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Authors

Nyamathi, Adeline

Compton, Peggy

Cohen, Allan

et al.

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Correlates of Hospitalization for Methadone-Maintained Persons with Physical Health Problems

Adeline Nyamathi, ANP, PhD, FAAN,
University of California, Los Angeles

Peggy Compton, PhD,
University of California, School of Nursing, Los Angeles

Allan Cohen, MA, MFT,
Bay Area Addiction, Research and Treatment, Inc

Mary Marfisee, MD,
University of California, School of Nursing, Los Angeles

Steven Shoptaw, PhD,
University of California, Family Medicine, Los Angeles

Barbara Greengold, MSN, PhD,
University of California, School of Nursing, Los Angeles

Viviana de Castro, PhD,
University of California, Los Angeles

Mashid Reaves, MPH,
BAART Southeast

Albert Hasson, MPH,
Integrated Substance Abuse Program

Daniel George, MPH, and
Matrix Institute on Addictions

Barbara Leake, PhD
University of California, Los Angeles

Abstract

This cross-sectional study (n = 190) examined correlates of hospitalization for physical health problems among methadone maintenance therapy (MMT) clients with a history of alcohol abuse. The study was derived from baseline data collected for a longitudinal trial assessing the effect of motivational interviewing among alcohol-abusing adults undergoing MMT. The sample included clients who were 18–55 years of age, abusing alcohol, and receiving MMT from five large methadone maintenance clinics in the Los Angeles area. A structured questionnaire was used to collect the data. Correlates of hospitalization in logistic regression analysis included lack of social support, recent victimization, age of first alcohol use, chronic severe pain in the previous six months, not having children, and ethnicity. Identification of hospitalization risk factors among alcohol-abusing MMT clients is a first step to developing risk-reducing interventions designed to lower hospitalization rates in this population.

Keywords

alcohol abuse; methadone maintenance; hospitalization

Introduction

Clients undergoing methadone maintenance therapy (MMT) have demonstrated significantly worse physical and psychological health problems when compared to the general population (Backmund, Schutz, Meyer, Eichenlaub, & Soyka, 2003; Friedmann, Hendrickson, Gerstein, Zhang, & Stein, 2006; Hillebrand, Marsden, Finch, & Strang, 2001; O'Toole, Conde-Mariel, Young, & Ford, 2006). Such health problems have included hepatitis infection, chronic pain, depression, diabetes, asthma and high blood pressure (Sheridan, Wheeler, & Walters, 2005), cardiovascular disease, renal disease, psychosis, and cirrhosis (Gourevitch, Chatterji, Deb, Schoenbaum, & Turner, 2007). Human immunodeficiency virus (HIV) and other infections such as endocarditis and osteomyelitis are also frequently documented among clients both prior to and during MMT (Skeie, Brekke, Lindbaek, & Waal, 2008). Chronic severe pain, at times associated with these diseases, but more often related to chronic back pain is also prevalent among MMT clients (Jamison, Kauffman, & Katz, 2000; Rosenblum, Joseph, Fong, Kipnis, & Portenoy, 2003).

In general, alcohol use is associated with a number of physical illnesses; moreover, it plays a role in sexual assaults, domestic violence, serious injuries, and traffic fatalities (Rosen, Miller, & Simon, 2008). As the majority of studies have not distinguished the impact of alcohol use between mono- and polydrug abusers (Kedia, Sell, & Relyea, 2007), it is difficult to directly compare the health-related consequences of alcohol use among MMT clients versus non-MMT clients. However, one study which compared alcohol-using drug abusers to those who used alcohol alone revealed that those who abused drugs in conjunction with alcohol experienced more health-related problems, compared with those who abused alcohol alone (Rhodes, Peters, Perrino, & Bryant, 2008).

