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Employment in people with severe mental illnesses in India

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Dissertation

EMPLOYMENT IN PEOPLE WITH SEVERE MENTAL ILLNESSES IN INDIA

by

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EMPLOYMENT IN PEOPLE WITH SEVERE MENTAL ILLNESSES IN INDIA

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ABSTRACT

Schizophrenia and other severe mental illnesses (SMI) often have adverse effects on work functioning. However, most research on employment in people with SMI has been conducted in developed countries and much less is known about work patterns and interest in work in people with SMI living in developing countries, including India. Moreover, treatment for SMI in developing countries is largely limited to pharmacotherapy; psychosocial interventions including vocational rehabilitation are rarely available. A comprehensive understanding of employment in people with SMI living in developing countries would inform the development of vocational services for this population. Therefore, a series of three studies were conducted as part of this dissertation with the goal of evaluating rates of employment, interest in employment, perceived benefits of work and problems related to work among employed participants, perceived barriers and desired job supports among unemployed participants, and to examine stability and change in work status and interest in work over a one-year period.

In Study 1, interviews were conducted with 550 people with SMI receiving psychiatric outpatient services at two private hospitals in two different districts in the state of Maharashtra in western India. The results were that 60.9% of participants were working, with employment rates being significantly higher in men than in women (79.4%

vs. 35.9%). In addition, the rates of work were higher in people who were living in rural areas compared to those living in urban areas (77.8% vs. 48.9%). The majority of employed participants living in rural areas were working in family operated businesses such as farming, while work for independent employers was more common in urban areas. Among the participants who were working for independent employers, more than 45% obtained jobs through their family or friends. Interest in work was high (77.4%) among unemployed participants and the majority indicated wanting help with their job search and with managing their mental illness. Social norms related to gender specific roles in Indian society, in which men are expected to be primary wage earners, and the involvement of families in employment may have contributed to high work rates in this study. The strong interest in work among unemployed participants suggests that the deployment of vocational services for people with SMI in India could improve employment rates.

Study 2 was a one-year follow-up of participants in Study 1 to evaluate stability and change in employment status and interest in work. A total of 459 (83.5%) participants completed follow-up interviews, of whom 62.9% were employed at follow-up, compared to 60.9% at the baseline assessment. Employment status was highly stable over the one-year period, with 56.4% working at both assessments and 32.4% not working at either assessment. Among the participants who were working at both assessments, more than 80% of were employed in the same job, for an average period of 10 years. Among the participants who were unemployed at baseline, 16.9% began working at follow-up. Although interest in work among those who were unemployed was lower at follow-up than baseline (62.8% vs. 73%, respectively), 58.1% expressed a consistent interest in work across both assessments. The most commonly desired job supports for unemployed participants were assistance with finding a job and help with mental illness management. The findings suggest that the work status of people with SMI in India is stable over a period of one year. The majority of participants who wanted to work at baseline remained unemployed at follow-up but still wanted to work, suggesting that vocational rehabilitation programs for people with SMI in India could improve their employment functioning.

Study 3 employed the same methods used in Study 1 to collect data from 150 participants with SMI who were receiving psychiatric outpatient services from a public hospital located in the same predominantly urban district in the state of Maharashtra as the private hospital in Study 1. This study was aimed at evaluating employment functioning in people with SMI receiving public outpatient psychiatric services as compared to those receiving private outpatient treatment in Study 1 based on the assumption that people with lower economic means would be more likely to receive treatment at a public hospital. The results of this study were that 40% of participants were working, which was slightly lower than the 48.9% employment rate in urban areas in Study 1, and much lower than rates of employment in the general population. The majority of participants were working for independent employers, similar to the employed participants urban areas in Study 1, who found their jobs with the help of family and/or friends. Over 90% of the unemployed participants expressed interest in work (compared to 79% in urban areas in Study 1), and most of them wanted help finding a job and coping with their mental illness. The slightly lower rates of work in this study compared to Study 1 may be related to the smaller proportion of participants who were working in family businesses than in Study 1 (5% vs. 13%, respectively), and greater severity of illness, as suggested by the higher proportion of participants with schizophrenia-spectrum disorders than Study 1 (90% vs. 66.2%, respectively), and a greater proportion of participants with a history of psychiatric hospitalization than Study 1 (89.3% vs. 49.5%). The findings indicate that there are significant levels of unemployment among people with SMI living in urban areas in India who are receiving publicly funded treatment, and a very high interest in work. The findings provide further support for the need for interventions designed to improve employment functioning in people with SMI living in India.

Taken together these three studies indicated that while rates of work in people with SMI in India are higher than rates reported in developed countries, significant unemployment is still present, especially in urban areas. Furthermore, most unemployed persons want to work. Work status was relatively stable over time, as was the strong interest in work among unemployed participants. A high proportion of participants endorsed the need for work supports related to the job search and illness management across the three studies, suggesting the need for vocational rehabilitation services that are culturally tailored for Indian society.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

IPS	Individual Placement and Support model of supported employment
SMI	Severe Mental Illnesses

INTRODUCTION

Schizophrenia and other severe mental illnesses (SMI) are prolonged psychiatric disorders that are marked by the deterioration in personal, social, and occupational functioning. Optimizing functioning in areas such as self-care, interpersonal relationships, education and work is important for reducing the burden of these illnesses on individuals, their families, and society. Although significant progress has been made in pharmacological and psychosocial treatments for SMI, these disorders continue to have major impact on the lives of people affected by them. Unemployment, in particular, is a common consequence of SMI.

This dissertation focuses on the employment functioning of people with SMI in India. I begin the Introduction with a summary of research on employment in people with SMI in the U.S. and other developed countries. Next, I review existing literature on work in this population in developing countries and identify gaps in knowledge that have implications for understanding the extent of work functioning, and need for vocational services for people with SMI in developing countries. This dissertation research is aimed at filling some of these gaps in knowledge.

1. Employment in people with severe mental illnesses in developed countries

Unemployment is a hallmark feature of SMI, with estimates indicating employment rates below 25% in the U.S. and other developed countries (Marwaha et al., 2009; Salkever et al., 2007). Multiple factors have been found to be associated with unemployment in SMI, including demographic characteristics such as low education (Gilbert et al., 2010; Kiejna et al., 2015; Marwaha et al., 2007; Mueser, Salyers, &

Mueser, 2001; Waghorn, Saha, & McGrath, 2014), a lack of prior work experience (Tsang, Leung, Chung, Bell, & Cheung, 2010), clinical factors such as diagnosis of schizophrenia (Wewiorski & Fabian, 2004), cognitive impairment (McGurk & Mueser, 2004), and environmental factors such as disability policies and labor laws (Bond & Drake, 2008; Metcalfe, Drake, & Bond, 2018). In addition to these predictors of employment, research suggests that the stigma of mental illness is an important obstacle to employment (Krupa, Kirsh, Cockburn, & Gewurtz, 2009).

Regardless of the high rates of unemployment and the barriers to employment, survey indicate that between 55% and 75% of people with SMI want to work (Frounfelker, Wilkniss, Bond, Devitt, & Drake, 2011; McQuilken et al., 2003; Mueser, Salyers, & Mueser, 2001; Mueser & McGurk, 2014; Westcott, Waghorn, McLean, Statham, & Mowry, 2015), and that interest in work is stable over time (Mueser, Salyers, & Mueser, 2001). Moreover, several benefits of work have been documented in the literature, including better course of mental illnesses (Luciano, Bond, & Drake, 2014), decreased symptoms (Marwaha & Johnson, 2004) and hospitalizations (Hoffman et al., 2014; Luciano et al., 2016), increased financial stability (Mueser et al., 1997), and improved self-esteem (Mueser, Drake, & Bond, 2016; Torrey, Mueser, McHugo, & Drake, 2000) and quality of life (Jäckel, Kupper, Glauser, Mueser, & Hoffmann, 2017).

Several models of vocational rehabilitation have been developed to improve work functioning in individuals with SMI. Traditional vocational rehabilitation models characterized by a ‘train-and-place’ approach (e.g., sheltered workshops) provide extensive teaching of vocational and related skills before focusing on attainment of competitive employment. However, research indicates that such models seldom lead to competitive employment (Bond, 1987; Bond, 1992). In contrast to the ‘train-and place’ approach, ‘place-train’ approaches such as supported employment focus first on helping people get a competitive job, and then providing the training and supports necessary to help them keep their job (Wehman, 1986). Individual Placement and Support (IPS), the most extensively studied model of supported employment for people with SMI (Becker & Drake, 1993; Becker & Drake, 2003), is based on eight principles: (1) competitive employment is the goal; (2) eligibility to participate in supported employment is based on client’s choice; (3) rapid job search; (4) integration of mental health and vocational services; (5) attention to client preferences for job type and disclosure of mental illness to employers; (6) systematic job development; (7) time unlimited job support; and (8) benefits counseling.

IPS has been studied for more than twenty years in the U.S. and other developed countries (Mueser et al., 2016). The evidence from 23 randomized controlled trials indicates that approximately 60% of IPS participants obtain competitive employment over periods of time usually between six months and two years, which is two to three times higher than the proportion of participants in other vocational rehabilitation programs who obtain work, providing strong empirical support for its effectiveness at improving employment in people with SMI (Drake, Bond, Goldman, Hogan, & Karakus, 2016). Moreover, the positive employment outcomes across different countries, including Australia, Canada, Hong Kong, Japan, Netherlands, Sweden, Switzerland, United Kingdom, and the U.S., suggest that IPS can be implemented in countries with varied socio-economic conditions.

2. Employment in people with severe mental illnesses in developing countries

The majority of research on employment in people with SMI has been conducted in developed countries, including studies examining rates and correlates of work, interest in work, benefits of work, barriers to work, and models of vocational rehabilitation. Much less is known about employment in people with SMI in developing countries. Moreover, considering the substantial differences in sociocultural and economic factors, and in human and financial resources available to treat people with SMI, it is unclear to what extent research on employment in people with SMI from developed countries applies to people in developing countries. For example, a recent report from the World Health Organization (2018) indicates that the median number of mental health workers ranges from 1.6 to 20.6 per 100000 population in developing countries compared to 71.7 in developed countries. Moreover, available treatment for SMI is largely limited to pharmacological treatment, and psychosocial interventions, including empirically supported models of vocational rehabilitation, are rarely available in developing countries, unlike the comprehensive care more often available in developed countries (World Health Organization, 2013). Improving employment outcomes in people with SMI in developing countries may be particularly important because of the poverty in these countries, and the high societal and economic costs associated with SMI (Charlson et al., 2018). A more complete understanding of employment is essential in order to inform the development or adaptation of interventions targeting work for people with SMI living in developing countries.

In contrast to extensive research from developed countries, fewer studies from developing countries have investigated employment in people with SMI. The extant literature from developing countries, including China (Ran et al., 2011; Yang et al., 2013), Ethiopia (Shibre et al., 2015), Malaysia (Midin et al., 2011; Rahman & Indran, 1997), Nigeria (Akinsulore et al., 2015; Olagunju, Adegbaju, & Uwakwe, 2016), and India (Prasad & Acharya, 2014; Srinivasan & Tirupati, 2005; Srinivasan & Thara, 1997; Srivastava, Stitt, Thakar, Shah, & Chinnasamy, 2009; Suresh et al., 2012; Thara, 2004) suggests higher employment rates in people with SMI (ranging from 40% to 77%) than commonly reported in developed countries. However, these studies have significant methodological limitations. Most studies lack clear descriptions of important work characteristics, including the employer (e.g., independent employer, self-employment, or family business), the number of hours worked per week, the duration of employment, and wages earned, as well as benefits and problems related to work. Additional limitations of some of the previous studies have included small sample sizes (Srinivasan & Thara, 1997) and exclusion of females (Prasad & Acharya, 2014; Srinivasan & Thara, 1997).

Another important limitation of research on employment in people with SMI in developing countries is the lack of studies comparing work in urban vs. rural settings. Urban and rural areas differ in sociocultural factors (e.g., more informal and accommodative work culture in rural areas), and accessibility of psychiatric treatment (e.g., more treatment services available in urban areas) (Patel et al., 2016; Rathod et al., 2017). Moreover, while employment in the agricultural sector in rural areas is common in many developing countries, work is more industry based in urban areas (Bucci, 1993;

Chowdhury, 2011; Fields, 2010). Thus, socio-cultural and treatment related factors, and labor market conditions may contribute to larger variations in employment rates in urban compared to rural areas in developing countries than in developed countries. For example, a recent study from China showed that the rate of employment was three times higher in people with schizophrenia living in rural than urban areas (Yang et al., 2013). Thus, there is a need to directly compare rates of work between people living in urban versus rural areas in developing countries.

Another critical gap in the literature on employment in people with SMI in developing countries is information about people who are not working, such as how many would like to work and what the perceived obstacles to work are. One study from India of 59 unemployed people with schizophrenia receiving outpatient treatment found that 38 (64.4%) wanted to work (Nagaswami, Valecha, Thara, Rajkumar, & Menon, 1985). However, other studies have not reported rates of interest in work in unemployed people with SMI in developing countries. Similarly, there is limited research on barriers to work in developing countries. Some studies from India and China indicate that people with SMI and their family members identify mental illness stigma as an obstacle to work (Loganathan & Murthy, 2011; Tsui & Tsang, 2017; Zou, Li, Arthur, & Wang, 2014). However, little is known about other barriers to work, or about the types of supports desired by people with SMI who want to work.

There is also very little research about the naturalistic course of employment in people with SMI living in developing countries. In one study from India, Srinivasan and Thara (1997) followed up 40 male outpatients with first episode schizophrenia for 10 years, and found that 63% to 73% were working during any one year of the follow-up period. Another epidemiological study from rural China indicated that 88% of 510 individuals with schizophrenia were working at baseline, and 77% were working ten years later (Ran et al., 2011). While these studies indicate relatively high rates of employment over time, little is known about the stability of work, including who is most likely to lose a job, change jobs, or get a job, how many people are engaged in long-term employment on the same job, or the consistency of the perceived benefits and problems related to work in employed people. It is also unknown how consistent interest in work is among unemployed people in developing countries, and whether perceived barriers to work and desired job supports are consistent over time among such people.

Lastly, differences in employment functioning between people with SMI living in developing countries who are receiving publicly funded versus private psychiatric services have not been examined. Healthcare systems that include a combination of public and private services are common in developing countries (Mackintosh et al., 2016), with the private sector being the more dominant source of healthcare than the public sector in some developing countries. For example, 70% of healthcare is provided by the private sector in India (Indian Ministry of Statistics and Programme Implementation, 2019a). While both public and private treatment providers in India and some other developing countries charge for services (Dixon, McDaid, Knapp, & Curran, 2006; Rajkumar, 2015), public sector services are provided at low or no cost to families who cannot afford the cost of private services (Aljunid, 1995). As research in the general population in India suggests employment is higher in people with lower family income, it raises the questions whether family economic resources influence the employment status of a member with SMI, and whether individuals receiving public mental health services in India would have higher rates of work due to fewer family economic resources than people with SMI receiving private psychiatric services.

To address these gaps in knowledge a series of three studies was conducted to examine work functioning in persons with SMI living in the state of Maharashtra, India. Specifically, these studies examined rates of work, and benefits and problems related to work among employed people, and interest in work among unemployed people, and perceived barriers to work and desired job supports. In addition, the consistency and stability of these characteristics of work over time were examined.

Study setting:

India is a lower-middle-income country in South Asia and is the second most populated country in the world with a population of 1.35 billion (Ginniken et al., 2017). The country is comprised of 28 states and eight union territories. The states and union territories are further divided into districts as the next level of administrative unit. Currently, there are 718 districts in India (National portal of India, 2020).

Maharashtra is the second most populated state in India, located in the western part of the country and comprised of 35 districts. The studies for this dissertation were conducted in the Pune and Ahmednagar districts, which are neighboring districts in Maharashtra. The Pune district is predominantly urban, with a population of about 9 million people in an area of 15000 square kilometers. The Ahmednagar district is predominantly rural, with a population of about 4 million people in an area of 17000 square kilometers.

Study 1 used a cross-sectional design and was conducted to evaluate the rates, correlates, and interest in work, and perceived benefits and barriers to work in people with SMI receiving psychiatric outpatient services at two private hospitals in these two districts. Study 2 was a one year longitudinal follow-up of the participants in Study 1 aimed at examining consistency and change in work rates and perceptions of benefits and problems related to work among employed participants, and consistency and change in interest in work and perceived barriers and desired job supports among participants who wanted to work. Study 3 was a cross-sectional study of individuals with SMI receiving psychiatric outpatient services at a public hospital in Pune district, and was conducted using the same research methods as Study 1.

STUDY 1: EMPLOYMENT FUNCTIONING IN PEOPLE WITH SEVERE MENTAL ILLNESSES LIVING IN URBAN VS. RURAL AREAS IN INDIA

Abstract

Purpose: Research on employment in people with severe mental illnesses (SMI) in developing countries is sparse and largely limited to employment rates. We conducted a comprehensive study of work, interest in work, and perceived benefits and barriers to work in people with SMI in India.

Methods: Semi-structured interviews were conducted with 550 individuals with SMI receiving private psychiatric outpatient services in two districts in western India, one urban (Pune) and the other rural (Ahmednagar).

Results: More than half of the participants were employed, with significantly more men working (79.4%) than women (35.9%). Higher rates of work were found in rural areas (77.8%), where most work was in family agricultural businesses, than in urban areas (48.9%), where most work was for independent employers. Participants in rural areas worked fewer hours and earned less money, and reported fewer benefits and fewer problems related to work than urban participants. Over 45% of participants working for independent employers found jobs with help from families and extended social networks. Most unemployed participants wanted to work, and desired a variety of supports, including assistance with job finding and illness management.

Conclusions: Gender-specific social role expectations and families play an important role in work in people with SMI in India. Despite higher rates of work in this sample than most studies from developed countries, a significant subgroup was unemployed but

wanted to work. Persons with SMI in developing countries may benefit from the adaptation of validated vocational rehabilitation approaches in developed countries to their cultural context.

Introduction

Schizophrenia is one of the fifteen most burdensome diseases in both developing and developed countries (Vos et al., 2017). Schizophrenia and other severe mental illnesses (SMI) are characterized by persistent adverse effects on personal, social, and occupational functioning (Ruggeri, Leese, Thornicroft, Bisoffi, & Tansella, 2000), including obtaining and sustaining work (Haro et al., 2011). Research from developed countries has typically reported rates of employment below 25% in people with SMI (Baron & Salzer, 2002; Haro et al., 2011), with unemployment associated with lower education (Tsang et al., 2010), diagnosis of schizophrenia (vs. mood disorder) (Wewiorski & Fabian, 2004), and cognitive impairment (McGurk & Mueser, 2004). Despite these low employment rates, surveys indicate that between 55 and 75% of people with SMI want to work (Frounfelker, Wilkniss, Bond, Devitt, & Drake, 2011; Mueser & McGurk, 2014; Westcott, Waghorn, McLean, Statham, & Mowry, 2015).

Much less is known about employment in people with SMI in developing countries, despite substantial sociocultural and economic differences from developed countries, and the shortage of professional and financial resources for treatment (Burns, 2015; Saxena, Thornicroft, Knapp, & Whiteford, 2007; World Health Organization, 2017). The high societal and economic costs of SMI in developing countries underscore the importance of improving work outcomes in this population (Charlson et al., 2018; Knapp, Mangalore, & Simon, 2004). To inform the development or adaptation of vocational rehabilitation in developing countries, a more complete understanding of employment in people with SMI is needed.

In contrast to the low rates of work in people with SMI in developed countries, studies from developing countries such as China (Ran et al., 2011; Yang et al., 2013), Ethiopia (Shibre et al., 2015), Malaysia (Midin et al., 2011; Rahman & Indran, 1997), Nigeria (Akinsulore et al., 2015; Olagunju et al., 2016), and India (Prasad & Acharya, 2014; Srinivasan & Tirupati, 2005; Srinivasan & Thara, 1997; Srivastava, Stitt, Thakar, Shah, & Chinnasamy, 2009; Suresh et al., 2012; Thara, 2004) indicate higher rates of employment, ranging from 40 to 77%. However, most of these studies lack specific information about work (e.g., employer, job types, hours worked, wages earned), and had other limitations such as small sample sizes (Srinivasan & Thara, 1997; Srivastava et al., 2009; Thara, 2004) and exclusion of women (Prasad & Acharya, 2014; Srinivasan & Thara, 1997).

There is also a need for more research on employment comparing people living in urban vs. rural areas in developing countries. Rural areas tend to have a more informal and accommodative work culture than urban areas (Yang et al., 2013) and differ in the types of jobs available and wages paid (Bucci, 1993; Fields, 2010), but also have lower access to psychiatric treatment (Patel et al., 2016; Rathod et al., 2017). One epidemiological study from China showed that employment rates were three times higher for people with schizophrenia in rural compared to urban areas (Yang et al., 2013), warranting direct comparisons of work functioning.

Finally, little is known about interest in work among unemployed people with SMI in developing countries. In one study, 38 of 59 individuals with schizophrenia (64.4%) wanted to work (Nagaswami et al., 1985). Furthermore, research has shown that stigma hinders employment of people with SMI in developing countries (Koschorke et al., 2014; Loganathan & Murthy, 2011; Tsui & Tsang, 2017), but little is known about other barriers to work, and the supports desired by people who want to work.

To address these questions, we conducted a study at two sites in India to examine rates and patterns of work, interest in work, and perceived benefits and barriers to work in people with SMI. Based on previous research from developed countries, we hypothesized that employment would be related to past work, younger age, higher education, being married, mood disorder diagnosis (vs. schizophrenia), no prior hospitalizations, shorter duration of illness, and absence of comorbid medical conditions. In addition, on the basis of the national employment survey of the general population in India, we postulated that male gender and rural residence would be associated with work status (Indian Ministry of Labour & Employment, 2016).

Methods

The study was conducted at the psychiatric outpatient departments of two private hospitals in two districts in the state of Maharashtra, western India. Boston University's Institutional Review Board approved the study. Of the two study sites, one had an ethics committee that reviewed the study protocol and indicated that it was exempt from their oversight. All participants provided informed consent before enrolling in the study.

Study Sites

The two sites were Poona Hospital and Research Center in Pune, and Manasdeep Psychiatric and Addiction Treatment Center in Ahmednagar. Pune is a city of three million people in a predominantly urban district of nine million people living within

15,000 km^2. Poona Hospital and Research Center has 300 beds and provides assessment and treatment services for people with physical and mental illnesses.

Ahmednagar is a much smaller city of 350,000 people in a predominantly rural district of four million people residing in 17,000 km^2. Manasdeep Psychiatric and Addiction Treatment Center is a small private 20 bed psychiatric hospital providing services mainly to people from the Ahmednagar district. The psychiatry outpatient departments at both hospitals provide primarily pharmacological services to approximately 100–130 patients daily.

Participants

Inclusion criteria for the study were: (1) primary medical record diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, or major depression; (2) age between 18 to 60 years; (3) verbally fluent in Marathi language; (4) residing in Pune or Ahmednagar districts; and (5) willing and able to provide informed consent. Chart diagnoses of persons with SMI have been found to be reliable when compared to structured clinical interviews (Harvey et al., 2012). A total of 550 individuals with SMI participated in the study (n = 275 per site).

Procedures

Psychiatrists at each site referred interested patients to the site interviewer, who obtained informed consent and administered the interview. Family members frequently accompanied patients to their outpatient appointments, and with participant permission often attended the interview. The study was conducted from August 2016 through March 2017.

Measures

A semi-structured interview was designed for the study. The first author translated the interview into Marathi, which was then back translated into English by a native Marathi speaker. Discrepancies between the two versions were resolved through discussion. One interviewer at each site with a minimum of a master's degree conducted the interviews.

