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Social Support, Activities, and Recovery from Serious Mental Illness: STARS Study Findings

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Abstract

Research on the role of social support in recovery from severe mental illness is limited and even more limited is research on the potential effects of participating in various activities. This study explores these relationships by analyzing baseline data from a 153-participant subsample in the Study of Transitions and Recovery Strategies. Higher scores on the Recovery Assessment Scale were related to both social support/network size and engagement in more activities. The particular nature of the activities (more/less social, more/less physically active, inside/outside the home) was not important, rather, activities of any type were related to recovery. Furthermore, engagement in activities was more important as levels of social support declined. The results suggest that both social support and activities may promote recovery, and that for persons with poor social support, engagement in a variety of individualized activities may be particularly beneficial.

Keywords

Recovery; serious mental illness; social support

Recovery from mental illness has been defined as the “personal experience of the individual as he or she moves out of illness into health and wholeness”.¹ It is a dynamic process characterized by movement toward conditions of hope, purpose, and wellness. Participation in meaningful social life is a major goal for many persons in recovery,² and therefore relationships among recovery, social support and social activities are important areas of study.

Social support is a key source of psychological health³ and has been identified as a specific aid to recovery.^{4,5} Corrigan et al.⁶ found that size of social networks as measured by number of friends was correlated to recovery, but that satisfaction with social support was not. However, in another study with a larger sample, Corrigan and Phelan⁷ found that recovery was related to both social network size and perception of network satisfaction. Other studies have examined social support and recovery from a more limited symptoms perspective. Pevalin and Goldberg⁸ followed a sample of 4,878 people to track episodes of mental illness over time and found that low social support increased the chances of an illness episode onset and decreased chances of recovery. Kendler et al.⁹ reported that social support predicted shorter time to recovery from symptoms for women with major depression. Similarly, Lara et al.¹⁰ found that social support predicted both depression severity and six-month symptom recovery,

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and Johnson et al.¹¹ found social support related to better six-month recovery from depression but not mania among patients with bi-polar disorders.

Less understood than social support is the role of meaningful activities in promoting recovery. The term “meaningful activities” itself has not been clearly defined, but may be expressed as pursuits that allow a person to grow in connection, confidence and contribution through development of skills, education, vocation, or relationships.¹² Meaningful activities has been identified qualitatively as important to promoting recovery,¹² but research evidence on the role that involvement in activities may play is limited. Mezzina et al.² suggest that the role of social support in recovery is not merely that of building more social ties but investing social life with meaning, which may be assisted by participation in community activities. Thus, social support and activities may interact to promote recovery. Although not specifically research on recovery, prior studies have identified volunteering behavior as a correlate of lower depression, especially among older adults;^{13, 14} volunteering is a form of meaningful activity.

This study examined the roles of social support, social network size, and engagement in activities as they relate to recovery from serious mental illness. Specifically, the study examines whether involvement in activities has benefits beyond social networks and social support, and whether activities interact significantly with support in their relationship to recovery. The relevance of this examination for clinical practice and for personal efforts at recovery pertains to the respective contributions of support and activities; for example, if greater involvement in activities is related to better recovery above effects of support, then encouragement of activities, such as setting behavioral goals for activities, may be advanced as a clinical treatment strategy.

Methods

Setting

The study took place at Kaiser Permanente Northwest (KPNW), a non-profit prepaid, group model, integrated health plan serving about 480,000 members in northwest Oregon and southwest Washington State. The study took place as part of a larger longitudinal study funded by the National Institute of Mental Health, Study of Transitions and Recovery Strategies (STARS), that focused on recovery among individuals with serious mental illness. KPNW's Institutional Review Board and Research Subjects Protection Office approved the study, and all study participants provided informed consent prior to participation.

