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Financial hardship among individuals with serious mental illness

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ABSTRACT

This study explored financial hardship, defined as difficulty in obtaining food, shelter, or medicine in the past 12 months and its personal and clinical correlates in individuals with serious mental illness (SMI) in a sample of 271 adults with SMI newly admitted to two inner city community mental health centers. The study found that 59 percent (n = 161) reported experiencing financial hardship in the past 12 months. Patients with financial hardship were more likely to be female, to experience self-stigma, to experience medical care delays, and to use emergency services. Patients who experienced financial hardship typically had more severe psychiatric symptoms, including depressive symptoms, emotional lability, and interpersonal problems. Financial hardship persisted in nearly half of those with hardship interviewed a year later. The findings highlight the role of multiple social and economic challenges that the SMI patients face in recovery from serious mental illness and the importance of awareness of such challenges by providers treating this population. Though mental health treatment may help alleviate the psychiatric symptoms it alone is not sufficient in addressing persistent hardship. These findings highlight the need for multidisciplinary interventions in order to better serve this vulnerable population.

1. Introduction

Past research has found many associations between poverty and mental health problems, including depression, in the general population (Butterworth et al., 2009, 2012; Hanandita and Tampubolo, 2014). Additionally, economic adversity has been shown to have a disproportionate effect on individuals with mental health problems (Evans-Lacko et al., 2013). Individuals with serious mental illness (SMI) are more prone to financial hardship than the general population. (Padgett, 2007; Mangurian et al., 2013; Wilton, 2004). For example, prevalence of food insecurity has been estimated to be over four times higher in individuals with SMI compared to the general population (Mangurian et al., 2013).

Comparatively less is known about the personal and clinical correlates of hardship in those with SMI, a population of particularly vulnerable individuals with more severe symptoms as well as poorer general health (Miller et al., 2006; Spivak et al., 2018), and social (Mangurian et al., 2013) outcomes. Better understanding of the correlates of financial hardship in this group is useful for planning social and health services and for gauging the impact of social adversity on the course of serious mental illness. To address this gap in knowledge we examined associations of financial hardship, defined as trouble with access to food, shelter, or medications, with psychiatric symptoms, self-stigma, general health care access, emergency department (ED) use, and high risk behaviors among inner city individuals with SMI. We hypothesized that financial hardship was associated with a greater burden of mental illness, as indicated by more severe symptoms and greater use of emergency services and higher levels of mental illness stigma.

2. Methods

The study sample has been described in detail in past reports (Mojtabai et al., 2014; Cullen et al., 2017). Briefly, newly admitted participants with SMI were recruited from two inner city outpatient mental health centers between 2008 and 2012 as part of a longitudinal recovery study in urban setting focusing on serious mental disorders. Adults with charted DSM-4 diagnoses of primary psychotic illnesses as well as severe mood disorders were included. The baseline and follow up questionnaires were administered over a period of 2 days by trained interviewers. Study participants were incentivized via 70 dollars in gift certificates to local stores for completing the survey. All participants

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provided written consent and the study was approved by the Institutional Review Board.

Financial hardship was assessed via three separate questions. The participants were asked "In the past 12 months, was there any time when you did not have enough money for…" followed by "housing" for one of the questions, "food" for another, and "medications" for the third question. Patients who responded affirmatively to difficulty in any of these domains were rated as having experienced financial hardship. Patients were also asked about high risk behaviors including selling drugs, selling sex, or stealing.

Clinical psychiatric diagnoses were extracted from medical records. Diagnoses were categorized into schizophrenia (including schizoaffective disorder and schizophreniform disorder), bipolar disorder with psychotic features, depression with psychotic features, and psychotic disorder, not otherwise specified (NOS).

Delays in seeking medical care over the past 12-month period were assessed using seven items, five of which were derived from the National Health Interview Survey, including questions about care delay due to trouble reaching providers, inability to get a timely appointment, transportation problems, prohibitive service hours, and having to wait too long once arrived. Two questions were added to assess care delay due to trouble affording care and concerns about being treated differently because of a mental health diagnosis (Mojtabai et al., 2014; Spivak et al., 2018).

