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Predictors of outpatient mental health clinic follow-up after hospitalization among Medicaid-enrolled young adults

Leslie Marino,
Department of Psychiatry, Columbia University Medical Center, and New York State Psychiatric Institute, 1051 Riverside Drive, Box 93, New York, New York, 646-774-6312

Lawrence S. Wissow,
Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland

Maryann Davis,
Learning and Working During the Transition to Adulthood Rehabilitation Research and Training Center, Systems and Psychosocial Advances Research Center, Department of Psychiatry, University of Massachusetts Medical School, Worcester, Massachusetts

Michael T. Abrams,
HillTop Institute, University of Maryland Baltimore County, Catonsville, Maryland

Lisa B. Dixon, and
Department of Psychiatry, Columbia University Medical Center, and New York State Psychiatric Institute, New York, New York

Eric P. Slade
Capitol Healthcare Network (VISN5) Mental Illness Research, Education and Clinical Center U.S. Department of Veterans Affairs, and Department of Psychiatry, University of Maryland School of Medicine, Baltimore, Maryland

Leslie Marino: marinol@nyspi.columbia.edu

Abstract

Aim—To assess demographic and clinical predictors of outpatient mental health clinic follow-up after inpatient psychiatric hospitalization among Medicaid-enrolled young adults.

Methods—Using logistic regression and administrative claims data from the Maryland public mental health system and Maryland Medicaid for (N=1127) young adults ages 18–26 who were enrolled in Medicaid, the likelihood of outpatient mental health follow-up within 30 days after inpatient psychiatric hospitalization was estimated.

Results—Only 51% of the young adults had any outpatient mental health follow-up visits within 30 days of discharge. Being black and having a co-occurring substance use disorder diagnosis were associated with a lower probability of having a follow-up visit (OR=0.60, p<.01 and OR=0.36, p<.01, respectively). In addition, those who utilized any outpatient public mental health

Correspondence to: Leslie Marino, marinol@nyspi.columbia.edu.

services during the 180 days prior to their index hospitalization (N=625, 55.4%) were more likely to have a follow-up visit than those without prior outpatient use (OR=2.45, p<0.01). Prior Medicaid-reimbursed primary care visits were not significantly associated with follow-up.

Conclusions—In this predominantly urban, low income statewide sample of young adults hospitalized for serious psychiatric conditions, half did not connect with an outpatient mental health care provider following their discharge. Outpatient transition supports may be especially needed for young adults who were not receiving outpatient services prior to being admitted for psychiatric inpatient care, as well as for young adults with substance use disorders and African Americans.

Keywords

young adults; Medicaid; mental health services

Introduction

Young adults with serious mental illness are at risk of not receiving minimally adequate outpatient mental health services.[1] Lack of timely and adequate outpatient follow-up increases the likelihood that clients may disengage with care resulting in readmissions, self-harm, and medication non-compliance.[2,3,4] For young adults with mental illness, discharge from inpatient hospitalization represents a crucial focus point for patient-centered mental health care systems to implement processes that link them with outpatient mental health services after they are discharged. Limited prior research shows inconsistent receipt of follow-up care after hospitalization among adults in general.[5–8] Stein et al. found that only 49% of Medicaid-enrolled adults attended outpatient mental health appointments within 30 days of discharge from an inpatient mental health stay.[5] However, few if any prior research studies provide information about the likelihood that Medicaid-enrolled young adults receive follow-up outpatient mental health services after discharge from a hospital stay.

Past research, mostly on small clinical samples, has found varying rates of post-discharge follow-up at outpatient appointments for adult inpatients.[6,7,8] Low follow-up rates (35–36% were found in two studies of adult inpatients discharged to local community mental health clinics.[6,7] One study found a much higher rate (82%) in a sample of adults discharged to an outpatient clinic within the university-affiliated hospital system that they were admitted to.[8] None of these studies shed light on post-hospitalizations outpatient clinic use in young adults.

