A Community Navigation Scale for Persons With Serious Mental Illnesses

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Objective: The recovery paradigm in the context of serious mental illnesses pertains to several characteristics of community functioning, adjustment, and integration, among other constructs. Additional rating scales would be beneficial for measuring various facets of community functioning for research that is recovery oriented as opposed to symptom focused. The Community Navigation Scale was developed as part of the Opening Doors to Recovery project to address several aspects of navigating community resources.

Methods: After item development, the 21-item Community Navigation Scale was used across two studies with 340 participants who had serious mental illnesses. Factor analysis revealed three potential factors, and subscales were computed.

Results: The social and physical well-being subscale (seven items, Cronbach's $\alpha=0.82$) addressed community involvement, volunteering, finding enjoyable activities, and engaging in positive health behaviors. The accessing external resources subscale (nine items, Cronbach's $\alpha=0.80$) tapped one's ability to obtain needed resources, ranging from medications to housing and from small appliances to classes in the community. The home and self-maintenance subscale (five items, Cronbach's $\alpha=0.73$) measured abilities around shopping, cooking, cell phone use, house cleaning, and personal grooming and hygiene. Initial validity of the subscales was suggested through correlations with the Multnomah Community Ability Scale ($r=0.65$, 0.55, and 0.41 for social and physical well-being, accessing external resources, and home and self-maintenance, respectively).

Conclusions: The Community Navigation Scale assesses dimensions of community functioning among persons with serious mental illnesses and may add to the array of research and clinical measures pertinent to recovery outcomes. Additional research on its psychometric properties is warranted.

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Mental health services for individuals with serious mental illnesses have become increasingly interested in the recovery paradigm, focusing less on a life free of symptoms and more on the attainment of a valued life while managing the illness (1). Recovery is about living a satisfying, hopeful, and meaningful life despite the challenges of a mental illness (2). A need has arisen to better measure the multiple components of recovery, especially within the community context given that most people with serious mental illnesses are living in the community.

Modern recovery frameworks define the characteristics and processes of personal recovery. One example is a framework proposed by Leamy et al. (2) that comprises 13 characteristics of the recovery journey (e.g., recovery is an active process and recovery is a gradual process) and five recovery processes: connectedness, hope and optimism about the future, identity, meaning in life, and empowerment (CHIME). Winsper and colleagues (3) proposed a different recovery framework, focusing on functional (employment, education, and housing), existential (personal confidence, self-esteem, empowerment, identity, meaning, and reduced self-stigma), and social (social functioning and support as

HIGHLIGHTS

- The concept of community navigation can be a person's perceived importance of, and abilities around, accessing mental health and social services, being involved with others and one's community, pursuing desired activities, taking part in healthy activities, meeting basic expectations about managing a home, and using basic modern technology.
- The Community Navigation Scale is a new measure intended to assess community functioning, and community navigation in particular, among individuals with serious mental illnesses.
- Scores can be used as indicators for community navigation along three subscales: social and physical well-being, accessing external resources, and home and self-maintenance.

well as community integration) domains of recovery as key outcomes. Essential to each framework is the importance of psychosocial well-being, which can be characterized as a person's self-awareness of their mental illness and their determination to be part of community life (4). This latter aspect, community involvement, has influenced the aims of behavioral health interventions, including focusing on family support, social skills training, and supported employment, which have been proven to aid recovery (1, 5).

A variety of psychometrically sound measures evaluate recovery among individuals with mental illnesses, including the Multnomah Community Ability Scale (MCAS) (6), the Maryland Assessment of Recovery in People With Serious Mental Illness (7), and the Recovery Assessment Scale (8). Such measures may be more useful than traditional quality-of-life scales, which can vary greatly with symptoms (9). However, they do not necessarily gauge some aspects of community functioning, namely, "community navigation," defined here as one's perceived importance of, and abilities around, accessing mental health and social services, being involved with others and in one's community, pursuing desired activities, taking part in healthy activities, meeting basic expectations around managing a home, and using basic modern technology (10). Community navigation is essential to recovery because most people with mental illnesses live much of their lives in the community. Evidence is increasing regarding how social inclusion and community participation are crucial to recovery (11). Recovery-related measures that thoroughly address community navigation, which is critical for recovery-oriented services and navigation programs (12, 13), are lacking.

