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Social Cognition and Social Skills in Schizophrenia: The Role of Self-Monitoring

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Individuals with schizophrenia, relative to both clinical and nonclinical control subjects, demonstrate significant deficits in social skills (Mueser and Bellack, 1998). To identify factors that contribute to impairments in social skills, it has been argued that increased attention should be placed on social cognition, the processing of social information (Silverstein, 1997). And, in fact, there is growing evidence that individuals with schizophrenia have specific impairments in social cognition and that these impairments have important functional consequences (reviewed in Penn et al., 1997).

The functional role of social cognition in schizophrenia may be better understood by investigating social-cognitive constructs that have a known association with social behavior in the general population. One such construct is "self-monitoring" (SM), which reflects one's ability to control expressive behavior and self-presentation (Snyder and Gangestad, 1986). High self-monitors, compared with low self-monitors, demonstrate more behavioral variability across situations, more expressive social skills, and greater extraversion and self-confidence. Conversely, the behavior of individuals low in SM is more internally regulated and less likely to be influenced by situational demands or social expectations.

The purpose of this study is to conduct a preliminary investigation of self-monitoring in schizophrenia. Individuals with schizophrenia will participate in two role plays differing in impression management demands. It is hypothesized that high self-monitors with schizophrenia will demonstrate superior social skills than low self-monitors with schizophrenia, with the difference being strongest for the role play high in impression management demands.

Methods

Participants: The subjects were 26 outpatients at the University of Chicago, Center for Psychiatric Rehabilitation, all meeting criteria for schizophrenia based on the Structured Clinical Interview for DSM-IV, patient version (SCID-P; First et al., 1995), administered by trained research assistants (Kappa > .70). Exclusionary criteria included a history of neurological disorder, corrected vision of less than 20/30, less than a third-grade reading level, and substance abuse in the past 6 months.

Subjects had the following demographic characteristics: age (*M* = 33.3; SD = 9.7); number of previous hospitalizations (*M* = 4.7; SD = 3.8); years of education (*M* = 12.0; SD = 1.7); vocabulary subtest (WAIS-R) raw score (*M* = 25.78; SD = 13.3), gender (male = 15; female = 11); ethnicity (Caucasian = 9; African-American = 17); and chlorpromazine equivalent (*M* = 701.46; SD = 516.4).

Materials

Self-Monitoring Scale: The Self-Monitoring Scale (Snyder and Gangestad, 1986) is comprised of 18 statements that the respondent rates ("true" or "false") as being descriptive of him/her (*e.g.,* "I may deceive people by being friendly when I really dislike them," and "I would probably make a good actor"). The SM scale used in the current study is an updated version of the original SM scale. Specifically, the current version of the SM scale is considered a more "pure" measure of the general self-monitoring factor than its predecessor, which may have better reflected the SM scale's underlying subfactors of "public performance" (*i.e.,* behavioral tendencies indicative of extraversion) and "other-directedness" (*i.e.,* the tendency to modify behavior according to the demands of the situation; Briggs and Cheek, 1988). Performance on the self-monitoring scale was indexed as the total number of statements that the respondent endorsed as being true of her/him.

Test-retest reliability was investigated by administering a second self-monitoring scale approximately one-week after the initial assessment.

Social Skills Assessment: Social skills were assessed with two versions of the conversation probe (CP) role play test. The CP requires the subject to initiate and maintain a conversation with a research confederate for 3 minutes. Subjects participated in two 3-minute CPs, each with a different confederate. The two CPs differed with respect to the impression management (IM) demands placed on the subject. In the low IM role play (LIM-RP), subjects were instructed that the confederate was the focus of the evaluation and that the confederate was told to make the best impression possible on the subject. For the high IM role play (HIM-RP), the subject was told that he/she was the focus of the evaluation and that the confederate would evaluate him/her on a rating form after the role play. To increase motivation to impression manage (Leary and Kowalski, 1990), the subject was told that a second confederate, sitting next to the confederate engaging in the role play, would observe the subject and also rate his/her social skills. The order of the IM conditions was counterbalanced across subjects.

Two research assistants rated the subject's videotaped social skills on anchored 5-point Likert scales (1[Poor] to 5[Good]): overall social skill, clarity, fluency, affective expression, gaze, and involvement. The final social skill, "asks questions," was rated on a Likert scale anchored by "none" and "many." Interrater reliability (ICCs) was calculated on 73% of the set of all CPs and ranged from .46 (fluency) to .94 (involvement), with a mean ICC of .78.

Consistent with previous research in this area (discussed in Penn et al., 1998), three composite indices of social skill were formed by summing standardized *z*-scores for each rating of social skill: verbal social skill (*i.e.,* overall social skill + asks questions), nonverbal social skill (affect + involvement + gaze), and paralinguistic skills (fluency + clarity).

