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Vocational functioning in schizotypal and paranoid personality disorders

Susan R. McGurk [a,*], Kim T. Mueser [a], Rebecca Mischel [b], Rebecca Adams [c], Philip D. Harvey [d], Margaret M. McClure [e,f], Amy E. Look [e,f], Winnie W. Leung [e,f], Larry J. Siever [e,f]

[a] Center for Psychiatric Rehabilitation, Departments of Occupational Therapy, Psychology, and Psychiatry, Boston University, Boston, MA 02215, USA
[b] Department of Psychology, Yeshiva University, New York, NY, USA
[c] Department of Psychology, Suffolk University, Boston, MA, USA
[d] Department Psychiatry and Behavioral Sciences, University of Miami, Miami, FL, USA
[e] Department of Psychiatry, The Mount Sinai School of Medicine, NY, USA
[f] Mental Illness Research, Education, and Clinical Center (VISN 3), Bronx Veterans Administration Center, Bronx, NY, USA

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ABSTRACT

Impaired vocational functioning is a hallmark of schizophrenia, but limited research has evaluated the relationships between work and schizophrenia-spectrum personality disorders, including schizotypal (SPD) and paranoid personality disorder (PPD). This study compared employment history and job characteristics of 174 individuals drawn from the community or clinic, based on four personality disorder groups: SPD Only, PPD Only, SPD+PPD, and No SPD or PPD. Symptoms and cognitive functioning were also assessed. Both PPD and/or SPD were associated with lower rates of current employment, and a history of having worked at less cognitively complex jobs than people without these disorders. Participants with PPD were less likely to have a history of competitive work for one year, whereas those with SPD tended to have worked at jobs involving lower levels of social contact, compared with those without these disorders. When the effects of symptoms and cognitive functioning were statistically controlled, PPD remained a significant predictor of work history, and SPD remained a significant predictor of social contact on the job. The findings suggest that impaired vocational functioning is an important characteristic of SPD and PPD.

1. Introduction

Personality disorders are associated with a broad range of impairments in vocational functioning (Gatchel et al., 1995; Skodol et al., 2002; Yang et al., 2010). There is particularly strong evidence linking schizotypal personality disorder (SPD) to low rates of competitive work (McGlashan, 1986; Skodol et al., 2002; Dickey et al., 2005; Skodol et al., 2005; Pulay et al., 2009). SPD may be related to poor vocational functioning for several reasons.

SPD is a schizophrenia-spectrum disorder, and difficulty sustaining competitive work is a common feature of schizophrenia (Maneros et al., 1992; Jablensky et al., 1999; Mueser et al., 2001). SPD has a symptom profile, albeit attenuated, similar to schizophrenia (Siever et al., 1993), suggesting that psychotic-like symptoms such as magical thinking and perceptual distortions, and deficit-like symptoms such as constricted affect and social avoidance may interfere with working. In addition, SPD is associated with a pattern of less severe cognitive impairment similar to that seen in schizophrenia (Raine, 2006), which is a consistent predictor of poor work outcomes (McGurk and Mueser, 2004).

Cognitive impairments in SPD are associated with worse social cognition (Aguirre et al., 2008; Henry et al., 2008) and social skills (Waldeck and Miller, 2000). However, little research has evaluated the contribution of cognitive factors to impaired vocational functioning in SPD. Furthermore, while it has been established that people with SPD have greater work disability, other aspects of vocational functioning in the disorder remain unexplored, such as the degree of social contact at work, the complexity of jobs that individuals work, and the occupational status of their jobs.

There is a high comorbidity between SPD and paranoid personality disorder (PPD) (Watson and Sinha, 1998; Dickey et al., 2005; Raine, 2006; Pulay et al., 2009). Paranoia and interpersonal suspiciousness are common symptoms of both disorders, while magical thinking and deficit-like symptoms are present only in SPD. Like SPD, there appears to be a genetic link between PPD and schizophrenia (Kendler and Gruenberg, 1982;

* Correspondence to: Center for Psychiatric Rehabilitation, Boston University, 940 Commonwealth Ave. West, Boston, MA 02215, USA. Tel.: +1 617 353 3549; fax: +1 617 353 7700.
E-mail addresses: mcgurk@bu.edu, susan.r.mcgurk@dartmouth.edu (S.R. McGurk).