The Community Navigation Scale was developed and used in two studies of the Opening Doors to Recovery (ODR) model of recovery-oriented case management and community navigation created in southeast Georgia (14). The first study (15) was conducted from 2010 to 2012 in the 34-county southeast region of Georgia with three of the region's community service boards (community mental health agencies). The second study (manuscript submitted) was conducted in the eight-county catchment area of one of the community service boards from 2014 to 2019. In the present analysis, using a combined data set from those two studies, we aim to fill a potential gap in measuring community navigation among mental health recovery measures by focusing on individuals' perceived importance of, and abilities for, navigating personal, social, and community resources. Specifically, the Community Navigation Scale was developed and tested as a new measure of psychosocial well-being and community functioning among individuals with serious mental illnesses.

The Community Navigation Scale addresses aspects of both the CHIME framework (the empowerment subdomains of "personal responsibility" and "control over life" as well as the connectedness subdomain of "being a part of the community") and Winsper et al.'s (3) framework (the social recovery outcomes). After item creation, we studied the new measure in a combined data set of two consecutive, similar samples by assessing its factor structure, internal consistency reliability, and initial validity.

METHODS

Measures

The Community Navigation Scale is a 21-item scale that was created to address a gap in outcome measurement for two studies of the ODR model (15, manuscript submitted). Two investigators (B.B., M.T.C.) designed items on the basis of the four ODR tenets: ensuring adequate treatment (e.g., getting my medicine), helping to secure safe and stable housing (e.g., keeping safe and stable housing), developing a meaningful day (e.g., being involved in the community and volunteering in the community), and using technology to promote recovery (e.g., using a computer and using a cell phone). Additional items were developed to assess three other domains of community functioning and psychosocial well-being, including basic activities of daily living (access to reliable transportation, managing money, shopping for groceries, availability of small appliances, cooking meals, keeping the house clean, and keeping up daily hygiene and grooming), positive health behaviors and protective factors (regular exercise schedule, eating a healthy diet, forming social relationships, receiving needed support, and having a satisfying spiritual life), and navigating one's community (finding classes to learn new things, finding enjoyable activities, and knowing where to go for help finding a job). Some items tapped several of these overlapping domains (e.g., "I volunteered in the community" pertains to both a meaningful day and navigating one's community).

Domains and items were reviewed by several subject matter experts during an iterative process of item development, which resulted in the 21 items. Items were then further revised on the basis of a review by three mental health services researchers, four licensed mental health professionals working as professional navigators on the initial ODR implementation (i.e., licensed clinical social workers and licensed professional counselors), and four certified peer specialists working as peer navigators on the initial ODR implementation. Although each item was initially scored on an evenly spaced, 7-point Likert scale ranging from 1 ("very hard") to 7 ("very easy"), consensus discussions with reviewers resulted in changing the end points of some items according to the content of those items while keeping the 7-point Likert scale. Specifically, scales ranged from "very hard" to "very easy" (13 items), "very untrue" to "very true" (four items), "very unimportant" to "very important" (three items), or "very unsatisfying" to "very satisfying" (one item) according to what was felt to be most appropriate and understandable to the respondent. Pilot testing was conducted before the Community Navigation Scale was used. Specifically, the instrument was used with 10 patients, with clinicians giving feedback on wording and patients' comprehension of items; very minor changes were made in finalizing the scale.

Both research projects also used the MCAS, a 17-item self-report instrument that examines several dimensions of community functioning. The scale's validity is good, and test-retest reliability and internal consistency are high (16). The internal consistency reliability of the MCAS in this combined sample was $\alpha=0.85$.