The interview included 49 items covering demographics, psychiatric history, medical disorders, and work status and history. Questions were adapted from studies of work in people with SMI in developed countries (McGurk et al., 2015; Mueser et al., 2004), and informed by the relevant research literature and input from vocational rehabilitation experts in the US, and senior clinicians with expertise in treating individuals with SMI in India.

Demographic and Clinical Characteristics

Demographic (e.g., age, gender) and clinical characteristics (e.g., duration of illness, psychiatric hospitalizations) were collected. The census handbooks for Pune (Directorate of Census Operations, 2011b) and Ahmednagar (Directorate of Census Operations, 2011a) were used to determine the urban or rural residential status of participants.

Work History and Current Work

Work was defined as any work done for money. Agricultural work on family farms was counted if some of the yield was sold, but not if all was consumed by the family. Household work for one's own family was not counted. The number of months worked during the last 5 years was ascertained, with work for 12 months or more coded as a recent work history (McGurk et al., 2015).

Current work status was coded as working or not working. Job type, title, nature of job, employer (independent, family, or self-employed), start date, hours worked weekly, and monthly income were obtained for the current job. For participants who were working on family farms that sold some of their yield, the total hours worked per week was estimated without distinguishing between time spent on crop production for sale vs. family consumption. For participants working for a family business who were not paid a separate wage, income was estimated by dividing the total family income by the number of working family members, adjusting for the amount of time the participant worked. Job type was coded according to the Indian Ministry of Labor and Employment's National Classification of Occupations, 2015 (Indian Ministry of Labor & Employment, 2015, 2015a, 2015b), which includes nine levels ranging from highly skilled (1) (e.g., senior government officials, managers) to minimally skilled occupations (9) (e.g., laborers, servants).

Work Satisfaction, Benefits of Work and Problems related to Work

Work satisfaction and perceived benefits and problems related to work were queried for employed participants. Satisfaction was rated on a 5-point Likert scale ranging from 1 (totally dissatisfied) to 5 (totally satisfied). Perceived benefits of work were assessed with five yes/no questions (money, improved self-esteem, help managing mental illness, improved social status, having something to do), with the number of benefits summed per participant. Problems related to work were assessed with ten yes/no questions (stress, long work hours, transportation problems, dealing with coworkers, psychiatric symptoms, medication side effects, cognitive difficulties, low energy/stamina, physical health, difficulty keeping a job), with the number of problems summed per participant.

Currently Not Working Participants

Unemployed participants were asked about reasons for not working, including: household responsibilities, stress, increase in symptoms, stigma of mental illness, or difficulty finding or keeping a job. Participants who were not currently interested in work were asked whether they would be interested in working in the future. A “yes” to either question was coded as ‘interested in working.’ Participants who were interested in work were asked what supports would help them work (e.g., help finding a job, managing symptoms).

Statistical Analyses

To evaluate whether participants with schizophrenia-spectrum disorders differed from those with mood disorders in prior psychiatric hospitalizations, a χ^2 analysis was conducted on the history of hospitalization (yes/no), and a *t*-test was performed on number of hospitalizations. Demographic and clinical characteristics of participants living in urban vs. rural areas, and those working vs. not working, were compared using χ^2 tests for categorical variables and *t*-tests for continuous variables. A logistic regression analysis was performed to evaluate which variables were uniquely associated with current work status by entering variables in two blocks: the first block included variables hypothesized to be related to work based on previous research (except recent work), and the second block included other variables significantly associated with work in the univariate analyses.

To determine whether the nature of work differed between people living in urban vs. rural areas, χ^2 tests and *t* tests were performed on work characteristics (e.g., type of employer, hours worked per week). Differences in continuous work variables between employers (independent, family or self-employment) were evaluated by performing one-way analyses of variance (ANOVAs), followed by Games-Howell post hoc tests (Field, 2009). In addition, we computed χ^2 analyses and *t* tests to evaluate differences in work characteristics between participants working for independent employers vs. for family. Participants who were interested in work were compared with those not interested in work on demographic and clinical characteristics. Significant variables were included in a logistic regression to identify unique predictors. χ^2 analyses were used to compare differences in specific perceived barriers to work and desired job supports between participants interested in work who were living in urban vs. rural areas, and *t* tests were performed to compare the groups on the total number of barriers and desired supports. Data were analyzed using the Statistical Package for Social Sciences (SPSS).

Results

Eight participants were dropped because they were students or volunteer workers, leaving 542 participants in the analyses. There were no significant differences between the schizophrenia-spectrum and mood disorder groups in the history of psychiatric hospitalizations or number of hospitalizations.

Demographic and Clinical Characteristics of Urban vs. Rural Samples

Table 1.1 provides the demographic and clinical characteristics of the participants, and comparisons between participants in urban vs. rural areas. In the total sample, the mean age was 39.1 years old and slightly over half of the participants lived in urban areas. The majority of participants were male, had the education of 12th grade or below, had been married (single: 19.7%; currently married: 69.0%; divorced/separated/widowed: 11.3%), and had schizophrenia. A total of 330 (60.9%) participants were currently employed, and 369 (68.1%) had worked in the last 5 years.

Compared to participants from rural areas, those from urban areas were older, had higher education and family income, a longer duration of illness, were more likely to have schizophrenia and comorbid medical conditions, and were less likely to have married, to have been hospitalized, to be employed (77.8% vs. 48.9%, respectively), or to have a work history.

Table 1.1: Demographic and Clinical Characteristics of Study Participants Living in Urban vs. Rural Areas

Categorical variables	Total $n = 542$	Urban $n = 317$	Rural $n = 225$		
	n (%)	n (%)	n (%)	*df*	χ^2
District					
Pune	268 (49.4%)	239 (75.4%)	29 (12.9%)	1	205.68***
Ahmednagar	274 (50.6%)	78 (24.6%)	196 (87.1%)		
Gender					
Male	311 (57.4%)	178 (56.2%)	133 (59.1%)	1	0.47
Female	231 (42.6%)	139 (43.8%)	92 (40.9%)		
Education					
12th grade or below	369 (68.1%)	184 (58.0%)	185 (82.2%)	1	35.40***
Above 12th grade	173 (31.9%)	133 (42.0%)	40 (17.8%)		
Marital status					
Never married	107 (19.7%)	80 (25.2%)	27 (12.0%)	1	14.55***
Ever married	435 (80.3%)	237 (74.8%)	198 (88.0%)		
Living situation					
Independent	13 (2.4%)	11 (3.5%)	2 (0.9%)	1	3.74
With family	529 (97.6%)	306 (96.5%)	223 (99.1%)		
Diagnosis					
Schizophrenia-spectrum	330 (60.9%)	210 (66.2%)	120 (53.3%)	1	9.21**
Major mood disorder	212 (39.1%)	107 (33.8%)	105 (46.7%)		
Past psychiatric hospitalization					
Yes	339 (62.5%)	157 (49.5%)	182 (80.9%)	1	55.25***
No	203 (37.5%)	160 (50.5%)	43 (19.1%)		
Current medical condition (s)					
Yes	141 (26.0%)	109 (34.4%)	32 (14.2%)	1	27.79***
No	401 (74.0%)	208 (65.6%)	193 (85.8%)		
Current tobacco use					
Yes	204 (37.6%)	110 (34.7%)	94 (41.8%)	1	2.80
No	338 (62.4%)	207 (65.3%)	131 (58.2%)		

Current alcohol use					
Yes	37 (6.8%)	27 (8.5%)	10 (4.4%)	1	3.43
No	505 (93.2%)	290 (91.5%)	215 (95.6%)		
Current work status					
Yes	330 (60.9%)	155 (48.9%)	175 (77.8%)	1	46.09***
No	212 (39.1%)	162 (51.1%)	50 (22.2%)		
Recent past work					
Yes	369 (68.1%)	191 (60.3%)	178 (79.1%)	1	21.53***
No	173 (31.9%)	126 (39.7%)	47 (20.9%)		
Continuous variables	*M (SD)*	*M (SD)*	*M (SD)*	*df*	*t*
Age	39.1 (8.9)	40.1 (9.1)	37.6 (8.5)	540	3.13**
Total family income (monthly) (USD)	595 (985)	760 (1201)	363 (461)	434.46	5.35***
Total family income (monthly)[a]	2.4 (1.1)	2.7 (1.1)	2.0 (0.9)	507.65	-7.64***
Duration of illness (years)	11.7 (6.9)	13.2 (7.6)	9.6 (5.3)	539.99	6.27***

* = p <.05; ** = p < .01; *** = p < .001

a. Based on a 4-point ordinal scale, with higher numbers pertaining to higher income. The four categories were determined by quartiles: ≤ $167, $167.3–385, $385.1–692, ≥ $692.1

Demographic and Clinical Correlates of Work

A similar pattern of associations was found between the demographic and clinical correlates of current work status of participants living in urban and rural areas. Therefore, the results from the total sample are presented in Table 1.2. Employed participants were significantly younger, and were more likely to be male, married, live in rural areas, live with more family members, have families with lower income (*Mdn* = $131/month vs. $385/month), have a mood disorder and history of hospitalization, and to use tobacco or alcohol than unemployed participants. For the logistic regression analysis, family income (excluding participants' income) was used, based on quartiles (lowest to highest) due to the skewness of the variable. This analysis is presented in Supplementary Table S1.1. The overall logistic regression model was significant ($\chi^2 = 237.75$, $p < .001$), with unique predictors of work including marital status (*OR* = 1.93, $p = 0.04$), rural residence (*OR* = 2.94, $p < 0.001$), male gender (*OR* = 5.40, $p < 0.001$), younger age (*OR* = 0.96, $p = 0.02$), higher number of family members (*OR* = 1.13, $p = 0.02$), and lower family income (*OR* = 0.46, $p < 0.001$). Mood disorder diagnosis was marginally associated with employment (*OR* = 0.63, $p = 0.05$).

Table 1.2: Demographic and Clinical Comparisons between Employed vs. Unemployed Participants

Categorical variables	Working *n* = 330	Not working *n* = 212	*df*	χ^2
	n (%)	*n* (%)		
District				
Pune	131 (48.9%)	137 (51.1%)	1	32.08***
Ahmednagar	199 (72.6%)	75 (27.4%)		
Residence				
Urban	155 (48.9%)	162 (51.1%)	1	46.09***
Rural	175 (77.8%)	50 (22.2%)		
Gender				
Male	247 (79.4%)	64 (20.6%)	1	105.27***
Female	83 (35.9%)	148 (64.1%)		
Education				
12th grade or below	230 (62.3%)	139 (37.7%)	1	1.01
Above 12th grade	100 (57.8%)	73 (42.2%)		
Marital status				
Never married	53 (49.5%)	54 (50.5%)	1	7.21*
Ever married	277 (63.7%)	158 (36.3%)		

Living situation				
Independent	10 (76.9%)	3 (23.1%)	1	1.43
With family	320 (60.5%)	209 (39.5%)		
Diagnosis				
Schizophrenia-spectrum	183 (55.5%)	147 (44.5%)	1	10.45**
Major mood disorder	147 (69.3%)	65 (30.5%)		
Past psychiatric hospitalization				
Yes	224 (66.1%)	115 (33.9%)	1	10.24**
No	106 (52.2%)	97 (47.8%)		
Current medical condition				
Yes	84 (59.6%)	57 (40.4%)	1	0.13
No	246 (61.3%)	155 (38.7%)		
Current tobacco use				
Yes	155 (76.0%)	49 (24.0%)	1	31.29***
No	175 (51.8%)	163 (48.2%)		
Current alcohol use				
Yes	34 (91.9%)	3 (8.1%)	1	16.03***
No	296 (58.6%)	209 (41.4%)		
Recent past work				
Yes	315 (85.4%)	54 (14.6%)	1	290.91***
No	15 (8.7%)	158 (91.3%)		
Continuous variables	*M (SD)*	*M (SD)*		*t*
Age	38.4 (8.7)	40.1 (9.1)	540	2.10*
Total family members	5.1 (2.5)	4.5 (2.6)	540	2.73**
Monthly family income excluding participant income (USD)	261 (393)	729 (1405)	232.36	-4.72***
Monthly family income excluding participant income [a]	2.1 (1.1)	3.1 (0.9)	489.08	-11.05***
Duration of illness (years)	11.5 (6.8)	12.2 (7.3)	540	1.16

* = p <.05; ** = p < .01; *** = p < .001

a. Based on a 4-point ordinal scale, with higher numbers pertaining to higher income. The four categories were determined by quartiles: ≤ \$76.9, \$77–223, \$223.1–495.1, ≥ \$495.2

Characteristics of Work among Employed Participants

Of the 16 participants who reported working at two jobs, 14 worked mainly at one job, while two worked equally at both jobs. The two participants who worked equally at both jobs were dropped from the analyses of work characteristics, whereas information about the primary job was used for the remaining 14 participants. Twenty participants (6.1%) reported working fewer than 20 hours/week, 80 (24.4%) worked 20–40 hours /week, 185 (56.4%) worked 41–60 hours /week, and 43 (13.1%) worked more than 60 hours/week.

Table 1.3 presents the work characteristics of employed participants living in urban vs. rural areas. Jobs in urban areas were significantly more skilled and paid higher wages than jobs in rural areas (*Ms* = \$375 vs. \$130, respectively), and were perceived by participants to have both more benefits and more problems. Individuals working for independent employers in rural areas also reported receiving significantly more help from family or friends in getting the job than those in urban areas (58.7% vs. 41.1%).

Table 1.3: Work Characteristics of Employed Participants Living in Urban vs. Rural Areas

Variable	Total n = 328	Urban n = 154	Rural n = 174		
	M (SD)	*M (SD)*	*M (SD)*	*df*	*t*
Hours worked per week	45.7 (15.1)	46.6 (15.1)	44.9 (15.1)	326	0.99
Monthly income (USD)	245 (377)	375 (505)	130 (123)	169.15	5.84***
Duration of current job (months)	114.5 (112.8)	103.7 (114.3)	124.1 (110.8)	326	-1.63
Job satisfaction[a]	4.2 (1)	4.1 (1.1)	4.3 (0.8)	280.84	-1.83
Benefits of work (number)[b]	4.2 (0.9)	4.5 (0.7)	3.9 (0.9)	321.15	5.55***
Problems related to work[c] (number)	2.2 (2.1)	3.1 (2.4)	1.4 (1.5)	256.97	7.53***
National Classification of Occupations (NCO) scale[d]	5.8 (2.4)	4.51 (2.2)	7.1 (2.0)	326	-11.33***
Type of employer		*n* (%)	*n* (%)		χ^2
Independent employer	155 (47.3%)	108 (70.1%)	47 (27.0%)	2	88.71***
Family	131 (39.9%)	20 (13.0 %)	111 (63.8%)		
Self-employed	42 (12.8%)	26 (16.9%)	16 (9.2%)		
Source for finding job (independent employers only; *n* = 153)		*n* (%)	*n* (%)		χ^2
Self	82 (53.6%)	63 (58.9%)	19 (41.3%)	1	3.99*
Family, other relatives, friends	71 (46.4%)	44 (41.1%)	27 (58.7%)		
Type of job[e]					
Managers	3 (0.9%)	3 (1.9%)	0 (0.0%)	--	--
Professionals	37 (11.3%)	31 (20.1%)	6 (3.4%)	1	22.71***
Technicians and associate professionals	22 (6.7%)	20 (13.0%)	2 (1.1%)	1	18.29***
Clerks / clerical support workers	41 (12.5%)	32 (20.8%)	9 (5.2%)	1	18.19***
Service and sales workers	47 (14.3%)	30 (19.5%)	17 (9.8%)	1	6.27*

Skilled agricultural, forestry and fishery workers	48 (14.6%)	2 (1.3%)	46 (26.4%)	1	41.32***
Craft and related trade workers	30 (9.1%)	20 (13.0%)	10 (5.7%)	1	5.15*
Plant & machine operators and assemblers	9 (2.7%)	5 (3.2%)	4 (2.3%)	--	--
Elementary occupations[f]	91 (27.7%)	11 (7.1%)	80 (46.0%)	1	61.45***

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to higher levels of job satisfaction on 1–5 scale

b. Higher numbers pertain to more benefits of work (range 0–5)

c. Higher numbers pertain to more problems related to work (range 0–10)

d. Lower numbers pertain to higher skilled jobs on 1–9 scale

e. Each job type with a minimum of 20 participants was compared to all other type of jobs with a χ^2 test.

f. Of the total 91 jobs in elementary occupations 71 were agricultural laborers, including 3 people in urban areas and 68 people in rural areas

The one-way ANOVAs comparing work characteristics between different employers showed significant differences in hours worked/week, monthly income, perceived benefits and problems related to work (Table 1.4). Post hoc analyses indicated that people employed in a family business worked significantly fewer hours and earned less than those working for independent employers (*Ms* = 42.7 h vs. 48.2 h; *Ms* = \$120 vs. \$319), but did not differ from self-employed participants. Family work was also associated with fewer work-related benefits and problems than self- or independent employment.

Table 1.4: Comparison of Work Characteristics of Participants Working for Different Employers

Variable	Total $n = 328$	Independent employer $n = 155$	Family $n = 131$	Self-employed $n = 42$		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	*df*	*F*
Hours worked per week	45.7 (15.1)	48.2 (13.1)	42.7 (16.0)	46.3 (17.9)	2, 106.69	4.83**[a]
Monthly income (USD)	245 (377)	319 (345)	120 (157)	361 (725)	2, 94.04	22.20***[a]
Duration of current job (months)	114.5 (112.8)	98.8 (121.4)	128.9 (101.8)	127.2 (107.2)	2, 325	2.86
Job satisfaction[b]	4.2 (1)	4.1 (1.1)	4.3 (0.9)	4.2 (0.9)	2, 325	1.21
Benefits of work[c]	4.2 (0.9)	4.4 (0.8)	3.8 (0.9)	4.6 (0.6)	2, 134.76	20.06***[a]
Problems related to work[d]	2.2 (2.1)	2.8 (2.3)	1.4 (1.5)	2.4 (2.3)	2, 105.97	21.32***[a]

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to higher levels of job satisfaction on 1–5 scale

b. Higher numbers pertain to more benefits of work (range 0–5)

c. Higher numbers pertain to more problems related to work (range 0–10)

d. Lower numbers pertain to higher skilled jobs on 1–9 scale

e. Each job type with a minimum of 20 participants was compared to all other type of jobs with a χ^2 test.

f. Of the total 91 jobs in elementary occupations 71 were agricultural laborers, including 3 people in urban areas and 68 people in rural areas

Supplementary Tables S1.2 and S1.3 present the specific benefits and problems related to working for independent employers vs. family. The most commonly reported benefit of work was improved self-esteem (95.8%), followed by money (94.8%), help managing the mental illness (92.7%), improved social status (69.2%), and having something to do (61.2%). Participants working for independent employers reported more total benefits and were significantly more likely to report social status and having something to do as benefits of work. Cognitive difficulties (45.1%) were the most commonly reported problem related to work, followed by stress (36.4%), low energy (32.5%), symptoms (21.7%), medication side-effects (15.7%), long hours (14.7%), dealing with coworkers (12.9%), difficulty keeping a job (12.9%), physical health (12.9%), and transportation (12.6%). Participants working for independent employers reported more total problems related to work, as well as significantly more of each type of problem except low energy and physical health.

Interest in Work among Unemployed Participants

Among the 212 participants who were not working, 164 (77.4%) expressed interest in work (144 wanted work currently, 20 wanted work in the future). A similar pattern of demographic and clinical correlates of interest in work was found between participants in urban and rural areas. Therefore, the findings of the total sample of unemployed participants are presented in Supplementary Table S1.4. Interest in work was significantly associated with recent work, male gender, younger age, higher education, not having married, shorter duration of illness, and not having a comorbid disorder.

The overall logistic regression analysis predicting interest in work was significant ($\chi^2 = 49.93$, $p < 0.001$), with significant variables including male gender (OR = 3.59, $p = 0.025$), younger age (OR = 0.93, $p = 0.015$), and higher education level (OR = 4.28, $p = 0.004$).

Perceived Barriers to Work and the Desired Job Supports

Table 1.5 displays perceived barriers to work and desired job supports of participants interested in work who were living in urban vs. rural areas. Overall, difficulty finding a job (34.8%) was the most common barrier, followed by having to manage the household (34.1%), difficulties keeping a job (25.6%), stress (25.6%), increase in symptoms (21.3%), and stigma (14.6%). Urban participants reported significantly more total barriers than rural participants, and were more likely to report stigma and difficulty keeping a job as obstacles to work.

The most common job support desired by participants interested in work was assistance with finding a job (88.4%), followed by help with stress (70.1%), symptoms (62.8%), cognitive difficulties (60.4%), co-workers (49.4%), medication side effects (38.4%), and transportation (34.8%). Urban participants wanted more total job supports, and significantly more of each type of support except help with the job search. Statistically controlling for diagnosis did not affect the difference between urban vs. rural participants in the number of job supports desired [$F = (1, 161) = 39.79$, $p < 0.001$].

Table 1.5: Perceived Barriers and Desired Job Supports of Unemployed Participants Interested in Work in Urban vs. Rural Areas

Barriers	Total $n = 164$	Urban $n = 128$	Rural $n = 36$		
	n (%)	*n* (%)	*n* (%)	*df*	χ^2
Managing household					
Yes	56 (34.1%)	43 (33.6%)	13 (36.1%)	1	0.07
No	108 (65.9%)	85 (66.4%)	23 (63.9%)		
Stress					
Yes	42 (25.6%)	37 (28.9%)	5 (13.9%)	1	3.32
No	122 (74.4%)	91 (71.1%)	31 (86.1%)		
Increase in symptoms					
Yes	35 (21.3%)	29 (22.7%)	6 (16.7%)	1	0.60
No	129 (78.7%)	99 (77.3%)	30 (83.3%)		
Stigma					
Yes	24 (14.6%)	23 (18.0%)	1 (2.8%)	1	5.19*
No	140 (85.4%)	105 (82.0%)	35 (97.2%)		
Difficulty finding job					
Yes	57 (34.8%)	43 (33.6%)	14 (38.9%)	1	0.34
No	107 (65.2%)	85 (66.4%)	22 (61.1%)		
Difficulty keeping job					
Yes	42 (25.6%)	41 (32.0%)	1 (2.8%)	1	12.62***
No	122 (74.4%)	87 (68.0%)	35 (97.2%)		
	M (SD)	*M (SD)*	*M (SD)*	*df*	*t*
Total barriers[a]	1.6 (1.2)	1.7 (1.3)	1.1 (0.8)	80.24	3.09**
Job supports	n (%)	n (%)	n (%)		*p* (Fisher's exact test)
Job search					
Yes	145 (88.4%)	115 (89.8%)	30 (83.3%)		0.37
No	19 (11.6%)	13 (10.2%)	6 (16.7%)		

	n (%)	n (%)	n (%)	*df*	χ^2
Managing stress					
Yes	115 (70.1%)	103 (80.5%)	12 (33.3%)	1	29.79***
No	49 (29.9%)	25 (19.5%)	24 (66.7%)		
Managing symptoms					
Yes	103 (62.8%)	94 (73.4%)	9 (25.0%)	1	28.22***
No	61 (37.2%)	34 (26.6%)	27 (75.0%)		
Transportation					
Yes	57 (34.8%)	52 (40.6%)	5 (13.9%)	1	8.85*
No	107 (65.2%)	76 (59.4%)	31 (86.1%)		
Managing medication side effects					
Yes	63 (38.4%)	58 (45.3%)	5 (13.9%)	1	11.72**
No	101 (61.6%)	70 (54.7%)	31 (86.1%)		
Help with cognitive functioning					
Yes	99 (60.4%)	88 (68.8%)	11 (30.6%)	1	17.13***
No	65 (39.6%)	40 (31.3%)	25 (69.4%)		
Help dealing with co-workers					
Yes	81 (49.4%)	76 (59.4%)	5 (13.9%)	1	23.25***
No	83 (50.6%)	52 (40.6%)	31 (86.1%)		
	M (SD)	*M (SD)*	*M (SD)*	*df*	*t*
Total job supports[b]	4.0 (2.2)	4.6 (2.0)	2.1 (1.7)	162	-6.50***

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to more barriers

b. Higher numbers pertain to more job supports

Discussion

A moderately high proportion (60.9%) of persons with SMI in this study were employed, with the average person working 45.7 hours/week and earning $245 per month. Employment rates were higher among participants living in rural areas (77.8%), where the most common type of job was agricultural work (54.8%), compared to urban areas (48.9%), where clerical (20.8%), and service jobs (19.5%) were most common. These employment rates are substantially higher than the 10%–25% rates reported for people with SMI in developed countries (Baron & Salzer, 2002; Haro et al., 2011). Other studies from developing countries have also reported higher employment rates than developed countries (Akinsulore et al., 2015; Srinivasan & Tirupati, 2005; Yang et al., 2013). However, this study improves upon methodological limitations of previous research from developing countries by its large sample size, the inclusion of both men and women in urban and rural sites, as well as the detailed information obtained about work, and interest in work and desired job supports among those unemployed.