Nevertheless, the negative social and physical health consequences of problem drinking is of intense concern, and are highly prevalent in patients undergoing MMT (Teplin, Raz, Daiter, Varenbut, Plater-Zyberk, 2007). Alcohol-related problems have been reported by approximately 50% of clients undergoing MMT (Watson et al., 2007). Compared with MMT clients who do not drink, alcohol-using MMT clients have higher rates of medical and psychiatric morbidity (Senbanjo, Wolff, & Marshall, 2006; Stenbacka, Beck, Leifman, Romelsjo, & Helander, 2007; Srivasta, Kahan & Ross, 2008). While higher death rates and medical illness have been reported among alcohol-using patients on methadone, it is unclear whether alcohol-using patients on MMT were compared to alcohol-users not in MMT (Srivasta et al., 2008).

Barriers and Facilitators of Seeking Care

Access to medical services has been correlated with greater treatment success among those in MMT, including those who abuse alcohol, in large part because of the fact that physical illness is very prevalent in this group (Berkman & Wechsberg, 2006). While on-site delivery of treatment-related support services has been shown to lower barriers to clients accessing services by addressing issues such as cost, transportation problems, and lifestyle disorganization (Friedmann et al., 2006), on-site services are rare. Rather, what is frequently observed is that drug and alcohol abusers do not seek medical assistance because of fear of treatment, bad treatment experiences, and stigma (Nyamathi, et al., 2008; Rapp et al., 2006). In a study of self-reported health status among MMT clients who reported

methamphetamine use, fear of losing eligibility for healthcare services was a barrier experienced by many and can result in the concealment of alcohol use (Teplin et al., 2007).

The presence of chronic pain, prevalent among chemically dependent MMT clients, can be a barrier to health-seeking behavior if it leads to continued illicit drug use. In one study, 37% of MMT clients experienced chronic and severe pain (Rosenblum et al., 2003). Factors explaining inadequate pain management in the setting of chemical dependency include inadequate training of clinicians, lack of access to health care, and reluctance of physicians to prescribe opioids to persons with a drug abuse history (Rosenblum et al., 2003). History of victimization is also noted to be a barrier to forming therapeutic alliances within the health care system (Branstetter, Bower, Kamien, & Amass, 2008).

Hospitalizations for Physical Health Problems

Less is known about predictors of hospitalization for persons in MMT. In one study, almost half (48%) of the participants (n=390) were re-hospitalized during the first 6 months following initial hospitalization; having hepatitis, HIV/AIDS, kidney disease, or bipolar disorder were all positively associated with re-hospitalization (O'Toole, Pollini, Ford, & Bigelow, 2007). In a study of medical care provided during MMT (n=423), a substance-abuse related condition was the primary diagnosis in almost half of the hospitalizations for health problems (Gourevitch et al., 2007). Among MMT clients who abused methamphetamine, factors associated with serious health consequences included age at first regular drug use (i.e., longer drug use history), lower socioeconomic status, alcohol use, early trauma, lack of social support, and injection drug use (Greenwell & Brecht, 2003). Having severe pain (Ilgen, Trafton, & Humphreys, 2006; Jamison et al., 2000; Peles, Schreiber, Gordon, & Adleson, 2005), a history of abuse, and lack of social support have also been correlated with poor health among substance abusers. However, it is not known whether these factors themselves predict hospitalization.

Purpose

The purpose of this study is to examine the correlates of hospitalization among MMT clients. Identification of such correlates could lead to the development of interventions to promote health and treatment in community settings, such as MMT sites and thus reduce possibility of hospitalization. Potential correlates, which are theoretically based, include sociodemographic characteristics and health and health utilization factors.

Theoretical Framework

The variables of interest in this study emanate from the Comprehensive Health Seeking and Coping Paradigm (CHSCP; Nyamathi, 1989), a theoretical framework that has been used to understand the coping behaviors and health outcomes of impoverished and drug-addicted persons (Nyamathi, Stein, & Swanson, 2000; Nyamathi, Stein, Dixon, Longshore & Galaif, 2003; Nyamathi, Stein, Schumann, & Tyler, 2007). The model, originally adopted from the Lazarus and Folkman (1984) Stress and Coping Model and the Schlotfeldt (1981) Health Seeking Paradigm, postulates that a number of factors play an influential role in health outcomes of vulnerable populations. The first four components in the model include a variety of antecedent variables including socio-demographic factors, health history, and health care socialization. Mediating components are also included in the model and these consist of personal, social, and cognitive factors; risk behaviors; and psychological factors. Health-related outcomes include hospitalization. In this study, key predictive variables from the model include sociodemographic factors (age, gender, education, ethnicity), health and health utilization factors (history of hospitalization, health insurance, interaction with health

care providers; desire for treatment, etc) and risk factors for poor health (heroin/cocaine use, alcohol use, lack of social support, mental and physical health, risky sexual behaviors, etc).