Setting, Samples, and Procedures

During the initial ODR study (15), 100 participants were enrolled in the study before being discharged from a local state psychiatric hospital or one of three crisis stabilization units. Inclusion criteria for participation were ages 18–65 years, English speaking, diagnosed as having a psychotic or mood disorder, being discharged to reside within the catchment area of one of the three community service boards, and ability to give informed consent. Exclusion criteria were known or suspected intellectual disability or dementia, or a serious medical condition that could interfere with research participation.

The second study enrolled 240 participants in a randomized trial comparing ODR with traditional forms of case management; participants were enrolled before being discharged from the same state psychiatric hospital or one of two crisis stabilization units. The two samples were assessed at different times given the studies' consecutive nature. Inclusion criteria were nearly identical, but the second study had stricter functional impairment requirements; specifically, because of the randomized design, participants in the second study had to be eligible for intensive case management services in Georgia.

Trained research assessors conducted interviews with the participants. Each interview lasted approximately 2–3 hours, with the Community Navigation Scale assessment taking 5–7 minutes. These instructions were read at the beginning of the instrument: "Now I'll read several statements to you. For each statement, I would like you to choose the answer that best fits your opinion." Each item began with "During the month before you came to the hospital or CSU [crisis stabilization unit]. . . ." The participant was shown a response card with the respective Likert scale. Participants were compensated with $80 for the entire interview. Both studies were approved by the institutional review boards of The George Washington University (for the first study) and New York State Psychiatric Institute at Columbia University (for the second study).

Data Analysis

We used baseline data for this analysis. Data from the two studies were compared and then combined for subsequent analyses because factor analysis is considered a large-sample technique. The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were computed to determine suitability of the data for factor analysis. The principal axis factoring method, followed by a varimax rotation, was used for exploratory factor analysis, and its results are given here. Our a priori convention for assigning items to factors and subscales was that only the largest loading for each item would be considered if it was greater than the a priori 0.4 loading threshold. This method is in line with common practice because 0.4 is generally considered a moderately strong loading; moreover, the practical usefulness of coefficients has often been judged to lie in the |0.30| to |0.40| range (17). As a secondary approach, oblique rotation was used. In doing so, overall factor structure results did not change. However, some factor loadings decreased, with some dropping below our a priori threshold of 0.4. Only participants with a fully completed Community Navigation Scale were included in the factor analyses (N=328). Subscale scores were calculated by adding item responses, and correlations between the scores were computed. We assessed the derived subscales' internal consistency reliability with Cronbach's alpha.

As an initial assessment of convergent validity, we examined the correlation between each Community Navigation Scale subscale score and the MCAS. We chose the MCAS because it is a widely used measure of community functioning among individuals with serious mental illnesses, measuring constructs somewhat similar to those of the Community Navigation Scale (e.g., some items pertain to critical abilities for coping with a serious mental illness and surviving in the community, including successfully managing money and managing day-to-day tasks such as eating regularly, dressing appropriately, or keeping up one's home). All analyses were conducted with IBM SPSS Statistics, version 26.

RESULTS

Sample Characteristics and Community Navigation Scale Properties

The demographic and clinical characteristics of the study participants are given in Table 1. The possible range of the total 21-item Community Navigation Scale score was 21–147, the observed range was 23–146, the mean±SD was 89.7±24.1 (median=90, mode=105), and the Cronbach's alpha coefficient indicating internal consistency reliability was 0.89. Distributions of responses across the 7-point scales were carefully examined for each of the 21 items and generally showed very good dispersion of scores across the scale. However, two items (6 and 9) showed right skewness. For item 6, "Keeping my house clean was...," the following response frequencies (N=334 participants) were found: 1 (very unimportant), N=14 (4%); 2 (unimportant), N=18 (5%); 3 (a little unimportant), N=17 (5%); 4 (neutral), N=35 (10%); 5 (a little important), N=29 (9%); 6 (important), N=74 (22%); and 7 (very important), N=147 (44%). For item 9, "Keeping up my daily hygiene and grooming was...," the following results (N=335 participants) were found: 1 (very unimportant), N=4 (1%); 2 (unimportant), N=12 (4%); 3 (a little unimportant), N=18 (5%); 4 (neutral), N=25 (7%); 5 (a little important), N=15 (4%); 6 (important), N=80 (24%); and 7 (very important), N=181 (54%).