The young adult population—defined here as persons ages 18–26—is differentiated from other adult age groups by the multiple transitions in legal status and social roles that they experience over a several-year period. Although multi-year delays between onset of mental health symptoms and receipt of mental health treatment are common in this age group [1], Medicaid programs in most states do not have services in place to manage and support service transitions for young adults who may be experiencing these types of delays.[9] Consequently, research focusing on young adults may provide a rationale for offering them access to “bridging” programs[10] designed to improve outpatient engagement post-hospitalization in this vulnerable population. Early intervention and engagement with

outpatient mental health services can enhance both clinical outcomes and psychosocial outcomes, such as overall quality of life, attainment of competitive employment and continuation of education for young adults with serious mental illness.[11,12]

The purpose of this study was to examine demographic and clinical predictors of outpatient mental health clinic engagement within 30 days after inpatient psychiatric hospitalization among Medicaid-enrolled young adults. In addition to demographic and clinical correlates of follow-up, regression analyses examined differences in the likelihood of follow-up between young adults who had not been receiving outpatient mental health services prior to their index hospitalization as compared with young adults who had been previously receiving services. A prior study of Medicaid-enrolled adults found that clients who had received treatment in the 30 days prior to admission were over 3 times more likely to follow-up.[5] Consequently, it was hypothesized that not receiving outpatient mental health services in the 180 days prior to admission would be a risk factor for lack of outpatient follow-up after discharge. We also explored the relationship of primary care visits to outpatient mental health follow-up. Primary care providers could be an important linkage strategy for young adults entering the mental health system to enhance treatment linkage and engagement.

Methods

Data and Sample

The Medicaid database included 1,177 persons ages 18 to 26 years old who had completed at least one episode of inpatient mental health care between October 1, 2005 and September 30, 2006, at either a general or a psychiatric hospital in Maryland and who had been enrolled in Medicaid as of the discharge date. Medicaid (including public mental health system) claims, eligibility and authorization data on these young adults' use of mental health care services were obtained from Maryland's Department of Mental Hygiene Administration (DHMH). Forty-seven persons who were not continuously enrolled in Medicaid after discharge plus one person who was dually enrolled in Medicare and two who had no qualifying mental health diagnosis (International Classification of Disease, Version 9 codes 290 to 319 except 299 for autism spectrum) were excluded, which left 1,127 in the analyses. The study was declared exempt from Institutional Review Board review by the Maryland Department of Health and Mental Hygiene and University of Maryland.

Dependent Variable

The study period included the 180 days prior to the individual's index hospital discharge date and 30 days afterwards. The primary dependent variable was any outpatient clinic use during the 30 day post-discharge period. Outpatient clinics are staffed by licensed mental health clinicians and generally provide medication management, counseling, and individual and group psychotherapy.

Estimation Model

The likelihood of any outpatient clinic service use was estimated using a logistic regression model. Covariates were chosen a priori to represent mental health services predisposing, enabling, and need factors; step-wise variable selection was not used.[13,14] Predisposing

characteristics included patient sex, age, race-ethnicity, and the eligibility category associated with Medicaid enrollment.[15–18] For the enrollment variable, Medicaid coverage groups were collapsed into three categories based on how a person qualified for Medicaid. The first category included persons who qualified as a result of being in a low income family (Temporary Assistance to Needy Families and Medicaid expansion categories for low income children and pregnant women, including the State Children's Health Insurance Program). The second category included persons receiving Supplemental Security Income (SSI), persons who were receiving long-term care services, and other medically needy aged, blind, or disabled persons. The third category included foster care, as these young adults are eligible to retain their coverage until age 20.

Enabling factors included whether the young adult had any inpatient admissions or outpatient mental health clinic visits, or both, during the 180-day period prior to the index admission. An interaction between not having received outpatient public mental health clinic services prior to their index hospital admission and having had any primary care visit during the 180 days prior to the index admission was also included in the regression. It was hypothesized that primary care contact would enable outpatient mental health service use following hospital discharge (i.e., would be associated with a greater likelihood of follow-up outpatient mental health clinic use). Thus, the regression coefficient of the interaction term captures the potential impact for new clients of having seen a primary care provider in the 180 days prior to the index hospital admission.

