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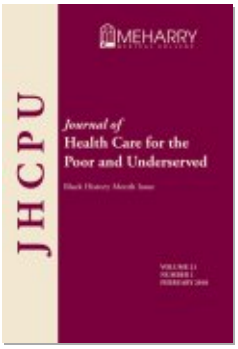

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Behavioral Health Services Use among Heads of Homeless and Housed Poor Families

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Abstract: **Objectives**. This study compares the use of and cost for behavioral health services among heads of homeless and housed poor families. **Methods**. Medicaid records for 59,135 heads of families receiving Temporary Assistance to Needy Families benefits were matched with data from Philadelphia's municipal shelter system. Propensity score matching was used to select a matched control group to those identified as having been homeless between 1997 and 2003. Behavioral health services utilization was then assessed based on Medicaid claims records. **Results**. Substantially higher levels of behavioral health services use and corresponding costs were found among heads of families with a history of shelter use. **Conclusions**. Greater use of behavioral health services by heads of homeless families may reflect greater severity of disorders or a greater likelihood to seek treatment relative to what has been suggested by previous research.

Key words: Behavioral health services, homelessness, low-income families, service use, costs.

In contrast to the preponderance of research on mental health and substance use disorders among unaccompanied adults who are homeless, there is relatively little research on this topic among adults who are homeless as part of a family. Behavioral health disorders occur far less frequently among adults in homeless families than among their single adult counterparts, and are less frequently cited as risk factors for the onset or duration of homelessness among families.[1]

The prevalence of mental illness and substance use disorders among adults in homeless families has been compared with their prevalence among adults in poor, housed families. In a series of studies that compared the rates of mental illness and substance use disorders among homeless and housed families, Bassuk and colleagues found that current behavioral health disorder rates for homeless mothers were 35.4%, compared with 33.3% for poor, housed mothers.[2–4] For diagnosed substance abuse disorders,

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Bassuk et al. reported current rates of 4.6% and 3.7% for homeless and house poor mothers, respectively.[2] The most frequently occurring disorders included major depression, substance use disorders, anxiety disorder, and post-traumatic stress disorder. In another study comparing housed and homeless family heads, Shinn et al. reported that rates of having a history of psychiatric hospitalization or meeting diagnostic criteria for major depression or schizophrenia were 9% for the shelter requesters and 8% for matched welfare caseloads, and that rates of substance abuse were 18% for the shelter requesters and 8% for welfare caseloads.[5] On the other hand, there are studies that have documented higher rates of major depression, post-traumatic stress disorder, and emotional distress among homeless women compared with poor, non-homeless women.[6–7]

Reported rates of hospitalization for mental health or substance abuse disorders among adults in homeless families are consistently higher than for those in housed, low-income families. For example, Bassuk and colleagues found that rates of hospitalization for mental health and substance use disorders were 12.4% and 18.6%, respectively, for homeless mothers and 4.2% for both disorders for housed controls. Significant differences in rates of inpatient treatment for substance use and mental health disorders have also been found in other studies.[8–10]

Little additional information has been available in the studies that assess hospitalization rates. Findings on service use are based on the recall of survey respondents, and do not provide further information on length of stays, costs, diagnoses, and other particulars. Furthermore, little information is provided on ambulatory care for behavioral health disorders. Inpatient care is typically provided for acute episodes of mental illness and substance dependencies; augmenting findings on inpatient care with information about use of outpatient care would provide additional information that might help lessen the occurrence of untreated disorders reported in previous studies.

In this article, administrative records on public shelter utilization were merged with Medicaid-paid behavioral health service use records to compare rates of treatment between adult homeless and housed heads of poor families receiving Temporary Assistance to Needy Families (TANF) cash benefits. Use of administrative records provides a means of assessing the extent of behavioral health service use that does not rely on subject recall; these data also enable us to assess the extent of outpatient care, providing a more complete picture of rates of treated behavioral health disorders.

Methods

Data and sample. This study used data from Medicaid eligibility and claims files for all beneficiaries in Philadelphia who were certified as eligible for Medicaid by virtue of their eligibility for TANF. Medicaid eligibility files provided information on program eligibility and demographic characteristics, and Medicaid claims files provided information related to specific, reimbursed inpatient and ambulatory services received. Information in the claims includes dates and types of service, corresponding diagnoses, and costs for services.

Personal identifiers (name, date of birth, gender, social security number) from the Medicaid eligibility files were matched, using a combination of deterministic and

probabilistic matching procedures, with similar information from a database on families using emergency shelter that is maintained by the Philadelphia Office of Supportive Housing (OSH). These shelter records provided information about homelessness status, as well as dates of entry and exit.