Stigma was assessed using an abbreviated version of the Internalized Stigma of Mental Illness (ISMI) scale. The ISMI is a 29-question self-report questionnaire that assess the experience of stigma in several domains, including alienation, stereotyping, perceived discrimination, social withdrawal, and resistance to stigma (Boyd et al., 2014a,b). Abbreviated versions have been used previously with good results (Boyd et al., 2014a,b). Twelve questions from ISMI assessing personal and cultural stigma were used for this study (Cullen et al., 2017).

Symptom severity was assessed using two assessment tools. The first, BASIS-24, is a 24 item interviewer-administered survey that measures problem domains including depression, interpersonal relationships, psychotic symptoms, alcohol/drug use, emotional lability, and self-harm (Eisen et al., 2004). The second assessment, the Positive and Negative Symptom Scale (PANSS; Kay et al., 1987), is a 33 item scale designed to measure symptoms of schizophrenia and administered by trained interviewers using a structured interview.

Participants were asked if in the past 12 months they had visited an emergency department (ED) for any reason. They were also asked to report any substance use in the past 12 months.

Finally, participants were asked to return a year later for follow up assessments, which mirrored the baseline assessments in content.

Analyses were conducted in two stages. First, chi-squared and *t-tests* were used to examine the unadjusted associations of financial hardship with socio-demographic and clinical characteristics of patients. Second, multivariable logistic regression analyses were conducted to assess the association of financial hardship with these characteristics controlling for age, sex, race, primary diagnosis, and education level. All analyses were conducted in SPSS version 23 (IBM Corp. ©, 2015).

3. Results

A total of 271 patients or 31% of the 874 eligible consecutively approached participants consented to participate. Of these, 53% ($n = 144$) were female, 54% ($n = 147$) were African American, 34%($n = 91$) were white and 12% ($n = 33$) Hispanic or from other racial/ethnic groups. The mean age was 42 years (SD = 11, ranging 19–66). Schizophrenia was the primary diagnosis in 33% of the sample ($n = 89$) while 60% ($n = 163$) were diagnosed with a mood disorder with psychotic features and 7% ($n = 19$) with psychotic disorder NOS. Participants with less than a high school diploma comprised 33% ($n = 88$) of the sample, another 38% ($n = 102$) had a high school or equivalent diploma, and 30% ($n = 81$) reported at least some college. Of the 271 participants 73% ($n = 197$) returned a year later for the follow up assessments.

Sixty-two percent ($n = 169$) of the patients reported experiencing medical care delays and 65% ($n = 175$) reported visiting an ED in the

Table 1
Unadjusted correlates of financial hardship, defined as difficulty obtaining food, shelter, or medicine in the past 12 months among individuals with serious mental illness.

Participants	Experienced hardship in past 12 months		Did not experience hardship in past 12 months		Comparison of groups[a]		
	n	%	*n*	%	χ^2	df	*p*
Total	161	59.4	107	39.9	–	–	–
Sex							
Female	95	59.0	48	44.9	5.17	1	.016
Age							
18–34	47	29.2	32	29.9	.02	1	.503
35–46	51	31.7	36	33.6	.11	1	.418
47–59	58	36.0	33	30.8	.77	1	.228
60+	5	3.1	6	5.6	1.02	1	.241
Race							
White	54	33.5	37	34.6	.03	1	.481
Black	85	52.8	59	55.1	.14	1	.401
Other	22	13.7	11	10.3	.68	1	.265
Education							
Less than HS	51	31.7	35	32.7	.03	1	.481
HS grad/GED	59	36.6	42	39.3	.19	1	.380
Some college	51	31.7	30	28.0	.40	1	.310
Diagnosis							
Schizophrenia	54	33.5	34	31.8	.09	1	.434
Bipolar	71	44.1	51	47.7	.33	1	.327
Depression	26	16.1	13	12.1	.83	1	.233
Psychosis NOS	10	6.2	9	8.4	.47	1	.325
Experienced care delay [a.]	116	72.0	60	56.1	14.27	1	<.001
Visited ED in past 12 mo	114	71.3	59	55.1	7.28	1	.005
Substance use past 12 mo							
Alcohol	108	67.9	59	55.7	4.11	1	.051
Cannabis	48	29.8	32	29.9	0	1	.546
Cocaine	42	26,3	13	12.1	7.79	1	.005
Illicit sedative	15	9.3	1	.1	8.05	1	.003
Heroin	16	9.9	6	5.6	1.6	1	.26
	M	SD	M	SD	*t*	df	*p*
Stigma ccore[b]	5.41	2.62	4.36	2.73	3.08	1.04 (.34)	.002
BASIS-24[c.] scores							
Mean total	2.50	.40	2.39	.43	2.06	249	.040
Depression	2.78	.66	2.48	.65	3.51	249	.001
Interpersonal	3.31	.89	3.58	.80	2.42	248	.016
Emotional lability	3.09	1.02	2.64	1.06	3.32	247	.001
Self-harm	1.37	.74	1.38	.79	−.03	247	.973
Psychosis	1.78	.81	1.77	.82	.04	247	.965
Alcohol/drug	1.57	.73	1.55	.81	.27	247	.788
SCI-PANNS[d.] scores							
Total	59.33	18.76	56.87	15.73	1.07	248	.284
Disordered	8.35	4.03	7.62	3.64	1.46	248	.147
Depression	11.97	4.30	10.26	4.20	3.09	248	.002
Positive	59.3	18.76	14.53	6.24	1.37	248	.172
Negative	11.96	5.75	12.59	4.85	−.88	248	.379
General	12.59	4.85	11.97	5.75	1.7	248	.090