Methods

This study is derived from baseline data collected between February 2007 and May 2008 for a longitudinal study assessing alcohol-abusing adults receiving methadone maintenance. The longitudinal study was designed to assess the effectiveness of motivational interviewing offered in group format vs one-on one format compared to a group receiving traditional health promotion education on reduction of alcohol use. The baseline survey was administered, individually to the participants, by trained research staff prior to the randomization of participants into one of three groups: Motivational-Single group, Motivational-Group, or Health Promotion. The study and all study-related materials were approved by the institutional human subject's protection committee.

Sample and Setting

The total sample was comprised of 190 methadone maintained treatment (MMT) clients randomized from each of five large methadone maintenance clinics in the Los Angeles area. These sites included: Bay Area Addiction (BAART) clinics in the areas of Beverly, Southeast, Lynwood, and non-BAART MMT sites in Santa Monica and Southeast Los Angeles. MMT clients were eligible if they had been receiving methadone for at least three months, and were 18–55 years of age, and were moderate or heavy drinkers. Heavy drinking was defined as consumption of five or more drinks per day on an average day, and moderate drinking was defined as less than five drinks per day on an average day. All participants were moderate or heavy drinkers.

Procedure

Information about the study was disseminated by means of flyers posted in each of the MMT clinics. Research staff met with the staff and directors of each MMT clinic prior to study initiation in order to assess the sites and understand best ways to integrate the study (Nyamathi et al., 2008). For clients interested in the study, a detailed summary of the screening phase and the actual study was provided in a private room in the MMT clinic. If interest continued, informed consent for the screening was procured. Thereafter, the outreach workers administered a brief two-minute structured questionnaire composed of socio-demographic characteristics, a screener for alcohol use and severity and a hepatitis-related health history.

After the initial screening was completed, reinforced information was provided about the study and consent for the blood testing was provided. MMT clients who met eligibility criteria and wished to participate completed a third consent form prior to enrollment in the study.

Measures

Socio-Demographic information, collected by a structured questionnaire, included age, gender, race/ethnicity, number of children, marital status, and highest level of education completed.

Health History and Health Utilization Factors included history of hospitalization, having health insurance and health care utilization. The latter was measured by use of physical and mental health services and medications over the previous six months.

Risk Factors included poor health status, as measured by general physical and mental health. Physical health was measured by self-report of functional limitations, as measured in the RAND Medical Outcomes Study (Short Form [SF]-36) (Stewart, Hays & Ware, 1988), and by a self-reported one-item measure in the SF-36 asking about perceived health. Perceived health status was measured using a 5-point response set: excellent, very good, good, fair, and poor. Health status was dichotomized at fair/poor versus good to excellent health. This item has been extensively used with general populations, as well as impoverished and drug-addicted populations, as a valid indicator of general health (Koegel & Burnam, 1991; Wenzel, Leake & Gelberg, 2000). We also assessed MMT clients' history of victimization, including mugging and sexual abuse, poor health habits such as eating from a dumpster and smoking, self-reported severe pain, and prior blood transfusion. Self-reported chronic pain experienced in the six months prior to study admission was measured using a single SF-36 item measured on a 5 point scale to rate the severity of bodily pain from none to very severe.