Need for outpatient mental health clinic services was indicated by International Classification of Disease, Version 9 (ICD-9) diagnoses for mental health conditions and by receipt of a psychotropic medication (i.e., by any antipsychotic, mood stabilizer, antidepressant, or stimulant prescription fill) during the 180-day pre-index period. Diagnosis categories included schizophrenia (295.x); bipolar disorder (296.0, 296.4–296.9); psychotic disorder NOS (297.1, 298.9); major depressive disorder or dysthymia (296.2, 296.3, 300.4); mood disorder NOS (296.9, 311); and all other mental health codes that were from claims paid for by Medicaid (290.x–319.x except 299).

Results

Women comprised 52% of the sample (Table 1). The sample's racial-ethnic composition was equally divided between white (N= 521, 46.2%) and black (N=525, 46.6%) and the remaining 7.2% were Hispanic or other. In the Medicaid eligibility categories, more than half or 57.4% of the young adults in the sample were receiving SSI or state disability supports, 37.4% were in the non-disabled and non-foster care group (those receiving Medicaid primarily due to financial need), and 5.2% were in foster care. Bipolar disorder was the most prevalent diagnosis (32.5%), followed by schizophrenia (28.1%), and major depressive disorder/dysthymia (21.3%). The remaining persons were diagnosed with either mood disorder not otherwise specified (NOS), psychotic disorder NOS, or other. Slightly less than ten percent (N=111, 9.8%) had a co-morbid substance use disorder diagnosis.

Roughly half (51.2%, N=577) of the young adults attended an outpatient mental health appointment within 30 days of discharge from the hospital. Young adults who attended an

outpatient appointment were more likely to be white, eligible for Medicaid because they were receiving SSI or similar long-term care/disability support, have a diagnosis of schizophrenia or bipolar disorder, have received psychotropic medication prior to the index admission, or have had at least one prior outpatient mental health visit in the 180 days prior to the index admission. Those who did not attend the outpatient follow-up appointment were more likely to be black, receive Medicaid primarily due to financial reasons, carry a diagnosis of major depressive disorder/dysthymia, or have a co-morbid substance use disorder.

Table 2 shows the results of the logistic regression model. Being black was associated with significantly decreased odds of having an outpatient visit within 30 days after discharge compared with being white (OR=0.60, $p<0.01$). There was a very small, but statistically significant age effect of being older on outpatient follow-up (OR=1.06, $p=0.03$). None of the diagnostic categories were associated with likelihood of attending an outpatient appointment except for “other” which was found to have decreased likelihood of follow-up compared with having schizophrenia. Those young adults with a co-morbid substance use disorder had much lower odds of follow-up within 30 days of discharge (OR=0.36, $p<0.01$). After controlling for other factors, Medicaid–eligibility categories were not associated with the likelihood of follow-up after discharge. Young adults who had any outpatient mental health clinic visits or received psychotropic medications in the 180 days prior to the index admission were more likely to have an outpatient clinic visit after discharge compared with those who did not (OR=2.45, $p<0.01$ and OR=1.41, $p<0.01$, respectively). Having had a primary care visit in the prior 180 days for those who did not have any prior outpatient mental health visits was not associated with receipt of follow-up care (OR=1.24, $p=0.30$).

The finding that a substantial proportion of young adults in this inpatient discharge sample had no contact with outpatient mental health care providers in the prior 180 days coupled with the finding that persons in this subgroup were less likely to receive follow-up outpatient care post-discharge led us to examine the characteristics associated with individuals in this subgroup, using logistic regression. These results are shown in Table 3. Having had no contact with the outpatient mental health care providers in the prior 180 days was positively associated with being black (OR=1.35, $p<0.05$) and negatively related with Medicaid enrollment due to a disability/institutional care (OR=0.47, $p<0.01$) or foster care eligibility category (OR=0.37, $p<0.01$), having a diagnosis of bipolar disorder (OR=0.43, $p=0.05$), having a co-morbid substance use disorder (OR=0.46, $p<0.01$), prior mental health inpatient admission (OR=0.17, $p<0.01$) and prior use of primary care services (OR=0.35, $p<0.01$).