One reason for the higher rate of work in persons with SMI in this study (and others from developing countries) appears to be the high proportion of participants working in family businesses (40%), mainly farming (75.5% of those working in a family business), compared to developed countries (Suresh et al., 2012; Yang et al., 2013). The Indian economy is primarily agrarian, with about 50% of the general population employed in the agricultural sector (Kumar, Kumar, & Singh, 2011), most on family farms. Family work may be easier to obtain and retain for persons with SMI than competitive work, and provide greater access to support and more flexibility in work hours and responsibilities (Suresh et al., 2012; Yang et al., 2013). Consistent with these advantages, participants working in family businesses reported fewer work-related problems, including fewer illness-related problems (e.g., symptoms, cognitive difficulties), and worked fewer hours than those working for independent employers (*Ms* = 42.7 vs. 48.2, respectively).

The social norm of family businesses in India involves a strong expectation that all members will work in the business, which may increase the willingness of families to accommodate individual members' needs (Chadda & Deb, 2013), including a relative with SMI. Interestingly, compared to participants who were working for independent employers, those working for the family were less likely to endorse improved social status and having something to do as benefits of work, perhaps because they viewed their work as an obligation rather than a way of enhancing their social position outside of their family or fulfilling a sense of purpose. Moreover, although participants working for family reported fewer problems related to work, they also endorsed fewer benefits and earned substantially lower wages than those working for other employers (*Ms* = $120 vs. $319 per month). It should be noted that at least some of the lower wages earned by participants working for family businesses may be due to the fact that information was obtained on total hours worked and wages earned on family farms without distinguishing between hours worked for yield that was sold vs. consumed by the family.

The role of the family in contributing to the high work rates in this study may extend beyond employment in family businesses. Finding work can be difficult for persons with SMI due to symptoms, associated functional impairments, and stigma.

Families facilitated job finding for study participants through their extended social networks: almost half (46.4%) of participants working for independent employers got their jobs with the help of family or other social connections. Research in the general population shows that both strong and weak social connections play an important role in obtaining jobs both for people in developed and developing countries (Gee, Jones, Fariss, Burke, & Fowler, 2017). Families in more collectivistic cultures such as India may compensate for the smaller social networks of people with SMI (Evert, Harvey, Trauer, & Herrman, 2003; Randolph, 1998) by providing more assistance in job finding through their larger social networks.

An additional factor that may have contributed to the relatively high rate of work is the private psychiatric outpatient settings from where the study took place. Private treatment for medical illnesses is common in India, including psychiatric disorders, with approximately 70% of medical care provided by the private sector (Indian Ministry of Statistics and Programme Implementation, 2019a; Rajkumar, 2015). Although private treatment is charged on a sliding fee scale, families seeking such treatment for a relative may have greater financial and social resources than those seeking treatment at public hospitals, which could contribute to higher rates of employment for their relatives with SMI.

Another possible factor related to the higher rate of employment in this study and others from developing countries is the lack of disability insurance in developing countries compared to developed countries. Receipt of disability income in persons with a first episode of psychosis is associated with reduced likelihood of subsequently working

(Rosenheck et al., 2017). Furthermore, the generosity of disability benefits programs in developed countries is related to lower employment rates in supported employment programs, and loss of benefits is a common concern of people with SMI contemplating work (Metcalfe et al., 2018).

The higher rates of work in rural than urban areas appear to be partly due to the greater proportion of family businesses, accounting for 60% of all jobs in rural areas compared to only 13% of jobs in urban areas. However, even when people working for family businesses were excluded, participants in rural areas were more likely to be employed than in urban areas (56.1% vs. 45.5%). Differences in the role of families in helping a member get a job with an independent employer may explain some of these differences in work rates. In rural areas, 58.7% of jobs with independent employers were obtained through family or other social contacts, compared to only 41.1% in urban areas. The lower rate of jobs obtained through family and social contacts in urban areas may partly reflect the impact of urbanization on the breakdown of family and social supports in India (Medora, 2007).

In addition to high rates of work, employed participants worked for average 45.7 hours per week, considerably more than reported in studies from developed countries. For example, a mail survey study in the US of 529 employed people self-identified as having SMI, only 31% reported working more than 40 hours a week (Russinova, Bloch, Wewiorski, Shappell, & Rogers, 2018), compared to 69.5% in the present study. In a combined analysis of four controlled studies comparing supported employment with control vocational programs, the study participants who worked competitively worked an average of only 18.9 and 22.3 hours/week, respectively (Bond, Campbell, & Drake, 2012).

The high number of hours worked in this study mirrors the higher work hours in the general population in developing countries compared to developed ones. Specifically, in India people living in rural areas work an average of 48 hours/ week (vs. 44.9 hours/week for study participants), and those in urban areas work an average of 56 hours/week (vs. 46.6 hours for study participants) (Indian Ministry of Statistics and Programme Implementation, 2019b). While the number of hours worked per week for participants was less than the general population in India, it nevertheless appears high, raising questions about the accuracy of the work reported.

We explored the plausibility of the reports by examining the types of jobs held by study participants who worked the most hours/week. Among the 43 participants who worked over 60 hours per week, 29 worked in a shop, on a farm, or as a security guard. Jobs in small to medium size shops selling goods such as groceries, prepared food, and clothing were usually open for long hours, involved working with other employees, and may not have been busy much of the day. Farm work was typically comprised of sowing, watering, weeding, spraying and harvesting, and was carried out collectively by co-workers (often other family members). Participants working as security guards were primarily responsible for monitoring the premises of a business or home, often working 12 hours per day, six or seven days/week. These jobs are known to sometimes be associated with long work hours in India, providing some support for the validity of the reported hours of work.

While these types of jobs involved long work hours, they may not have required high effort all of the time, and may not have been especially stressful. More generally, it is possible that there are more low-stress jobs in India and other developing countries than developed countries. Support for this conjecture is provided by the concept of surplus labor, which is defined as when more people are employed for a given job than are required to perform the work (Lewis, 1954). Surplus labor is often observed in developing countries, particularly in rural agricultural sectors (Foster & Rosenzweig, 2012), but also in urban labor markets to some extent. An implication of surplus labor may be that there are lower demands on worker productivity, which may reduce the effort required at work and associated stress. Greater access to less stressful, lower-skilled jobs that require less effort may contribute to more people with SMI working, and working longer hours. More research is needed to investigate the association between surplus labor, employment, and perceived stress of work in people with SMI in developing countries

A large majority of the unemployed participants were interested in work (77.4%), similar to studies in developed countries, where 55% to 75% of people with SMI want to work (Frounfelker et al., 2011; McQuilken et al., 2003; Mueser, Salyers, & Mueser, 2001; Westcott et al., 2015). Interest in work was higher in individuals who were male, younger, and had higher education levels. The higher rate of work in men than women (79.4% vs. 35.9%, respectively), as well as interest in work (92.2% vs. 70.9%, respectively) is not surprising given the strong social role expectations in India that men are the primary earners, and married women are primarily responsible for running the household (Srinivasan & Thara, 1997; Thara, 2004). Consistent with this, marital status was unrelated to interest in work in men, whereas unmarried women were significantly more interested in work (100%) than married women (65.6%).

A minority of unemployed participants who were interested in work identified specific barriers to employment. Only 14% indicated that stigma was a barrier, and between 21% (increase in symptoms) and 35% (difficulty finding a job) identified other barriers. Nevertheless, 88% of the unemployed participants reported wanting help finding a job, and over 60% wanted help managing their illness (e.g., coping with stress and symptoms) and improving their cognitive functioning. These findings suggest that unemployed people with SMI in India want help working and could benefit from vocational services. Furthermore, employed participants, particularly those working for independent employers, indicated a number of problems related to work such as cognitive difficulties or stress, suggesting that vocational supports could improve work functioning or reduce burden of illness in employed people with SMI in India.

Supported employment has the strongest evidence base of vocational rehabilitation approaches for people with SMI in developed countries (Drake et al., 2016), but there are few reports of it in developing countries, including India (Jaleel, Nirmala, & Thirthalli, 2014). Successful implementation of supported employment may require adaptation to the context of India. Since study participants identified help coping with their psychiatric disorder as a desired job support, one possible adaptation would be to integrate teaching illness self-management skills (Mueser et al., 2006) into supported employment. Another potential adaptation would be the systematic involvement of families in supported employment, including help with job finding through their extended social networks, collaboration on illness management, and facilitating work in family businesses (McFarlane et al., 2000).

Several limitations of this study should be noted. First, standardized measures of diagnosis, symptoms, or psychosocial functioning were not used, limiting information about the clinical functioning of the participants. Second, family members' perspectives about the employment of their relative were not obtained. Considering the importance of families to work in this study, their perceptions of their relative's ability to work, as well as challenges and facilitators of work, could inform the development of vocational services for this population. Third, the focus of this study was on understanding paid employment in people with SMI in India, and hence we did not assess unpaid work which may be equivalent to a paid job, such as fulfilling domestic responsibilities, which is the traditional role for women in Indian society. Future research should examine the broader range of role functioning beyond work in people with SMI in India, including household and educational functioning.

These limitations notwithstanding, the large sample size and rich data in this study provide strong evidence that employment in persons with SMI in India is higher than in developed countries and that families play an important role in supporting a relative working. Despite the higher rates of work, a significant proportion of participants were unemployed (39.1%), and most of those wanted to work and indicated desire for a range of job supports. The findings suggest that attention should be paid to adapting models of vocational rehabilitation to the cultural context of developing countries to improve the employment outcomes of persons with SMI.

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Supplementary Table S1.1: Two-step Logistic Regression Analysis Predicting Employment Status (Currently Working vs. Not Working)

Block 1

	B	SE	Odds ratio	*p*	95% CI
Age	-0.02	0.01	0.97	.07	0.94, 1.00
Education	0.03	0.24	1.03	.89	0.64, 1.66
Ever married (vs. never married)	1.12	0.31	3.07	.000	1.67, 5.62
Schizophrenia-spectrum disorder (vs. mood disorder)	-0.49	0.23	0.61	.03	0.39, 0.95
Duration of illness	-0.002	0.02	0.99	.91	0.96, 1.03
Past psychiatric hospitalization	0.14	0.23	1.15	.54	0.73, 1.81
Current medical conditions	0.43	0.27	1.53	.12	0.89, 2.62
Rural residence (vs. urban)	1.39	0.26	4.02	.000	2.39, 6.74
Male (vs. female)	2.34	0.24	10.47	.000	6.57, 16.65

Model $\chi^2 = 188.11$, $p < .001$

Block 2

	B	SE	Odds ratio	*p*	95% CI
Age	-0.04	0.02	0.96	.02	0.93, 0.99
Education	0.37	0.26	1.44	.16	0.86, 2.43
Ever married (vs. never married)	0.66	0.33	1.93	.04	1.01, 3.66
Schizophrenia-spectrum disorder (vs. mood disorder)	-0.46	0.24	0.63	.05	0.39, 1.00
Duration of illness	0.001	0.02	1.00	.94	0.96, 1.03
Past psychiatric hospitalization	0.11	0.25	1.11	.66	0.68, 1.81
Current medical conditions	0.51	0.29	1.67	.08	0.93, 2.98
Rural residence (vs. urban)	1.08	0.27	2.94	.000	1.71, 5.04
Male (vs. female)	1.68	0.26	5.40	.000	3.20, 9.10
Total family members	0.12	0.05	1.13	.02	1.01, 1.25
Family income	-0.77	0.12	0.46	.000	0.36, 0.58
Current tobacco use (vs. not)	0.27	0.26	1.32	.28	0.79, 2.19
Current alcohol use (vs. not)	1.23	0.67	3.42	.06	0.91, 12.73

Model $\chi^2 = 237.75$, $p < .001$

Supplementary Table S1.2: Benefits of Work among Participants Working for Independent Employer vs. Working for Family

Benefits of work	Total $n = 286$	Independent employer $n = 155$	Family $n = 131$		
		n (%)	*n* (%)	*df*	χ^2
Money					
Yes	271 (94.8%)	148 (95.5%)	123 (93.9%)	1	0.36
No	15 (5.2%)	7 (4.5%)	8 (6.1%)		
Improved self-esteem					
Yes	274 (95.8%)	150 (96.8%)	124 (94.7%)	1	0.79
No	12 (4.2%)	5 (3.2%)	7 (5.3%)		
Social status					
Yes	198 (69.2%)	121 (78.1%)	77 (58.8%)	1	12.39***
No	88 (30.8%)	34 (21.9%)	54 (41.2%)		
Help in managing the illness					
Yes	265 (92.7%)	141 (91.0%)	124 (94.7%)	1	1.42
No	21 (7.3%)	14 (9.0%)	7 (5.3%)		
Something to do					
Yes	175 (61.2%)	120 (77.4%)	55 (42.0%)	1	37.53***
No	111 (38.8%)	35 (22.6%)	76 (58.0%)		
	M (SD)	*M (SD)*	*M (SD)*		*t*
Total benefits[a]	4.1 (0.9)	4.4 (0.8)	3.8 (0.9)	284	-4.99***

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to more benefits of work (range 0–5)

Supplementary Table S1.3: Problems Related to Work among Participants Working for Independent Employer vs. Working for Family

Problems related to work	Total n = 286	Independent employer n = 155	Family n = 131		
	n (%)	n (%)	n (%)	df	χ^2
Stress					
Yes	104 (36.4%)	76 (49.0%)	28 (21.4%)	1	23.47***
No	182 (63.6%)	79 (51.0%)	103 (78.6%)		
Long hours					
Yes	42 (14.7%)	31 (20.0%)	11 (8.4%)	1	7.62**
No	244 (85.3%)	124 (80.0%)	120 (91.6%)		
Transportation problems					
Yes	36 (12.6%)	30 (19.4%)	6 (4.6%)	1	14.08***
No	250 (87.4%)	125 (80.6%)	125 (95.4)		
Dealing with coworkers					
Yes	37 (12.9%)	32 (20.6%)	5 (3.8%)	1	17.85***
No	249 (87.1%)	123 (79.4%)	126 (96.2%)		
Psychiatric symptoms					
Yes	62 (21.7%)	47 (30.3%)	15 (11.5%)	1	14.89***
No	224 (78.3%)	108 (69.7%)	116 (88.5%)		
Medication side effects					
Yes	45 (15.7%)	36 (23.2%)	9 (6.9%)	1	14.32***
No	241 (84.3%)	119 (76.8%)	122 (93.1%)		
Cognitive difficulties					
Yes	129 (45.1%)	82 (52.9%)	47 (35.9%)	1	8.31**
No	157 (54.9%)	73 (47.1%)	84 (64.1%)		
Low energy/stamina					
Yes	93 (32.5%)	53 (34.2%)	40 (30.5%)	1	0.43
No	193 (67.5%)	102 (65.8%)	91 (69.5%)		

Physical health					
Yes	37 (12.9%)	18 (11.6%)	19 (14.5%)	1	0.52
No	249 (87.1%)	137 (88.4%)	112 (85.5%)		
Difficulty keeping a job					
Yes	37 (12.9%)	35 (22.6%)	2 (1.5%)	1	27.94***
No	249 (87.1%)	120 (77.4%)	129 (98.5%)		
	M (SD)	*M (SD)*	*M (SD)*	*df*	*t*
Total problems[a]	2.2 (2.1)	2.8 (2.3)	1.4 (1.5)	262.13	-6.41***

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to more problems related to work (range 0–10)

Supplementary Table S1.4: Demographic and Clinical Characteristics of Unemployed Participants Interested in Work vs. Not Interested in Work

Categorical variables	Interested in work $n = 164$	Not interested in work $n = 48$		
	n (%)	*n* (%)	*df*	χ^2
District				
Pune	107 (78.1%)	30 (21.9%)	1	0.12
Ahmednagar	57 (76.0%)	18 (24.0%)		
Residence				
Urban	128 (79.0%)	34 (21.0%)	1	1.07
Rural	36 (72.0%)	14 (28.0%)		
Gender				
Male	59 (92.2%)	5 (7.8%)	1	11.51**
Female	105 (70.9%)	43 (29.1%)		
Education				
12th grade or below	97 (69.8%)	42 (30.2%)	1	13.22***
Above 12th grade	67 (91.8%)	6 (8.2%)		
Marital Status				
Never married	51 (94.4%)	3 (5.6%)	1	12.07**
Ever married	113 (71.5%)	45 (28.5%)		
Diagnosis				
Schizophrenia-spectrum	115 (78.2%)	32 (21.8%)	1	0.20
Major mood disorder	49 (75.4%)	16 (24.6%)		
Past psychiatric hospitalization				
Yes	88 (76.5%)	27 (23.5%)	1	0.10
No	76 (78.4%)	21 (21.6%)		
Current medical condition				
Yes	36 (63.2%)	21 (36.8%)	1	8.97**
No	128 (82.6%)	27 (17.4%)		

Current tobacco use				
Yes	40 (81.6%)	9 (18.4%)	1	0.66
No	124 (76.1%)	39 (23.9%)		
Recent past work				
Yes	52 (96.3%)	2 (3.7%)	1	14.83***
No	112 (70.9%)	46 (29.1%)		

Current alcohol use	*n* (%)	*n* (%)		*p* (Fisher's exact test)
Yes	2 (66.7%)	1 (33.3%)		0.53
No	162 (77.5%)	47 (22.5%)		

Continuous variables	*M (SD)*	*M (SD)*		*t*
Age	38.3 (8.8)	46.1 (7.6)	210	5.52***
Total family income (monthly) (USD)	658 (1297)	970 (1717)	210	1.35
Total family income[a]	2.5 (1.1)	2.7 (1.1)	210	-1.48
Duration of illness (years)	11.4 (6.7)	14.7 (8.3)	65.97	2.50*

* = p <.05; ** = p < .01; *** = p < .001

a. Based on a 4-point ordinal scale, with higher numbers pertaining to higher income. The four categories were determined by quartiles: ≤ $167, $167.3–385, $385.1–692, ≥ $692.1

STUDY 2: A LONGITUDINAL ANALYSIS OF EMPLOYMENT IN PEOPLE WITH SEVERE MENTAL ILLNESSES IN INDIA

Abstract

Purpose: Little is known about longitudinal trajectories of employment in people with severe mental illnesses (SMI) in developing countries, including India. We examined stability and change in work status, interest in work, problems and benefits related to work among employed participants and barriers and desired job supports among unemployed participants.

Methods: We conducted a one-year follow-up with 550 participants with SMI receiving psychiatric outpatient treatment in two hospitals in two districts in India. A total of 459 (83.5%) participants completed follow-up interviews.

Results: Rates of employment were stable across a one-year period, with over 60% employed at baseline and follow-up assessment. More than 80% who worked at both assessments were working in the same job for an average duration of 10 years. Among the participants who were unemployed at baseline, 16.9% started working at follow-up, an outcome associated with interest in work and efforts to find work at baseline. Interest in work of those unemployed at both assessments was lower at follow-up than baseline, but over 60% of participants wanted to work across both assessments, and endorsed desired supports for their job search.

Conclusions: There is considerable stability of work in people with SMI in India. Working in the same job for the long term may have contributed to consistent work. Most unemployed participants who wanted to work at baseline did not find a job at

follow-up, and desired help with their job search, suggesting the need for vocational services to help people with SMI in developing countries obtain employment.

Introduction

Rates of employment in people with schizophrenia and other severe mental illnesses (SMI) are higher in developing countries, ranging from 40% to 77% (Olagunju, Adegbaju, & Uwakwe, 2016; Shibre et al., 2015; Srinivasan & Tirupati, 2005; Srivastava, Stitt, Thakar, Shah, & Chinnasamy, 2009; Yang et al., 2013), than in developed countries where fewer than 25% are typically working (Marwaha et al., 2009; Salkever et al., 2007). Nevertheless, unemployment of persons with SMI in developing countries has dire implications for families, where the loss of a single worker can threaten their ability to meet their basic living needs (Raut, Pal, & Bharati, 2014). Despite the different employment rates, unemployed people with SMI in both developing (Nagaswami et al., 1985) and developed countries (Frounfelker et al., 2011; Westcott et al., 2015) share a strong interest in work. However, little progress has been made in vocational rehabilitation for this population in developing countries, in contrast to developed countries, where supported employment has been shown to improve vocational outcomes (Drake et al., 2016). Information about work in people with SMI in developing countries is needed to inform the adaptation of vocational services to their unique social context.

Research on employment in people with SMI in developing countries is sparse, with most studies lacking information about the nature and extent of work among employed persons (e.g., employer, earnings). Furthermore, some studies excluded women (Prasad & Acharya, 2014; Srinivasan & Thara, 1997), and most studies have been conducted at a single urban or rural site (e.g., Midin et al., 2011; Srinivasan and Tirupati, 2005; Suresh et al., 2012), limiting the generalizability of findings. Additionally, even less is known about problems and benefits of work among those employed, or interest in work among the unemployed, and perceived barriers to work and desired job supports among those who want to work.

Another limitation of the extant research is the lack of knowledge about the longitudinal course of work in people with SMI in developing countries. A ten year follow-up study from India of male outpatients with schizophrenia indicated 63–73% were working in any given year (Srinivasan & Thara, 1997). An epidemiological study from rural China reported that 88% individuals with schizophrenia were working at an initial assessment, while 77% were employed ten years later (Ran et al., 2011). However, longitudinal studies from developing countries have not examined the consistency of work among individuals over time, their perceptions of benefits and problems related to work, nor who is most likely to lose, change, or get a job. Furthermore, the consistency of interest in work among unemployed persons over time is unknown, as well as the perceived barriers to work and desired job supports.

To address these gaps in the literature, we conducted a longitudinal evaluation of employment in a large cohort of people with SMI receiving outpatient services at two private hospitals in two districts in India (one urban, one rural), with two assessments conducted one year apart (Khare et al., 2020). Results from the baseline study indicated that 60.9% of the participants were working, with higher employment rates for those living in rural than urban areas (77.8 vs. 48.9%). Higher rates of work in family owned businesses in rural areas (e.g., farming) primarily accounted for the higher rate of employment than in urban areas. Approximately three-fourths of unemployed participants were interested in work, and endorsed a variety of desired job supports, including help finding a job and managing their mental illness.

This paper presents findings from the one-year follow-up of the cohort reported above. The analyses were guided by questions regarding stability and changes in rates of work and interest in work, reasons for job changes and job losses, and correlates of obtaining a job at follow-up. The study also examined consistency and change in perceived benefits and problems related to work in employed participants, and in barriers and desired supports among unemployed participants who were interested in work.

Methods

The study was conducted at the psychiatry outpatient departments of two private hospitals in the state of Maharashtra in western India: Poona Hospital and Research Center in Pune, predominantly an urban district, and Manasdeep Psychiatric and Addiction Treatment Center in Ahmednagar, predominantly a rural district. Informed consent was obtained from all participants. The Institutional Review Board (IRB) of Boston University approved the study. See Khare et al. (2020 Online) for additional details about the research methods employed.