Participant Identification, Inclusion and Exclusion Criteria, and Recruitment

Study participants were identified using health plan membership and diagnostic records. Inclusion criteria included a diagnosis (for a minimum of 12 months) of schizophrenia, schizoaffective disorder, bipolar disorder, or affective psychosis; at least 12 prior months of health plan membership; age 16 years or older; and plans to stay in the local area for at least 12 months. Patients with dementia, mental retardation, or organic brain syndrome were excluded because such conditions interfere with ability to provide informed consent, participate in interviews, and complete questionnaires. Also excluded were those whose mental health clinician felt they were unable to participate. Based on power analyses for the larger study, the target was to recruit at least 170 participants.

Potential participants ($n = 1827$) were recruited through letters signed by the principal investigator (PI) and the member's mental health clinician or, if no specialty mental health visits were found, primary care provider. The letter was first prepared by the PI and then sent to the clinician or provider for review. At this stage, 289 patients (15.8%) were screened out by clinicians, and 17 (0.9%) additional patients were excluded because clinicians did not return letters. Remaining potential participants were stratified by gender and diagnosis and sampled

randomly within these groups to achieve roughly equal representations of men and women, and individuals with mood (bipolar disorder, affective psychosis) or schizophrenia spectrum (schizophrenia, schizoaffective disorder) disorders.

Recruitment was conducted via letters followed by telephone calls. Attempts were made to contact 418 people before exceeding the enrollment target of 170. Of the 418 attempted contacts, 350 individuals were contacted, and of these, 201 individuals refused ($n = 184$) or agreed to participate but did not complete the baseline interview ($n = 17$); 22 individuals were ineligible for the study. Overall, 44% (184) of the 418 people were enrolled, 46% of those who were eligible. Of these, 3 did not complete both baseline interviews and 4 were excluded because study staff determined that medical record diagnoses had been in error. Data from these 7 individuals were not included in analyses, resulting in a final sample of 177. Limited information was available from eligible persons who did not participate, but they did not differ from participants in terms of age, sex, or diagnostic group.

Participants

Study participants included 92 women (52%) and 85 men (48%). The average age of participants at baseline was 48.8 ($SD = 14.8$) years, with a range from 16 to 84 years. The enrolled sample distributions for age, sex and diagnosis did not differ from the study-eligible population of health plan members. About 75% of the sample had some post-high school education. About 94% were white. The total number of participants was 177, but missing data on items of interest reduced the sample to 153 for the current study.

Data

The STARS design employs mixed methods and is longitudinal and exploratory. Questionnaire data were linked to health plan records of diagnoses, service use and clinician information. The study presented here is limited to quantitative information collected at baseline. Definitions of measures follow:

Mental and Physical Health—We used the SF-12 Mental Health Composite (MCS) and Physical Health Composite (PCS) scores, which assess general mental health and emotional functioning.^{15, 16} A short version of the SF-36 Health Inventory,¹⁶ the SF-12 is a general measure of health status that is a reliable and valid measure of functioning among people with severe mental illnesses.¹⁷ The SF-12 reproduces the SF-36 physical and mental health summary scales with greater than 90% accuracy.¹⁶

Satisfaction with Clinicians—Satisfaction with primary mental health clinician (psychiatrist, nurse practitioner, counselor or primary care provider) was measured using the mean of three questions rated on 5-point scales from “very satisfied” to “very dissatisfied”. Questions were: “How satisfied are you with:” a) “the personal interest and attention your (psychiatrist, nurse practitioner, counselor, primary care provider) gives you?” b) “your (psychiatrist’s, nurse practitioner’s, counselor’s, primary care provider’s) competence, skill, and ability?” and c) “the amount of information and explanation your (psychiatrist, nurse practitioner, counselor primary care provider) gives you?”

Recovery—The Recovery Assessment Scale (RAS)⁶ is an easy-to-complete measure developed for use with individuals with serious mental illnesses. It has good test-retest reliability ($r = 0.88$) and high internal consistency (Cronbach’s $\alpha = 0.93$).