Discussion

The results of this study indicate that approximately half (577 of 1127, or 51%) of young adults in Maryland’s Medicaid program did not have an outpatient mental health clinic encounter within 30 days after being discharged from an inpatient mental health stay. Rates of follow-up outpatient clinic use varied across clinical and demographic subgroups. Those who did not attend follow-up care were more likely to be black, have a co-occurring substance use disorder diagnosis and not have had any contact with outpatient mental health providers in the public mental health system or received any psychotropic medications in the

6-month period immediately prior to their inpatient discharge. Those young adults who lacked an existing connection to an outpatient mental health care provider comprised nearly half of the total sample. Of this group, most (N=271, 54%) also had no contact with a primary care provider during this same period. This suggests that a significant minority of young adults with serious mental health problems do not have any contact with outpatient health care providers during the months leading up to an acute psychiatric episode.

Those young adults who had no recent connection with an outpatient mental health clinic were more likely to be black and had fewer prior hospitalizations, a lower prevalence of SSI receipt and lower prevalence of a psychotic disorder or comorbid substance use disorder diagnosis. These young adults represent a distinct group at greater risk for poor outpatient follow-up. Consequently, they may be a critical target group for interventions to help link clients to care. Further research is needed to better understand their course of illness, use of services and pathways to care.

Prior research studies reach inconsistent conclusions regarding the demographic predictors of not receiving minimally adequate outpatient follow-up care, likely due to variability in the samples including sample size, insurance status, and systems of care that clients are engaged in. Stein et al. [5] found that African Americans and those with a co-occurring substance use disorder diagnosis were less likely to receive follow-up care, but found no association with younger age. Nose and colleagues conducted a systematic review of predictors of non-adherence to outpatient follow-up and found client-level factors such as being young, male and unemployed associated with poor follow-up.[19] Kruse et al. examined missed intake appointments for clients with serious mental illness who were referred by a state agency to an outpatient psychiatric clinic and found that being younger and Hispanic were associated with nonattendance.[20] The findings in this study showed a small, but significant age effect and taken together with prior research suggests that perhaps the youngest adults are at elevated risk of non-attendance at outpatient follow-up following an inpatient stay.

The finding that African Americans have lower follow-up rates after hospitalization is not uncommon. A recently published paper that examined racial and ethnic disparities in outpatient mental health follow-up after hospitalization utilizing the Medical Expenditure Panel Survey found the lowest rates of follow-up among blacks in the sample, 29% followed up within 30 days. The authors cite lack of empathy or culturally competent care as well as social and community level factors as likely contributing factors to poor outpatient follow-up. A systematic review of interventions to increase engagement among underserved racial and ethnic minorities found that the collaborative care model for depression was effective in enhancing engagement, but additional research needs to be conducted to create and assess the effectiveness of interventions aimed at increasing treatment engagement in this population.

The finding that persons with co-occurring substance use disorder diagnoses are more likely to disengage in care has also been found in other studies.[21] One of the main challenges in treating this population of dual-diagnosis clients is that in most states, substance use and mental health treatment services are often not integrated.[22] Adolescents and young adults are vulnerable to the development of mental illness and substance use disorders[23] and co-

occurring mental health and substance use disorders may substantially impact their longer term recovery. While there is limited evidence regarding any particular model of integrated mental health treatment and substance use treatment being more effective than another, it is well-accepted yet seldom practiced that such should be the standard of care for patients with co-occurring mental health and substance use diagnoses.[24–26]

This study did not find any association between use of primary care services in the 180 days prior to hospitalization and follow-up at outpatient mental health visits. While primary care providers may be an important gateway to mental health treatment, particularly in young adults with newly emerging symptoms, the medical and specialty mental health systems remain fragmented and parallel. New efforts in the Affordable Care Act aim to integrate primary care and behavioral health services (mental health and substance use) in order to reduce overall health care costs and enhance clinical outcomes. More research will need to be conducted to assess whether this integration of care assists low-income young adults with mental illness to remain engaged in outpatient mental health treatment.