Participants

Inclusion criteria for the study were: 1) diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, or major depression; 2) age between 18 to 60 years; 3) verbally fluent in Marathi language; 4) residing in Pune or Ahmednagar districts; and 5) willing and able to provide informed consent. A total of 550 individuals with SMI (275 per site) participated in the baseline assessment.

Procedures

The study interviewers or the first author contacted participants to schedule an appointment for the follow-up interview. Interviews were conducted between 11 and 13 months following the baseline assessment. Family members were sometimes present during the interview with the client's permission. Phone interviews were conducted when an in-person meeting was not possible (n = 126).

Measures

The majority of questions from the survey instrument developed for the baseline study (Khare et al., 2020) were retained for the follow-up and are only briefly described here. Modifications were made to capture changes that may have occurred over the past year, with a particular focus on work.

Two interviewers were trained to administer the interview. The first author also conducted some of the interviews. Weekly supervision calls were conducted with the interviewers to discuss assessment-related issues and coordinate the follow-up interviews.

Demographic and Clinical Characteristics

Information related to demographic (e.g., marital status) and clinical characteristics (e.g., psychiatric hospitalizations in the past year) was obtained.

Current Work Status, and Benefits and Problems Related to Work

Current work status was coded as working or not working. Information about current job was obtained, including title, employer, job duties, hours worked per week, and monthly earnings. Employed participants were asked five yes/no questions to assess perceived benefits of work (e.g., money). The number of benefits endorsed were summed. Problems related to work were assessed with 10 yes/no questions (e.g., stress), with the number of endorsed problems summed.

Currently Not Working Participants

Unemployed participants were asked about possible reasons for not working (e.g., managing household), whether they were currently interested in work, and if not whether they would be interested in working in the future. Affirmative responses to either question about interest in work were coded as ‘interested in working.’ Participants who were interested in work were then asked about different supports they wanted to help them work (e.g., help with job finding).

Work Over the Past 12 Months

Information was obtained for each job worked over the past year, including: title, employer, description, hours worked/week, monthly income, start and end date, and reasons for job termination.

Statistical analyses

Participants who completed the follow-up interview were compared with those who did not on baseline characteristics using χ^2 analyses and *t*-tests. Stability of work status over the one-year period was evaluated by computing a Kappa statistic. Kappa values were interpreted using the convention of Landis and Koch (1977): 0.81–1.00 — almost perfect, 0.61–0.80 — substantial, 0.41–060 — moderate, 0.21–0.40 — fair, 0.00–0.20 — slight, < 0.00 — poor. A McNemar test was computed to evaluate change in work status over the one year.

The consistency of specific benefits and problems related to work among participants working in the same job at both assessments were examined by computing Kappa statistics, and McNemar tests were conducted to assess change in specific problems and benefits of work endorsed. Pearson correlations and paired *t*-tests were computed to evaluate the relationship between the number of benefits and number of problems related to work endorsed by the participants at baseline and follow-up. For participants who were working at baseline but either changed jobs or were not working at follow-up, we calculated frequencies for different reasons for the job change or ending.

A Kappa statistic was computed to evaluate the consistency of interest in work over the one-year, and a McNemar test was performed to examine change in interest among participants who were unemployed at both assessments. We also computed Kappa statistics to assess the consistency of efforts to find work over the past month among participants who were not employed at both assessments, and used a McNemar test to evaluate change in efforts to find work across the two assessments.

For participants who were unemployed at baseline, we examined the demographic, clinical, and work interest factors associated with getting a job at follow-up by computing χ^2 analyses and *t*-tests. Kappa statistics were calculated to evaluate consistency of individual barriers to work and desired job supports among participants who were unemployed at both assessments but who wanted to work, and McNemar tests were performed to examine changes in perceived barriers and desired supports over the year. Changes in the number of barriers and number of desired job supports over the year were evaluated by computing Pearson correlations and paired *t* tests.

Results

Of the 550 participants assessed at baseline, 459 (83.5%) completed the one-year follow-up interview. Reasons for missing follow-up assessments included inability to contact (n = 50), missed assessment appointment (n = 25), family member could not coordinate interview for the participant (n = 8), declined to participate (n = 6), or psychiatric hospitalization (n = 2). Comparisons of participants who completed the follow-up assessment vs. did not revealed only one significant difference: a higher percentage of participants with a schizophrenia-spectrum disorder were lost to follow-up than with a mood disorder (19.3% vs. 12.2%; $\chi^2 = 4.74$, $p = 0.02$). Table 2.1 presents the full comparison of the two groups.

Table 2.1: Comparisons between Participants Who Completed One Year Follow-up vs. Participants Who Did Not

Categorical variables	Total N = 550	Completed follow-up n = 459	Lost to follow-up n = 91		
	n (%)	n (%)	n (%)	*df*	χ^2
Residence					
Urban	323	275 (85.1%)	48 (14.9%)	1	1.61
Rural	227	184 (81.1%)	43 (18.9%)		
Gender					
Male	316	264 (83.5%)	52 (16.5%)	1	0.004
Female	234	195 (83.3%)	39 (16.7%)		
Education					
12th grade or below	376	310 (82.4%)	66 (17.6%)	1	0.87
Above 12th grade	174	149 (85.6%)	25 (14.4%)		
Marital status					
Never married	115	96 (83.5%)	19 (16.5%)	1	0.0
Ever married	435	363 (83.4%)	72 (16.6%)		

Diagnosis					
Schizophrenia-spectrum	337	272 (80.7%)	65 (19.3%)	1	4.74*
Mood disorder spectrum	213	187 (87.8%)	26 (12.2%)		
Past psychiatric hospitalization					
Yes	343	286 (83.4%)	57 (16.6%)	1	0.003
No	207	173 (83.6%)	34 (16.4%)		
Current medical condition(s)					
Yes	143	122 (85.3%)	21 (14.7%)	1	0.48
No	407	337 (82.8%)	70 (17.2%)		
Current tobacco use					
Yes	205	174 (84.9%)	31 (15.1%)	1	0.48
No	345	285 (82.6%)	60 (17.4%)		
Current alcohol use					
Yes	37	28 (75.7%)	9 (24.3%)	1	1.74
No	513	431 (84.0%)	82 (16.0%)		

Continuous variables	*M (SD)*	*M (SD)*	*M (SD)*	*df*	*t*
Age	38.89 (9.14)	39.12 (9.29)	37.71 (8.24)	548	1.34
Monthly family income (USD)	602 (988)	597 (1030)	630 (741)	548	-0.29
Duration of illness (years)	11.67 (6.99)	11.83 (6.97)	10.87 (7.11)	548	1.19

* = p <.05; ** = p < .01; *** = p < .001

Two participants who completed the follow-up reported being full-time students and one reported working as a volunteer. These participants were excluded from the analyses, leaving a final sample size of 456 participants.

Consistency and Change in Work Status and Benefits and Problems Related to Work

Of the 456 participants, 257 (56.4%) were working at both baseline and follow-up, 148 (32.4%) were not working at either assessment, 21 (4.6%) were working at baseline but not follow-up, and 30 (6.6%) were not working at baseline but were employed at follow-up. The Kappa for work status was significant ($k = 0.76$; $p < .001$), whereas the McNemar test was not, indicating work status was relatively consistent over time and did not change. Among the 148 participants who were not working at both assessments, only 8 (5%) worked during the intervening months.

Of the 257 participants employed at both assessments, 218 (84.8 %) had worked continuously in the same job for the year, while 10 (3.9%) took a break of at least one month before returning to the same job. Of these 228 participants working in the same job at both assessments, 96 (42.1%) were working for independent employers, 94 (41.2%) were working for family, and 36 (15.8%) were self-employed. The average duration on the job was 125.35 months.

Table 2.2 presents the percentages of employed participants who were working in the same job at both assessments and endorsed specific problems and benefits related to work at across the two assessments. Kappa statistics for all problems were significant (range: 0.29 – 0.51). Four problems were moderately stable over time (Kappas range: 0.44 – 0.51), including dealing with co-workers, low energy/stamina, medication side effects, and stress. Significantly fewer overall problems related to work were identified at the follow-up assessment than baseline, as well as fewer specific problems except for medication side-effects and long hours. We explored whether some of this reduction in problems might be due to participants who had more recently obtained the job at baseline having more problems initially but reporting fewer problems later as they became accustomed to the job. We computed a *t*-test to compare the number of problems reported at baseline by participants who had been working $\leq$1 year in the same job (n = 32) with the number of problems reported by those who had been working >1 year (n = 196), which was found to be significant (*Ms* = 2.81 vs. 2.02, respectively, t =2.02, df = 226, p =.044). At one year, a *t*-test indicated that the number of problems reported by the two groups no longer differed significantly (*Ms* = 1.47 vs. 1.44, respectively). Thus, some of the reduction in number of problems appears to be attributable to more recently employed people at baseline becoming more accustomed to their jobs by the one-year follow-up.

All the Kappa statistics for specific benefits of work were significant (range: 0.15–0.48). The most stable benefits of work over time were having something to do (k = 0.48; p <.001) and improved social status (k = 0.44; p <.001). Fewer participants indicated that work helped with mental illness management at follow-up than baseline, but there were no significant changes in any other benefits of work.

Table 2.2: Consistency and Change in Problems and Benefits Related to Work among Participants Who were Working in the Same Job at Both Assessments (n = 228)

Problems related to work	Baseline	Follow-up	Consistently yes or no across both assessments		
	n (%)	*n* (%)	*n* (%)	Kappa	McNemar *p*
Stress					
Yes	82 (36.0%)	67 (29.4%)	50 (21.9%)	0.51***	.04
No	146 (64.0%)	161 (70.6%)	129 (56.6%)		
Medication side effects					
Yes	33 (14.5%)	30 (13.2%)	18 (7.9%)	0.50***	.70
No	195 (85.5%)	198 (86.8%)	183 (80.3%)		
Low energy/stamina					
Yes	74 (32.5%)	46 (20.2%)	35 (15.4%)	0.45***	< .001
No	154 (67.5%)	182 (79.8%)	143 (62.7%)		
Dealing with co-workers					
Yes	27 (11.8%)	14 (6.1%)	10 (4.4%)	0.44***	.01
No	201 (88.2%)	214 (93.9%)	197 (86.4%)		
Psychiatric symptoms					
Yes	56 (24.6%)	38 (16.7%)	24 (10.5%)	0.39***	.01
No	172 (75.4%)	190 (83.3%)	158 (69.3%)		
Cognitive difficulties					
Yes	104 (45.6%)	73 (32.0%)	54 (23.7%)	0.38***	< .001
No	124 (54.4%)	155 (68.0%)	105 (46.1%)		
Long hours					
Yes	27 (11.8%)	19 (8.3%)	10 (4.4%)	0.37***	.17
No	201 (88.2%)	209 (91.7%)	192 (84.2%)		
Transportation problems					
Yes	25 (11.0%)	13 (5.7%)	8 (3.5%)	0.37***	.02
No	203 (89.0%)	215 (94.3%)	198 (86.8%)		

Physical health					
Yes	30 (13.2%)	17 (7.5%)	9 (3.9%)	0.32***	.02
No	198 (86.8%)	211 (92.5%)	190 (83.3%)		
Difficulty keeping a job					
Yes	28 (12.3%)	12 (5.3%)	7 (3.1%)	0.29***	.002
No	200 (87.7%)	216 (94.7%)	195 (85.5%)		

Benefits of work	*n* (%)	*n* (%)	*n* (%)	Kappa	McNemar *p*
Something to do					
Yes	145 (63.6%)	141 (61.8%)	115 (50.4%)	0.48***	.69
No	83 (36.4%)	87 (38.2%)	57 (25.0%)		
Improved social status					
Yes	158 (69.3%)	163 (71.5%)	134 (58.8%)	0.44***	.58
No	70 (30.7%)	65 (28.5%)	41 (18.0%)		
Money					
Yes	218 (95.6%)	218 (95.6%)	210 (92.1%)	0.16*	1.00
No	10 (4.4%)	10 (4.4%)	2 (0.9%)		
Managing mental illness					
Yes	218 (95.6%)	199 (87.3%)	193 (84.6%)	0.15**	.001
No	10 (4.4%)	29 (12.7%)	4 (1.8%)		
Improved self-esteem					
Yes	221 (96.9%)	213 (93.4%)	208 (91.2%)	0.15*	.09
No	7 (3.1%)	15 (6.6%)	2 (0.9%)		
	M (SD)	*M (SD)*		Pearson *r*	*t*
Problems related to work[a] (number)	2.13 (2.06)	1.44 (1.64)		0.71***	7.13***
Benefits of work[b] (number)	4.21 (0.93)	4.10 (1.08)		0.51***	1.71

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to more problems related to work (range 0–10)
b. Higher numbers pertain to more benefits of work (range 0–5)

Change in Jobs and Job Loss

Among the 29 participants who changed jobs between the assessments, the reasons for change included: finding a better job (*n* = 12; 41.5%), job characteristics (e.g., work in shifts; *n* = 5; 17.2%), mental illness (e.g., symptom increase; *n* = 5; 17.2%), seasonal work (*n* = 4; 13.8%), or life changes (e.g., marriage; *n* = 3; 10.3%). Among the 21 participants who stopped working between baseline and follow-up, the reasons for job ending were: mental illness-related (*n* = 9; 42.9%), life changes (*n* = 8; 38.1%), lay-off (*n* = 3; 14.3%), and did not like the work (*n* = 1; 4.7%).

Consistency of Interest in Work and Efforts to Find Work

The status of interest in work and efforts to find work among unemployed participants at both assessments is presented in Table 2.3. Interest in work was moderately consistent across both assessments, although there was a significant decline in interest in work from 73% at baseline to 62.8% at follow-up. Effort to find work was also moderate stable across the two assessments but did not change.

Table 2.3: Consistency of Interest in Work and Efforts to Find Work among Participants Who were Unemployed at Both Assessments (*n* = 148)

	Baseline	Follow-up	Consistently yes or no across both assessments		
	n (%)	*n* (%)	*n* (%)	Kappa	McNemar *p*
Interested in work					
Yes	108 (73.0%)	93 (62.8%)	86 (58.1%)	0.56***	.008
No	40 (27.0%)	55 (37.2%)	33 (22.3%)		
Efforts to find work					
Yes	27 (18.2%)	20 (13.5%)	13 (8.8%)	0.47***	.19
No	121 (81.8%)	128 (86.5%)	114 (77.0%)		

Correlates of Getting a New Job

Table 2.4 compares participants who were unemployed at baseline but were working at follow-up (*n* = 30; 16.9%) with those who remained unemployed (*n* = 148; 83.1%) on interest in work and efforts to find work at baseline, number of desired job supports, and demographic and clinical characteristics. Individuals who began working were significantly more likely to be interested in work, to have made efforts to find work, and to want more job supports at baseline than those who continued to be unemployed. In addition, starting work was associated with being male, younger age, higher educational levels, and never having married.

Table 2.4: Comparisons between Participants Not Working at Baseline Who Started Working at Follow-up vs. Not Working at Baseline and Follow-up

Categorical variables	Total n =178	Started working n = 30	Did not start working n = 148		
	n (%)	n (%)	n (%)	df	χ^2
Residence					
Urban	135	23 (17.0%)	112 (83.0%)	1	0.01
Rural	43	7 (16.3%)	36 (83.7%)		
Gender					
Male	54	22 (40.7%)	32 (59.3%)	1	31.56***
Female	124	8 (6.5%)	116 (93.5%)		
Education					
12th grade or below	117	13 (11.1%)	104 (88.9%)	1	8.04*
Above 12th grade	61	17 (27.9%)	44 (72.1%)		
Marital status					
Never married	47	14 (29.8%)	33 (70.2%)	1	7.62*
Ever married	131	16 (12.2%)	115 (87.8%)		
Diagnosis					
Schizophrenia spectrum	118	20 (16.9%)	98 (83.1%)	1	0.002
Mood disorder spectrum	60	10 (16.7%)	50 (83.3%)		
Past psychiatric hospitalization					
Yes	97	14 (14.4%)	83 (85.6%)	1	0.89
No	81	16 (19.8%)	65 (80.2%)		
Current medical condition(s)					
Yes	49	4 (8.2%)	45 (91.8%)	1	3.64
No	129	26 (20.2%)	103 (79.8%)		
Current tobacco use					
Yes	43	8 (18.6%)	35 (81.4%)	1	0.12
No	135	22 (16.3%)	113 (83.7%)		
Current alcohol use					
Yes	2	1 (50.0%)	1 (50.0%)		.31[a]
No	176	29 (16.5%)	147 (83.5%)		
Interest in work					
Yes	135	27 (20.0%)	108 (80.0%)	1	3.94*
No	43	3 (7.0%)	40 (93.0%)		

Efforts to find work in past one month					
Yes	41	14 (34.1%)	27 (65.9%)	1	11.37**
No	137	16 (11.7%)	121 (88.3%)		
Received help in finding work in past one month					
Yes	26	8 (30.8%)	18 (69.2%)		.05[a]
No	152	22 (14.5%)	130 (85.5%)		
Continuous variables	*M (SD)*	*M (SD)*	*M (SD)*	*df*	*t*
Age	40.13 (9.48)	35.50 (10.25)	41.07 (9.08)	176	-3.00**
Monthly family income (USD)	769 (1516)	607 (763)	801 (1627)	176	-0.64
Duration of illness (years)	12.37 (7.18)	11.10 (7.37)	12.62 (7.14)	176	-1.06
Total barriers[b]	1.56 (1.29)	1.80 (1.45)	1.51 (1.26)	176	1.11
Total job supports[c]	3.16 (2.58)	4.00 (2.41)	2.99 (2.59)	176	1.97*

* = $p \leq .05$; ** = $p < .01$; *** = $p < .001$

a. *p* value based on Fisher's exact test

b. Higher numbers pertain to more barriers

c. Higher numbers pertain to more job supports

Consistency of Barriers to Work and Desired Job Supports

For unemployed participants who were interested in work at both assessments, the specific barriers and desired job supports at each assessment are displayed in Table 2.5. The Kappa statistics for consistency of specific barriers ranged 0.39 – 0.62, with managing household as the most consistent obstacle ($k = 0.62$; $p < .001$). McNemar tests indicated that the proportion of participants who endorsed difficulty finding a job as a barrier to work was significantly higher at follow-up than baseline, while the proportions endorsing stigma and difficulty keeping a job were lower. Participants who had recently worked were more likely to endorse difficulty keeping a job as barrier at both assessments than those who had worked longer ago (baseline *Ms* = 3.86 vs. 8.76 years, $t = -2.86$, $p = .006$; follow-up *Ms* = 3.2 vs. 8.9 years, $t = -3.21$, $p = .003$).

The Kappa statistics for desired job supports ranged 0.24 – 0.59. Five desired job supports were moderately consistent over the one-year period: help dealing with co-workers, symptoms, cognitive difficulties, stress, and job search. Except for job search, stress and cognition, the proportions of participants endorsing specific and overall desired job supports were lower at follow-up than baseline.

Table 2.5: Consistency and Change in Barriers to Work and Desired Job Supports among Participants Who were Unemployed but Interested in Work at Both Assessments *(n* = 86)

	Baseline	Follow-up	Consistently yes or no across both assessments		
Barriers to work	*n* (%)	*n* (%)	*n* (%)	Kappa	McNemar *p*
Managing household					
Yes	30 (34.9%)	31 (36.0%)	23 (26.7%)	0.62***	1.00
No	56 (65.1%)	55 (64.0%)	48 (55.8%)		
Difficulty in keeping job					
Yes	24 (27.9%)	14 (16.3%)	11 (12.8%)	0.47***	.02
No	62 (72.1%)	72 (83.7%)	59 (68.6%)		
Stress					
Yes	20 (23.3%)	15 (17.4%)	10 (11.6%)	0.47***	.30
No	66 (76.7%)	71 (82.6%)	61 (70.9%)		
Difficulty in finding job					
Yes	29 (33.7%)	45 (52.3%)	25 (29.1%)	0.45***	.002
No	57 (66.3%)	41 (47.7%)	37 (43.0%)		
Stigma					
Yes	12 (14.0%)	5 (5.8%)	4 (4.7%)	0.42***	.04
No	74 (86.0%)	81 (94.2%)	73 (84.9%)		
Increase in symptoms					
Yes	12 (14.0%)	13 (15.1%)	6 (7.0%)	0.39***	1.00
No	74 (86.0%)	73 (84.9%)	67 (77.9%)		
Desired job supports	*n* (%)	*n* (%)	*n* (%)	Kappa	McNemar *p*
Job search					
Yes	77 (89.5%)	79 (91.9%)	75 (87.2%)	0.59***	.69
No	9 (10.5%)	7 (8.1%)	5 (5.8%)		
Managing Stress					
Yes	60 (69.8%)	51 (59.3%)	46 (53.5%)	0.52***	.06
No	26 (30.2%)	35 (40.7%)	21 (24.4%)		

Help in attention, concentration, memory					
Yes	53 (61.6%)	44 (51.2%)	37 (43.0%)	0.46***	.09
No	33 (38.4%)	42 (48.8%)	26 (30.2%)		
Managing symptoms					
Yes	56 (65.1%)	45 (52.3%)	39 (45.3%)	0.46***	.04
No	30 (34.9%)	41 (47.7%)	24 (27.9%)		
Help in dealing with coworkers					
Yes	43 (50.0%)	25 (29.1%)	22 (25.6%)	0.44***	<.001
No	43 (50.0%)	61 (70.9%)	40 (46.5%)		
Managing medication side effects					
Yes	35 (40.7%)	21 (24.4%)	15 (17.4%)	0.33**	.01
No	51 (59.3%)	65 (75.6%)	45 (52.3%)		
Transportation					
Yes	31 (36.0%)	11 (12.8%)	8 (9.3%)	0.24*	<.001
No	55 (64.0%)	75 (87.2%)	52 (60.5%)		
	M (SD)	*M (SD)*		Pearson *r*	*t*
Barriers to work[a] (number)	1.48 (1.15)	1.43 (1.10)		0.57***	0.42
Desired job supports[b] (number)	4.13 (2.16)	3.21 (1.95)		0.52***	4.19***

* = p <.05; ** = p < .01; *** = p < .001

a. Higher numbers pertain to more barriers

b. Higher numbers pertain to more job supports

Discussion

This study examined employment activity in a large cohort of people with SMI receiving psychiatric outpatient services in two private hospitals in two districts in India over a one-year period. The rates of work at both assessments were similar, with 60.9%

working at baseline, and 62.9% working one year later. These relatively high rates employment are generally consistent with the few published longitudinal studies from developing countries (Srinivasan & Thara, 1997; Thara, 2004). Current work status was also consistent, with 56.4% working at both assessments and 32.5% not working at both assessments, suggesting that work status is relatively stable over time in the absence of formal vocational interventions.

One reason for high consistency in work may be that most participants were employed in the same job for a long time, an average of 10 years for individuals employed in the same job at both assessments. Long-term employment may confer several advantages, including greater familiarity with the job, higher mastery of tasks, more support from co-workers and employers, and higher rate of pay. While these advantages may be beneficial to anyone, they may be particularly helpful for people with SMI because they may lower stress on the job and increase the person's perceived value to others.

The most important reason for changing jobs between the two assessments was the opportunity for a better job (41.5%), with only 17.2% reporting mental illness as the reason. Mental illness-related factors such as increased symptoms or medication side-effects played a more important role for people who stopped working, with 42.9% citing it as the primary reason for the job ending. These findings are consistent with evidence from developed countries showing that problems related to mental illness can reduce job performance in this population (Auerbach & Richardson, 2005), and is an important reason for job loss (Becker et al., 1998; Cook, 1992; Lanctôt, Bergeron-Brossard, Sanquirgo, & Corbière, 2013).

