Online appendix

Sample items of the measures

Variable	Scale	Response category	Sample item
1. Perceived discrimination from the general public	Discrimination subscale of the Stigma Scale (1, 2)	Five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree)	I have been discriminated against in education because of my mental health problems.
2. Perceived discrimination from health care professionals	Adapted from the discrimination experience subscale of the Internalized Stigma of Mental Health scale (3)	Five-point Likert scale from 1 (never) to 5 (always)	Health care professionals often patronize me, or treat me like a child because I have a mental illness.
3. Self-Stigma	Self-Stigma Scale (4)	Four-point Likert scale from 1 (strongly disagree) to 4 (strongly agree)	My identity as a person with mental illness is a burden to me.
4. Mental health service engagement	Adapted from the Service Engagement Scale (5, 6)	Four-point Likert scale from 1 (not at all or rarely) to 4 (most of the time)	I take an active part in the setting of goals or treatment plans.
5. Recovery orientation of services	Recovery Self Assessment-Revised (RSA-R) – Person in Recovery version (7, 8)	Five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree)	Staff listen to me and respect my decisions about my treatment and care.
6. Clinical recovery	Behavior and Symptom Identification Scale (9)	Five-point Likert scale from 1 (no difficulty / none of the time / never) to 5	During the past week, how much of the time did you feel sad or depressed?

		(extreme difficulty / all of the time / always)	
7. Personal recovery	Recovery Assessment Scale (10, 11)	Five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree)	I have goals in life that I want to reach.
	Recovery Markers Questionnaire (12, 13)	Five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree)	I am involved in meaningful productive activities.
	Test Life Satisfaction Scale (14, 15)	Five-point Likert scale from 1 (strongly dissatisfied) to 5 (strongly satisfied)	How satisfied are you with your current social life?

Details of data analysis

A two-step approach to structural equation modeling (SEM) was conducted using Mplus version 5.1 (16). First, the hypothesized latent factor structure was examined with confirmatory factor analysis (CFA). In the CFA, items from scales measuring perceived discrimination from the general public, self-stigma, mental health service engagement, and recovery orientation of services were grouped into three observed parcels to represent the underlying constructs (17). The four items measuring perceived discrimination from health care professionals were used as the indicators of the construct. The six subscales of the BASIS-24 served as the individual indicators of clinical recovery. RAS, RMQ, and TLSS served as the individual indicators of personal recovery. Upon confirmation of the latent factor structure, SEM was performed to examine the hypothesized relationships in the proposed model. The overall model fit was assessed by a combination of fit indices including chi-square (χ^2) statistics, comparative fit index (CFI), Tucker–Lewis index (TLI), and the root mean square error of approximation (RMSEA). CFI and TLI with values between .90 and .95 indicate an acceptable model fit, while values greater than .95 indicate a good model fit (18). A RMSEA value of .06 or less indicates a close model fit, while a value between .06 and .08 suggests a reasonable model fit (18). In addition, a multi-sample SEM was conducted to examine whether the hypothesized relationships would hold across people with different mental illnesses. Invariance analysis suggested by Byrne (19) was performed to examine the

measurement and structural equivalence across the three groups of people with different psychiatric diagnoses. Configural invariance was first established, followed by testing the invariance of factor loadings and structural parameters, to investigate whether and how the experience of discrimination would differentially affect recovery across groups. A likelihood ratio test was conducted for model comparison in invariant analysis. Mediation effects were tested with the bootstrapping procedures recommended by Shrout and Bolger (20). Bias-corrected bootstrap confidence intervals were estimated using 1,000 bootstrapped samples from the original data (21).

Description of multi-sample SEM results

The results of the multi-sample SEM supported the hypothesized relationships among the latent variables across people with psychotic disorders, mood disorders, and substance use disorders. Specifically, perceived discrimination from the general public and perceived discrimination from healthcare professionals were positively associated with self-stigma and negatively associated with service engagement. Self-stigma was, in turn, negatively correlated with clinical recovery and personal recovery, whereas service engagement, in turn, was positively correlated with clinical recovery and personal recovery. Recovery orientation of services was positively associated with service engagement and personal recovery.

The overall model explained 23.7%, 24.6% and 24.2% of the variances in self-stigma,as well as 23.2%, 30.1% and 18.8% of the variances in service engagement among participants

with psychotic disorders, mood disorders, and substance use disorders, respectively. It accounted for39.3%, 36.9% and 34.4% of the variances in clinical recovery, as well as40.1%, 32.4% and 35.6% of the variances in personal recoveryamong participants with psychotic disorders, mood disorders, and substance use disorders, respectively.

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