While demographic and clinical variables may help clinicians identify individuals at risk for disengaging from care in certain populations, broader policy changes and system-level interventions may be more effective in helping young adults remain engaged in outpatient treatment.[3] Evidence from research on “bridging strategies”, interventions that help clients connect with outpatient services after inpatient hospitalization, suggests that state Medicaid programs could use various strategies, ranging in intensity, to help increase young adults’ attendance at follow-up outpatient mental health appointments.[10] Low-intensity system-level interventions include decreasing the wait time to first outpatient appointment[27] as well as other discharge planning interventions by inpatient teams, such as making appointments for clients, using reminder phone calls and letters, and utilizing referral coordinators.[3,10] High-intensity interventions include assertive community treatment (ACT) teams.[10] For those clients who are at risk for poor follow-up after hospitalization, yet do nott meet criteria for ACT teams, brief critical time intervention (CTI) is an effective, mid-intensity intervention to help clients remain engaged in care.[28] CTI clinicians work closely with patients on risk factors for disengagement, more intensively at first and decreasing in intensity over time, assisting the client in utilizing community supports. By implementing such bridging strategies as part of standard discharge planning during hospitalization, states, health insurers and mental health providers can assist at-risk young clients’ transition to engage in necessary outpatient mental health services.

This study is subject to several limitations. First, this data sample is comprised of a Medicaid-enrolled population in a single state and may not be generalizable to services utilization by all young adults with mental illness. By comparison to other states’ public mental health systems, Maryland’s system probably is among the best in relation to client access to outpatient mental health care providers.[29] Consequently, rates of outpatient engagement may be higher in Maryland than in other states. In addition, this study is based solely on Medicaid data and did not take into account services paid for by other payers. Roughly 300 young adults in the sample were not continuously enrolled in Medicaid during the prior 180 days and may have received care from an outside provider. A sensitivity

analysis excluding this population of young adults who were not continuously enrolled demonstrated similar results, except for a nonsignficant age effect.

In conclusion, roughly half of the young adults in this sample did not follow-up with outpatient mental health services within 30 days of discharge from an inpatient psychiatric hospitalization placing them at risk for poor outcomes. With the emergence of a new approach to healthcare, which places extensive value on prevention and insurance coverage, now is an opportune time to create and implement interventions and strategies to assist young adults in the public mental health system to engage with outpatient mental health services. Lack of an existing connection to an outpatient mental health care provider prior to discharge from an inpatient stay is a prevalent characteristic of young adults with serious mental health conditions and may be an important indicator of young adults' need for specially designed outpatient transition supports. Linking young adults with mental illness to important health services may not only enhance their clinical outcomes, but may also increase their likelihood of recovery and of remaining engaged in their communities.

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Table 1

Characteristics of Medicaid-enrolled young adults (N=1127), by whether attended any outpatient clinic visits within 30 days of inpatient discharge

	Overall (N=1127)		Did attend (N = 577)		Did not attend (N = 550)				
Characteristic	**N**	**%**	**N**	**%**	**N**	**%**	**df**	**F**	**P**
Gender									
Female	582	51.6	291	50.4	291	52.9	1, 1126	0.69	0.41
Male	545	48.4	286	49.6	259	47.1	1, 1126	0.69	0.41
Age (mean ± sd)	21.6	± 2.3	21.8	± 2.4	21.4	± 2.3	1, 1126	5.80	0.02
Race/ethnicity									
White non-Hispanic	521	46.2	292	50.6	229	41.6	1, 1126	9.18	<.01
Black non-Hispanic	525	46.6	237	41.1	288	52.4	1, 1126	14.57	<.01
Hispanic/other/unknown	81	7.2	48	8.3	33	6.0	1, 1126	2.29	0.13
Medicaid eligibility category									
Non-disabled, non-foster care groups (TANF, etc.)	422	37.4	182	31.5	240	43.6	1, 1126	17.77	<.01
SSI, other disabled, long term care	647	57.4	365	63.3	282	51.3	1, 1126	16.73	<.01
Foster care	58	5.2	30	5.2	28	5.1	1, 1126	0.01	0.93
Mental health diagnosis									
Schizophrenia	316	28.1	177	30.7	139	25.3	1, 1126	4.09	0.04
Bipolar disorder	366	32.5	211	36.6	155	28.2	1, 1126	9.12	<.01
Major depressive disorder/Dysthymia	240	21.3	105	18.2	135	24.5	1, 1126	6.76	0.01
Mood disorder NOS	124	11.0	56	9.7	68	12.4	1, 1126	2.02	0.16
Psychotic disorder NOS	39	3.5	15	2.6	24	4.4	1, 1126	2.59	0.11
Other	42	3.8	13	2.3	29	5.3	1, 1126	7.06	<.01
Substance use disorder	111	9.8	41	7.1	70	12.7	1, 1126	9.97	<.01
Received psychotropic medication prior to admission	515	45.7	322	55.8	193	35.1	1, 1126	50.90	<.01
Service use prior to admission									
Had another inpatient mental health admission	141	12.5	82	14.2	59	10.7	1, 1126	3.14	0.08
Had an outpatient mental health clinic visit	625	55.4	389	67.4	236	42.9	1, 1126	72.58	<.01
Had a primary care visit *	165	32.8	66	35.1	99	31.5	1. 1126	0.67	0.41