There was a trend among participants working in the same job at both assessments towards endorsing fewer work-related problems at follow-up. This reduction appears to be partly due to the longer duration of time on the job at the follow-up assessment. Specifically, participants who were working for a year or less on their job at baseline reported more work-related problems than those who had been working for more than a year, whereas one year later both groups reported fewer problems, with no difference in number of problems. This reduction in problems on the job over time may contribute to reduce stress at the workplace, and facilitate longer job tenure. However, a sub-group of participants consistently endorsed several problems related to work across both assessments, with cognitive difficulties (23.7%) and stress (21.9%) identified as the most common problems. These problems are consistent with the research on employed people with SMI in developed countries (Fossey & Harvey, 2010; Henry & Lucca, 2004; Honey, 2003), and may have important implications for job performance. A potential focus of vocational services for employed people with SMI in India could be on reducing these problems in order to increase both job performance and well-being.

Among the participants who were unemployed at baseline, 16.9% were working at the follow-up assessment. Interest in work at baseline was associated with a significantly higher chance of working at follow-up than no interest (20.0% vs. 7.0%), and efforts to find work in the month before baseline was even more strongly related to subsequent work (34.1% vs. 11.7%). These findings are consistent with one study from the U.S. showing a nearly identical pattern of associations between interest in work and efforts to find work among unemployed persons with schizophrenia and employment one and two years later (Mueser et al., 2001). Desire for work appears to be an important contributor to future employment in people with SMI.

Overall interest in work declined somewhat from baseline to follow-up for participants who were unemployed at both assessments (73% vs. 62.8%), with 58.1% showing consistent interest at both assessments. This reduced interest may be partly due to the frustration of not being able to find a job—while interest in work and efforts to find work at baseline were associated with increased rates of work at follow-up, the vast majority of such individuals remained unemployed. Consistent with this, the number of participants who endorsed difficulty finding a job as a barrier to work increased from 33.7% at baseline to 52.3% at follow-up. Getting jobs is evidently a major problem for individuals with SMI who want to work in India, and was identified as the most common type of desired vocational support, endorsed by approximately 90% of participants at both assessments.

These findings point to the potential role of vocational rehabilitation in improving employment functioning in people with SMI in India, and the need for the most basic of all vocational services, assistance with the job search. Practical help finding a job, with an emphasis on rapid job search, is a defining feature of supported employment, which has been empirically validated in developed countries (Drake et al., 2016). Other features of supported employment models such as Individual Placement and Support (IPS) that may have relevance to improving work in the India context include the provision of ongoing time unlimited supports after people obtain a job, and the integration of vocational and clinical services (Becker & Drake, 2003).

In addition to practical support job finding and keeping jobs, the results suggest that people with SMI in India who want to work need help managing their psychiatric illness more effectively. At both assessments over 40% of the unemployed participants who wanted to work wanted support for managing their mental illness, including dealing with stress, coping with symptoms, and help with cognitive difficulties. Furthermore, problems related to mental illness was the most common reason cited by participants who lost a job during the one-year follow-up period. Even participants who were working stably at the same job at both assessments frequently endorsed problems related to psychiatric illness management. Vocational services designed for the context of India may need to attend to improving mental illness management of people with SMI in order to improve their employment prospects.

The IPS model focuses primarily on providing vocational supports for finding and keeping a job in an integrated fashion with a clinical team that provides comprehensive treatment services (Becker and Drake, 2003). In India, however, most people with SMI receive few clinical services other than medication management, and clinical teams are rare. The present findings suggest that the IPS model may need to be adapted in order to be effective in India's mental health system. Specifically, the supported employment approach may need to go beyond its traditional focus on providing vocational supports to also enhancing the individual's (and more broadly, the family's) capacity to more effectively manage the mental illness. This could be accomplished by incorporating aspects of evidence-based interventions for improving illness self-management, such as the Illness Management and Recovery (IMR) program (Gingerich and Mueser, 2011; McGuire et al., 2014), into supported employment services. Considering the importance of the family to work and life in general in India, inclusion of family members in the provision of such adapted vocational services would be essential.

This study had some limitations. First, information about employment activity over the previous 12 months was collected retrospectively, which was subject to recall bias. Second, although we obtained data on consistency in problems related to work among employed participants, we did not explore the impact of those problems on work performance. Future research could examine whether problems related to work adversely affect job performance in employed people with SMI in developing countries. Despite these limitations, this study is strengthened by its longitudinal investigation of employment activity in a large group of people with SMI living in diverse settings in India that allowed for a comprehensive examination of factors related to consistency and change in work status, interest in work, the perceived benefits and problems related to work, and perceived barriers to work and desired job supports.

This longitudinal study provides evidence of stability of employment in people with SMI in India, with over 80% of those employed at both assessments working throughout the year. The study also showed that interest in work was relatively stable and was associated with a modest increase in the chances of working at follow-up, suggesting that the majority of people who want to work may profit from vocational services to aid in job attainment. Additional findings such as perceived barriers and desired job supports among the unemployed participants further underscore the need for culturally relevant vocational rehabilitation to help people with SMI pursue and sustain work, and advance in the work place.

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STUDY 3: Employment in People with Severe Mental Illnesses receiving Public Sector Psychiatric Services in India

Abstract

Background: The limited literature on employment in people with severe mental illnesses (SMI) in developing countries suggests higher rates than in developed countries. The present study explored rates and associated characteristics of work in people receiving public psychiatric services.

Methods: Semi-structured interviews were conducted with 150 individuals with SMI (90% schizophrenia-spectrum) receiving public outpatient psychiatric services in an urban district in western India to evaluate employment.

Results: Forty percent of participants were employed, largely with independent employers (86.7%) for an average of 53 hours/week. Earning money was reported as the primary motivation to work. Common barriers to employment for those unemployed but interested in working were psychological (e.g., stress), mental illness (e.g., symptoms), and work-related factors (e.g., difficulty finding a job); help with job finding and managing mental illness were the primary desired supports.

Conclusion: Rates of employment in people with SMI living in urban areas in India are higher than in developed countries, but much lower than the general population. A very high proportion of unemployed participants were interested in work. The high interest in work coupled with specific noted barriers and desired supports point to the need for vocational rehabilitation for improving the employment functioning of people with SMI in India.

Introduction

Severe mental illnesses (SMI) such as schizophrenia and bipolar disorder have a profound impact on occupational functioning, with rates of employment generally below 25% for people living in developed countries (Jonsdottir & Waghorn, 2015; Marwaha et al., 2009). In contrast, research suggests higher rates of employment for people with SMI who are living in developing countries. For example, studies report work rates between 40% and 76% for persons with SMI living in India (e.g., Srinivasan and Tirupati, 2005; Srivastava et al., 2009; Thara, 2004), and between 52% and 77% for people with SMI in China (Ran et al., 2011; Xiao, Mi, Li, Shi, & Zhang, 2015; Yang et al., 2013).

Despite the evidence suggesting higher rates of work for people with SMI in developing countries, many studies have significant methodological limitations. For example, almost all studies lack important details about work, including types of jobs, employers, hours worked, and income earned, and none have examined the perceived benefits of work or problems related to work in this population. Some studies had small samples and excluded women (Prasad & Acharya, 2014; Srinivasan & Thara, 1997). Additionally, few studies from developing countries have evaluated interest in work among unemployed persons (Nagaswami, Valecha, Thara, Rajkumar, & Menon, 1985). As vocational rehabilitation is generally not available in developing countries, such information is critical to the development and/or adaptation of vocational services for improving employment functioning in people with SMI in these countries.

In order to better understand work functioning in people with SMI in developing countries we conducted a two-site study of employment in 550 people who were receiving private psychiatric outpatient treatment and were living in urban or rural areas in India. The findings indicated that 60.9% of participants were working, with higher employment rates in rural than urban areas, largely due to the preponderance of family owned farms in rural areas (Khare et al., 2020). A high proportion of unemployed people were interested in work (77.4%), similar to studies in developed countries (Frounfelker, Wilkniss, Bond, Devitt, & Drake, 2011; McQuilken et al., 2003; Mueser, Salyers, & Mueser, 2001; Westcott, Waghorn, McLean, Statham, & Mowry, 2015). Further, most participants wanted assistance with work, such as help finding a job or coping with mental illness. The findings suggest that many unemployed individuals are interested in work and would benefit from vocational services tailored to their unique cultural context.

The participants in Khare et al. (2020) were receiving outpatient services at private hospitals, which are a common source of services in India and many other developing countries (Government of India, 2019; Mackintosh et al., 2016). While both public and private treatment providers charge for services in India and some other developing countries (Dixon, McDaid, Knapp, & Curran, 2006; Rajkumar, 2015), public sector services are provided at no cost to families who cannot afford them (Aljunid, 1995). The likely differences in economic standing between people receiving public vs. private sector psychiatric services suggests that employment rates might be higher in the former group due to their greater incentive to work. Indeed, Khare et al. (2020) reported that employment rates among participants receiving private psychiatric services were higher in those who had lower family incomes. On the other hand, family economic resources other than income could also be important, such as whether the family owns a business that could employ the relative with SMI. The current study addressed these questions by examining employment in people with SMI who are receiving outpatient services at a public hospital in India.

Other under researched topics include interest in working among unemployed people receiving public sector psychiatric services in India, and motivation for work among those who are employed. Studies from developed countries suggest that although money is an important motivator for work, other benefits of work are frequently reported, such as help coping with psychiatric symptoms, improved self-esteem, and making social connections (Arns & Linney, 1993; Dunn et al., 2010, 2008; Marwaha and Johnson, 2005; Netto et al., 2016). From a broader perspective on motivation, these reasons for working align with Maslow's (1954) hierarchy of needs theory, which posits that lower level needs (physiological, safety, belongingness) must be fulfilled before attending to higher level needs such as self-esteem and self-actualization. Developing countries are characterized by poorer economies than developed countries, and usually do not provide disability payments for SMI, which may contribute to the need to work to earn a living. Moreover, unemployed people receiving public sector services may have a particularly strong motivation to work to improve the economic conditions of their family.

Lastly, there is limited information about what factors hinder work among unemployed people with SMI in developing countries. Some qualitative evidence from studies in China, India, and South Africa indicate that stigma of mental illness is a barrier to work (Loganathan & Murthy, 2011; van Niekerk, 2009; Zou, Li, Arthur, & Wang, 2014), although it was not identified as a major obstacle in Khare et al. (2020). Two studies from India and Nigeria suggest that a range of other factors may interfere with employment in people with SMI, including symptoms, medication side-effects, physical health problems, inadequate skills or education, and lack of family or social support (Eaton, 2008; Thomas, Prasad Muliyala, Jayarajan, Angothu, & Thirthalli, 2019), consistent with studies from developed countries (Henry & Lucca, 2004; Honey, 2004; Marwaha & Johnson, 2005). A study with integrated quantitative and qualitative methods evaluating barriers to work would improve the understanding of factors impeding employment, similar to studies conducted in developed countries (e.g., Kukla et al., 2015).

To address these questions, this study examined work functioning in people with SMI receiving psychiatric outpatient treatment from a public hospital in India using the same methods as Khare et al.'s (2020) study of people receiving private treatment. In addition to the evaluation of specific types of work and other characteristics of employment (e.g., employer, hours worked), the perceived benefits and problems related to work were examined. Furthermore, interest in work, barriers to employment, and desired job supports were ascertained among the unemployed participants.

Methods

The study was conducted at the psychiatry outpatient department of the Regional Mental Hospital, a public hospital located in the city of Pune which serves several districts in the western part of the state of Maharashtra, India. The Regional Mental Hospital is the largest psychiatric hospital in India, with an inpatient capacity of over 1500 beds. The outpatient department serves approximately 200 patients per day. The study was approved by the Institutional Review Board of Boston University, U.S.

Participants

A total of 150 outpatients with SMI participated in the study. Study inclusion criteria were: (a) between 18 to 60 years old; (b) primary medical record diagnosis of a severe mental illness, including schizophrenia, schizoaffective disorder, bipolar disorder, or major depression; (c) verbal fluency in Marathi language; (d) residing in the Pune district; and (e) willing and able to provide informed consent.

Procedures

The first author met with the medical superintendent and the psychiatrists at the hospital to explain the purpose and eligibility criteria of the study. Psychiatrists referred interested patients to the first author, who met with them to describe the study, confirm eligibility, and obtain informed consent from those who were interested. Patients were often accompanied by relatives to their appointments, and therefore with the participants' permission often attended the study interview. Data were collected between September 2017 and January 2018.

Measures

The same semi-structured interview developed for Khare et al. (2020) was employed. This interview included 49 items and covered information about demographics, psychiatric history, medical disorders, and employment (see Khare et al., 2020 for more details).

Demographic and Clinical Characteristics

Demographic (e.g., age, gender) and clinical characteristics (e.g., duration of illness, psychiatric hospitalizations) were collected.

Work History and Current Work

Work was defined as any work for pay. The total number of months worked during the last five years was ascertained, with work for 12 or more months coded as recent work history (McGurk et al., 2015). Current work status was coded as working or not working. Job type, title, and nature of job tasks, employer (independent, family, or self-employed), start date, weekly hours worked, and monthly income were obtained for the current job. Job type was coded according to the Indian Ministry of Labor and Employment National Classification of Occupations (Indian Ministry of Labour and Employment, 2015; 2015a; 2015b), which consists of a nine level coding structure with "one" being highly skilled occupations (e.g., senior government officials, managers) and "nine" being unskilled occupations (e.g., laborers, cleaners).

Work Satisfaction, Reasons for Working, Benefits and Problems Related to Work

Participants who were currently working were queried to evaluate their satisfaction with work, their reasons for working, and the perceived benefits and problems related to work. Satisfaction was rated on a 5-point Likert scale ranging from 1 (totally dissatisfied) to 5 (totally satisfied). Participants were asked an open-ended question: "What are your reasons for working?" Responses were recorded verbatim. The perceived benefits of work were elicited with five yes/no questions, including: money, improved self-esteem, help managing mental illness, improved social status, and having something to do. The number of benefits endorsed was summed per participant.

Problems related to work were assessed with eleven yes/no questions pertaining to: stress, long work hours, transportation problems, dealing with coworkers, psychiatric symptoms, medication side effects, cognitive difficulties (e.g., attention, memory), low energy/stamina, physical health problems, difficulty keeping a job, and lack of motivation. The number of problems was summed per participant.

Currently Unemployed Participants

Unemployed participants were asked the open-ended question: “What are your reasons for not working?” Responses were recorded verbatim. Participants were then asked a series of yes/no questions about possible reasons for not working, including: household responsibilities, stress, increase in symptoms, stigma of mental illness, lack of motivation, or difficulty finding or keeping a job.

Participants were then queried about their interest in currently working. Participants who were not interested in work now were asked whether they would be interested in working in the future. A “yes” answer to either question was coded as ‘interested in working.’ Participants who were interested in work were then asked about what types of assistance might help them work (e.g., help finding a job).

Data analysis

Quantitative Data Analysis

To evaluate whether there were differences in demographic and clinical characteristics between participants who were working vs. not working, χ^2 tests and *t*-tests were performed. Next, the nature of work for employed participants was characterized by computing frequencies (and percentages) for categorical variables (e.g., type of job, employer, benefits and problems related to work) and means (and standard deviations) for continuous variables (e.g., hours worked, wages earned). Frequencies were also computed of barriers to work and desired job supports for unemployed participants who wanted to work.

Qualitative Data Analysis

The first author translated the responses to the open-ended questions about reasons for working (among employed participants) and reasons for not working (among unemployed participants) from Marathi language to English. These responses were then analyzed by two authors (CK and SV) using the data driven thematic analysis approach (Braun & Clarke, 2006), which involves five steps: 1) getting familiar with the data, 2) developing codes, 3) synthesizing the codes into themes, 4) refining the themes, and 5) determining the main themes. A code is a basic unit in qualitative data analysis, which is produced by assigning labels to verbal statements that provide similar or related information. For example, some of the answers to the question about reasons for not working (barriers to work) included not having a graduate degree, not knowing how to use a computer, or never having been employed. These three responses were included in the code 'lack of education or skills or experience.' The two authors worked independently for the first phase of the analysis and the beginning of the second phase. Following the independent development of the initial codes in the phase two, the two authors shared their coding frameworks and through discussion resolved discrepancies related to the labeling of codes and the assignment of responses to specific codes. For the next three phases, the authors worked together to reach an agreement about consolidating the codes into themes, refining them, and identifying main themes. The themes were then presented to another author (KM) for final validation.

Results

Characteristics of Study Participants

The characteristics of the study participants are presented in Table 3.1. The mean age of participants of 39.3 years old and the mean duration of psychiatric illness was 13.4 years. The majority of participants were urban dwellers (82.7%), male (65.3%), and ever married (64.0%). Thirty one percent had a 12th grade or higher education levels. Most of the participants had schizophrenia or schizoaffective disorder (90%), and a history of psychiatric hospitalization (89.3%).

Table 3.1: Participant Characteristics (N = 150)

Categorical Variables	*n*	(%)	
Residence			
Urban	124	82.7%	
Rural	26	17.3%	
Gender			
Male	98	65.3%	
Female	52	34.7%	
Education			
Up to 9th grade	70	46.7%	
10th to 12th grade	65	43.3%	
Bachelor's degree and higher	15	10.0%	
Marital status			
Single	54	36.0%	
Married	65	43.3%	
Divorced/separated/widowed	31	20.7%	

Living situation			
Independent	6	4.0%	
With family	144	96.0%	
Present at interview			
Participant only	67	44.7%	
Participant and family member	83	55.3%	
Psychiatric diagnosis			
Schizophrenia	127	84.7%	
Schizoaffective disorder	8	5.3%	
Bipolar disorder	14	9.3%	
Major depression	1	0.7%	
Past psychiatric hospitalization	134	89.3%	
Current medical conditions	27	18.0%	
Current tobacco use	75	50.0%	
Current alcohol use	5	3.3%	
Continuous variables	*M*	*SD*	*Range*
Age (years)	39.30	8.96	21 – 60
Monthly family income (USD)	369	378	46 – 2308
Duration of illness (years)	13.40	7.40	3 – 39

Employment Rate and Correlates of Work Status

A total of 60 (40%) participants were currently employed. Table 3.2 compares the demographic and clinical characteristics of participants who were working vs. not working. Employed participants were significantly more likely to be male, to have married, to have lower family income, to use tobacco, and to not have a comorbid medical condition.

Table 3.2: Demographic and Clinical Characteristics of People Currently Working vs. Currently Not Working

Categorical variables	Total N = 150	Working n = 60 (40%)	Not working n = 90 (60%)	*df*	χ^2
		n (%)	n (%)		
Residence					
Urban	124	51 (41.1%)	73 (58.9%)	1	0.38
Rural	26	9 (34.6%)	17 (65.4%)		
Gender					
Male	98	51 (52%)	47 (48.0%)	1	17.07***
Female	52	9 (17.3%)	43 (82.7%)		
Education					
12th grade or below	135	54 (40.0%)	81 (60.0%)	1	0.00
Above 12th grade	15	6 (40.0%)	9 (60.0%)		
Marital status					
Never married	54	15 (27.8%)	39 (72.2%)	1	5.25*
Ever married	96	45 (46.9%)	51 (53.1%)		
Diagnosis					
Schizophrenia spectrum	135	51 (37.8%)	84 (62.2%)	1	2.77
Mood disorder spectrum	15	9 (60.0%)	6 (40.0%)		
Past psychiatric hospitalization					
Yes	134	53 (39.6%)	81 (60.4%)	1	0.10
No	16	7 (43.8%)	9 (56.3%)		
Current medical condition (s)					
Yes	27	5 (18.5%)	22 (81.5%)	1	6.33*
No	123	55 (44.7%)	68 (55.3%)		

Current tobacco use					
Yes	75	36 (48.0%)	39 (52.0%)	1	4.00*
No	75	24 (32.0%)	51 (68.0%)		
Current alcohol use					
Yes	5	3 (60.0%)	2 (40.0%)		0.38 (Fisher's exact test *p*)
No	145	57 (39.3%)	88 (60.7%)		
Continuous variables	*M (SD)*	*M (SD)*	*M (SD)*		*t*
Age (years)	39.30 (8.96)	39.78 (8.66)	38.98 (9.18)	148	0.53
Family size	4.74 (2.78)	4.55 (3.19)	4.87 (2.49)	148	- 0.68
Monthly family income excluding participant's income (USD)	307 (369)	231 (377)	357 (357)	148	-2.06*
Duration of illness (years)	13.40 (7.40)	13.27 (7.32)	13.49 (7.49)	148	-0.18

* = p <.05; ** = p < .01; *** = p < .001

Characteristics of Employment

The work characteristics of employed participants are displayed in Table 3.3. The majority of jobs held were with independent employers (86.7%). The most common jobs were in low skilled occupations (43.3%), such as cleaning and unskilled factory work. Participants worked an average of 53.23 hours a week, earned an average of $157 per month, and had been employed in their current job an average of 60.02 months.

Table 3.3: Work Characteristics of Employed Participants

	M (SD)
Hours worked per week	53.23 (17.15)
Monthly income (USD)	157 (134)
Job duration (months)	60.02 (85.49)
National Classification of Occupations (NCO) job type[a]	6.98 (2.03)
Job satisfaction[b]	4.00 (0.88)
	n (%)
Employer	
Independent	52 (86.7%)
Self	5 (8.3%)
Family	3 (5.0%)
Source for finding job (independent employers only; *n* = 51)	
Self	18 (35.3%)
Family or friends	33 (64.7%)
Type of job	
Professionals	1 (1.7%)
Technicians and associate professionals	1 (1.7%)
Clerks / clerical support workers	3 (5%)
Service and sales workers	17 (28.3%)
Skilled agricultural, forestry and fishery workers	3 (5.0%)
Craft and related trade workers	7 (11.7%)
Plant & machine operators and assemblers	2 (3.3%)
Elementary (unskilled) work	26 (43.3%)

a. Higher number pertain to lower skilled jobs on 1–9 scale

b. Higher numbers pertain to higher levels of job satisfaction on 1–5 scale

Motivators of Work and Benefits of Work

All of the employed participants (*n* = 60) answered the open-ended question about why they worked. The qualitative analysis of these responses identified two main themes: financial gain, and personal or social gain. The sub-themes and codes comprising each theme are presented in Table 3.4. Financial gain was the most common reason for working, identified by 85% (*n* = 51) of the participants, of whom 78.4% (*n* = 40) indicated it was their only reason for working. The most common reason for needing money was for living costs. Some participants stated other reasons for earning money, such as saving for their children's education or marriage.

One-third of the participants (*n* = 20) described working for either personal gains (e.g., having a routine, keeping one's body and mind healthy) or social gains (e.g., connecting with others, meeting social expectations), with personal gains reported more often. For example, one participant said, "work keeps my head active, helps (me) pass the time, and helps (me) make new acquaintances. (I) get to talk to people."

Responses to the yes/no questions about possible benefits of work indicated a high endorsement of all queried benefits: financial gain and improved self-esteem (95%), having something to do (88.3%), improved social status (80%), and help in managing mental illness (75%).

Table 3.4: Themes and Codes from Qualitative Analysis Related to Motivators of Work among Employed Participants (n = 60).

Financial gains (n = 51; 85%)		**Personal or social gains** (n = 20; 33.3%)	
Living costs	*n*	Personal gains	*n*
Household expenses	24	Have a routine	7
Provision for family	17	Healthy body and mind	5
Food	13	For self	3
Living	4	Develop a career	2
Health	3	Lead an independent life	2
Personal needs	2	Achieve life goals (e.g., studies, marriage)	1
Paying debt	2	Satisfaction	1
Clothes	1	Social gains	
Future costs		Social status	2
Children's specific needs	11	Social expectations	2
Future savings	3	Social connections	1
Having money	7		

Problems Related to Work

Table 3.5 presents the problems related to work reported by employed participants. Forty-three (71.7%) participants identified at least one problem. Cognitive difficulties (36.7%) were the most common problem, followed by low energy/stamina (25%), medication side-effects (23.3%), difficulty keeping a job (21.7%), and psychiatric symptoms (20%).