TABLE 1. Sociodemographic and clinical characteristics of the 340 participants with serious mental illnesses in the two studies[a]

	Overall sample (N=340)		Study 1 (N=100)		Study 2 (N=240)						
Characteristic	N	%	N	%	N	%	t	df	χ^2	df	p
Age (M±SD years)[b]	36.3±12.0		37.3±13.0		35.9±11.6		1.01	337			.31
Educational attainment (M±SD years)	10.9±2.6		10.8±2.1		11.0±2.7		.54	333			.59
Gender, male	207	61	52	52	155	65			4.29	1	.038
Race									.91	2	.64
Black or African American	160	47	46	46	114	48					
White	169	50	52	52	117	49					
Other[c]	11	3	2	2	9	4					
With whom the participant lived before hospitalization									21.18	5	.001
Alone	56	17	25	25	31	13					
With parents, siblings, or other family members	125	37	42	42	83	35					
With boyfriend, girlfriend, spouse, or partner	34	10	10	10	24	10					
With friends	29	9	10	10	19	8					
Homeless or staying in a homeless shelter	77	23	8	8	69	29					
Other[d]	19	6	5	5	14	6					
Diagnostic category, psychotic disorder	205	60	46	46	159	66			12.09	1	.001
Presence of a substance use disorder	185	54	38	38	147	61			15.38	1	<.001

[a] Study 1 was Compton et al. (15), and study 2 was Compton et al. (manuscript submitted).
[b] Age range 18–65 years.
[c] The race category of "other" (e.g., Asian, Hispanic, and Russian) was not included in this chi-square comparison because of the small sample size.
[d] The living situation of "other" included responses such as group home, ex-girlfriend, going from place to place, with various friends, and renting a room weekly.

Exploratory Factor Analysis and Resulting Subscales

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.90, and Bartlett's test of sphericity was statistically significant (χ^2=2,231.37, df=210, p<0.001), indicating that the data were suitable for factor analysis. The initial principal-axis factor analysis revealed four factors with eigenvalues >1.0, which accounted for 52% of the total variance. A thorough examination of eigenvalues and the cumulative proportion of explained variance, as well as visual inspection of the scree plot showing ordered eigenvalues by factors, suggested reducing the number of factors to three for further analysis. These three factors had eigenvalues of 6.58, 1.85, and 1.50 and accounted for 47% of the total variance. After varimax rotation, the factor solution uncovered the factor loadings presented in Table 2. As noted previously, our a priori convention was that only the largest loading for each item, if >0.4, would be considered in assigning items to factors.

Factors to which items were assigned are shown in Table 2. Factor 1 was labeled "social and physical well-being," factor 2 was "accessing external resources," and factor 3 was "home and self-maintenance." The three subscales' distributional properties were examined. Although social and physical well-being and accessing external resources did not exhibit meaningful skewness (−0.003 and −0.057, respectively), home and self-maintenance was slightly skewed (−0.602). Kurtosis values (−0.675, −0.663, and −0.323, respectively) did not indicate outliers or a need to consider the distributions as substantially nonnormal. Cronbach's alpha indicated good internal consistency (Table 3). Means, standard deviations, possible ranges, observed ranges, and medians for the three subscales, along with intercorrelations, are reported in Table 3.