Depressive Symptoms were assessed with the Center for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977). This 20-item self-report instrument is designed to measure depressive symptomology in the general population and has been validated for use in homeless populations (Nyamathi, Christiani, Nahid, Gregerson, & Leake, 2006; Nyamathi, et al., 2008). Each item measures the frequency of a symptom on a 4-point response scale from 0 "Rarely or none of the time (Less than 1 day)" to 3 "Most of the time (5–7 days)". Scale scores were dichotomized at the clinical cutoff value of 16 (Radloff, 1977), indicating a need for further evaluation of depressive symptoms. The internal reliability of the scale in this sample was .90.

The five-item mental health index (MHI-5), which has well-established reliability and validity, was used to measure Emotional Well-Being (Stewart et al., 1988) on a scale of 0–100. An established cut-point of 66 (Rubenstein et al., 1989) was used to discriminate participants' emotional well-being. Social support was assessed by an 18-item scale used in the RAND Medical Outcomes Study (Sherbourne & Stewart, 1991). Individuals who reported any social support were then asked whether their support came primarily from drug users, non-users of drugs or both.

Alcohol use was assessed by the question: "During the last six months, how many drinks did you consume on a typical day?"

Drug use was calculated as the sum of the number of days drugs were used in the last 30 days. Drugs that were assessed included heroin, other opiates, cocaine, marijuana, barbiturates, hallucinogens, and amphetamines. Participants who were found to be in the upper median score were considered to be heavy drug users. Analysis using log-transformed drug-use scores did not differ from those using the dichotomized measure in terms of drug-use associations.

Data Analysis

Associations between categorical variables from the CHSCP and past six-month hospitalization were examined with chi-square tests. Age, education, depressive symptoms and psychological well-being were categorized for presentation in Tables 1 and 2; however, they were used as categorical variables in regression analyses. Logistic regression modeling was used to determine whether unadjusted correlates of hospitalization were important when potential confounders were controlled. Variables that were associated with hospitalization at the .15 level in preliminary analyses were entered into a stepwise backward logistic regression model since there were a number of potential covariates that were related to each other. The level of retention was .10. The final model was tested for multicollinearity and the Hosmer-Lemeshow test was used to assess goodness of fit. Participants for ethnicities

other than African American, Caucasian or Hispanic were excluded from the regression analyses due to low sample size; the remaining participants were dichotomized as African-American versus other based on results of early regression models.

Results

Sociodemographic Factors

In terms of race/ethnicity for the overall sample, over half were male and African American or White, and about one-third were Hispanic (Table 1). On average, the MMT clients were approximately 51 years of age and reported a little less than 12 years of education. Among those hospitalized (Table 2), bivariate analysis revealed African-American and Whites were equally represented. MMT clients with children were less likely to be hospitalized than their counterparts. No differences were apparent related to gender, age or education.

Health History and Health Utilization Factors

Findings revealed that 18% of the sample had been hospitalized in the previous six months. Approximately two-thirds of the sample reported having health insurance and taking some sort of medication. A majority (72%) also wanted treatment for a physical health problem and more than one third recently engaged in counseling with a mental health provider.

Among those who reported being hospitalized, a greater number of MMT clients felt comfortable to discuss mental health problems with providers (30%) than those not hospitalized and were also more likely to want treatment for physical health problems (Table 2). Those hospitalized were also more likely to be taking medication. While not statistically significant, compared to those not hospitalized, about one of five of persons hospitalized reported health insurance. There were no age differences among those hospitalized compared to their respective counterparts.

Risk Factors

The sample as a whole engaged in risk factors related to poor health. Interestingly, over 20% of the sample revealed perceptions that they were in poor health and over 90% had a history of cigarette smoking. The heavy alcohol and heavy drug users were almost evenly divided; 51% vs 49%, respectively). Over one third of the sample reported severe or very severe pain, and a similar number reported having sex partners who injected drugs. Almost one-third received prior blood transfusions. Moreover, psychological health was also poor as the mean for depressive symptoms was over the cutoff of 16 and poor psychological well-being was also higher than average.

Among those who reported being hospitalized, a greater number of MMT clients who were hospitalized reported risk factors such as eating from a dumpster, reporting poor health, being victimized, having severe pain, receiving a transfusion, reporting a history of victimization, reported depressive symptoms and poor psychological well-being. No significant differences were found with alcohol or drug users as well as smokers (Table 2).

