

An Analysis of Relationships Among Peer Support, Psychiatric Hospitalization, and Crisis Stabilization

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Received: 29 October 2008 / Accepted: 10 June 2009 / Published online: 24 June 2009
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Abstract This study's objective was to investigate how peer support relates to psychiatric hospitalization and crisis stabilization utilization outcomes. The likelihood of experiencing a psychiatric hospitalization or a crisis stabilization was modeled for consumers using peer support services and a control group of consumers using community mental health services but not peer support with 2003 and 2004 Georgia Medicaid claims data; 2003 and 2004 Mental Health, Developmental Disability, and Addictive Diseases (MHDDAD) Community Information System data; and 2003 and 2004 MHDDAD Hospital Information System data. Peer support was associated with an increased likelihood (odds = 1.345) of crisis stabilization, a decreased but statistically insignificant likelihood (odds = 0.871) of psychiatric hospitalization overall, and a decreased and statistically significant (odds = .766) likelihood of psychiatric hospitalization for those who did not have a crisis stabilization episode.

Keywords Peer support · Medicaid · Recovery

Introduction

This study's objective was to answer the following research question: How is peer support related to psychiatric hospitalization and crisis stabilization utilization outcomes? Psychiatric inpatient service in Georgia is defined as a short-term stay in a licensed state hospital for the treatment or habilitation of a psychiatric and/or substance related disorder. Services are of short duration and provide treatment

for an acute psychiatric or behavioral episode (Georgia Department of Human Resources, Division of Mental Health, Developmental Disabilities, and Addictive Diseases 2007a, b). Crisis stabilization is defined as a residential alternative to or diversion from psychiatric hospitalization, offering psychiatric stabilization and detoxification services. The program provides medically monitored residential services for the purpose of providing psychiatric stabilization and substance detoxification services on a short-term basis (Georgia Department of Human Resources, Division of Mental Health, Developmental Disabilities, and Addictive Diseases 2007a, b). Crisis stabilization is most appropriate for a mental health crisis that can be appropriately managed in a short period of time. It is not offered on an outpatient basis. Average length of stay for crisis stabilization is about one-third that of the average psychiatric hospitalization.

Peer support is social and emotional support, coupled with instrumental support, that is provided by persons having a mental health condition to others sharing a similar mental health condition to bring about a desired social or personal change (Gartner and Riessman 1982; Solomon 2004). The Georgia Peer Support Program was developed in 1999 by the Georgia Department of Human Resources, Division of Mental Health, Developmental Disabilities, and Addictive Diseases (MHDDAD)¹ as part of its

¹ Services for individuals with serious and persistent mental illness are managed in Georgia by the MHDDAD and financed with state and federal funds administered by MHDDAD and by the Georgia Department of Community Health through the state Medicaid program (Georgia Department of Human Resources, Division of Mental Health, Developmental Disabilities, and Addictive Diseases 2007a, b). Services are delivered within five state regions by 25 Community Services Boards. Psychiatric hospital services are available in seven state facilities across the five regions, and crisis stabilization services are supplied through contracted providers on a fee-for-services basis. Both are supported directly with state and federal MHDDAD funds.

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emphasis on recovery oriented programming. Peer support in Georgia is typically delivered by consumers for consumers in an outpatient group setting for not less than 12 h per week. Certified Peer Support Specialists assist consumers in identifying resources and supports to accomplish recovery goals. Activities promote socialization, recovery, wellness, self-advocacy, development of natural supports, and maintenance of community living skills (Georgia Department of Human Resources, Division of Mental Health, Developmental Disabilities, and Addictive Diseases 2007a, b). Certified Peer Support Specialists are also assigned to each of Georgia's state hospitals and may assist consumers in transitioning back to the community. In 2001, Georgia was the first state to implement peer support as a Medicaid billable service under the Medicaid Rehabilitation Option. It is included in the community (outpatient) mental health category of service.