Social Support and Social Network—The social network question was measured as number of friends and scored in four categories: none, 1–2, 3–5, or more than 5. Social support was measured as the reported support of family and friends in the last month (scored 1=poor,

2=moderate, and 3=good). The exact wording was, “During the last four weeks, you have (check one): 1) been having good relationships with others and receiving support from family and friends; 2) been receiving only moderate support from family and friends; 3) had infrequent support from family and friends or only when absolutely necessary”; this direction was reverse scored so that a higher score meant better support. Both the social support and social network items were taken from the Wisconsin Quality of Life Questionnaire.^{18–20}

The authors obtained permission to use the Wisconsin Quality of Life Questionnaire, but encountered a problem when scoring the social support subscale. This scale cannot be scored for individuals who have no social support, thus truncating the range of support experiences. For this reason, we chose to use two items from the scale that address 1) actual support received, and 2) number of individuals in participants’ support networks. We do not have reliability or validity data for these items, although they are similar to other items used in the field and are components of the full subscale, which shows adequate reliability and validity.

Activities—Preliminary analyses were undertaken to identify the optimal way to measure activities. Activities were initially measured through a set of 25 items that asked respondents to indicate the extent to which they engaged in that activity over the last month, scored from 1 (not at all) to 5 (daily). Bivariate correlations were explored between each of the items and the RAS. One item, frequency of television watching, was unrelated to recovery and was dropped from further analysis. An exploratory factor analysis was conducted to examine how the remaining items grouped together; although a 5-factor solution was suggested, the conceptual interpretation of the factors was problematic, and the resulting alpha reliabilities were poor, so these factor scores were not used. A second strategy involved the qualitative grouping of items based on discussion among the research team, but the item groups again demonstrated poor reliability, and all of the groups correlated at a bivariate level with scores on the RAS at approximately the same level – that is, there was no advantage of one group over another. However, a simple mean of total activities across all 24 items resulted in an alpha reliability of .77; the research team dropped 2 additional items (playing cards and playing computer games) which increased alpha to .80. The final activities measure is the mean of the 22 retained items (Table 1).

Other covariates—Other variables included in analyses were age group (16–20, 21–30, 31–50, 51–64, 65–74, 75 and over), sex, married (yes/no), diagnostic group (schizophrenia spectrum or mood disorder), socioeconomic group (scored 1 to 5 based on participant self-report of group membership as lower, working, middle, upper-middle, or upper class, which was used instead of reported income because they correlated with each other at .44 and income was missing in 14 extra cases), experience with negative medication side-effects (no, mild, or severe), and age at which the participant “first felt different.” The “age felt different” question is a proxy to early onset, which predicts delay in receiving treatment and less favorable prognosis.^{21, 22} However, preliminary models indicated that the “age felt different” measure was not related to recovery, and would have resulted in the loss of 9 additional cases due to missing data, and so it was dropped from further analysis.

The side-effects variable was also included as a possible risk variable because of its association with discontinuation of treatment²³ and with risk of social withdrawal resulting from symptoms of tardive dyskinesia.²⁴ This variable also had missing data because not every patient was taking medications. Preliminary regression models indicated that the side-effects question was not related to recovery and did not change the significance of other variables, and so it was deleted from final models.

Analyses

After descriptive analyses, the activity variable was examined with other variables in ordinary least squares multiple regression models where the RAS was the dependent variable. A set of 4 models was examined. Model 1 contained demographic and risk variables only: age group, sex, married, diagnostic group, socioeconomic group, and counselor satisfaction. Model 2 included all variables from Model 1 plus the social network and social support questions. Model 3 added the total activity score. Model 4 added 2 interaction terms, namely, social support and total activity, and social network and total activity.

Results

The activity score correlated with the RAS at .47. Social support and social network correlated with the RAS at .44 and .36, respectively. A descriptive summary of the study variables is provided in Table 2. There were 39.9% of participants with schizophrenia or schizoaffective disorder, and the remainder were diagnosed with a bipolar or mood disorder. Average provider satisfaction scores were high.