Multivariate Predictors of Hospitalization

Table 3 provides logistic regression analyses of correlates of hospitalization of MMT clients. Findings revealed that MMT clients who lacked social support and had experienced severe chronic pain over the past six months had over six times greater odds of hospitalization in the past 6 months than their respective counterparts. Clients who received professional mental health had over five times greater odds of hospitalization. In addition, those who were African American and recently victimized were also more likely to have been

hospitalized. Additional correlates of hospitalization include age first used alcohol and not having a child.

Discussion

Findings showed that approximately 20% of these clients in MMT had been hospitalized for physical health problems within the past six months. This is consistent with findings from other studies showing that substance-abusing adults are frequent users of emergency department and inpatient hospital care (Friedmann et al., 2006), and are almost seven times more likely to be hospitalized for physical health problems, compared with non-drug users (O'Toole et al., 2006). The present study also showed that there were significantly more hospitalizations among African-American participants, compared with non-African-American subjects. To date, there have been no studies demonstrating a relationship between ethnicity and hospital utilization among MMT clients.

We also found that hospitalization rates did not differ based upon heavy alcohol or drug use. While clients in MMT who are alcohol-dependent have a higher rate of morbidity and mortality than those who do not abuse alcohol (Hillebrand et al., 2001; Maremmanni et al., 2007; Stenbacka, et al., 2007), the fact that all participants were moderate to heavy may have obscured differences. Additional correlates of hospitalization included the age at which the client first used alcohol (the younger the person, the greater the hospitalization risk), and whether or not a client had had children (no children predicted higher hospitalization risk). Although there is no supporting evidence examining the relationship between hospitalization and either age at which a person first began to abuse alcohol or parental status, it has been demonstrated that young people with prolonged methamphetamine use are more likely to have poorer physical health conditions, compared with older methamphetamine users (Greenwell & Brecht, 2003).

Findings also revealed that hospitalized MMT participants felt more comfortable discussing mental health problems with providers compared to their non-hospitalized counterparts. While the relationship between substance abuse and mental health problems is well documented in the literature (O'Toole et al., 2006; Greenwell & Brecht, 2003), the rates of mental health disorders are higher among alcohol-abusing MMT clients, compared with MMT clients who are non-alcohol abusers (Teplin et al., 2007). In addition, those who were hospitalized had greater levels of depression (and poor mental health) compared with their non-hospitalized counterparts.

The relationship between health insurance and health service utilization among substance abusers has also been examined. The literature clearly demonstrates that significantly more participants with health insurance are likely to use emergency and hospital services, compared with participants lacking insurance (Cronquist, Edwards, Galea, Latka, & Vlahov, 2001). However, we found that health insurance was not related to hospitalization of the MMT client. These findings highlight the fact that these MMT clients are in critical need of acute health care services and frequently utilize publicly available resources to those needing care, but who do not have insurance. This finding is also consistent with the fact that more than one-third report poor health. While it is beyond those analyses to figure the exact economic costs of providing emergent care to underinsured MMT clients, it seems reasonable to think that investment in on-site services might be one way to mitigate such costs.

Our findings also revealed that, compared with the non-hospitalized, almost half of those hospitalized experienced recent victimization. Studies have shown that a history of victimization is correlated with increased substance abuse, depression, and HIV risk

behaviors (Branstetter et al., 2008). Early sexual abuse has been found to be negatively correlated with overall health (Greenwell & Brecht, 2003). Our findings are the first to document the fact that having a recent history of victimization is related to higher rates of hospitalization, among MMT clients.

Participants who lacked social support had over six times greater odds of hospitalization (in the past 6 months), compared to their non-hospitalized counterparts. Social support has been strongly linked to health and in general, unmarried drug abusers and those with same-sex partners are at greater risk of poor health (Greenwell & Brecht, 2003). Treatment entry may be influenced by lack of social support (Rapp et al., 2006).