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Webb and Levinson, 1993), and PPD is thought by many to be a schizophrenia-spectrum disorder (McGlashan et al., 2000; Raine, 2006). However, less attention has been paid to employment functioning in people with PPD, although some research suggests significant impairment (McMahon and Enders, 2009).

There is a need to better understand the nature of vocational disability in schizophrenia-spectrum personality disorders, including the contribution of cognitive impairments and symptoms to poor functioning. This study addressed this question by evaluating the vocational functioning in persons with SPD or PPD in a mixed sample drawn from the clinic and community comprised mainly of people with non-psychotic Axis I disorders and other Axis II disorders. We also evaluated the relationships between cognitive functioning, symptoms, and employment characteristics in individuals with SPD or PPD. We hypothesized that SPD and PPD would be associated with worse vocational functioning, and that cognitive impairment would be a strong predictor of work and job-related characteristics, based on similar associations reported in research on schizophrenia (Mueser et al., 2001; McGurk and Mueser, 2004; Marwaha et al., 2007).

2. Methods

2.1. Participants

Inclusion criteria for participation in this study were: (a) age 25 or older, and (b) willing and legally able to provide informed consent. Exclusion criteria were: (a) met criteria for current (within past six months) substance abuse or dependence, history of IV drug use and dependence, or prolonged abuse of crack cocaine; (b) a positive urine drug toxicology screen, (c) a lifetime diagnosis of a psychotic disorder or bipolar I disorder (based on SCID interview), or (d) history of significant head trauma. The study sample included 174 participants, of whom 120 (69%) were male, 93 (53%) were non-Hispanic White, 43 (25%) African American, 24 (14%) Hispanic, 9 (5%) Asian, and 5 (3%) Other. with a mean age of 38.4 (S.D.=9.5) years and 14.9 (S.D.=2.6) years of education.

Participants were recruited from outpatient clinics at the Mount Sinai and Bronx Veterans Affairs Medical Center by advertisements in newspapers and referrals from psychiatrists and psychologists in the local community as part of a larger study on cognitive functioning in the schizophrenia spectrum. The advertisements were broadly aimed at social and interpersonal dysfunctions, and cited problems in relating to others and feeling like one did not fit in. Of the total sample of 174, 113 (65%) were recruited through advertisements, 54 (31%) were clinic referrals, and the referral source was unknown for 10 (4%) participants.

2.2. Procedures

Potential study participants were initially screened by a member of the research staff, and if the individual was interested, a meeting was arranged to explain study procedures and obtain written informed consent. Study eligibility was then confirmed by administering the urine toxicology test and the SCID. The project was approved by the Mt. Sinai School of Medicine and the Bronx Veterans Affairs Medical Center Institutional Review Boards (IRBs). In accordance with IRB guidelines, written informed consent was obtained from participants who met the study eligibility criteria, who were then scheduled for the additional assessments.

2.3. Measures

2.3.1. Diagnostic and background information

Participants were assessed for Axis I lifetime diagnoses using the Structured Clinical Interview for DSM-IV (SCID) (First et al., 1996). Axis II diagnoses were assessed with the Structured Interview for DSM-IV Personality Disorders (SIDP) (Pfohl and Zimmerman, 1995). Diagnostic interviews were conducted by a Master's or Ph.D. level psychologist. Educational level and other demographic characteristics were ascertained based on client interviews using a structured format.

2.3.2. Vocational functioning

Work history was assessed in the context of the SCID, supplemented by additional information gathered during the subsequent assessments, to evaluate current work status, work history, and characteristics of jobs held. Current work status was determined by whether the person was employed at the time of assessment. Work history was defined as a minimum of 12 consecutive months of competitive employment in adulthood (age 21 or older).