Background

As the mental health recovery movement has grown, so has the delivery of community mental health services by consumers of those services (Hodges 2006; Solomon 2004). Consumers identify the need for support during crisis, and consumer delivered services (CDS) demonstrate some evidence in facilitating avoidance of psychiatric admissions and crisis services (Trainor and Shepherd 1997). Peer support—a system of giving and receiving help founded on the principles of respect, shared responsibility, and mutual agreement on what is helpful (Mead et al. 2001)—is a CDS that is promoted in the literature as a means to assist recovery (Coatsworth-Puspoky et al. 2006; Davidson 1999; Solomon and Draine 2001).

Peer support programs have proliferated over the past decade (Davidson et al. 2006; Solomon 2004), supported by the President's New Freedom Commission recommendation that recovery should guide the US mental health system (DHHS 2003). Recovery, grounded in the principles of self-determination and choice, is the process of adjusting one's attitudes, beliefs, perceptions, and goals in life (Farkas 2007) in order to regain a valued role in society and recover from the effects of having been diagnosed with a mental illness (Anthony 1993).

The literature generally reflects that social support, consumer delivered services, and peer support services are associated with reduced psychiatric admissions and crisis episodes. Although studies of the link between social support and symptom recurrence report mixed results (Goering et al. 1992; Hughes et al. 1993; McLeod 1992; Paykel 1994; Powell et al. 2001), several studies associate consumer delivered services with improved outcomes (Galanter 1988; Min et al. 2007; Nelson et al. 2007; Paulson et al. 1999;

Trainor and Shepherd 1997). Studies that directly examine the relationships among peer support, psychiatric hospitalization, and crisis intervention—with exceptions (Clarke et al. 2000; O'Donnell et al. 1999)—report reductions in both (Corrigan 2006; Felton et al. 1995; Klein 1998; Min et al. 2007). However, the majority of studies prior to 2001, whether of consumer delivered services more generally or peer support specifically, rely on less rigorous self-reported assessments, description, process, case study, and small sample sizes (Solomon and Draine 2001).

In August 2007, the Centers for Medicare and Medicaid Services (CMS) issued a letter to states providing policy guidance for the development of Medicaid billable peer support services (Smith 2007). Because of the likelihood that peer support programs will continue to expand nationwide with support of the CMS guidance, it is important to better understand the relationships associated with peer support.

This work contributes to the body of peer support literature by addressing several concerns with previous research: lack of a focus on client outcomes (Solomon and Draine 2001), lack of a comparison group and analysis of small samples (Forchuk et al. 2005), and the availability of research on mental health utilization patterns where a large percent of the population is seriously mentally ill and care is publically financed through Medicaid (Rothbard et al. 1996). We measure the relationships among peer support, psychiatric hospitalizations, and crisis stabilization with 1,910 consumers of peer support services and a matched sample of 3,820 non-consumers of peer support services using 2003 and 2004 Georgia Medicaid claims data; 2003 and 2004 Mental Health, Developmental Disability, and Addictive Diseases (MHDDAD) Community Information System data; and 2003 and 2004 MHDDAD Hospital Information System data. The study employs two logistic regression models that control for age, gender, race, urban/rural status, and presence of a substance abuse diagnosis. We find, contrary to most previous research, that peer support is associated with an increased likelihood of crisis stabilization and a decreased likelihood of psychiatric hospitalization.

The paper proceeds as follows. We begin with a description of our data sources and the method by which we created the study and comparison groups. We then describe our study design and data analysis, followed by a discussion of our key findings within the context of previous research and directions for future research.

Methods

Data Sources

Three administrative data files from the Georgia Department of Community Health, Division of Medical Assistance

(Medicaid) and the Georgia Department of Human Resources, Division of MHDDAD were used in this study. The Medicaid claims contain enrollees' eligibility status, demographic information, outpatient (including community mental health and peer support claims), and prescription drug claims. Because psychiatric hospitalization and crisis stabilization are not Medicaid billable services in Georgia and are not captured by Georgia Medicaid claims, data from the MHDDAD Community Information System and Hospital Information System were obtained and linked with the Medicaid claims data using enrollees' social security numbers.

Subjects

Human subjects interactions were approved by the Georgia State University Institutional Review Board. Study participants were first identified using Medicaid claims data and then matched against the two MHDDAD data files. Medicaid claims document community mental health services reimbursed by Medicaid. Consumers under the age of 18 were excluded, as they are not eligible for peer support services. All consumers ($N = 35,668$) with at least one community mental health claim in calendar year 2003 were identified using the Medicaid community mental health category of service code. The data were then divided into two files: those consumers with a peer support service claim in calendar year 2003 and those without. Cohort demographics are presented in Table 1. Study subjects were significantly different across all demographic variables.