Table 3.5: Problems Related to Work among Employed Participants

Problem related to work	*n* (%)
Cognitive difficulties	22 (36.7%)
Low energy/stamina	15 (25%)
Medication side-effects	14 (23.3%)
Difficulty keeping a job	13 (21.7%)
Psychiatric symptoms	12 (20%)
Long hours	11 (18.3%)
Stress	10 (16.7%)
Transportation	8 (13.3%)
Lack of motivation	7 (11.7%)
Dealing with co-workers	4 (6.7%)
Physical health problems	3 (5%)
	M (*SD*)
Total problems[a]	1.98 (2.10)

a. Higher numbers pertain to more problems related to work

Interest in Work, and Barriers to Work

Among the 90 participants who were not working, 83 (92.2%) expressed interest in work, and 27 (32.5%) had looked for a job in the past month. Of the 83 participants interested in work, 81 answered the open-ended question about why they were not working, and thus their responses were analyzed to explore barriers to work. Eighteen codes related to barriers were identified, which were combined into six main themes: psychological barriers, mental illness barriers, work-related barriers, physical health problems, competing responsibilities, and family opposition to work.

The most common theme was psychological barriers (*n* = 27; 33.3%), which included a lack of confidence in one's ability to work, past negative work experiences, self-stigma, and emotional difficulties. Barriers related to mental illness were identified by 23 participants (28.4%), and included medication side-effects, symptoms, reduced motivation, and cognitive difficulties. Work-related barriers were identified by 21 participants (25.9%), such as difficulty finding a job and lack of adequate education or skills. Health-related barriers were identified by 17.2% of participants, such as pain or comorbid medical conditions. Thirteen participants (16.1%), mostly women (*n* = 12), described other responsibilities, such as household, that prevented them from working. Last, 11.1% of participants indicated family members opposed their working due to reasons such as concern that work might worsen the participant's symptoms or that their adult children could provide sufficiently for them. Some female participants stated that their husbands did not want them to work.

When asked about specific possible barriers to work, 65.1% of the participants endorsed at least one of the eight barriers. The most frequently endorsed barrier was difficulty finding a job (36.1%), followed by the concern that work might increase symptoms (20.5%), and that work would be stressful (20.5%). Table 3.6 summarizes the quantitative and qualitative findings related to barriers to work.

Table 3.6: Barriers to Work among Unemployed Participants Who were Interested in Work

Quantitative findings n (%)	Qualitative findings	Quote
Psychological barriers		
• Stress 17 (20.5%) • Fear of stigma 10 (12%)	• Emotional difficulties such as stress • Stigma • Lack of confidence in one's ability to work • Negative work experience	• *"Somehow people find out that I have mental illness then they ridicule me then I feel disturbed."* • *"I used to work before. But when the senior employees retired, all the workload got shifted to the existing employees. When I couldn't work fast enough, they told me not to come in anymore. When that job ended, I didn't look for another one….I was very upset about that."*
Mental illness related barriers		
• Increase in symptoms 17 (20.5%) • Lack of motivation 3 (3.6%)	• Psychiatric symptoms • Lack of motivation • Cognitive difficulties • Medication side-effects	• *"(I hear) voices that say 'you must come with us,' and then I can't pay attention to anything."* • *"(I) feel sleepy because of the medicines so I fear that I won't be able to work for the whole day."*
Work-related barriers		
• Difficulty finding a job 30 (36.1%) • Difficulty keeping a job 12 (14.5%)	• Difficulty finding a job • Difficulty keeping a job • Lack of education, skills or experience • Gap in work history	• *"I try but (I) don't get a job…if I get one, it's far (from the home)."*

	• Lack of resources for self-employment • Can't think of work	
Competing responsibilities		
• Managing household 12 (14.5%) • Student 1 (1.2%)	• Household responsibilities • Caring for a family member / children • Preparing for examination	• *"I have to look after my mother in law so (I) cannot leave the house. But I want to work, I feel like I should earn some money."*
Physical health problems		
	• Low energy or exhaustion • Body pain • Co-morbid medical condition	• *"(I) feel dizzy because of the fatigue due to heart problem."*
Family opposition		
	• Family says participant does not need to work • Family worries that work will worsen symptoms	• *"My sons say that they are earning, so there is no need for me to work."* • *"I have a strong desire to work but my family members feel that my symptoms will increase if I work so they don't allow me to work."*

Desired Job Supports among Participants Who were Interested in Work

Most participants (96.4%) wanted at least one type of support, with the most common being help finding a job (84.3%). Other types of desired assistance included help managing symptoms (51.8%), cognitive difficulties (47%), stress (38.6%), medication side effects (25.3%), dealing with co-workers (19.3%), and with transportation (16.9%).

Discussion

The rate of employment among the 150 participants with SMI who were receiving psychiatric outpatient treatment at a public hospital in an urban district in western India was 40%. This rate is lower than the employment rate in the general population in India (World Bank, 2011), but similar to other studies of work in people with SMI in urban areas in developing countries (Midin et al., 2011; Prasad & Acharya, 2014; Rahman & Indran, 1997; Srivastava et al., 2009), underscoring the global burden of SMI in these countries (Charlson et al., 2018). However, the rate is higher than most studies of work in people with SMI living in developed countries, where work rates are typically below 20–30% (Marwaha et al., 2009; Salkever et al., 2007). Furthermore, most of the employed participants in this study were working for independent employers, and had full time jobs working an average of 53 hours a week, considerably more than is usually reported for employed people with SMI in developed countries, where part-time work is more common (Bond, Drake, & Becker, 2008; Drake et al., 2013). However, similar to findings from developed countries (Marwaha et al., 2007), the most common jobs held by employed participants in the present study were elementary (unskilled) occupations (43.3%), such as janitorial or factory work, and service jobs (28.3%) such as sales workers.

The 40% employment rate of participants receiving publicly funded outpatient treatment in this study is consistent with the 48.9% rate we previously found for people with SMI receiving private outpatient treatment in the same urban district, but lower than the 72.6% rate for participants living in a predominantly rural district in the same state

(Khare et al., 2020). The lower rates of work for people with SMI living in urban areas in this study and in Khare et al. (2020) than those in rural areas are consistent with labor market trends in the general population in India, where employment rates are also lower in urban than rural areas (Indian Ministry of Labour & Employment, 2016).

The higher rates of employment of people with SMI living in rural areas in developing countries appear to be largely explained by the predominance of family operated businesses (i.e., farms) in these countries (Khare et al., 2020; Suresh et al., 2012; Yang et al., 2013). Several other characteristics of developing countries may explain the higher rates of work among people with SMI in urban areas in this and other studies (Khare et al., 2020; Srinivasan & Thara, 1997) compared to those in developed countries. Greater availability of unskilled jobs in developing countries may facilitate the employment of people with SMI. For example, 29% of employed people in the general population in India work in unskilled occupations, compared to only 5% of workers in the U.S. (World Bank, 2010; World Bank 2011a). In this study, over 40% of participants worked in unskilled jobs, which may be particularly important for people with schizophrenia due to the reduced educational attainment associated with the relatively early onset of the disorder (Kessler, Foster, Saunders, & Stang, 1995) and the accompanying cognitive impairment (Schaefer, Giangrande, Weinberger, & Dickinson, 2013).

Differences in access to disability benefits may also be an important consideration in understanding variations between countries in employment rates of people with SMI. Longitudinal studies from developed countries show that receipt of disability payments following the first episode of psychosis is associated with a reduction in the likelihood of subsequent employment (Rosenheck et al., 2017). Moreover, concern about losing disability benefits is an important barrier to work in this population (Drake, Bond, Goldman, Hogan, & Karakus, 2016; MacDonald-Wilson, Rogers, & Massaro, 2003). Research on supported employment programs in developed countries has found that people with SMI in countries with higher disability payments are less likely to obtain work than those with lower payments (Metcalfe, Drake, & Bond, 2018). Like many other developing countries, there are no disability benefits programs in India. Thus, the absence of this financial disincentive to work could contribute to the higher employment rates of persons with SMI in developing countries.

As expected, the family income of participants receiving public treatment in this study was lower than the participants receiving private treatment in the same urban setting in Khare et al. (2020) ($369 vs. $760, respectively). While the lower family income of the participants in this study might have expected to be associated with higher rates of work due to their greater incentive to work, the employment rate was actually lower (40% vs. 48.9%, respectively). Two factors may have contributed to the slightly lower rate of employment in this study. First, employment in family run businesses was less common among the working participants in this study than the urban dwelling participants in Khare et al. (5% vs. 13%, respectively), suggesting that more family resources may be needed to sustain a family business in urban areas.

Second, greater severity of mental illness could lead to higher treatment costs and more impaired work functioning, exceeding family income and necessitating treatment of a relative's SMI in the public sector. Supporting this possibility, a higher proportion of participants receiving publicly funded treatment in this study had schizophrenia or schizoaffective disorder than participants receiving private treatment in Khare et al. (90% vs. 66.2%, respectively). A diagnosis of schizophrenia has been frequently found to be associated with worse vocational functioning that other SMI diagnoses (Razzano et al., 2005; Wewiorski & Fabian, 2004). Furthermore, a higher percentage of participants in this study had a history of psychiatric hospitalization than the previous study (89.3% vs. 49.5%, respectively).

Almost all the unemployed participants wanted to work (92.2%), which is a higher rate than studies from developed countries (McQuilken et al., 2003; Mueser, Salyers, & Mueser, 2001; Westcott, Waghorn, McLean, Statham, & Mowry, 2015), and the 79% rate among participants receiving private treatment in urban areas in Khare et al. (2020). The lower family income of participants in this study compared to Khare et al. may partly explain the even stronger interest in work among the study participants. This interest appears to be consistent with Maslow's (1954) hierarchy of needs theory, as suggested in the introduction to this paper.

Support for the importance of earning money as a motivation for work in this study is also provided by the responses employed participants gave for why they work. Money was the most common answer participants gave to the open-ended question about reasons for working, and 95% of participants endorsed money as one of the five benefits of work. While most participants indicated needing money to fulfill basic living needs, having sufficient funds for children's education or marriage were also given as reasons for working, underscoring the importance of responsibility to family as a motivation to work in Indian society. This importance of money as a reason for working is consistent with findings in the general population (Lazear, 2018).

Although nearly all the working participants identified money as a benefit of work, a similar proportion also endorsed improved self-esteem (95%) as a benefit. Other frequently endorsed benefits of work included having something to do (88.3%), improved social status (80%), and help managing mental illness (75%). These findings are consistent with the research from developed countries indicating multiple benefits of work aside from money for people with SMI (Luciano et al., 2016; Marwaha & Johnson, 2004, 2005; Mueser, Drake, & Bond, 2016; Torrey, Mueser, McHugo, & Drake, 2000). Interestingly, although most employed participants endorsed non-economic benefits of work, very few of them spontaneously cited these as reasons for working. This suggest that rather than being primary motivators for work, these factors are viewed as benefits of work, subsequent to fulfilling family responsibilities by earning money.

The strong interest in work among the unemployed participants raises the question about why they were not working. The qualitative findings about reasons for not working indicated a wide range of perceived barriers. One obstacle to work was mental illness related barriers, such as symptoms or the sedative effects of medications. Work-related barriers were another obstacle, including difficulty finding a job, lack of education, and gaps in work history. The quantitative findings supported the themes identified in the qualitative analysis. For example, difficulty finding a job (36.1%), increase in symptoms (20.5%), and stress (20.5%) were the most common barriers to work endorsed by the participants who wanted to work. These barriers were also reflected in the job supports desired by the participants, with 84.3% wanting help with the job search, and 51.8% wanting help managing their symptoms.

The significant levels of unemployment among the study participants, coupled with their strong interest in work and identified barriers to work, points to the need for vocational services for people with SMI in India, especially those living in urban areas. The most empirically validated model of vocational rehabilitation in developed countries is the Individual Placement and Support (IPS) model of supported employment (Drake, Bond, Goldman, Hogan, & Karakus, 2016), which helps people with SMI find and keep jobs based on their interests and preferences, while also emphasizing rapid job search, follow-along supports, and integration of vocational services with the clinical treatment team (Becker & Drake, 2003). The focus of the IPS model on practical assistance in job finding and ongoing job supports is consistent with some of the barriers to work reported by study participants, and the types of assistance they desired. Some of the study findings also suggest the need for adaptations to the IPS model. For example, mental illness-related problems (e.g., symptoms, medication side effects, stress) were identified as common barriers to work, and participants wanted help coping with these challenges. Since most people with SMI in India and other developing countries receive few services other than pharmacological treatment, in contrast to more comprehensive treatment often provided in developing countries, supported employment services adapted for India might benefit from incorporating training of illness management strategies (Mueser et al., 2006).

The results of this study and Khare et al. (2020) also suggest the need to adapt supported employment approaches to the cultural context of India by involving family members in the vocational program. The family plays a central role in lives of people in India and other developing countries, and their importance is even greater in caring for a relative with SMI. Family members typically arrange for psychiatric treatment, accompany relatives to pharmacological appointments, and monitor medication adherence. Aside from the role of families in employing relatives in family-owned businesses, mainly in rural areas, other jobs for a relative with SMI are frequently obtained through contacts of family members. For example, in the present study, 64.7% of all jobs with independent employers held by participants with SMI were obtained through family or friends, and 41.1% of all jobs for independent employers in urban areas in Khare et al. (2020). As the family is the greatest asset available to persons with SMI in India, involving them in vocational services has the potential to both improve their employment and clinical functioning. Furthermore, such involvement may be critical to addressing concerns raised by some family members about employment, such as the fear that work will be too stressful and precipitate relapses, as indicated by some of the study participants.

The qualitative findings related to barriers to work provide more information about other targets for vocational services. For example, leaving home for a job may not be feasible for participants who reported other competing obligations, such as caring for a family member or children. Vocational service providers could explore work that can be done from home. Moreover, some participants who wanted to work lacked confidence in their ability to work, an issue that can be readily addressed in vocational rehabilitation. In addition, vocational services may need to facilitate assistance with improving health, as problems related to health including medical conditions (e.g., low energy, body pain, heart disease) emerged as one of the themes for barriers to work. The finding that employment status was associated with absence of medical conditions further emphasizes the importance of support in addressing health issues.

This study provides clear evidence that rates of employment in people with SMI in India who are receiving publicly funded treatment are significantly lower than in the general population, while also being higher than the rates of work found in developed countries. The vast majority of unemployed participants wanted to work, identified obstacles to work, and espoused the need for job supports. These findings highlight the need for vocational services adapted to the cultural context of India to help people with SMI in India obtain work, and to reduce the burden of mental illness on the family.

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General Discussion

This dissertation focuses on providing a greater understanding of employment in people with SMI in India than is currently available in the literature on this topic. Although obtaining and sustaining work is a common challenge for people with SMI, there is significant evidence indicating that employment rates in people with SMI are higher in developing countries than those living in developed countries. However, in contrast to the extensive literature on work in people with SMI in developed countries, little comparable research in developing countries has been conducted, limiting the understanding of the extent and nature of employment in people with SMI in these countries. Further, the extant research literature on employment in people with SMI in developing countries has several methodological limitations, including insufficient information about work characteristics (e.g., type of job, type of employer, hours worked, income earned, job duration), lack of direct comparisons between urban vs. rural settings, small sample sizes, exclusion of women, and inattention to the longitudinal course of employment and interest in work among unemployed people with SMI. In contrast to developed countries, there is a paucity of psychosocial interventions targeting employment in people with SMI in India and other developing countries (World Health Organization, 2013). A better understanding of work in people with SMI in developing countries is needed to inform the development of vocational rehabilitation services in these countries.

The three studies that comprise this dissertation sought to fill gaps in knowledge regarding employment in people with SMI in developing countries. Study 1 was conducted with 550 people with SMI living in urban and rural areas in western India who were receiving psychiatric outpatient services at two private hospitals in two districts. The purpose of this study was to examine rates of work, benefits and problems related to work among employed participants, interest in work among unemployed participants, and perceived barriers and desired job supports among unemployed participants who were interested in work. Study 2 investigated the longitudinal trajectories of employment by conducting a one-year follow-up with people who participated in Study 1. The objectives of this study were to evaluate the stability of work status, consistency of benefits and problems related to work among employed participants, factors associated with getting a job, reasons for job change and job loss, stability and change in interest in work, and consistency of perceived barriers and desired job supports among unemployed participants who wanted to work. Study 3 examined work in people with SMI receiving psychiatric outpatient treatment at a public hospital, which provided services at lower or no cost compared to outpatient treatment provided at the private hospitals in Study 1. This study was aimed at exploring differences in employment functioning of persons with SMI who receive publicly funded mental health services, and were assumed to have families with lower economic means than those receiving treatment in the private sector.

I begin this discussion section by summarizing key findings of each study. I follow this by providing an integration and synthesis of the results across the three studies, and their implications for understanding employment functioning of people with SMI in India, and more broadly people with SMI living in developing countries. Last, I consider the implications of the findings for development or adaptation of vocational rehabilitation programs designed to fit the sociocultural context of India.

Study 1

Study 1 was conducted with 550 individuals with SMI who were receiving psychiatric outpatient services at two private hospitals in two districts in the state of Maharashtra, western India. The findings indicated that 60.9% of the participants were employed and were working for an average of 45.7 hours per week. Employment rates were notably higher in rural areas (77.8%) than urban areas (48.9%). Rates of work were higher in men than women (79.4% vs. 35.9%, respectively). Work was also associated with being married, younger age, lower family income, and living with more family members. The majority of employed participants in rural areas were working in family-run businesses such as farming, while most employed participants in urban areas were working for independent employers. Over 45% of employed participants who were working for independent employers found their jobs with the help of family members and/or friends. Most employed participants endorsed earning money, improved self-esteem, and help in managing their mental illness as benefits of work. The most common problems related to work endorsed by employed participants were cognitive difficulties (45.1%), stress (36.4%), and low energy or stamina (32.5%). Employed participants living in urban areas endorsed significantly more benefits and problems related to work than their rural counterparts.

Among unemployed participants, 77.4% expressed interest in work, with male gender, younger age, and higher education levels predicting interest in work. Participants who wanted to work identified several barriers to work, with the most common ones being difficulties finding a job (34.8%), managing the household (34.1%), keeping a job (25.6%), and concerns that work would increase stress (25.6%). Over 80% of participants who were interested in work wanted help with the job search, and over 60% wanted help with aspects of illness management, such as coping with symptoms or cognitive difficulties. Among the participants who were interested in work, those who were living in urban areas identified more barriers and wanted more job supports than to those living in rural areas.

Study 2

Study 2 followed up the Study 1 cohort one year later. Among the 456 participants assessed at one year of the original sample of 550 people assessed at baseline, 62.9% were employed, similar to the 61% employed at baseline. Work status was relatively stable over the year, with 56.4% of participants employed at both assessments (88.7% at the same job) and 32.4% not employed at both assessments. Moreover, among participants who were working at both assessments, most were working in the same job, for an average duration of 10 years. A moderate level of stability was found in the overall benefits of work perceived by employed participants over the one-year period. In addition, specific benefits of work, including something to do and improved social status, were moderately stable over time. Furthermore, among participants who were working in the same job at both assessments, more than 80% consistently endorsed money, improved self-esteem and help in managing mental illness as benefits of work. A smaller sub-group of participants who were working in the same job at both assessments consistently endorsed cognitive difficulties (23.7%) and stress

(21.9%) as problems they experienced at work. Among the 21 participants who lost their job during the follow-up period, mental illness related factors (e.g., increased symptoms or medication side-effects) were the most common reason for the job ending.

Of the participants who were unemployed at baseline, 16.9% (n = 30) started working at follow-up. Getting a job at follow-up was associated with interest in work and efforts to find work at baseline. Among participants who were unemployed at both assessments, interest in work declined significantly from baseline (73%) to follow-up (62.8%). Several barriers to work such as managing the household, difficulty finding or keeping a job, stress, and stigma were found to be relatively stable over the one-year period among unemployed participants who wanted to work at both assessments. Help with the job search was by far the most desired support among participants who were interested in working, followed by help with illness management.

Study 3

Study 3 was conducted in the same city as the urban site in Study 1, and aimed at evaluating employment in people receiving psychiatric outpatient services in a public hospital setting, as compared to private psychiatric services in Study 1. In this study, most participants were living in urban areas, with an average monthly family income approximately half the income of the participants in Study 1 who were living in urban areas, consistent with the assumption that public hospitals serve families with fewer economic resources. This study found that rates of work were slightly lower than the rates in urban areas from Study 1 (40% and 48.9%, respectively). Similar to the urban sample in Study 1, the majority of employed participants were working for independent employers, with the average person working for about 53 hours per week. Only a few participants (5%) worked in family-run businesses. Over 60% of participants who were working for independent employers obtained their jobs through social ties of family members and/or friends. Employment was associated with being male, being married, tobacco use, and absence of co-morbid medical conditions. Qualitative analyses of reasons for working indicated that financial gain was the most common motivator for employed participants. Relatedly, earning money was endorsed as the most common benefit of work. Other benefits of work were improved self-esteem, having something to do, improved social status, and help with managing mental illness. Similar to Study 1 cognitive difficulties (36.7%) and low energy/stamina (25%) were the most common problems identified by employed participants.

A higher proportion of unemployed participants expressed interest in work (92.2%) than among the participants receiving private psychiatric services in urban areas in Study 1 (79%). Qualitative analyses indicated that psychological barriers (e.g., stress, fear of stigma, negative work experiences), mental illness-related barriers (e.g., psychiatric symptoms, medication side-effects), and work-related barriers (e.g., difficulty finding or keeping a job) were the most common obstacles to work among unemployed participants who wanted to work. Similar to these results, difficulty finding a job, and concerns that work would be too stressful or could increase symptoms were the most frequently endorsed barriers to work. As in Study 1, help with the job search, followed by help with managing the mental illness, were the most frequently desired job supports among unemployed participants who wanted to work.

Synthesis, Discussion, and Implications of Findings across Studies

These three studies provide new and important information about vocational functioning in persons with SMI who are living in India that extends the existing research on employment in India (e.g., Srinivasan & Thara, 1997; Suresh et al., 2012) and other developing countries (e.g., Midin et al., 2011; Ran et al., 2011). For example, among employed participants, information was obtained about the employer, the type of job worked, the number of hours worked, income earned, duration of work, as well as job satisfaction, and benefits and problems related to work. Information about unemployed participants was also obtained, including their interest in work, and among those who wanted to work, perceived barriers to work and desired job supports. These studies also improve upon the methodological limitations of previous research on employment in developing countries by the large sample sizes, inclusion of both men and women and people living in urban and rural areas, the collection of data on people who were receiving psychiatric outpatient services at both private and public hospital settings using the same research methods, and the obtainment of a one-year follow-up assessment for the first cohort of participants receiving private outpatient services.

In this section, I discuss the findings from these studies and consider what they mean for understanding employment functioning for people with SMI living in India. This discussion is around four major themes: 1) rates of employment compared to studies from developed countries, 2) correlates of work, 3) problems and benefits related to work, and 4) interest in work, barriers to work, and desired job supports. Following discussion of these themes, I consider the implications of the findings for the development and adaptation of vocational rehabilitation services for people with SMI in India.

Rates of Employment Compared to Studies from Developed Countries

These studies found that the rates of employment among people with SMI living in rural areas were 77.8% in Study 1 and 75.5% one year later in Study 2. In contrast, for people living in urban areas the rates of employment were 48.9% in Study 1 and 54.4% one year later in Study 2, whereas 40% of the participants (who were receiving public psychiatric services) were employed in Study 3.