Our study found that those who were hospitalized were more likely to have experienced severe pain. Chronic and severe pain is common among MMT clients and, in a study by Rosenblum et al (2003), 78% of a sample of MMT clients who were hospitalized experienced severe pain. MMT clients who were experiencing severe pain had over six times greater odds of hospitalization (in the past 6 months) than the non-hospitalized. Chronic pain has been found to be prevalent among MMT clients, and 78% of those who were hospitalized experienced chronic pain (Rosenblum et al., 2003). Although pain is likely to be prevalent among drug users, few studies have directly explored the relationship between pain and chemical dependency (Rosenblum et al, 2003). However, in studies using experimentally-induced pain, MMT clients have been shown to have lower pain thresholds compared with controls (Compton, Charuvastra & Ling, 2001).

One limitation of this study was that we did not include a subanalysis examining the correlates of hospitalization among alcohol-abusing MMT clients who are also HIV/AIDS positive. However, other studies have shown that drug abusers diagnosed with HIV/AIDS are admitted to hospitals and emergency departments more frequently than their counterparts without HIV/AIDS (Friedmann et al., 2006; Palepu et al., 2001). Moreover, we did not address duration of MMT.

Nevertheless, we were able to identify several predictors of hospitalization in our study sample. These included MMT clients lacking social support, those experiencing severe pain, and those recently victimized were at risk for hospitalization.

It has been suggested that effective methods for integrating prevention programs into substance abuse treatment settings are warranted (Mackesy-Amiti, Fendrich & Johnson, 2008). Our results show that among MMT clients, lack of social support is correlated with increased hospitalization. Consequently, programs offering prevention could be used for educational purposes and at the same time be used to provide social support: prevention programs could be developed in a support group setting which might offer MMT clients a community social support system. It has been shown that programs linking addiction patients to primary care services for the treatment of medical ailments can reduce emergency and hospital admissions (Friedmann et al., 2006). Our study demonstrated that clients experiencing severe pain are more likely to be hospitalized compared with those without severe pain. Programs offering MMT in conjunction with case management of physical symptomatology might be beneficial in reducing hospital admissions.

Based upon qualitative data collected with MMT clients earlier (Nyamathi et al., 2007), it is clear that these clients desire support in very many way. For example, by allowing them to recount the impact that victimization has had on their lives may be helpful in enabling them to move forward with their lives.

Strategies designed to decrease the risk of hospitalization among substance abusing clients have been evaluated. Turner and colleagues (2003) compared the effects of long-term,

medically supervised drug-free support versus MMT on drug users' emergency department use and hospitalization. They were able to demonstrate that long-term drug-free treatment was at least as effective as long-term MMT. Barnett and colleagues (2005) compared the effect of vouchers (providing clients a voucher for standard MMT free-of-charge) versus case management among opioid-dependent patients: Both interventions were equally effective with respect to reducing health care use, although there was a trend toward lower medical care costs in the case management group. Provision of outpatient medical and substance abuse care has been associated with reductions in hospitalizations, among substance abusers (Palepu, Horton, Tibbetts, Seville, & Samet, 2005). The use of low-cost incentives has been shown to improve counseling attendance among MMT clients (Sigmon & Stitzer, 2005).

Clearly, among MMT clients, there have been a number of interventions which have resulted in reductions in health care use. Our study results suggest that interventions which provide clients with a support system, offer physical symptom management (i.e., pain), and psychological support (i.e., for those who have experienced victimization) are highly warranted. It is hoped that, based on our findings, risk-reducing interventions can be designed, which will result in fewer hospital admissions.