Concerning convergent validity with the MCAS total score, medium-strength correlations that were statistically significant at the p<0.001 level were found for all three factors (social and physical well-being, r=0.65; accessing external resources, r=0.55; and home and self-maintenance, r=0.41) and the Community Navigation Scale total score (r=0.66).

DISCUSSION

The recovery paradigm has gained greater importance over a symptom-based focus of mental health care; moreover, it has become imperative for services to evaluate clients' functioning in the community context instead of primarily addressing clinically oriented outcomes (18, 19). Because most people with mental illnesses live and receive treatment in the community, reliable and valid measures are needed to assess the effectiveness of programs designed to improve community functioning among individuals with serious mental illnesses. Although originally designed to assess outcomes for the ODR projects, the Community Navigation

Scale may have wider application potential. Measures such as the Community Navigation Scale could be useful, for example, to case managers and peer service providers, who need to evaluate how well their client is functioning in the community in order to provide the most effective recovery support.

In terms of how the three derived factors and subscales related to the initial seven domains, social and physical well-being included items meant to capture both the "developing a meaningful day" tenet of ODR (i.e., being involved in the community and volunteering), as well as four of the five items in the "positive health behaviors and protective factors" domain and one item pertaining to "navigating one's community" (i.e., finding enjoyable activities). Accessing external resources encompassed items across six of the seven domains, but all items pertained to obtaining or using needed resources (e.g., medication, computer, and small appliances) and accessing forms of assistance (e.g., finding classes and knowing where to seek help finding a job). Home and self-maintenance included one item from the "using technology" ODR tenet (cell phone) and four items from the "basic activities of daily living" domain (shopping, cooking, cleaning house, and grooming and hygiene). Thus, sorting the 21 items into the three factors was based more on the specific content of the item than on the original seven domains. Although we preferred the empirical subscales from the factor analysis over the original conceptual domains, the initial latent factor structure of the 21 items reported here should be assessed in other samples.

Although the Community Navigation Scale total score and all three factors were moderately correlated with the MCAS total score, these results are only initial evidence of convergent validity. In additional studies, researchers should examine convergent validity by using other established scales as well as divergent validity and various forms of reliability, such as test-retest reliability.

TABLE 2. Statistical and distributional properties of resulting subscales for the participants with a fully completed Community Navigation Scale (N=328)

Item	Item content[a]	M±SD	Factor 1[b]	Factor 2[c]	Factor 3[d]
1	Getting my medicine was. . . .	3.5±2.2	.17	.58[e]	−.11
2	Keeping safe, stable housing was. . . .	3.7±2.3	.10	.70[e]	.08
3	Getting access to reliable transportation was. . . .	3.5±2.2	.05	.70[e]	.15
4	Using a computer was. . . .	3.8±2.3	.11	.61[e]	.21
5	Managing my money was. . . .	4.2±2.1	.28	.46[e]	.21
6	Keeping my house clean was. . . .[f]	5.6±1.8	.27	−.02	.67[e]
7	Shopping for groceries was. . . .	4.6±2.0	.29	.42	.56[e]
8	Cooking meals for myself was. . . .	4.7±2.1	.12	.37	.64[e]
9	Keeping up my daily hygiene and grooming was. . . .[f]	6.0±1.5	.31	−.13	.65[e]
10	Keeping up a regular exercise schedule was. . . .	4.0±2.1	.65[e]	.19	.24
11	Eating a healthy diet was. . . .	4.1±2.2	.46[e]	.28	.41
12	Forming social relationships was. . . .	3.6±2.0	.65[e]	.35	.14
13	Using a cell phone was. . . .	5.2±2.1	−.12	.35	.63[e]
14	Finding classes to learn new things was. . . .	3.7±2.1	.39	.40[e]	.24
15	My spiritual life was. . . .[g]	4.9±2.0	.64[e]	.02	.24
16	Being involved in the community was. . . .[f]	4.1±2.1	.76[e]	.07	.10
17	Finding activities that I enjoyed was. . . .	4.0±2.1	.60[e]	.30	.24
18	If I wanted to find a job I knew where to find help.[h]	4.5±2.1	.42	.45[e]	.01
19	I received the amount of support I needed in my recovery.[h]	4.0±2.2	.49	.54[e]	.02
20	Small appliances (e.g., microwaves, toasters) that I needed were available to me.[h]	5.0±2.1	−.01	.48[e]	.25
21	I volunteered in the community.[h]	3.2±2.1	.62[e]	.00	−.01