These employment rates are lower than the rates of employment in the general population in India (World Bank, 2011a). Employment rates in the general population are calculated based on the labor force participation rate, which includes people who are currently employed or actively seeking work or are available to work. Following this definition of labor force participation, 97.2% of the labor force in the working age population in India are employed. The definition of labor force participation can be applied to the data from these studies in two ways. First, labor force participation can be estimated by adding the number of participants with SMI who were working and the number of participants who were unemployed but reported trying to find work in the past month before the study interview (actively seeking work). Second, the number of participants who were working can be added to the number of participants who were unemployed but expressed interest in working (available to work). Using the first method to calculate labor force participation, the rates of work in Study 1 were 87.8%, 91.7% in Study 2 and 69% in Study 3, all of which are lower than the 97.2% rate in the general population. Using the second method to calculate labor force participation, even lower rates of work are found in the three studies: 66.8% in Study 1, 72.3% in Study 2, and 42% in Study 3. It should be noted that these are rough estimates of employment and need to be interpreted cautiously in the absence of separate data on labor force participation rate in the general population in India living in urban versus rural areas.

The rates of work found in these studies are consistent with the rates reported in previous studies conducted with people with SMI in India and other developing countries. For example, similar to the over 75% rates of work among rural participants in Studies 1 and 2, research from rural China has reported employment rates of 77% (Ran et al., 2011) and 93.9% (Yang et al., 2013) for people with SMI. Rates of work reported in previous studies conducted in predominantly urban areas of developing countries are lower, such as 40% in a study from India (Srivastava et al., 2009), 45% in a study from Nigeria (Olagunju et al., 2016), and 50.5% in a study from Malaysia. The rates of employment in these studies and others from developing countries show a pattern of higher employment rates for people with SMI living in rural areas as compared to urban areas. However, despite the urban-rural differences in employment in people living in developing countries, the rates are higher than those typically reported in developed countries, where employment rates are usually below 25% (Baron & Salzer, 2002; Marwaha et al., 2009). Although rates of work are higher in people with SMI living in rural areas compared to those living in urban areas in developing countries, such differences in work rates in urban-rural areas are not observed in studies from developed countries. For example, a review of studies of people with SMI in Europe and the U.S.

found employment rates between 4% to 20% in urban areas and 8% to 19% in rural areas (Marwaha & Johnson, 2004).

There are several possible explanations for the higher rates of employment among people with SMI in these three studies and other studies from developing countries than in developed countries. One reason for the higher work rates in these studies is the high proportion of employment in people living in rural areas, where the majority of participants were working in family run businesses (63.8% in Study 1 and 60.9% in Study 2). Employment of people with SMI living in rural areas in these and other studies from developing countries is predominantly in the agricultural sector (Ran et al., 2011; Suresh et al., 2012; Yang et al., 2013), most commonly on family farms. Traditionally, the economy in India and other developing countries is agrarian. Even today, approximately 50% of employment in the general population in India is in the agricultural sector (Kumar, Kumar, & Singh, 2011).

When a family business is available such as a family farm, it creates both the opportunity and obligation for all members to work in the business, in part to conform to the social norms in the collectivistic cultures such as India (Chadda & Deb, 2013). Working in a family business may have particular advantages for people with SMI. For example, the person does not have to interview for the job, there may be greater flexibility in work responsibilities and easier access to job supports from family members, and they may experience less stigma of mental illness as a barrier to work than when seeking work from an independent employer. These benefits of working in a family business may also accommodate other special challenges of employment for people with

SMI, such as working at a slower pace, lower stamina and increased sensitivity to fatigue, social difficulties, increased sensitivity to stress, persistent symptoms, and vulnerability to relapse (Cook & Razzano, 2000; Racenstein et al., 2002; Suresh et al., 2012; Yang et al., 2013).

Although work in family businesses accounted for a significant proportion of the high rates of work in rural areas (63.8% in Study 1 and 60.9% in Study 2), much less work for family businesses was found in urban areas (13% of employed participants in Study 1 and 12.2% in Study 2, and 5% of participants in Study 3). In fact, the difference in overall employment rate between the participants in Study 1 who were receiving private outpatient services and living in urban areas (13%), and those in Study 3 who were receiving public outpatient services and mainly living in urban areas (5%), appeared to be accounted for by the somewhat higher rate of work in family businesses for those in Study 1.

Despite the lower rates of family employment in urban areas as previously noted, these rates are nevertheless higher than most studies from developed countries. Aside from the contribution of family businesses to the higher rates of employment in the three studies, especially in rural areas, families also played an important role in using their social connections to help relatives with SMI find jobs with independent employers. Specifically, in Study 1, 41.1% of employed participants in urban areas and 58.7% of participants in rural areas obtained jobs with the help of their family or friends, whereas 64.7% of employed participants in Study 3 got their jobs through similar connections. This assistance from family members in helping a relative with SMI obtain a job may be critical to overcoming some of the known barriers to work, such as psychiatric symptoms (Salkever et al., 2007), functional impairments, stigma (Yanos, Lysaker, & Roe, 2010), and also poor interviewing skills (Dickinson, Bellack, & Gold, 2007; Tse, 1996).

The research literature on the role of families in helping people with SMI obtain jobs in developed countries is sparse. Research on employment in the general population from both developed and developing countries suggests that approximately 50% of employed people get jobs through their social networks, including family, relatives, friends, and acquaintances (Burns, Godlonton, & Keswell, 2010; Gee, Jones, Fariss, Burke, & Fowler, 2017). As people with SMI tend to have smaller social networks than in the general population (Evert, Harvey, Trauer, & Herrman, 2003, Randolph, 1998), it may be speculated that families, which have a central role in Indian society, may compensate for the limited social network of a relative with SMI by using their social ties to help them find a job. Such assistance from families in helping people with SMI obtain jobs may have contributed to higher rates of work in these studies than studies conducted in developed countries. Research is needed to examine the naturalistic job seeking methods used by people with SMI in developed countries who want to work (i.e., excluding vocational rehabilitation approaches).

Another possible factor contributing to higher rates of work across the three studies may be greater access to low skilled jobs in the Indian labor market compared to developed countries (Ghose, 2012). For example, 28.7% of employed participants in the general population in India work in unskilled jobs compared to 5% in the U.S. (World Bank, 2010; World Bank 2011b). Consistent with the labor market trend in the general population in India, the proportions of participants who were employed in unskilled occupations were 27.7% in Study 1 and 43.3% in Study 3.

Previous research conducted with people with SMI in developing countries has also noted that the majority of jobs worked were low-skilled in nature (Ran et al., 2011; Srinivasan & Thara, 1997). Greater availability of low-skilled jobs may be particularly beneficial for people with SMI due to decreased educational attainment frequently associated with the relatively early onset of schizophrenia (Kessler, Foster, Saunders, & Stang, 1995; Sagar et al., 2020), and the accompanying cognitive impairment frequently present in persons with SMI (Kurtz, Gopal, John, & Thara, 2018; Schaefer, Giangrande, Weinberger, & Dickinson, 2013), which may limit the complexity of jobs than many persons can perform (McGurk et al., 2013). The higher percentage of participants working in unskilled jobs in Study 3 compared to Study 1 (43.3% vs. 7.1%) may be partly explained by the greater proportion of people with schizophrenia in Study 3, which is associated with greater cognitive impairment than other psychiatric disorders (Bowie & Harvey, 2006; Rajji, Miranda, & Mulsant, 2014).

A final consideration regarding the higher rate of employment in these three studies compared to rates reported in developed countries is the lack of disability payments for SMI in developing countries. There is some evidence from developed countries that financial entitlements for mental health disability may reduce incentive to work. One multi-site study of people in treatment for a first episode of psychosis showed that receiving disability benefits was associated with a reduction in motivation and subsequent likelihood of employment (Rosenheck et al., 2017). Moreover, controlled studies comparing supported employment with other vocational rehabilitation programs conducted across multiple developed countries have shown that lower employment rates are associated with more generous disability programs (Metcalfe et al., 2018). Thus, it is possible that lack of disability payments (or the absence of an economic disincentive to work) contributes to the higher rates of employment rates in studies from developing countries than developed countries.

In addition to the relatively high rates of work found across the three studies, employed participants were working a significant number of hours. Specifically, employed participants in Study 1 were working for an average of 45.7 hours a week (and an average of 46.4 hours/week one year later in Study 2), and an average of 53 hours per week in Study 3. It is difficult to directly compare these hours of work with the amounts of work in people with SMI in developed countries as very few studies similar to these three studies have been conducted evaluating employment in a broad group of outpatients with SMI living in developed countries. A mail survey of 529 employed people living in the U.S. who self-identified as having SMI found that only 31% were working for more than 40 hours a week (Russinova, Bloch, Wewiorski, Shappell, & Rogers, 2018), compared to 69.5% of participants in Study 1 and 81.7% of participants in Study 3. In a combined analyses of four randomized controlled trials comparing supported employment with control vocational services, participants employed in a competitive job worked for an average of 18.9 and 22.3 hours per week, respectively (Bond, Campbell, & Drake, 2012). Thus, most of the literature from developed countries on hours of work among employed people with SMI comes from studies of participants enrolled in supported employment programs (Bond, Drake, & Becker, 2012), and much less is known about the amount of work performed by employed people with SMI who do not receive vocational services.

Nevertheless, the number of hours worked in these studies appears to be high, raising the question about the validity of the reports of work by participants, as well as whether such high work hours might be stressful to people with SMI. The high number of hours worked in these studies reflect the number of hours worked in the general population in India. In fact, study participants were working for somewhat fewer hours compared to people in the general population. For example, in the general population, workers living in urban areas work for an average 56 hours a week (vs. 46.6 hours/week for participants in Study 1 and 53 hours/week in Study 3), while those living in rural areas work for an average 48 hours per week (vs. 44.9 hours/week for participants in Study 1) (Indian Ministry of Statistics & Programme Implementation, 2019b).

Upon examining the type and nature of work of participants who reported working for more than 60 hours a week, it was found that both in Study 1 and Study 3 over 60% of this group was employed in shops, agricultural work or as security guards. Although shops (selling food items, groceries, garments) typically remained open for long hours, they were often not busy all the time, and participants usually worked with other employees. Agricultural work consisted of relatively uncomplicated tasks such as sowing, weeding, harvesting, which were performed with co-workers, usually family members. Jobs as a security guard typically included watching the properties of a residence or office for 12 hours a day, six or seven days a week. These examples of jobs for which participants reported working the highest number of hours are consistent with the long hours required by these some types of jobs in India. Moreover, the nature of these jobs suggests that the long hours spent working on them may not have been particularly stressful. The greater preponderance of low skilled jobs in Study 3 than in urban areas in Study 1 (43.3% vs. 7.1%) may explain the number of higher hours of work between the two studies (53.2 hours vs. 46.6 hours a week, respectively).

Relatedly, it is possible that some of the jobs with high work hours may be relatively low in stress because of the 'surplus labor' phenomenon. *Surplus labor* refers to when more people are employed in a job than are actually needed to perform the work (Lewis, 1954), and is related to an excess of low wage employers in the labor market. Surplus labor most often occurs in developing economies, primarily in the agricultural sector in rural areas (Foster & Rosenzweig, 2012), but may also occur in urban areas as well. The effect of surplus labor may be that productivity demands on individual workers are reduced due to the availability of more workers than needed complete the work, reducing work-related stress on workers, including those with SMI.

Correlates of work

The findings from Study 1 indicated that male gender, being married, rural residence, younger age, living with more family members, and having lower family income were predictive of current employment. Consistent with these predictors, the findings from Study 3 also showed that males, those who were married, and those who had a lower family income were more likely to be working than participants who were female, who were not married, and who had higher family income. In addition, Study 3 found that tobacco use and the absence of co-morbid medical conditions were related to employment. In the discussion regarding predictors/correlates of work, I focus only on those factors that were consistently associated with work across both Studies 1 and 2.

Traditionally, in India and other developing countries men are considered as the primary wage earners of the family, while the responsibility for carrying out domestic chores lies with women (Akanle, Adesina, & Nwaobiala, 2018; D'Cruz & Bharat, 2001; Rao, 2012; Zhang, Hannum, & Wang, 2008). These gender-specific social role expectations in Indian society likely contributed to the higher rates of work among men than women (e.g., 81.9% of men vs. 18.1% of women in urban areas and 68.6% of men vs. 31.4% of women in Study 1, and 52% vs. 17.3% in Study 3). The pattern of greater rates of employment in men than women is consistent with the employment rates of the two genders in the general population in India and other developing countries (Verick, 2014).

The three studies also indicated that married participants were significantly more likely to be working than those who were not married (63.7% vs. 49.5%, respectively in Study 1, and 46.9% vs. 27.8% in Study 3). However, the effects of marriage were present for men and not for women. For example, in Study 1 significantly more married men were working than unmarried men (85.9% vs. 59.7%, respectively), while the difference was not significant among married vs. unmarried women (37.8% vs. 23.3%, respectively). Marriage is yet another factor in addition to gender where the responsibility of working to provide for one's family culturally lies with the married men in the family (Desai & Andrist, 2010). Thus, being employed is important for married men in order to conform to the social norms in India. Being married has also been found to be predictive of employment in people with SMI in developed countries (Marwaha et al., 2007), but may be consistent with the more general finding that people with SMI who are married tend to have better overall psychosocial functioning than those who have never married, and thus are more likely to be employed (Kokes et al., 1977; Zigler & Glick, 1986).

Studies 1 and 3 both found that participants from families with lower total income (excluding participants' income) were more likely to be working than those from families with higher family incomes (*Ms* = \$261 among employed participants vs. \$729 among unemployed participants in Study 1, and \$231 vs. \$357, respectively in Study 3). However, the overall rates of work were higher in Study 1 participants living in urban areas than in Study 3 participants living in urban areas (48.9% vs. 40%, respectively), despite having a higher average family income. Thus, there appeared to be a discrepancy in findings in which within both Study 1 and Study 3, lower family income was associated with higher rates of work, but between the studies the work rate was higher in in Study 1 in which the average family income was higher, not lower, than Study 3.

One possible explanation for the lower rates of work in Study 3 despite the lower family income levels than in Study 1 may be differences in the severity of participants' mental illnesses between the studies, and hence their capacity to work. Persons with more severe mental illnesses may have required more extensive and costly treatments, increasing the likelihood that families would have to seek publicly funded mental health services for a relative with SMI. Support for this possibility is provided by the fact that a higher proportion of participants receiving public treatment in Study 3 had schizophrenia or schizoaffective disorder than participants receiving private treatment in Study 1 (90% vs. 66.2%, respectively). The diagnosis of schizophrenia is often associated with worse employment outcomes (Wewiorski & Fabian, 2004). A greater proportion of participants in Study 3 had a history of psychiatric hospitalization than in urban areas in Study 1 (89.3% vs. 49.5%), also suggesting greater severity of mental illness of participants in Study 3. These factors suggest that severity of mental illness may have superseded the effect of family income on employment in Study 3.

Benefits of Work and Problems Related to Work

Most employed participants endorsed several benefits of work across studies, including earning money (94.8% in Study 1 and 95% in Study 3), improved self-esteem (95.8% in Study 1 and 95% in Study 3), help in managing mental illness (92.7% in Study 1 and 75% in Study 3), improved social status (69.2% in Study 1 and 80% in Study 3), and having something to do (61.2% in Study 1 and 88.3% in Study 3). In addition, Study 2 found that the benefits, including something to do and improved social status, were moderately stable over time (*K*s= 0.48 and 0.44, respectively). These benefits are consistent with the research from developed countries that has identified multiple personal and clinical benefits of work (Luciano et al., 2016; Marwaha & Johnson, 2004; Mueser et al., 2016; Torrey et al., 2000).

In addition to benefits of work, participants in Study 3 were asked, "What are your reasons for not working?" to elicit their motivations for work. Consistent with the high endorsement of earning as a benefit of work, findings from the qualitative analysis of reasons for working revealed that monetary gain was the most common motivation for working. Interestingly, although most participants endorsed non-economic benefits of work (e.g., improved self-esteem), very few cited them as motivators for work. This suggests that instead of being a motivator to work, factors such as improved self-esteem or social status may be subsequent benefits of being able to fulfill personal or family responsibilities by earning money.

Despite the high rates of employment and the number of hours worked per week across the three studies, employed participants identified several problems as interfering with their ability to work, and the majority endorsed at least one problem in both Study 1 (73.8%) and in Study 3 (71.7%). In both Studies 1 and 3, cognitive difficulties was the most commonly endorsed problem related to work (45.1% and 36.7%, respectively), which was followed by low energy/stamina (32.5% and 25%, respectively), psychiatric symptoms (21.7% and 20%, respectively), stress (36.4% and 16.7%, respectively), and dealing with co-workers (12.9% and 6.7%, respectively). Moreover, Study 2 indicated that work-related problems, including dealing with co-workers, low energy/stamina, medication side-effects, and stress, were moderately stable over the one year follow-up, with Kappas ranging from 0.44 to 0.51. In addition, Study 2 found that over 20% of participants who were working in the same job at both assessments consistently endorsed cognitive difficulties and stress as work-related problems. Study 2 also suggested that problems related to work may have resulted in job losses among some participants who were employed at baseline but lost their jobs over the follow-up period**.** Over 40% of participants who were working at baseline but lost their jobs by follow-up cited mental illness related factors such as medication side-effects or increased symptoms as the reason for the job ending.

Comparable studies on problems related to work among employed participants with SMI in developed countries who are not receiving vocational rehabilitation are lacking (Auerbach & Richardson, 2005). However, there is some indication that problems related to work similar to those found in these studies are some of the common reasons for job loss in people with SMI in developed countries (Becker et al., 1998; Cook, 1992; Lanctôt, Bergeron-Brossard, Sanquirgo, & Corbière, 2013). For example, among 107 individuals with SMI who participated in a randomized controlled trial comparing a combined supported employment and cognitive remediation program with supported employment only, 52 participants obtained 99 jobs over the study period of two years (Teixeira, Mueser, Rogers, & McGurk, 2018). Among the 71 jobs that ended, common reasons for losing the job included psychiatric symptoms or relapse (27%), difficulties related to job performance (30%), and problems dealing with co-workers (16%). The present findings suggest that difficulty coping with mental illness may contribute to job losses among employed persons with SMI in India, and raise the question of whether similar problems may reduce work performance among those who are more stably employed.

Interest in Work, Barriers to Work, and Desired Job Supports

Studies 1 and 3 reported that unemployed participants had a strong interest in work (77.4% and 92.2%, respectively), similar to studies from developed countries where between 55% and 75% of people with SMI have expressed a desire to work (e.g., McQuilken et al., 2003; Mueser et al., 2001; Westcott et al., 2015). Similar to the prediction of work status in Study 1, a logistic regression analysis indicated that male gender was predictive of interest in work as well. The strong association between gender and work, including both current and desired employment, is yet another consistency with social role expectations in India in which work is considered to be the primary responsibility of men (Akanle et al., 2018; D'Cruz & Bharat, 2001; Rao, 2012; Zhang et al., 2008). Indeed, in Study 1, marital status was not found to influence interest in work in men (93.9% of married men vs. 90.3% of unmarried men). However, married women were significantly less interested in work than those who were never married (65.6% vs. 100%, respectively), consistent with the gender specific roles in India, where household responsibilities lie with married women.

Study 2 found that 16.9% of participants who were unemployed at baseline started working at follow-up. Interest in work and efforts to find work in the previous month before the baseline assessment were associated with a greater chance of working at follow-up. Specifically, 20% of participants who wanted to work at baseline were employed at the one-year follow-up (vs. 7% of those not interested in working), and 31.4% of those who had looked for a job were working at follow-up (vs. 11.7% of those who had not looked for work). These rates are quite similar to the 25.4% of unemployed people with schizophrenia in a study in the U.S. who wanted to work and found a job one year later, and the 30.6% of people who had looked for work and found employment by next year (Mueser et al., 2001). Although interest in work among unemployed participants and efforts to find work at baseline were associated with a modest increase in employment at the one-year assessment, the low rates of job acquisition among participants interested in work indicate that motivation to work alone is insufficient for most unemployed people with SMI in India to find employment.

Study 2 also confirmed that interest in work was relatively stable over time, with 58.1% of unemployed participants consistently wanting to work over a one-year follow-up period, and 22.3% consistently not being interested in work. However, there was modest but significant reduction in the proportion of participants who wanted to work at the follow-up assessment (73% vs. 62.8%). This loss of interest at follow-up by some participants may be partly due to the frustration of participants not being able to get a job during the one-year period. Obtaining a job appears to be an important barrier to work for many people with SMI in India as, across all three studies, difficulty finding a job was the most common obstacle to work identified by participants who wanted to work. Moreover, in Study 2, among unemployed participants who were interested in work at both assessments, there was a significant increase in the endorsement of difficulty finding a job as a barrier to work from the baseline follow-up to assessment (33.7% vs. 52.3%, respectively).

Along with difficulty finding a job, unemployed participants who wanted to work also identified other barriers, including coping with psychiatric symptoms and stress. These barriers to work are consistent with the research from developing as well as developed countries (Eaton, 2008; Henry & Lucca, 2004; Marwaha & Johnson, 2005; Thomas, Muliyala, Jayarajan, Angothu, & Thirthalli, 2019). The findings related to barriers to work mirror participants' endorsement of desired job supports. More than 80% of participants who were interested in work wanted help with the job search across the three studies, and over 40% wanted supports related to coping with their mental illness.

Implications for the development and adaptation of vocational services

While the rates of employment in these studies are higher than in developed countries, they are lower than the work rates in the general population in India, demonstrating the adverse effect of SMI on work functioning. As summarized in the introduction, few psychosocial interventions are typically provided to persons with SMI living in India and other developing countries. In particular, there is a lack of empirically validated vocational rehabilitation programs in India and other developing countries. The findings of these three studies provide evidence for the need to develop vocational rehabilitation interventions for people with SMI in India, and also serve to inform the specific types of vocational services that are needed, as discussed below.

First, Studies 1 and 3 found that the large majority of unemployed participants were interested in work, and Study 2 found that interest in work was relatively consistent over a one-year period. These findings suggest that unemployed people with SMI in India are interested in working and that such interest is largely stable over time.

Second, the vast majority of participants who expressed interest in work at baseline remained unemployed at follow-up (80%). This suggests that interest in work alone is not sufficient for getting a job, and that most people may need assistance if their goals of working are to be achieved. Some support for this interpretation is that among the unemployed participants who were consistently interested in working at the baseline and follow-up assessments in Study 2, there was a significant increase in the perceived barrier to work of not being able to find a job. Furthermore, across all three studies assistance with the job search was the most common type of help identified by unemployed participants who wanted to work.

Third, in addition to the evidence suggesting that a high proportion of unemployed people with SMI want to work, but remain unemployed despite their interest, the longitudinal analyses in Study 2 indicated that there was a significant reduction in interest in work among the unemployed participants one year after the initial assessment. This waning of interest in work may have been partly due to the frustration of some participants at not being able to get a job, and their losing interest in work by the follow-up assessment. These results suggest that in addition to providing unemployed people with SMI who want to work assistance in finding jobs, timely help in the job search, when people are most motivated to work, may also be critical to improving work outcomes. The importance of timely assistance in the job search was demonstrated in a study by Bond et al. (1994), who found that rapid help with the job search was associated with better long-term employment outcomes in people with SMI who wanted to work compared to when help on the job search was delayed.

In summary, people with SMI are less likely to be employed than their counterparts in the general population, but their interest in work is strong and relatively consistent over time. Difficulty finding a job is the most common obstacle to work reported by unemployed participants, and help with the job search is the most frequently desired support. Finally, most people who are interested in work remain unemployed but continue to be interested in work, while a minority lose interest. These results suggest that unemployed people with SMI in India who want to work could benefit from vocational services that provide assistance with the job search in a timely (i.e., rapid) manner.