A total of 59,645 residents of Philadelphia over age 18 were enrolled in Medicaid in 1999 in conjunction with receiving TANF cash benefits. These records were matched with OSH records on heads of family households (i.e., those accompanied by minor children) who entered shelter between 1997 and 2002. As a result of this match, 2,545 adults were identified as being both a Medicaid recipient in 1999 and having a history of shelter use with their families, during this six-year period. An additional 510 people in homeless families were identified as having used a shelter as part of a childless couple or as a pregnant single adult; they were excluded from the analysis.

The final study sample comprised 59,135 people, of whom 4.3% were considered homeless. For all these people, claims records between 1997 and 2003 served as a basis for identifying behavioral health services use. The homeless adults in this group are first compared with the other 56,590 adults (i.e., controls), and then to a subset of 2,545 matched controls selected from the larger control group using propensity score matching techniques.[11] Variables used for the matching included race/ethnicity, age in 1999, age at eligibility, gender, whether or not they were eligible for Medicaid in each year of 1995–98, and the number of days they were eligible in 1999.

Measures. Behavioral health services were identified by the Medicaid claims associated with primary International Classification of Diseases, 9th Edition (ICD-9) codes between 290 and 319. Claims records maintained separate files for psychiatric services and drug and alcohol services. Behavioral health services were classified as inpatient and outpatient services. The frequency and duration of receiving behavioral health services were calculated for each person. Behavioral health expenditures were calculated as the actual amount charged to Medicaid for covered services. Service use rate, a mean value for the group, was based on the number of people who received services divided by the total number of subjects in each group of the sample. The number and cost of services, mean values per user, were calculated for participants who received services during the study period. The average cost of services for a group was also calculated by summing all reimbursement amounts for each group and dividing it by the number of people in each group. Sociodemographic characteristics included age, gender, race/ethnicity, and duration enrolled in Medicaid.

Analysis. Descriptive analysis was conducted to compare sociodemographic characteristics, prevalence and patterns of behavioral service use, and service expenditures among low-income families with and without histories of a homeless episode. Chi-square tests for categorical variables and *t*-tests for continuous variables were used to detect a significant difference between homeless and other low-income families. The proportion of subjects who received behavioral health services per year was examined to identify service use patterns for the homeless group and its comparison group. The institutional review boards of the University of Pennsylvania and the University of Illinois approved this study before data analyses were conducted.

Results

The table exhibits a comparison of the study group with the matched and unmatched control groups on demographic and Medicaid-eligibility factors and use of Medicaid-reimbursed behavioral health services. The study group was significantly more female, African American, and younger than the unmatched control group, but (by design) was very similar to the matched control group.

The study group used significantly more behavioral health services than either of the two control groups in virtually every measure on the table. For inpatient services,

Table 1.

DEMOGRAPHIC CHARACTERISTICS AND BEHAVIORAL HEALTH SERVICE USE (1997–2003) FOR LOW-INCOME FAMILIES WITH AND WITHOUT AN EPISODE OF HOMELESSNESS (N=59,135)

Characteristics and service use	Homeless group (N=2,545)	Matched Non-homeless group (N=2,545)	Non-matched Non-homeless group (N=56,590)
Sociodemographic characteristics			
Female	98.5%	97.9%	91.2%[e]
Race/Ethnicity			[e]
African American (Non-Hispanic)	92.7%	93.2%	67.7%
Hispanic	3.7%	2.8%	15.5%
White (Non-Hispanic)	2.7%	3.1%	12.3%
Age (mean)	29.8	29.7	34.2[e]
No. days eligible for TANF in 1999	281.2	283.8	
Inpatient care			
Psychiatric inpatient services			
proportion of group using services	15.6%	5.7%[c]	6.1%[e]
mean days—all people in group	3.9	0.9[c]	1.1[e]
mean days—user	24.9	15.2[b]	16.8[e]
mean cost—all people in group	$1,823	$438[c]	$502[e]
mean cost—user	$11,687	$7,749[a]	$8,267[e]
Rate of alcohol/drug related inpatient care			
proportion of group using services	3.7%	0.8%[c]	1.1%[e]
mean days—all people in group	0.4	0.1[c]	0.1e
mean days—user	9.5	9.9	9.0
mean cost—all people in group	$158	$30[c]	$38[e]
mean cost—user	$4,533	$4,188	$4,132

(Continued on p. 586)