Note: ED stands for emergency department, χ^2 for chi-squared statistic, df for degrees of freedom, *t* for *t*-statistic.

[a] Defined as a positive answer to any of the seven questions assessing participant experience of barriers to medical care.

[b] Defined as total number of positive answers to the questions assessing internal stigma.

[c] Behavior And Symptom Identification Scale (***ref).

[d] Structured Clinical Interview for the Positive and Negative Syndrome Scale (***ref).

Table 2
Multivariable logistic regression results of correlates of the experience of financial hardship, defined as difficulty obtaining food, shelter, or medicine in the past 12 months among individuals with serious mental illness.

Participants	Comparison of groups[a]		
	AOR	95%CI	*p*
Sex (ref:male)			
Female	1.91	1.13–3.24	.017
Age (ref:18–34)			
35–46	1.01	.53–0.93	.978
47–59	1.18	.62–2.24	.624
60 +	.523	.14–1.95	.334
Race (ref: white)			
Black	.82	.49–1.55	.638
Other	1.29	.544–3.05	.566
Education (ref: less than HS)			
HS grad/GED	.96	.53–1.75	.962
Some college	1.19	.62–2.28	.604
Diagnosis (ref:schizophrenia)	–	–	–
Bipolar	.70	.38–1.29	.251
Depression	1.13	.62–2.60	.771
Psychosis NOS	.76	.27–2.16	.760
Care delay[b] (ref:no)	2.64	1.55–4.48	<.001
ED in past 12 mo (ref: no)	2.12	1.22–3.67	.008
Substance use past 12 mo			
Alcohol	1.71	1.0–2.9	.049
Cannabis	.92	.55–1.71	.915
Cocaine	3.21	1.55–6.67	.002
Illicit sedative	13.35	1.69–105.3	.014
Heroin	2.12	.78–5.74	.142
Stigma score[c]	1.15	1.04–1.28	.008
BASIS-24[d] score			
Mean total	1.78	.95–3.48	.090
Depression	2.05	1.33–3.18	.001
Interpersonal	1.53	1.09–2.14	.013
Emotional lability	1.53	1.17–2.01	.002
Self-harm	.90	.62–1.31	.589
Psychosis	.96	.67–1.38	.817
Alcohol/drug	1.07	.75–1.52	.714
SCI-PANNS[e] score			
Total	1.00	.99–1.02	.419
Disordered	1.05	.97–1.13	.209
Depression	1.11	1.04–1.19	.002
Positive	1.02	.98–1.07	.346
Negative	.97	.92–1.02	.242
General	1.03	.99–1.06	.116

Note: ED stands for emergency department, M for mean, SD for standard deviation, AOR for adjusted odds ratio, and CI for confidence interval.

[a] Adjusted for age, sex, race, primary diagnosis, education level.

[b] Defined as a positive answer to any of the seven questions assessing participant experience of barriers to medical care.

[c] Defined as total number of positive answers to the questions assessing internal stigma.

[d] Behavior And Symptom Identification Scale (***ref).

[e] Structured Clinical Interview for the Positive and Negative Syndrome Scale (***ref).

past 12 months.