Results of the regression models are shown in Table 3. Each model includes the unstandardized coefficient, the standard error, and the standardized beta (B). In all models that included them, social networks and social support were positively related to better recovery. Total activities was also related to better recovery. The interaction of social support and activities in the final model was also significant, but the interaction of activity and network size was not. Findings for each model are summarized as follows.

Model 1

This model had adjusted $R^2 = .31$ ($F=9.56$, $df=8$, 144 , $p<.0001$). Significant correlates of recovery were better MCS and PCS score.

Model 2

The adjusted R^2 increased to .39 ($F=10.52$, $df=10$, 142 , $p<.0001$). Significant variables were MCS, social network and social support. The PCS variable was no longer significant.

Model 3

The adjusted R^2 increased to .41 ($F=10.74$, $df=11$, 141 , $p<.0001$). Significant variables were MCS, social network, social support, and total activities.

Model 4

The adjusted R^2 increased to .43 ($F=9.78$, $df=13$, 139 , $p<.0001$). Significant variables were MCS, social support, total activities, and the activities – social support interaction. The main effect for social networks was no longer significant. The negative sign for the interaction term indicates that the activities variable was relatively more important for people with less social support. The relative size of the standardized betas (B) in the table show that social support, activity, and the interaction had the strongest effects, with the interaction being strongest, and that these 3 variables were stronger than the MCS score.

The significant interaction was examined graphically, as shown in Figure 1. The figure shows that the association between activities and recovery is positive for all levels of support, but that the slope is greatest for persons with lower support.

Discussion

Results are consistent with previous research^{7, 8} showing that both social network size and social support are correlated to better recovery for persons with serious mental illness. Prior literature suggests that patients with mental illness report a number of benefits from social support, including emotional, material, and psychological benefits, modeling, motivational encouragement, and others.⁴ But in addition to social support and social networks, our results demonstrate that greater involvement in a wide range of activities is also related to better recovery, especially when levels of social support were lower. These activities may be more or less social in nature, more or less physically active, or occur inside or out of the home. The particular activities related to recovery may be highly individualized from one person to another. Choice of activity may even be a contributing factor in building a sense of control over one's life. The data suggest that participation in a greater number of activities, regardless of the activity type, is associated with recovery.

Beyond social networks, social support, and activities, the only other variable associated with recovery in the final model was mental health status measured by the MCS. Recovery was not related to age, sex, diagnostic group, socioeconomic status, or other indicators. Other research, however, has found that recovery over time is related to variables such as physical health and changes in employment and marital status.⁸ The current results are encouraging in that many of these potential factors are outside people's ability to control; in contrast, it appears that recovery is potentially amenable to influence through social and behavioral factors.

In particular, people have the potential to exercise control over the behaviors in which they engage. The results suggest that being involved or active, in any of a wide variety of individualized activities, is related to better recovery. Moreover, to the extent that people do not enjoy strong social support, participation in activities may be of even greater importance. Of course, these data are cross-sectional and so it is unclear if activities promote recovery or if recovery enables people to be more active. There may be effects in both directions.

Regarding the interaction term, a hypothesis was tested that the combination of social support and activities would relate to higher recovery. This was found to be the case in that the association between activities and recovery was positive for all levels of support, however, rather than a simple cumulative effect, activities were particularly important when social support was low. Either activities or support may work to promote recovery when only one or the other is relatively high.

In addition to the cross-sectional design, limitations of the study include the way that activities and social support were measured. The measurement of activity was limited to a count, and may not reflect how meaningful specific activities are. In addition, not all potential activities are included, and other forms of physical, social, or spiritual activity may aid in recovery²⁵ but were not assessed here. Social networks and support were measured through only two items asking about network size and levels of support over the last month. The impact of this support and the positive or negative nature of support were not investigated, although the item we used is suggestive of qualitative feelings about receiving support. The sample was limited to persons who received care through the KPNW health plan. Future analyses may assess changes in recovery over time as they relate to social support, social networks, and activities.