Table 1. *(continued)*

Characteristics and service use	Homeless group (N=2,545)	Matched Non-homeless group (N=2,545)	Non-matched Non-homeless group (N=56,590)
Outpatient care			
Psychiatric outpatient services			
proportion of group using services	35.4%	15.9%[c]	20.5%[e]
mean visits—all people in group	10.8	4.0[c]	9.6
mean visits—user	30.5	25.3	46.7[e]
mean cost—all people in group	$670	$203[c]	$447[e]
mean cost—user	$1,894	$1,277	$2,176
Drug/alcohol outpatient service			
proportion of group using services	24.7%	5.4%[c]	6.0%[e]
mean visits—all people in group	12.2	4.1[c]	8.0[d]
mean visits—user	49	75	133[e]
mean cost—all people in group	$258	$72[c]	$136[e]
mean cost—user	$1,044	$1,320	$2,260[e]

Homeless families vs. Matched non-homeless families a<.05, b<.01, c<.001,
Homeless families vs. Non-matched non-homeless families d<.05, e<.001
TANF = Temporary Assistance for Needy Families

15.6% of the study group used inpatient psychiatric services, almost three times the proportions for either of the control groups, and 3.7% of the study group used inpatient drug and alcohol services, more than three times the proportions for either of the control groups. For psychiatric inpatient services, not only did a greater proportion of the study group use inpatient services, but on average the people used significantly more days and at a greater cost. In contrast, among those who used drug and alcohol inpatient services, the number of inpatient days consumed was roughly equal across all three groups.

Use of outpatient psychiatric and outpatient drug and alcohol services were more widespread in all three groups. In the study group, over one-third used psychiatric services and just under one-fourth used drug and alcohol services during the study period. These proportions were substantially higher than their counterparts in the control groups. However, looking only at those people using services, the average frequency and cost of services used per person in the study group were not different from those in the matched control group, and were significantly lower than those of the unmatched control group.

As displayed in Figure 1, heads of homeless families were more likely to receive inpatient behavioral health services than heads of housed low-income families throughout the observation period. Yearly inpatient behavioral health service use rate was in the

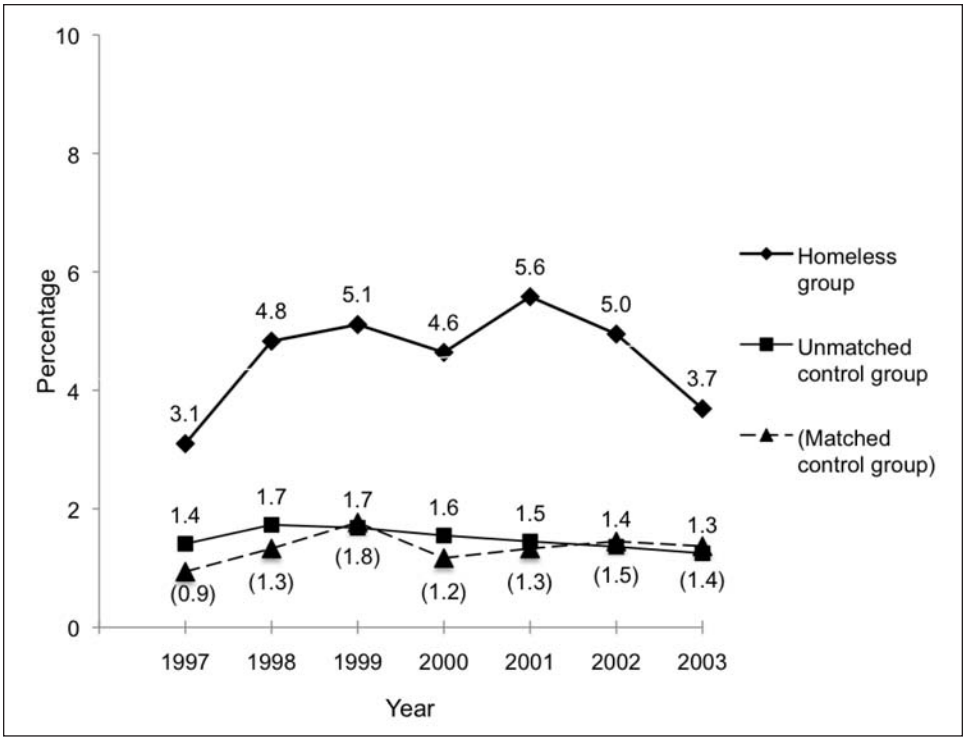

Figure 1. Rates of inpatient behavioral health service use among low-income families with and without an episode of sheltered homelessness (N=56,590).

range between 3.1% and 5.6% for the homeless group, compared with 1.3% and 1.7%. for the unmatched housed group and 0.9% and 1.8% for the matched housed group.

Figure 2 shows that yearly percentage of families who received outpatient behavioral health services was in a range of 7.8% and 14.5% for the homeless group, consistently higher than 6.6% and 10.0% for the unmatched housed group. The matched housed group had even lower percentages than the unmatched group, widening the gap in service use rate much more in comparison with the homeless group.