BASIS-24 scores were available for 93.3% of participants (n = 253; mean total score = 2.46, SD = 0.42) and PANSS scores for 92.9% (n = 252; mean total score = 58.6, SD 17.7).

Fifty-nine percent (n = 161) reported experiencing financial hardship. Hardship in food was the most commonly reported (46%, n = 123), followed by medicine (39%, n = 105), and housing (37%, n = 99). Financial hardship in these domains were highly correlated (median r = 0.44).

Table 1 summarizes the demographic characteristics of patients that reported financial hardship compared to those who did not. The two groups were largely similar although women were overrepresented in the hardship group (χ^2 = 5.17(1), p = .016, Table 1); this finding persisted in multivariate analyses (Table 2).

Medical care delays were more common in those with financial hardship (χ^2 = 14.27(1), p < .001) as were ED visits in the past 12 months (χ^2 = 7.28(1), p = .005, Table 1). These associations remained significant in adjusted analyses (Table 2). Stigma was higher in those who had experienced financial hardship (t = 3.08(249), p = .002), a finding mirrored in multivariate analyses (Table 2).

Patients who had experienced financial hardship had more symptoms, indicated by a higher total BASIS-24 score (t = 2.06(249), p = .040; Table 1), though this relationship was reduced to trend level significance in adjusted analyses (AOR = 1.78, 95%CI = 0.95–3.48, p = .090; Table 2). Furthermore, patients with hardship had higher scores on Depression, Interpersonal, and Emotional lability domains of BASIS-24 (Table 1), and these findings persisted in multivariate analyses (Table 2).

Patients experiencing financial hardship also had higher scores on PANSS Depression subscale both in unadjusted (Table 1) and adjusted (Table 2) analyses. Moreover, patients with financial hardship had a higher General PANSS score at trend level (t = 1.7(248),p = .090; Table 1), though this association was not mirrored in multivariate analyses (Table 2).

Risky behaviors, including stealing, selling sex or selling drugs were overrepresented in the hardship group (χ^2 = 8.28(1), p = .003; data not shown). This association remained significant in multivariate analyses (AOR = 4.68, 95% CI = 1.69–13.00, p = .003).

Alcohol use was somewhat more common in those reporting financial hardship (χ^2 = 4.11(1), p = .051), significantly so in adjusted analyses (AOR = 1.71, 95%CI = 1.0–2.9, p = .049). Cocaine use in the past 12 months was also significantly associated with financial hardship (Table 1); the odds of cocaine use were over 3 times higher in those that have experienced hardship (Table 2). Illicit sedative use was also overrepresented among those reporting hardship (χ^2 = 8.05(1), p = .003) and the odds of illicit sedative use was over ten times higher in those with hardship. Heroin and cannabis use were not more common among those experiencing financial hardship.

Of the 114 that reported hardship at baseline and returned a year later 49.1% (n = 79) reported persistent hardship.

4. Discussion

This study examined the association of the experience of financial hardship with clinical and personal correlates in individuals with SMI and found that nearly sixty percent of predominantly African-American inner city adults with SMI reported experiencing financial hardship. The combination of SMI, financial hardship and minority status puts these individuals at especially high risk of adverse health and social outcomes.

The odds of hardship in females were nearly two times higher, which is consistent with prior findings (Roberston and Winkleby, 1996) and could be in part attributed to the challenges that they face, such inadequate access to economic resources during pregnancy or during the child rearing period (Mowbray et al., 1995), more frequent complications in the perinatal period (Mowbray et al., 1995), and more common incidence of post-partum depression and psychosis (Jones et al., 2014), all of which can cause substantial resource drain and contribute to hardship. Additionally, women with SMI have higher rates of abuse (Goodman et al., 1997), victimization, and exploitation (Seeman, 2018), which can lead to further marginalization.

Physical health care delay is common in individuals with SMI (Mojtabai et al., 2014; Spivak et al., 2018) and is associated with a variety of poorer mental health and physical health outcomes (Miller et al., 2006; Mojtabai et al., 2014; Spivak et al., 2018). The odds of care delays were over two and a half times higher and greater dependence on ED services were over two times higher, in those with financial hardship, further demonstrating the lack of resources available to these vulnerable individuals, which is particularly concerning given the general health care needs of this population (Miller et al., 2006). While the increased morbidity and mortality of individuals with

SMI is widely known, those that have experienced financial hardship likely fare worse, with trouble meeting basic nutritional, medication and safety needs compounding barriers to healthcare. Indeed the ED may be one of the few places such individuals can reliably meet these needs, likely explaining their increased utilization of ED services.

