1.97$ ; $p = .04$ , $d = .8$
Social skills performance assessment	3.94 (.48)	4.40 (.45)	$t = 4.32$ ; $p < .001$ , $d = .9$

Note. SST = Social skills training.

### Social Functioning

Scores on the SESS social subscale significantly increased following participation in SST ( $t = 1.97$ ;  $p = .04$ ,  $d = .8$ ). Social skill performance on the SSPA also significantly improved following SST ( $t = 4.32$ ;  $p < .001$ ,  $d = .9$ ).

## Discussion

In the present study, young adults receiving inpatient care for psychosis evidenced improvements in both self-reported social self-efficacy (SESS) and performance-based social functioning (SSPA) following participation in a brief SST group. Psychiatric symptoms tended to decrease during study participation, however this change was not significant. Overall, these results highlight the potential clinical utility of a SST intervention for individuals with psychosis in the inpatient setting and support the novel application of a PEERS-based training program for young adults with psychosis. Notably, this is the first study to our knowledge exploring the utility of the PEERS intervention for young people with psychosis. Our findings also add to an existing body of literature suggesting that other inpatient psychosocial services for people with psychosis can contribute to improved social cognition (Bartholomeusz et al., 2013; Combs et al., 2007), reduced distress (Owen et al., 2015), and improved social functioning (Gaudiano & Herbert, 2006). However, of these existing studies our current investigation of PEERS-based SST is the only study that includes a performance-based indicator of social functioning and thus may have particular incremental value in supporting ecological validity of observed social benefits.

### Clinical Implications and Important Lessons

Though the inpatient setting provides a unique opportunity to provide SST for young adults with psychosis, our work also highlights some of the difficulties in carrying out intervention research with acutely ill psychiatric inpatients with psychosis. A significant portion of individuals eligible for the study (approximately 31%) declined to participate. This rate of refusal is similar to those observed in other published studies of inpatient psychosocial care for psychosis (Gaudiano & Herbert, 2006; Haddock et al., 1999). Though we are unable to draw specific inferences about this rate of refusal, concerns about privacy, active psychotic symptoms (e.g., paranoia), or concerns about the research procedures despite interest in the SST groups may have contributed to a lack of participation for some individuals. We were also particularly conservative in our approach to recruitment to prevent possible coercion or undue

influence (i.e., participants were not approached unless they indicated interest or were recommended by their treatment teams and were still able to attend the SST groups even if they declined to participate in the research study), which was warranted given our inpatient sample but may have also impacted study participation. In addition, the exposure to the study intervention was inherently limited by the duration of time each individual required inpatient treatment, which also meant that as individuals became increasingly psychiatrically stable and thus appropriate for discharge, they were less likely to be able to attend subsequent SST sessions. Notably, though our current investigation of SST did not occur within a Coordinated Specialty Care (CSC) early intervention framework, the observed benefits of this approach on social functioning among young people with psychosis may provide support for inclusion of socially focused interventions within broader CSC programs. Further, developing psychosocial interventions that are appropriate for individuals with psychosis in an acute state of illness presents a challenge. To meet this challenge, we formed an interdisciplinary team comprised of academic clinical psychologists with expertise in the treatment of psychosis among young adults and delivery of specialized early intervention services (A.M.M. & N.J.K.B.) and mental health social workers with extensive clinical experience in the design, implementation, and coordination of therapeutic services for adult psychiatric inpatient units (A.S. & M.M.). Through this collaboration, we have also provided education and training on psychosocial care for acute psychosis to a variety of mental health trainees (i.e., students in social work and clinical psychology) via involvement in the SST groups. We strongly encourage others considering similar inpatient psychosocial service implementation to consider a team-based approach. Finally, despite some of the difficulties inherent in conducting clinical research in the inpatient psychiatric setting, we believe this work provides important preliminary evidence that psychosocial programming for young people with psychosis can have benefits during what can be considered a relatively acute phase of illness (i.e., psychotic or other psychiatric symptoms serious enough to require hospitalization). In keeping with evolving models of psychiatric rehabilitation and recovery that promote meeting the individual needs of persons with serious mental illness beyond symptom reduction (Bellack & Drapalski, 2012), we believe this work is an important effort in making a variety of psychosocial services accessible to individuals across settings in which they are likely to be served.