Design

The majority of consumers (95%) with at least one community mental health service claim did not have a peer support service claim. The group with peer support service claims (1,910) was established as the study group. A synthetic control group was created by randomly sampling the group without peer support service claims in a 2:1 ratio by matching against five variables: gender, race, age group, urban/rural residence, and principle diagnosis of the first community mental health service claim in 2003. Matching ensures that any difference between the study and control groups is not the result of differences in the matching variables. The matching procedure resulted in a control group of 3,820 subjects with identical distribution along each of the five matched variables.

The Medicaid data were then matched against the two MHDDAD data files to capture clients' psychiatric hospitalization and crisis stabilization claims² incurred in calendar years 2003 and 2004. To ensure that analysis of

Table 1 Cohort demographics

	With peer support ($N = 1,910$)		Without peer support ($N = 33,758$)	
Gender				
Female	1,040	54.5%	23,288	69.0%***
Male	870	45.5%	10,470	31.0%***
Race				
White	821	43.0%	15,836	46.9%***
Non-white	907	47.5%	15,547	46.1%***
Missing	182	9.5%	2,375	7.0%***
Age group				
18–44	967	50.6%	21,880	64.8%***
45–64	827	43.3%	10,575	31.3%***
65+	116	6.1%	1,303	3.9%***
Residence status				
Rural	1,001	52.4%	15,456	45.8%***
Urban	909	47.6%	18,302	54.2%***
Age				
Mean	44.7		39.6***	
Median	44		39	
Principle diagnosis				
Schizophrenic disorders (295)	1,218	63.8%	8,239	24.9%***
Affective psychoses (296)	444	23.3%	10,700	32.4%***
All other	248	13.0%	14,819	42.7%***

*** $P < .01$

psychiatric hospital and crisis stabilization claims incurred after the first Medicaid claim for community mental health service in 2003, psychiatric hospital and crisis stabilization claims with dates earlier in 2003 than the first community mental health service claim were excluded. Thirteen percent of psychiatric hospital admissions and 14% of crisis stabilization claims were eliminated as a result of this exclusion. The resulting claims identified through this integration process served as the study data file.

Measurement

Outcome Variables Two dummy utilization variables—whether or not a consumer had at least one psychiatric hospitalization claim and whether or not a consumer had at least one crisis stabilization claim—were constructed as outcome variables.

Demographic Characteristics Gender, race, age group, and residential status (urban/rural) were controlled through the matching process. To further control for the consumer's specific age, an age variable was included in the multivariate models. The remaining matching variables were

² Psychiatric hospital claims do not include detoxification services.

included in the multivariate models to test whether they had independent effects on the outcomes of interest.

Comorbidity In addition to matching the study and control groups on principle diagnosis, the presence or absence of a substance abuse claim was used as a control variable in the multivariate models as a proxy for comorbidity because substance abuse is known to complicate the treatment of severe mental health conditions (Dickey et al. 1997). Two other variables—diagnosis count and number of mental health claims were tested for their validity as indicators for the co-morbidity measure. Both were weakly associated with consumers' crisis stabilization utilization and psychiatric hospitalization.

Data Analysis

Two utilization measures (psychiatric hospitalization and crisis stabilization) were modeled using multivariate logistic regression. In total, two models were tested to explore the relationships among peer support, psychiatric hospitalization, and crisis stabilization. Model 1 tested the relationship between peer support and crisis stabilization, and model 2 tested the relationship between peer support and psychiatric hospitalization:

$$\text{Utilization}_i = \alpha_0 + \alpha_1 \text{Peer Support}_i + \alpha_2 \text{Demo Characteristics}_i + \alpha_3 \text{Substance Abuse}_i + \varepsilon_i$$

where i pertains to the consumer, and ε_i is the error term.