Self-stigma is not uncommon in individuals with SMI (Corrigan, 2004) and has been linked to adverse impact on both quality of life and recovery from mental illness (Corrigan et al., 2006; Roe et al., 2010; Wood et al., 2016). The association between self-stigma and financial hardship could be bidirectional with internal barriers limiting the individual's ability to access resources (Corrigan et al., 2006), which in turn further marginalizes the individuals leading to increased self-stigma in a vicious cycle. Although a number of interventions to address stigma of mental illness have been introduced (Morrison et al., 2016; Wood et al., 2016; Roe et al., 2010), improving resource access may enhance the effect of these interventions by breaking the cycle linking financial hardship and stigma (Padgett, 2007).

The finding that financial hardship is associated with an increased symptom burden as measured by the BASIS-24 and PANSS is consistent with previous findings in the general population (Butterworth et al., 2009, 2012). It is notable that these symptoms were associated with financial hardship independently from primary diagnoses and that the associations were most prominent for depressive symptoms.

Individuals with SMI have elevated rates of substance use disorders and there is some evidence that certain acute drug effects are preferentially sought by this population (Dixon, 1990). For example sedatives, such as benzodiazepines, have been reported by patients to self-medicate anxiety (which can be comorbid with depression) (Dixon, 1990), alcohol to reduce anxiety (Dixon, 1999), cocaine to reduce depression and increase energy (Dixon, 1999). Given the link noted here and elsewhere (Butterworth et al., 2009) between financial hardship and depression it is plausible that individuals experiencing hardship preferentially seek those agents over others, explaining some of the findings.

The associations of hardship with substance use is likely bidirectional; some individuals with SMI might use substances as a coping mechanism with life stressors while substance use itself diverts their already limited resources. These findings support further integration of mental health and substance use services.

A similar bidirectional association may exist between financial hardship and the increased risk of dangerous and risky behaviors. Financial hardship can lead to increased exposure to violence, illness, and incarceration and, in turn, to increased hardship. The resulting vicious cycle can further marginalize this vulnerable population.

Individuals with SMI may find navigating typical public benefits, including public insurance, housing and income, particularly challenging, and building support for these needs into treatment planning could make an appreciable difference in outcomes (Wilton, 2004). However public benefits are often insufficient, especially in areas with higher cost of living or limited available subsidized housing.

Guiding patients toward other potential resources could plausibly make a difference for some of these patients. For example, Housing First approaches have shown promise compared to treatment first models (Padgett, 2007; Greenwood et al., 2005) in improving outcomes, although the combination of housing and treatment tends to be most effective (Henwood et al., 2014). While traditional financial planning services may not be as effective (Harper, 2018), there are promising other ways to achieve financial health, such as recovery focused (Elbogen, 2016) and peer supported financial wellness approaches (Jimenez-Solomon et al., 2016).

Additionally, policy initiatives, such as out-of-pocket medication cost assistance and improved medication coverage could help decrease hardship and improve outcomes (Piette et al., 2011).

The following limiting factors should be noted while interpreting the study results. First, the self-report nature of the assessments of financial hardship and outcomes can introduce bias. Second, it is plausible that some of the correlates of financial hardship noted here have a bidirectional relationship with such hardship, limiting causal inference. Third, some baseline participants did not return for the follow up a year later limiting the validity of follow-up data.

In conclusion, the study's findings shed light on the complex financial and social difficulties that SMI patients face across a variety of domains. A large proportion of these underserved and vulnerable individuals struggle to obtain even the bare necessities, and the experience of financial hardship is linked to higher stigma, increased barriers to care, and greater burden of mental illness. It is not uncommon for this struggle to persist even after individuals enter and remain in mental health treatment. The finding of a link to risky behaviors is further evidence of the critical need for interventions to reduce the financial hardships faced by these patients. This study's findings highlight the role of multiple social and economic challenges that the SMI patients face in recovery from serious mental illness and the importance of awareness of such challenges by providers treating this population.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2019.112632.

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