The following characteristics were recorded for each job, when available: duration of job, occupational status, cognitive complexity of job tasks, and degree of social contact. Occupational status was measured with the Hollingshead scale (Hollingshead and Redlich, 1958), a seven point scale that describes different occupations based on the level of skill and education required to complete them and their relative pay, with lower numbers corresponding to higher status jobs. Job complexity was rated using the Social Adjustment Scale, Work Subscale (Schooler et al.,1979), a five point scale with higher numbers indicating greater complexity. Amount of social contact on the job was rated on a three point scale: low (e.g., tollbooth collector), medium (e.g., bicycle messenger), and high (e.g., cashier). Ratings of occupational status, job complexity, and social contact were done independently by two evaluators who were blind to participants' psychiatric diagnoses. Discrepancies in ratings were resolved by discussion and reaching a consensus. Job characteristic ratings for the longest job held were used in the statistical analyses.

2.3.3. Premorbid academic achievement

The Wide Range Achievement Test-III (WRAT), Reading subtest (Wilkinson, 1993) was used to measure premorbid academic achievement. The WRAT-III measure is the total score for words read correctly, converted to the grade-equivalent score.

2.3.4. Cognitive functioning

A comprehensive cognitive battery was administered to all study participants by Master's level psychologists who were blind to clients' diagnosis and work history. In this report, we focused on a subset of four tests that captured the broad range of cognitive functions typically impaired in schizophrenia and assessed in studies of work functioning.

Speeded visual scanning was measured with Trail Making Test Part A (Radford et al.,1978), which requires subjects to connect numbers in order. The dependent measure was seconds to complete the task.

Verbal learning and memory was assessed with the California Verbal Learning Test (CVLT) (Delis et al., 1987), which requires subjects to recall a repeatedly presented word list. The dependent measures were acquisition (CVLT 1–5), and retention, determined by the total number of words recalled in the long delay free recall (CVLT LDFR), which occurs 20 min after the last acquisition trial.

Working memory was assessed with the Paced Auditory Serial Addition Test (PASAT), which requires subjects to add the number they just heard with the number the heard before. The total number of correct responses is the dependent variable.

Executive functioning was assessed with the Trail Making Test, Part B, which requires subjects to connect numbers and letters in order while shifting between the two sequences. The dependent measure was seconds to complete Trail Making B.

A composite measure of *overall cognitive functioning* was computed by standardizing each of the four cognitive measures (i.e., computing *z*-scores) and summing those scores. This standardization was performed on the current sample and did not rely on norms for healthy controls.

2.3.5. Psychopathology

Symptoms were assessed with both interviews and self-report measures. The expanded version of the Brief Psychiatric Rating Scale (BPRS) (Lukoff et al.,1986) was used to assess a broad range of symptoms over the past week through a clinical interview. The total score on the BPRS was used in the statistical analyses.

Self-reported depression was rated on the Beck Depression Inventory-II (BDI-II) (Beck et al.,1996), which assesses the severity of depressive symptoms and yields an overall score with a possible range from 0 to 63. Self-reported anxiety was rated with the Spielberger State-Trait Anxiety Scale (STAI) (Spielberger, 1983), which yields two subscales corresponding to state and trait anxiety.

A composite measure of symptoms was formed by standardizing each of the symptom measures (i.e., computing *z*-scores), including the BRPS total score, the BD-II, and the state and trait subscales of the STAI, and summing those scores.

2.4. Data analysis

Prior to conducting statistical analyses the distributions of the occupational status, job complexity, and social contact variables were examined for normality. Skewness and kurtosis for each variable were less than ± 2.0, and thus no transformations were done (Cameron, 2004). Ratings of occupational status were highly correlated with cognitive complexity, $r(152) = -0.84$, $p < 0.001$, and moderately correlated with social contact $r(152) = -0.32$, $p < 0.001$, indicating that higher occupational status was associated with greater job complexity and more social contact. Job complexity was also moderately correlated with social contact, $r(169) < 0.30$, $p < 0.001$, indicating that more complex jobs tended to involve greater social contact.