Results

After matching the control group to the study group on demographic and diagnostic variables, differences in utilization and co-morbidity between the two groups remained (Table 2). More members of the control group had psychiatric hospitalization claims, and fewer members of the control group had crisis stabilization claims. Members of

the study group averaged more community mental health (outpatient) service claims, and they averaged more months of community mental health service utilization than the control group over the study period. Consumers in the study group were less likely than the control group to have at least one substance abuse claim during the study period (8.8 vs. 12.2%). Average lengths of stay for crisis stabilization were about one-third that of psychiatric hospitalization for both study and control groups.

Model results are presented in Table 3. Model 1 tested the relationship between peer support and crisis stabilization utilization. Consumers of peer support were more likely (odds = 1.345) to experience a crisis stabilization episode than the control group.

Model 2 tested the relationship between peer support and psychiatric hospitalization. Consumers of peer support were less likely (odds = 0.871) to experience a psychiatric hospitalization; however, the result was not statistically significant. The result was statistically significant (odds = .766, $P < .01$), though, for consumers who did not have a crisis stabilization claim.

Discussion and Conclusions

The results from this study are important for three reasons. First, they are based on large samples of 1,910 consumers receiving peer support and 3,820 consumers not receiving peer support. In addition, the study is built on data from peer support, psychiatric hospitalization, and crisis stabilization service Medicaid and administrative data that are considered highly reliable. Second, and building on previous analyses, the study utilizes regression models that control for variables that might affect whether or not a consumer experiences crisis stabilization or psychiatric hospitalization. Third, against the backdrop of existing research on the impact of community mental health services in general and peer support in particular, the results provide important insights into peer support's potential.

Table 2 Psychiatric hospitalization, crisis stabilization utilization, community mental health visits and months, presence of substance abuse claim, and average lengths of stay

	Study group		Control group	
Psychiatric hospitalization	209	10.9%	491	12.9%**
Crisis stabilization	185	9.7%	308	8.1%**
Average number of community mental health visits per consumer	188		57***	
Average number of community mental health service months	18.6		11.4***	
Presence of at least one substance abuse claim		8.8%		12.2%***
Average length of stay (ALOS)				
Crisis stabilization		7.2		6.1
Psychiatric hospitalization		19.2		21.5

** $P < .05$, *** $P < .01$

Table 3 Model results

Model 1	Outcome variable = Crisis stabilization (0, 1)	
	<i>N</i> = 5,730	
	Odds ratio	95% CI
Peer support	1.345***	1.106–1.636
Age	0.983***	0.975–0.991
Urban	1.003	0.830–1.212
Male	1.286**	1.061–1.559
Non-white	0.827	0.679–1.008
Missing race	1.109	0.797–1.544
Substance abuse	3.347***	2.680–4.179
Model 2	Outcome variable = Hospitalization (0, 1)	
	<i>N</i> = 5,730	
	Odds ratio	95% CI
Peer support	0.871	0.732–1.037
Age	0.987***	0.981–0.994
Urban	0.930	0.792–1.093
Male	1.360***	1.155–1.602
Non-white	1.126	0.952–1.332
Missing race	1.066	0.792–1.436
Substance abuse	2.050***	1.661–2.531

** $P < .05$, *** $P < .01$

While the result of the first test—that peer support is associated with an increased likelihood of crisis stabilization—was, at first, a concern based on previous research to the contrary, it was not a concern for Georgia mental health program administrators. State program administrators reported that the results might demonstrate more timely and appropriate use of crisis stabilization—a manifestation of better symptom management skills learned through participation in peer support. In fact, Hodges (2006) supports the notion that those who participate in peer support are more aware of services and utilize a greater number of services overall.

The result of the second test—that there is a negative relationship between peer support and psychiatric hospitalization—is perhaps more interesting. The literature has reported both reduced hospitalizations in relation to peer support (Corrigan 2006; Felton et al. 1995; Klein 1998; Min et al. 2007) and no relationship (Clarke et al. 2000; O'Donnell et al. 1999), but these studies were largely descriptive. This analysis shows there are different results for different consumers. Although peer support is associated with a lower but statistically insignificant likelihood of psychiatric hospitalization overall, the relationship is statistically significant (odds = .766, $P < .01$) for consumers of peer support who did not utilize crisis stabilization services during the study period. In other words, compared

with similar (no crisis stabilization) consumers in the control group who do not use peer support, those who do use peer support services are less likely to have a psychiatric hospitalization claim.