These findings point to the potential role of some type of supported employment for people with SMI in India who want to work. Research in developed countries has shown that supported employment programs such as IPS, are effective at helping people with SMI get and keep jobs (Drake et al., 2016). In the IPS model, vocational services are provided by 'employment specialists' who help people with SMI find and keep competitive jobs that are matched to their preferences and interests (Becker & Drake, 2003). Two of the principles of IPS supported employment appear to have clear relevance to the needs of people with SMI in India who want to work (see the Introduction, above, for the eight principles of IPS supported employment). First, employment specialists play a critical role in developing jobs for their clients who want work, in line with the desired vocational supports indicated by unemployed participants who wanted to work in all three studies. Second, the IPS model stresses the importance of 'rapid job search,' which usually begins within a month of the person's enrollment in the program. Vocational services in India need to adopt a rapid job search philosophy in order to reduce the chances of people losing interest in work due to their inability to find a job, as suggested by the reduction in interest in work over the one-year follow-up period in Study 2.

The findings across the three studies showed that employed participants often identified mental illness-related problems as interfering with work, such as cognitive difficulties, psychiatric symptoms, or medication side-effects. Moreover, while Study 2 found that these problems were stable among a sub-group of employed participants, it also suggested that mental illness-related factors were the most common reasons for job loss among participants who were employed at baseline but stopped working by the follow-up. The consistent endorsement of mental illness-related problems interfering with work suggests that there may be a need for ongoing vocational supports for people with SMI in India.

'Time-unlimited job support' is another fundamental principle of the IPS model that stipulates that employment specialists provide continued supports to clients after they have obtained a job in order to help them sustain employment, or move onto another job if necessary (Drake, Bond, & Becker, 2012). Research shows a positive association between ongoing job supports and job tenure (Bond & Kukla, 2011), suggesting that integrating such supports in the vocational rehabilitation model for people with SMI in India may aid in preventing job losses among employed people.

Furthermore, the three studies found that employed participants identified multiple problems interfering with their work, such as cognitive difficulties, low energy and psychiatric symptoms. The persistent endorsement of work-related problems raises a question whether vocational supports might help improve job performance or reduce stress. However, findings also indicate that despite the endorsement of problems related to work, the majority of employed participants were working stably, most often in the same job. Therefore, more research is needed to examine whether the identified work-related problems affect job performance among the workers with SMI in India. The evaluation of impact of work-related problems on work productivity would help inform the need for incorporating the principle of ongoing vocational supports as part of vocational services for people with SMI in India.

All three studies found that unemployed participants who wanted to work desired job supports related to managing mental illness (e.g., psychiatric symptoms or cognitive difficulties). Participants who wanted to work also cited mental illness related factors (e.g., increase in symptoms, medication side-effects) as barriers to work. Furthermore, job losses were more often attributed to mental illness-related reasons than any other reasons. These findings suggest that people with SMI in India who are interested in work may profit from psychosocial interventions aimed at teaching effective management of mental illness.

In developed countries, illness management needs of people with SMI are usually addressed by clinical teams, with vocational rehabilitation programs focusing primarily on helping people with SMI obtain and keep work. The IPS model underscores the importance of integrating vocational and clinical services, and focuses on regular communication and coordination between vocational and clinical teams serving people with SMI (Bond, 1998). However, medication management is the primary treatment available to people with SMI in developing countries; other clinical services such as assistance with illness management are rare. Therefore, vocational services for people with SMI in India may also need to incorporate illness management strategies, such as those taught in the Illness Management and Recovery (IMR) program. IMR is a structured program developed in the U.S. to help people with SMI manage their illness effectively and pursue their personal goals by providing practical information and skills related to medication adherence, coping with stress, managing symptoms, preventing relapse, and building social support (Mueser et al., 2006).

In the absence of comprehensive clinical teams and adequate funds for mental health treatment in developing countries, providing vocational services with the same frequency and intensity as delivered in developed countries may not be feasible in India and other developing countries. Thus, there may be a need to look beyond vocational service providers to address the vocational and clinical needs of people with SMI. It is well known that most people with SMI in developing countries live with their families and that the family plays a primary role in caring for their relative with SMI (Murthy, 2003; Ran et al., 2003). The findings from the three studies conducted as part of this dissertation indicate that families of people with SMI in India contribute substantially to the employment of their relatives with SMI, either by providing employment in a family business or by utilizing their social networks to find jobs for their relative with independent employers. This confirmation of the pivotal role of family in employment in people with SMI in India suggests that vocational services need to engage family members in the process of helping people with SMI pursue employment.

Specifically, vocational rehabilitation models in India may benefit from harnessing the willingness and opportunity of family members in finding jobs for a relative with SMI. Moreover, vocational service providers may also partner with the families to assist a relative with SMI manage their mental illness. Research from developed as well as developing countries indicates that family psychoeducational interventions are effective in reducing relapses and re-hospitalizations, increasing medication adherence, enhancing social functioning, and thereby improving illness management (Kulhara, Chakrabarti, Avasthi, Sharma, & Sharma, 2009; Mueser, Deavers, Penn, & Cassisi, 2013; Pharoah, Mari, Rathbone, & Wong, 2010; Ran, Chan, Ng, Guo, & Xiang, 2015; Ran et al., 2003). The evidence for the effectiveness of family interventions suggests that the provision of specific supports and education to families may help optimize employment and clinical functioning of people with SMI in India.

Lastly, several findings from these studies provide evidence for differences between urban and rural areas in employment rates and patterns that may have implications for the development of vocational services. For example, Study 1 showed that rates of work among participants living in urban areas were lower compared to rural areas, and the rate of employment in the urban sample of Study 3 was even lower than that of the urban areas in Study 1. Study 1 also found that employed participants who were living in urban areas endorsed significantly more problems related to work than those in rural areas. Although interest in work did not differ between unemployed participants living in urban and rural areas, participants in urban areas identified significantly more barriers to work and wanted more job supports than their rural counterparts. These findings suggest that the need to develop vocational interventions is especially strong for people with SMI who are living in urban areas.

Limitations

Several limitations of the three studies should be noted. First, none of the studies employed standardized instruments to assess diagnosis, symptoms, or psychosocial functioning, limiting what is known about the clinical status of the study samples. Study participants may have had less severe clinical and functional impairment than studies of people with SMI from developed countries, and consequently had better work functioning.

Second, all participants across the three studies were receiving outpatient psychiatric treatment, and thus were not representative of the broader population of people with SMI in India, including the relatively small proportion of people with SMI who are long-term inpatients in psychiatric facilities, and the larger number who do not receive any treatment. It should be noted, however, that the vast majority of other studies examining vocational functioning in people with SMI have been conducted with individuals who are receiving treatment for their SMI, including studies conducted in developed countries (Marwaha & Johnson, 2004; Marwaha et al., 2009) and in developing countries (Midin et al., 2011; Shibre et al., 2015; Srinivasan & Thara, 1997).

Third, all three studies were conducted in a single state in western India (Maharashtra), and different employment rates and characteristics of employment might be found in other regions of India, and even more so in other developing countries. The Indian labor market is characterized by significant regional variations, with more employment opportunities available in western and southern states, and lower rates of unemployment, compared to central or eastern regions of India (Institute for Human Development, 2014). In addition, Maharashtra is one of the most developed states in India (Desai et al., 2010), and thus the moderate to high employment rates of persons with SMI in the three studies may be partly related to overall better employment picture in that state compared to other states. Therefore, it is unclear to what extent the findings of these studies can be generalized to other regions in India.

A fourth limitation is that we did not collect information regarding whether participants were working in formal or informal sectors (i.e., provision of social security and employment benefits vs. no provision). Considering that over 80% of employed people in the general population in India work in the informal sector (Ghose, 2004; Verick & Chaudhary, 2016), this information could have been useful to further the understanding of the relatively high rates of work and correlates of work in these studies in the context of employment in the general population in India. For example, it is possible that an even higher proportion of employed persons with SMI were working in the informal sector than in the general population, perhaps due to the ease getting a job in the informal sector.

Fifth, the primary focus of this dissertation was on the investigation of paid employment in people with SMI in India, and therefore information regarding unpaid work was not collected. Unpaid work such as carrying out domestic tasks, which is traditionally the responsibility of women in India, may be comparable to paid work in that mental illness-related impairments may adversely affect the ability to perform domestic work, thus having important social and economic implications. Considering the importance of gender-specific social role expectations in Indian society, future research is needed to explore the adequacy of role functioning among women with SMI in India who are mainly required to fulfill domestic tasks.

Sixth, we did not obtain information on the perspectives of family members on the work functioning of their relative with SMI. Families play a central role in caring for people with SMI in India and, as seen across the three studies, in the employment of a relative with SMI. Understanding family members' perceptions about the supports they provide to the successful employment of a relative with SMI, and any challenges they face, could greatly inform the development of vocational services for persons with SMI in India. Similarly, it would be useful to understand the extent to which family members are supportive of the goals of an unemployed relative with SMI who wants to work, what their concerns are about their relative working and what potential problems they anticipate, and the types of support they think that they or their relative would benefit from receiving in helping them work.

Conclusions

A series of three studies were conducted to provide a comprehensive evaluation of employment in people with SMI in India. These studies are unique in the depth of information obtained about employment in people with SMI in a developing country, including type and amount of work, perceived benefits and problems related to work, interest in work among unemployed participants and perceived barriers to work and desired supports for working, obtained using the same research methods in two samples of people with SMI, including one sample assessed twice over a one year period who were receiving private outpatient psychiatric treatment and were living in urban and rural areas, and a second sample receiving public outpatient psychiatric treatment in a predominantly urban area. Furthermore, the stability and change in work status, characteristics of work (including perceived benefits and problems), and interest in work (and perceived barriers and desired supports) were evaluated over a one-year period for the two samples receiving private outpatient treatment.

The findings from the three studies suggest moderately high rates of employment, and substantial stability in work status over a period of one year. Two factors that may have contributed significantly to the observed high rates, include strong gender specific social role expectations and role of families in providing employment in a family business or by utilizing their extended social connections to find other jobs for their relative with SMI. Although, the rates of work found in these studies are higher than rates of work reported for people with SMI in developed countries, they are lower than in the general population in India.

Despite high work rates in these studies, a substantial proportion of people were unemployed but were interested in work and wanted job supports, and the majority of them continued to be unemployed but interested in work and wanting job supports at the one-year follow-up. The most commonly desired type of job support was assistance with finding a job. These findings suggest that people with SMI in India may benefit from vocational rehabilitation programs such as supported employment that offer practical support with job finding. These studies also provide valuable information that could guide in the adaptation of supported employment interventions. For example, assistance with managing one’s mental illness was the second most frequent desired type of job support for unemployed participants who wanted to work. The teaching of illness self-management skills is not routinely provided in psychiatric treatment for persons with SMI in India or other developing countries. Therefore, integrating the teaching of mental illness management into the provision of supported employment services could improve work outcomes. In addition, considering the central role of families in coordinating care and facilitating employment in people with SMI in India, it is critical for vocational services to be provided in close collaboration with the families of those individuals. Research is needed, based on the findings of these three studies, to adapt and evaluate vocational rehabilitation services for persons with SMI living in India and other developing countries.

APPENDIX A: Survey instrument for baseline study

Survey of Work Status and Preferences in Persons with Serious Mental Illnesses in India

Location: ____________________________________ Date: __________________

Socio-demographic Details:

1. Informant
   ☐ Patient ☐ Family member

   If family member present, state the relationship with patient
   ____

2. Name
   ____

3. Address
   ____
   ____
   ____
   ____

4. Contact Number
   ____

5. Date of birth_________________________

6. Age (in years) ____________________________

7. Sex
   ☐ Male ☐ Female

8. Education

   ☐ No formal education ☐ HSC (Higher Secondary Certificate / 12th STD
   ☐ Primary school (up to 4th STD) ☐ Bachelor's degree
   ☐ High school (5th to 9th STD) ☐ Master's degree and above ☐ SSC (Secondary School Certificate/ 10th STD ☐ Don't know

9. Marital Status

☐ Single ☐ Married ☐ Divorced
☐ Separated ☐ Widow/ (er) ☐ Don't know

10. Living with

☐ Independent ☐ With family, specify family members –

Total number of members in the household ____________

11. Total family income (monthly)____

Clinical and Medical details:

12. Psychiatric diagnosis

☐ Schizophrenia ☐ Schizoaffective disorder ☐ Bipolar disorder
☐ Major Depression ☐ Others, specify __________________________

13. When did the symptoms begin?

Year_____________

14. When did you first see the psychiatrist?

Year_____________

15. Have you ever been hospitalized for psychiatric treatment?

☐ Yes ☐ No

If yes, how many psychiatric hospitalizations so far in your lifetime? Please specify the duration of each hospitalization.

____
____
____
____

16. When was your last hospitalization for psychiatric treatment?

    Year______________

17. Any other current medical conditions

    ☐ Yes ☐ No ☐ Don't know

    If Yes, tick appropriate box:
    ☐ Dental problems ☐ TB ☐ Diabetes
    ☐ HIV/AIDS ☐ Hypertension ☐ Heart disease
    ☐ Sensory deficit (motor, visual, auditory) ☐ Other, specify

18. Do you consume any substances?

    ☐ Yes ☐ No

    If yes, tick appropriate box:
    ☐ Tobacco ☐ Alcohol ☐ Other drugs

19. What household chores do you do as your primary responsibility? (Tick as many as appropriate)
    ☐ Cooking
    ☐ House Cleaning
    ☐ Washing
    ☐ Shopping (Grocery)
    ☐ Taking care of children
    ☐ Taking care of elderly
    ☐ Other (Specify)

<u>Current Work Details:</u>

19. Are you currently working for pay? (outside of the rehab. center)
    ☐ Yes ☐ No

IF CURRENTLY NOT WORKING:

20. What are the reasons for not working?

____

____

- ☐ Student
- ☐ Managing household / housewife
- ☐ Stress
- ☐ Increase in symptoms
- ☐ If you work, then there is no one else to take the responsibility of domestic work
- ☐ Stigma
- ☐ Difficulty in finding a job
- ☐ Difficulty in keeping a job

21. Are you currently interested in working?

☐ Yes ☐ No

If no, will you be interested in working, in future?

☐ Yes ☐ No

22. What kind of jobs are you interested in?

____

☐ Office/clerical ☐ Service industry ☐ Factory worker ☐ Janitorial

23. Are you looking for a

☐ Part time job ☐ Full time job ☐ Any

24. Have you tried to find work in past 30 days?

☐ Yes ☐ No

25. Has someone helped you to look for work in past 30 days?

☐ Yes ☐ No

26. Would you like someone to help you in searching job for you?

☐ Yes ☐ No

27. What kind of supports will help you in getting a job?
    - ☐ Job search
    - ☐ Managing stress
    - ☐ Managing symptoms / illness
    - ☐ Managing medication side effects
    - ☐ Transportation
    - ☐ Help in improving attention, concentration, memory
    - ☐ Help in dealing with colleagues

28. Does your family want you to work?

    ☐ Yes ☐ No

    If no, why?

    - ☐ Domestic work is your primary responsibility
    - ☐ Concerns about stress of work
    - ☐ Don't need money
    - ☐ Problems with medication adherence, especially in a long-distance job
    - ☐ Other (specify)______________________

29. What describes your current thoughts about work?

    - ☐ I am interested in working but cant find a job
    - ☐ I would like to work but do not feel well enough to work
    - ☐ Not interested in working
    - ☐ Other (specify)______________________

IF CURRENTLY WORKING:

30. Are you currently working in a

    - ☐ paid employment (skilled job)
    - ☐ paid employment (unskilled daily wages or regular)
    - ☐ self employed
    - ☐ other

31. What is your job title?

____

32. Describe your job tasks

____

____

____

33. How many hours on average do you work per week?

____

34. How much is your income per month?

____

35. How did you get the current job?

- ☐ Self
- ☐ With the help of family / relatives
- ☐ Friends/neighbors
- ☐ with the help of doctor/rehabilitation professional ☐ Other

36. Date the current job began - ______________________

37. How satisfied are you with your current job? Rate on a scale of 1 (totally dissatisfied to 5 totally satisfied) _________________

38. What are the reasons for working?

____

____

39. What are the most important benefits of working for you?

____

- ☐ Money
- ☐ Social status
- ☐ Something to do
- ☐ Improved self esteem
- ☐ Help managing the mental illness

40. What kind of problems do you face while working?

- ☐ Stress
- ☐ Hours are too long
- ☐ Transportation
- ☐ Difficulties in dealing with colleagues
- ☐ Symptoms interfering with the work

☐ Medication side effects
☐ Problems in paying attention, concentration, memory
☐ Energy / stamina
☐ Physical health problems
☐ Difficulty in keeping a job
☐ Other (Specify)________________

41. Do you get someone's help to deal with problems related to work?

☐ Yes ☐ No

If yes specify________________________

42. Would you like any professional help to deal with the problems at work?

☐ Yes ☐ No

Past Work details:

43. Have you ever worked?

☐ Yes ☐ No

44. If yes, describe the nature of your last job

45. When did your last job begin?

Month______________ Year______________

46. When did your last job end?

Month______________ Year_____________

47. What were the reasons for job ending?

☐ Resignation (specify reasons)
☐ Fired (specify reasons)
☐ Temporary position
☐ Other

48. In the past 5 years, what was the longest amount of time you even held a job?

Specify the year___________

49. Did you work prior to being diagnosed with a mental illness?

☐ Yes ☐ No

APPENDIX B: Survey instrument for one-year follow-up

Follow up Survey of Work Status and Preferences in Persons with Serious Mental Illnesses in India

Location: ___________________________________ Date: _________________

Socio-demographic Details:

1. Education

☐ No formal education ☐ HSC (Higher Secondary Certificate / 12th STD)
☐ Primary school (up to 4th STD) ☐ Bachelor's degree
☐ High school (5th to 9th STD) ☐ Master's degree and above ☐ SSC (Secondary School Certificate/ 10th STD) ☐ Don't know

2. Marital Status

☐ Single ☐ Married ☐ Divorced
☐ Separated ☐ Widow/(er) ☐ Don't know

3. Living with

☐ Independent ☐ With family, specify family members –

Clinical and Medical details:

4. Were you hospitalized for psychiatric treatment in the past year?

☐ Yes ☐ No

If yes, how many psychiatric hospitalizations? Please specify the duration of each hospitalization.

____

____

5. How regularly have you been taking medications in last one year?

☐ Always ☐ Very often ☐ Sometimes ☐ Seldom ☐Never

6. Any other current medical conditions?

☐ Yes ☐ No ☐ Don't know

If Yes, tick appropriate box:

☐ Dental problems ☐ TB ☐ Diabetes
☐ HIV/AIDS ☐ Hypertension ☐ Heart disease
☐ Sensory deficit (motor, visual, auditory) ☐ Other, specify

____

7. Do you consume any substances?

☐ Yes ☐ No

If yes, tick appropriate box:

☐ Tobacco ☐ Alcohol ☐ Other drugs

8. What household chores do you do as your primary responsibility? (Tick as many as appropriate)
   - ☐ Cooking
   - ☐ House Cleaning
   - ☐ Washing
   - ☐ Shopping (Grocery)
   - ☐ Taking care of children
   - ☐ Taking care of elderly
   - ☐ Other (Specify)

<u>Current Work Details:</u>

9. Are you currently working for pay? (outside of the rehab. center)

   ☐ Yes ☐ No

IF CURRENTLY NOT WORKING:

10. What are the reasons for not working?

____

____

- ☐ Student
- ☐ Managing household / housewife
- ☐ Stress

- ☐ Increase in symptoms
- ☐ If you work, then there is no one else to take the responsibility of domestic work
- ☐ Stigma
- ☐ Difficulty in finding a job
- ☐ Difficulty in keeping a job
- ☐ Lack of motivation to do a job

11. Are you currently interested in paid work?

    ☐ Yes ☐ No

12. If no, will you be interested in paid work, in future?

    ☐ Yes ☐ No

13. What kind of jobs are you interested in?

____

    ☐ Office/clerical ☐ Service industry ☐ Factory worker
    ☐ Janitorial

14. Are you looking for a

    Part time job ☐ Full time job ☐ Any

15. Have you tried to find work in past 30 days?

    ☐ Yes ☐ No

16. Has someone helped you to look for work in past 30 days?

    ☐ Yes ☐ No

17. Would you like someone to help you in searching job for you?

    ☐ Yes ☐ No

18. What kind of supports will help you in getting a job?
    - ☐ Job search
    - ☐ Managing stress
    - ☐ Managing symptoms / illness

- ☐ Managing medication side effects
- ☐ Transportation
- ☐ Help in improving attention, concentration, memory
- ☐ Help in dealing with colleagues

19. Does your family want you to work?

☐ Yes ☐ No

If no, why?

- ☐ Domestic work is your primary responsibility
- ☐ Concerns about stress of work
- ☐ Don't need money
- ☐ Problems with medication adherence, especially in a long-distance job
- ☐ Other (specify)________________________

20. What describes your current thoughts about work?

- ☐ I am interested in working but can't find a job
- ☐ I would like to work but do not feel well enough to work
- ☐ Not interested in working
- ☐ Other (specify)________________________

IF CURRENTLY WORKING:

21. Are you currently working in a

- ☐ paid employment (skilled job)
- ☐ paid employment (unskilled daily wages or regular)
- ☐ self employed
- ☐ other

22. What is your job title?

____

23. Describe your job tasks

____

____

24. How many hours on average do you work per week?

____

25. How much is your income per month?

____

26. Have you told your employer/supervisor about your mental illness?

    ☐ Yes ☐ No ☐ Not applicable in case of self employed

27. How did you get the current job?

    ☐ Self
    ☐ With the help of family / relatives
    ☐ Friends/neighbors
    ☐ with the help of doctor/rehabilitation professional ☐ Other

28. Date the current job began - ______________________

29. How satisfied are you with your current job? Rate on a scale of 1 (totally dissatisfied to 5 totally satisfied) ______________ 30. What are the reasons for working?

____

____

31. What are the most important benefits of working for you?

____

☐ Money
☐ Social status
☐ Something to do
☐ Improved self esteem
☐ Help managing the mental illness

32. What kind of problems do you face while working?
    Stress
☐ Hours are too long
☐ Transportation
☐ Difficulties in dealing with colleagues
☐ Symptoms interfering with the work
☐ Medication side effects
☐ Problems in paying attention, concentration, memory
☐ Energy / stamina
☐ Physical health problems
☐ Difficulty in keeping a job

☐ Lack of motivation to work
☐ Other (Specify)________________

33. Do you get someone's help to deal with problems related to work? ☐ Yes ☐ No

If yes specify________________________

34. Would you like any professional help to deal with the problems at work?

☐ Yes ☐ No

Work details of past 12 months:

35. Did you ever work for pay in past 12 months?

☐ Yes ☐ No

36. If No, what were the reasons of not working?

____

____

☐ I did not want to work
☐ I wanted to work but I was not well enough to work
☐ I wanted to work but could not find a job
☐ Other ________________________

37. If yes, how many months did you work in past 12 months?

____

Job 1:

38. What was your job title?

____

39. Describe your job tasks

____

____

40. How many hours on average did you work per week?

____

41. How much was your income per month?

____

42. Did you tell your employer/supervisor about your mental illness?

☐ Yes ☐ No ☐ Not applicable in case of self employed

43. When did your last job begin?

Month_______________ Year_______________

44. When did your last job end?

Month_______________ Year______________

45. What were the reasons for job ending?

☐ Resignation (specify reasons)_____________________________
☐ Fired (specify reasons)___________________________________
☐ Temporary position (specify reasons)_____________________________
☐ Other (specify reasons)____

Job 2

46. What was your job title?

____

47. Describe your job tasks

____
____
____
____

48. How many hours on average did you work per week?

____

49. How much was your income per month?

____

50. Did you tell your employer/supervisor about your mental illness?

☐ Yes ☐ No ☐ Not applicable in case of self employed

51. When did your Job 2 begin?

Month______________ Year______________

52. When did your Job 2 end?

Month______________ Year_____________

53. What were the reasons for job 2 ending?

☐ Resignation (specify reasons)_________________
☐ Fired (specify reasons)_______________________
☐ Temporary position (specify reasons)__________________________
☐ Other (specify reasons)_______________________

Please record same information for more than 2 jobs.

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