Brief Psychiatric Rating Scale: Subjects were administered the expanded version of the Brief Psychiatric Rating Scale, version 4.0 (BPRS; Ventura et al., 1993) by trained research assistants (ICCs > .80). Based on a recent factor analysis of over 400 individuals with schizophrenia (Mueser et al., 1997), four symptom clusters were used: affect, anergia, thought disorder, and disorganization.

Results

Reliability of the SM Scale: The internal consistency (alphas) for the general factor (based on the KR-20 correction) at time 1 and 2 was .71 (N = 26) and .79 (N = 23), respectively (note: retest data were not available for three subjects). Test-retest reliability for the general factor was good (r = .78).

The Forming of High and Low SM Groups: Consistent with previous research using the SM scale, subjects were dichotomized into low and high self-monitors using a median split on the general SM factor (based on the initial SM administration). Based on a median of 9.5, low (M = 6.0, SD = 2.8) and high (M = 11.5, SD = 1.5) SM groups were formed (13 subjects/group). *t*-Test and chi-square analyses of demographic and clinical variables revealed that these groups did not significantly differ from one another in age, education, vocabulary subtest raw scores, gender, ethnicity, previous hospitalizations, or neuroleptic levels (all p's > .05). Furthermore, a multivariate one-way analysis of variance conducted on the four BPRS subscales (*i.e.,* anergia, affect, thought disorder, and disorganization) was not significant, F[4,20] = 1.50, NS, indicating that high and low self-monitors with schizophrenia did not differ in symptomatology.

SM and Social Skill: A 2 (SM; high-low) x 2 (impression management [IM]; high-low) multivariate analysis of variance (with repeated measures on IM) was conducted on the three composite indices of social skill (*i.e.,* paralinguistic, verbal, and nonverbal social skills). Neither the SM x IM interaction nor the main effect of IM was significant, F(3,22) = .27, NS, F(3,22) = 0, NS, respectively. However, there was a significant multivariate effect for SM, F(3,22) = 3.6, p < .05. Univariate analyses conducted on each of the composite indices of social skills (*i.e., z*-scores) revealed that high self-monitors with schizophrenia had significantly greater paralinguistic skills than low self-monitors with schizophrenia (low SM: M = -1.28, SD = 2.94; high SM: M = 1.28, SD = 2.36; F[1,24] = 5.94, p < .05). The magnitude of the self-monitoring effect on paralinguistic skills (*i.e.,* omega squared) corresponds to a relatively large effect (.16). The high and low self-monitoring groups did not significantly differ in verbal (low SM: M = -.14, SD = 3.5; high SM: M = .14, SD = 3.28), or nonverbal social skills (low SM: M = -.44, SD = 5.56; high SM = .49, SD = 4.94) (all p's > .05), with omega squared corresponding to a small effect size (.01<).

Discussion

The results of this study indicate that in a sample of outpatients with schizophrenia, the general factor of the self-monitoring scale is a reliable measure of self-monitoring ability. Furthermore, individuals who rate themselves as high self-monitors have greater paralinguistic social skills than individuals who are low self-monitors, lending some support for the hypothesis that high self-monitoring would be associated with better social skills in schizophrenia. However, self-monitoring did not impact either the verbal or nonverbal skills of individuals with schizophrenia. These findings are likely not explained by the study sample size as the index used to measure the magnitude of the self-monitoring effects, omega squared, is unaffected by sample size (Keppel, 1991). Therefore, the null finding for verbal and nonverbal social skills does not appear to be an artifact of the study's statistical power.

The hypothesis that the difference in social skills between low and high self-monitors would be greatest for the high impression management role play was not supported. It is possible that for the high self-monitors, merely being placed in a videotaped role play with another person, irrespective of instructions, was enough to activate impression management strategies; thus, a possible ceiling effect may have occurred. Alternatively, the general self-monitoring factor tends to have a stronger association with the "public performing" than the "other-directedness" subfactor (John et al., 1996), a factor related to extraversion and social poise, characteristics that may be stable across social situations. This is a potentially important finding in light of the tendency for extraversion to be associated with positive outcomes in schizophrenia (discussed in Berenbaum and Fujita, 1994).

Self-monitoring appears to have promise in delineating some of the social skill deficits associated with schizophrenia. Future research should examine the possible treatment implications of directly remediating impairments in self-monitoring skills. Finally, the findings should be replicated with a larger sample, which would afford greater power to discern smaller effect sizes, and allow for classification of subjects into self-monitoring groups based on more extreme criteria (*e.g.,* 25th and 75th percentiles) rather than on a median split.

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