### **Limitations**

The current study has several notable limitations. First, our pilot study sample size was small and thus inferences should be interpreted cautiously. However, the current results do suggest a medium to large effect size in social skill improvements despite this limitation (Cohen, 1988). Further, given the intrinsically dynamic nature of the inpatient setting (e.g., variable duration of stay, inconsistent availability of participants to attend groups), participants varied in the content and total number of SST session that they attended. Of note, the average duration of inpatient stay for participants in this study (12 days) was relatively short, and thus the generalizability of the current findings to other inpatient settings is not currently known. Though the existing data on length of inpatient stay among individuals with serious psychiatric illness are variable, recently published data suggest that the median length of inpatient stay for

young adults presenting with early psychosis is 14 days (Rodrigues et al., 2019). Though previous research suggests that engagement in behavioral rehearsal is more important than number of sessions attended in predicting SST response (Mueser et al., 1990), the role of intervention dose remains unclear. Further, this was an uncontrolled study and thus we cannot determine how symptoms or functioning may have changed for inpatients who did not complete the SST intervention. Unmeasured changes (e.g., improvements in attention) or multiple exposures to the assessments may have also influenced results. In addition, members of the study team who assisted with coordination of SST groups at times acted as the assessor for post-SST ratings, and thus we cannot rule-out the influence of demand characteristics or rater bias. Though the one clinician-rated instrument (SSPA) utilizes detailed anchor points to optimize reliable administration, the potential influence of rater bias similarly cannot be ruled-out. Additionally, the symptom rating measure used in the present study was based on participant self-report and not clinician ratings, however, scores on the BSI have been found to classify high versus low levels of psychotic and general symptoms measured with a clinician-rated interview for psychosis with considerable power (Preston & Harrison, 2003). Finally, though we included only young adults in this study and most individuals experience the onset of psychosis during these years (Häfner, 2003), we did not obtain measures of exact duration of psychotic illness and thus the generalizability of these results to a sample of individuals with more defined first-episode psychosis is not currently known.

### **Future Research**

The current study has several important implications for future research. First, our results support additional investigations of the PEERS-based intervention with larger sample sizes among young adults with psychosis. Exploration of additional content that may be useful specifically for young people with psychosis is also warranted, and measurement of participant response to content or reactions to the sessions would be useful in guiding future development. Additionally, our sample in the present study had notable representation of racial minorities, and thus future research may investigate whether our pattern of results is observed in samples with varying racial or ethnic distributions. Given the select and relatively small number of topics covered in the SST sessions to optimize its inpatient delivery, outpatient studies of longer duration may provide additional information regarding intervention dosage and outcome. As the full PEERS intervention contains 15 skills lessons and thus many social strategies not included in the current study that are relevant to forming and maintaining peer relationships (e.g., planning and conducting social gatherings with friends, dating strategies and skills, and communicating on social media), future research may explore the broader benefit of the full PEERS intervention on social functioning among young people with psychosis. In addition, should future investigations of the adapted PEERS intervention for psychosis yield similarly promising results, studies designed to assess specificity of the observed benefits to the SST intervention (e.g., randomized controlled trials) or to specific diagnostic groups of individuals with psychosis (e.g., schizophrenia-spectrum vs. mood disorders with psychotic features) would be highly desirable.

## Conclusions

Though many young adults with psychosis have their first treatment contact in the inpatient psychiatry, few specialized psychosocial interventions are available in this setting. Impairments in social functioning and difficulties in forming peer relationships are particularly relevant to outcomes for young people with psychosis that can be addressed via targeted therapies. A brief, novel application of an existing social-skills intervention for young adults with psychosis delivered in the inpatient psychiatric setting has demonstrated preliminary, yet promising, improvements in social functioning among participants.

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