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Table 1

Characteristics of the Sample of Methadone-Maintained Clients (N = 190)

Independent Variables	n	%
SocioDemographic Characteristics		
	M	SD
Age	50.6	9.0
Education	11.55	2.1
Racial/ethnic group (%)		
	n	%
White	45	23.7
African American	67	35.3
Hispanic	57	30.0
Mixed	6	3.2
Others	15	7.9
Gender		
Male	109	57.4
Female	81	42.6
High School education	109	57.4
Have children	142	75.1
Health and Health Utilization Factors		
Hospitalized past 6 months	35	17.9
Health Insurance	121	63.7
Taking any medications	121	63.7
Recently discussed mental health problem with provider	73	38.4
Recently wanted treatment for physical health problem	136	71.6
Wanted psychological treatment	96	50.5
Risk Factors		
Ate from Dumpster	32	16.8
Cigarette Smoker	165	90.2
Poor health	41	21.6
Risk Factors (Cont'd)		
	n	%
Heavy Alcohol Use	97	51.0
Heavy Drug Use	93	49.0
Not Partnered	102	54.0
Recent victimization	19	10.0
Severe/very severe pain	62	33.6
Prior Blood Transfusions	53	27.9
Multiple Sex partners	35	18.4
Sex partner shoots drugs	62	33.0
No Social Support	42	22.1
Recent history of victimization (mugged or raped)	19	10.0
Depressive Symptoms (Mean, SD)	17.3	5.6
Psychological Well-Being (Mean, SD)	41.2	21.9

SD = standard deviation

Table 2

Hospital Use in the Past 6 Months by Methadone-Maintained Clients (N = 190)

Independent Variables	n	%
SocioDemographic Characteristics		
Racial/ethnic group (%)		
White	12	26.7
African American	16	23.9
Hispanic	3	5.3
Mixed	2	33.3
Others	1	6.7
Gender		
Male	18	16.5
Female	16	19.8
High School education		
Yes	24	22.0
No	10	12.4
Have children *		
Yes	20	14.1
No	14	29.8
Age		
<50	9	12.2
50	25	21.7
Health and Health Utilization Factors		
Hospitalized past 6 months	34	17.9
Health Insurance		
Yes	24	19.8
No	10	14.5
Taking any medications *		
Yes	27	22.3
No	7	10.1
Recently discussed mental health problem with Provider ***		
Yes	22	30.1
No	12	10.3
Health and Health Utilization Factors		
Wanted psychological treatment		
Yes	22	30.1
No	12	10.3
Recently wanted treatment for physical health problem ***		
Yes	32	23.5
No	2	3.7
Risk Factors		

Independent Variables	n	%
Ate from Dumpster **		
Yes	11	34.4
No	23	14.6
Smoker		
Yes	29	17.6
No	4	22.2
Poor health ***		21.6
Yes	15	36.6
No	19	12.8
Heavy Alcohol Use		
Yes	15	16
No	19	19.8
Heavy Drug Use		
Yes	15	20.6
No	19	17.6
Recent victimization ***		
Yes	9	47.4
No	25	14.6
Severe/very severe pain ***		
Yes	24	38.7
No	10	7.8
Transfusions **		
Yes	17	32.1
No	17	12.4
No Social Support *		
Yes	12	28.6
No	22	14.9
Recent history of victimization (mugged or raped) ***		
Yes	9	47.4
No	25	14.6
Depressive Symptoms ***		
Yes	32	20.3
No	2	6.5
Poor Psychological Well-Being *		
Yes	29	21.8
No	5	8.8

* p < .05;

** p < .01;

*** p < .001

Table 3Logistic Regression Results for Recent^b Hospitalization among Methadone-Maintained Adults

Methadone Maintained Adults (N = 181)			
Predictors	OR	95% CI	p value
Black (vs Whites and Latinos)	4.17	1.24–13.97	.02
Education	1.30	0.97–1.75	.08
Lack of Social Support	6.05	1.56–23.42	.01
Recent ^a Victimization ^b	4.34	1.09–17.21	.04
Age first used alcohol	1.12	1.02–1.22	.02
Severe pain	6.31	2.15–18.51	.00
Children	.19	0.06–0.69	.01
Partnered	.36	.11–1.16	.09
Recently saw specialist for emotional problems	5.63	1.76–18.0	.00
Recently wanted medical care	6.03	0.71–51.63	.10

OR = Odds ratio; CI = Confidence interval

^a past 6 months^b Raped or mugged in the past 6 months