Implications for Behavioral Health

From a treatment perspective, the results suggest that clinicians may consider working to encourage social supports and engagement in activities as aids to recovery. Identifying meaningful activities and setting behavioral goals to realize these activities may be a useful strategy. Furthermore, patients may be encouraged that even if their levels of social support

are low, finding personally meaningful activities to pursue is a viable approach to taking control of the recovery process.

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Figure 1.
Interaction of Social Support and Activities with Recovery

Table 1
List of activities. Subjects were asked, “How often in the past 4 weeks have you...”

Gone for a walk
Played a sport
Ridden in a bus or car
Gone to a library
Gone to a concert
Gone hiking
Went on a trip
Gone to a restaurant
Gone to a movie or play
Gone to a social group
Gone to a church or mosque
Gone out with friends
Cleaned your room or apartment
Gone shopping
Prepared a meal
Done laundry
Read a magazine or newspaper
Listened to the radio
Read a book
Created art or music
Worked in a garden
Organized your home

Table 2

Summary of study variables. (N=153).

Variable	Mean or Percent	Standard Deviation	Range
Percent female	49.7		
Percent married or living with partner	56.2		
Percent with schizophrenia	39.9		
Spectrum disorder			
Percent by age group:			
16–20	1.3		
21–30	9.8		
31–50	42.5		
51–64	32.0		
65–74	9.8		
75–84	4.6		
Mean counselor satisfaction	4.4	0.9	1–5
Mean socioeconomic group	2.5	0.9	1–5
Mean side-effects	1.1	0.8	0–2
Mean SF-12 MCS	40.7	12.6	3.1 – 65.2
Mean SF-12 PCS	46.0	13.4	12.5 – 69.2
Mean activities score	2.5	0.5	1.4 – 4.2
Recovery Assessment Scale	89.8	14.8	40 – 120

Table 3

Results of block-entry multiple regression models where the dependent variable is the Recovery Assessment Scale (RAS) score (N=153).

	Model 1	Standard error	B	Model 2	Standard error	B	Model 3	Standard error	B	Model 4	Standard error	B
Intercept	56.5***	8.10		39.2***	7.85		35.7***	7.76		-7.52	21.46	
Female	-.89	2.09	-.03	-.32	1.98	-.01	.09	1.93	.003	-.80	1.95	-.03
Married	-1.85	2.11	-.06	-2.56	2.01	-.09	-2.65	1.96	-.09	-2.71	1.93	-.09
MCS	.62***	.08	.52	.47***	.09	.40	.42***	.09	.35	.42***	.09	.35
PCS	.24**	.08	.22	.15	.08	.14	.06	.08	.06	.04	.08	.04
SES	1.64	1.30	.10	1.20	1.26	.07	.98	1.23	.06	.87	1.21	.05
Schizophrenia spectrum	.57	2.18	.02	.70	2.07	.02	.72	2.02	.02	1.16	2.01	.04
Age group	-1.52	1.09	-.10	-1.68	1.03	-.11	-1.91	1.01	-.13	-1.63	1.00	-.11
Counselor satisfaction	2.25	1.22	.13	1.33	1.17	.08	.99	1.15	.06	.87	1.13	.05
Social network				2.84**	1.16	.18	2.36*	1.14	.15	3.46	4.87	.21
Social Support				5.48**	1.64	.24	4.89**	1.62	.21	21.29**	7.45	.93
Activities							6.34**	2.26	.21	25.89**	9.15	.87
Social support × Activities										-7.19*	3.18	-1.09
Social network × Activities										-.44	2.02	-.09

* p<.05;

** p<.01;

*** p<.000