The results of both tests indicate potentially positive outcomes of peer support utilization. In the first result, users of peer support services, when compared with non-users of peer support with similar diagnoses, use crisis stabilization services more. This finding would be particularly salient if we knew the same consumers were then less likely to be admitted to a psychiatric hospital after the crisis stabilization; however, our cross-sectional analysis does not allow us to determine the sequencing of events—only their relationships.

In the second result, users of peer support are less likely to be admitted to a psychiatric hospital when compared with non-users of peer support with similar diagnoses, but the relationship is statistically significant only if consumers do not use crisis stabilization services. Here, we offer two possible explanations. The first is that those who use peer support, crisis stabilization, and psychiatric hospitalization are clinically different in important ways that we were not able to measure.

On the other hand, it may be possible that the consumers who did not have a psychiatric hospitalization were newer to the psychiatric service system overall when compared with those who used both crisis stabilization and psychiatric hospitalization. This might indicate that peer support had some effect in reducing socialization to psychiatric hospital use. Determining when consumers first entered the mental health system, however, was also beyond the limits of the current data. Regardless of the limits of the current data, this analysis appears to shed light on why past literature has found mixed results in the relationships among peer support, crisis stabilization, and psychiatric hospitalization: the effects of peer support may be more nuanced than previously reported.

As with previous studies, there are several limitations to the current analyses. First, the study is restricted to peer support services delivered to Medicaid consumers. The analysis does not examine the experiences of individuals who get peer support services with state mental health or private funds. As it has been shown previously that individuals with Medicaid have greater utilization of both psychiatric hospitalization and outpatient psychiatric services (Rothbard et al. 1996), this study may not reflect the experiences of all individuals who use peer support services.

Second, this analysis is a cross sectional snapshot in time. Researchers selected members of both the study and control groups for inclusion after the first Medicaid claim for community mental health service in 2003 in order to facilitate matching against the MHDDAD databases. There was no record of peer support, crisis stabilization, or

psychiatric hospitalization in the current data prior to the first claim in 2003. To ensure that the first community mental health claim was the event that triggered a subject's inclusion into the cohort, evidence of crisis stabilization and psychiatric hospitalization after January 1, 2003 but prior to the first community mental health claim in the same year was omitted from the analysis. Model results before and after the exclusion were similar; however, it is possible this adjustment may not fully account for any unmeasured effect from events prior to the first community mental health claim.

Finally, it is not possible to account for selection bias from factors the researchers could not measure. Participants self-select into peer support. Although the study and control groups were matched on demographic and diagnostic variables and tests indicated that both diagnosis count and number of mental health services claims were only weakly associated with crisis stabilization and psychiatric hospitalization, the subjects may be clinically different in important ways that may be related to the outcomes of interest.

This analysis makes two contributions to what we know about the effect peer support may have on crisis stabilization and psychiatric hospitalization, and it builds on the many qualitative analyses that have already shown the value of peer support programs in assisting consumers in identifying resources and supports to accomplish recovery goals. First, we demonstrate a relationship between peer support and an increased likelihood of crisis stabilization and suggest that this may be a positive outcome, particularly for consumers who are new to the mental health system and who may not be socialized to the use of psychiatric hospitals. Future research might address this question directly and investigate the role peer support plays in a consumer's decision to choose other outpatient treatment, crisis stabilization services, or psychiatric hospitalization. Such an analysis might be enhanced with qualitative data that describes the precipitating events that lead to intensive treatment.

This analysis also suggests that whether or not a consumer of peer supports experiences a psychiatric hospitalization may be dependent on factors such as whether or not they also experienced crisis stabilization. The analysis indicates there clearly are differences, but the study's cross-sectional nature limits us in concluding which event came first, second, third, etc. Future research might investigate the sequencing of events and include additional control variables to better tease out causal relationships.

The authors would be remiss if we did not suggest that a randomized controlled trial of peer support might conclusively determine the relationships among peer support, crisis stabilization, and psychiatric hospitalization. While logical, such a study might not be practical. Randomization itself may be in direct opposition to the nature of

self-determination and the philosophy of recovery and may prove a significant barrier to future study.

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