* Coded 1 if had a primary care visit and did not have an outpatient mental health clinic visit during the 180-day period prior to the index admission, and coded 0 otherwise. Of the 502 young adults with no outpatient mental health clinic visits prior to admission, N=231 (46%) had a primary care visit prior to admission.

Table 2

Logistic regression predictors of having an outpatient mental health clinic visit within 30 days of inpatient discharge

Covariates	OR	SE	z	p>z	95% CI	
Female	1.03	0.14	0.25	0.81	0.79	1.36
Age	1.06	0.03	2.15	0.03	1.01	1.12
Race-Ethnicity [ref: White]						
Black non-Hispanic	0.60	0.08	−3.61	0.00	0.46	0.79
Hispanic/Other/Unknown	1.01	0.27	0.05	0.96	0.61	1.69
Medicaid eligibility categories [ref: non-disabled, non-foster care]						
SSI, other disabled, long term care	1.22	0.19	1.31	0.19	0.90	1.66
Foster care	1.05	0.33	0.17	0.86	0.57	1.93
Mental health diagnosis [ref: Schizophrenia]						
Bipolar disorder	1.11	0.19	0.61	0.54	0.79	1.57
Major depressive disorder/Dysthymia	0.88	0.17	−1.01	0.31	0.55	1.21
Mood disorder NOS	0.96	0.23	−0.17	0.87	0.60	1.55
Psychotic disorder NOS	0.95	0.36	−0.02	0.88	0.45	1.98
Other	0.39	0.15	−2.50	0.01	0.18	0.81
Substance use disorder	0.36	0.08	−4.54	0.00	0.23	0.56
Received any psychotropic medication prior to admission	1.41	0.23	2.14	0.03	1.03	1.93
Contact with mental health providers prior to admission						
Any inpatient mental health admission	0.84	0.17	−0.89	0.38	0.56	1.24
Any outpatient mental health visits	2.45	0.43	5.14	0.00	1.74	3.45
Primary care use [only if no outpatient mental health visits prior to admission]	1.24	0.26	1.03	0.30	0.82	1.89

Table 3

Characteristics of young adults with no prior outpatient mental health visits prior to index hospitalization

	OR	SE	z	p	95% CI	
Female	1.26	0.19	1.49	0.14	0.93	1.69
Age	1.01	0.03	0.33	0.74	0.95	1.07
Race-Ethnicity [ref: White]						
Black non-Hispanic	1.35	0.20	1.99	<0.05	1.00	1.80
Hispanic/Other/Unknown	1.26	0.34	0.83	0.41	0.73	2.15
Medicaid eligibility categories [ref: non-disabled, non-foster care]						
SSI, other disabled, long term care	0.47	0.07	−4.76	<0.01	0.34	0.64
Foster care	0.37	0.13	−2.82	<0.01	0.19	0.74
Mental health diagnosis [ref: Schizophrenia]						
Bipolar disorder	0.43	0.16	−2.25	0.02	0.21	0.90
Major depressive disorder/Dysthymia	0.50	0.18	−1.96	0.05	0.24	1.00
Mood disorder NOS	1.24	0.46	0.59	0.55	0.60	2.55
Psychotic disorder NOS	1.98	0.79	1.71	0.09	0.91	4.33
Other	1.78	0.91	1.12	0.26	0.65	4.87
Substance use disorder	0.46	0.12	−3.06	<0.01	0.28	0.76
Any inpatient mental health admission	0.17	0.05	−6.01	<0.01	0.10	0.30
Primary care use prior to admission	0.35	0.05	−6.99	<0.01	0.26	0.47