Discussion

Heads of homeless families use behavioral health services much more and are much more costly to serve than heads of housed, low-income families. Heads of homeless families stay longer in inpatient mental health care, and, as a consequence, the average cost per user of inpatient psychiatric services is 40% higher for the homeless group. The public cost to serve homeless families is even greater, particularly given the added cost of shelter.

There are several possible explanations for the significant discrepancy in behavioral service use by family household heads with a history of homelessness. First, assuming

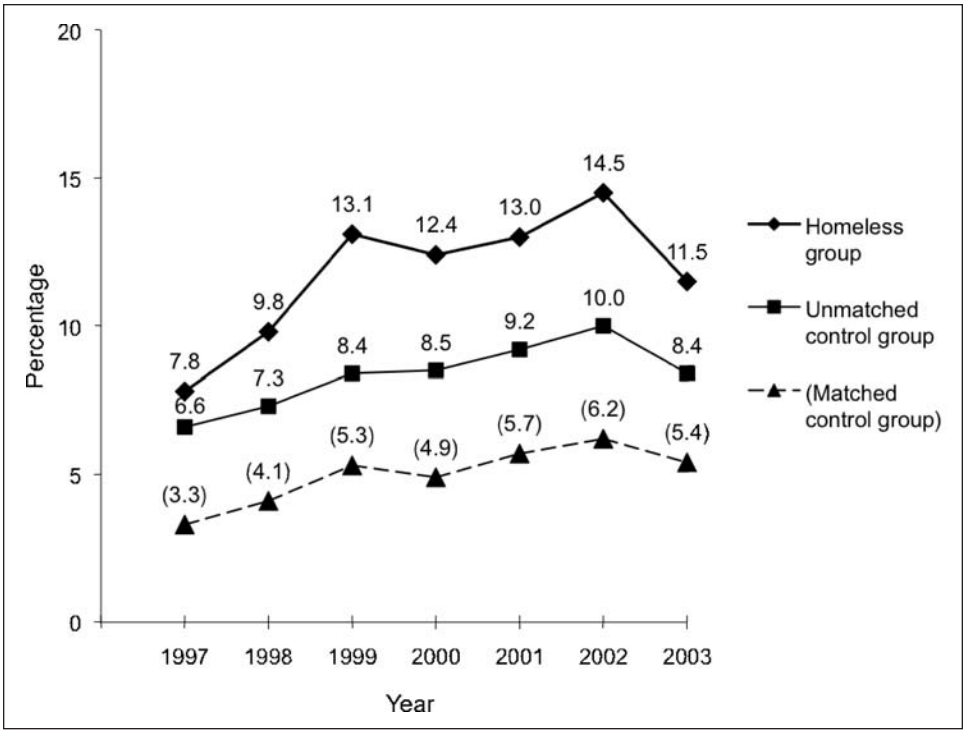

Figure 2. Rates of outpatient behavioral health service use among low-income families with and without an episode of sheltered homelessness (N=56,590).

that rates of disorder are closer between homeless and housed adults in families, as suggested by the literature, the severity of disorders may be greater among homeless households, leading to higher rates of treatment. For example, the literature shows that the prevalence of self-reported physical, sexual, and emotional abuse; domestic violence; and childhood out-of-home placement is greater among homeless than among housed household heads, and this could lead to greater severity in disorders.[3,12] Another possibility is that the stress related to experiencing homelessness may exacerbate underlying disorders and lead to greater rates of treatment. Finally, families who stay in shelters may interact more with health and social services professionals, which may lead to treatment at rates higher than those of housed adults in families, despite comparable rates of disorder. Furthermore, the housed poor might have more difficulty than their homeless counterparts in searching for clinicians and facilities that accept Medicaid and provide needed services.[13]

A limitation of this study is its focus on Medicaid-eligible and TANF-receiving families; most but not all homeless or poor families are enrolled in Medicaid or receiving TANF. In addition, only families who entered the municipal shelter system were identified as homeless families. For example, some families who lived with relatives or friends due to lack of housing but did not enter the shelter system were not counted as homeless. Second, while the Medicaid claims provide information on diagnosis and

behavioral health services, no direct measure of mental health conditions was available. Third, in spite of using propensity score matching, unmeasured differences in study and control groups may contribute to the differences found in levels of behavioral health services used. Finally, this study did not measure changes in the level of service use in relation to episodes of homelessness; future research will explore the sequencing of shelter and other services use.

Despite these limitations, the current study clearly suggests that heads of homeless families have higher rates of behavioral health service use than their housed poor counterparts. The findings also suggest a greater need for behavioral health services for adults in families who are at risk for and are currently experiencing homelessness and the importance of intervention efforts to meet mental health needs of families who are currently homeless and those at risk for homelessness.

Acknowledgments

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