[a] Except where indicated (see superscripts f, g, and h below), response options were 1, very hard; 2, hard; 3, a little hard; 4, neutral; 5, a little easy; 6, easy; 7, very easy.
[b] Factor 1 was named "social and physical well-being."
[c] Factor 2 was named "accessing external resources."
[d] Factor 3 was named "home and self-maintenance."
[e] Indicates the factor loading representing the factor to which each item was assigned.
[f] Response options were 1, very unimportant; 2, unimportant; 3, a little unimportant; 4, neutral; 5, a little important; 6, important; 7, very important.
[g] Response options were 1, very unsatisfying; 2, unsatisfying; 3, a little unsatisfying; 4, neutral; 5, a little satisfying; 6, satisfying; 7, very satisfying.
[h] Response options were 1, very untrue; 2, untrue; 3, a little untrue; 4, neutral; 5, a little true; 6, true; 7, very true.

This study had at least five limitations. First, its sample was not necessarily representative of the population of individuals with serious mental illnesses because all participants were hospitalized in public-sector inpatient units, and they had the capacity to participate in a research project. We do not know how scale structure may vary in other samples. Second, the Community Navigation Scale was administered by research assistants. Findings could change if the scale were to be self-administered. Third, only one measure was used to test validity of the Community Navigation Scale. Further research should explore the convergent and divergent validities, test-retest reliability, and sensitivity to change of the Community Navigation Scale alongside other similar instruments to further establish its psychometric properties.

Fourth, five items (shopping for groceries, eating a healthy diet, finding classes to learn new things, knowing where to find help finding a job, and receiving the support needed) had cross-loadings on a second factor, making it difficult to interpret factor loadings for those items.

TABLE 3. Intercorrelations among Community Navigation Scale subscales and subscale descriptive statistics for 340 participants with serious mental illnesses

Variable	Social and physical well-being	Accessing external resources	Home and self-maintenance
Accessing external resources	.57[a]		
Home and self-maintenance	.52[a]	.53[a]	
Community Navigation Scale total score	.85[a]	.88[a]	.75[a]
N of items	7	9	5
Score			
Possible range	7–49	9–63	5–35
Observed range	7–49	9–63	6–35
M±SD	27.9±10.1	35.8±12.1	25.9±6.6
Median	29	45	31
% of variance explained	18.0	16.9	12.4
Cronbach's α	.82	.80	.73

[a] All correlations were statistically significant at $p<0.001$ (two-tailed).

Rather than putting those items into two subscales, thereby increasing the subscales' correlations (and rather than deleting them and thus reducing the types of community competencies measured), we assigned them to the subscale with the highest factor loading (even though the cross-loadings approached or surpassed our a priori 0.4 loading threshold). As such, how we conducted our factor analysis and interpreted its results should be considered preliminary; these factor structures and solutions might not be stable or replicable. Future factor analyses are warranted and may yield different findings and interpretations. Fifth, because some individual items (e.g., "Keeping my house clean was. . . ." and "Keeping up my daily hygiene and grooming was. . . .") showed right skewness, the performance of individual items (in addition to the scale's factor structure) should be examined in future research.

CONCLUSIONS

The Community Navigation Scale is intended to assess community navigation among individuals with serious mental illnesses and showed initial reliability and validity in this study. Measuring community navigation is a new, complementary element to the prevailing personal recovery frameworks that emphasize empowerment, connectedness, and social outcomes in community contexts (2, 3).

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