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Recovery Prevalence and Health Profile of People in Recovery: Results of a Southeastern Pennsylvania Survey on the Resolution of Alcohol and Other Drug Problems

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Abstract

The emergence of recovery as an organizing construct for behavioral health public policy and the resulting push to increase the recovery orientation of addiction treatment have sparked renewed questions about the prevalence of substance use disorder (SUD) remission/recovery within the general population. The present study reports findings on recovery-related questions imbedded within a public health survey conducted in Philadelphia and four adjacent counties in Southeastern Pennsylvania. The results reveal an adult recovery prevalence rate (9.4%) comparable to rates found in national surveys, but key measures of physical, emotional, and social health of adults in recovery suggest

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the need for assertive, sustained, and community-based approaches to recovery management that transcend brief episodes of professional intervention.

Keywords: Remission, recovery, recovery prevalence, recovery survey, recovery profile, recovery management

Introduction

The concept of recovery is emerging as a central organizing paradigm for addiction treatment (El-Guebaly 2012; White 2008a, 2007c, 2005) and the larger arena of behavioral healthcare (Davidson & White 2007; Gagne, White, & Anthony 2007; Ralph & Corrigan 2004; Anthony 2000). In response, there have been multiple efforts to achieve consensus on a definition of recovery from substance use disorders (SAMHSA 2011; Betty Ford Institute Consensus Panel 2007; Laudet 2007; White 2007a) and calls for a recovery-focused research agenda (Laudet 2008). To date, studies of recovery prevalence rates in community samples remain limited (Compton et al. 2007 ; Dawson 1996 ; Dawson et al. 2008, 2005; Kessler et al. 1994; Hasin et al. 2007; Hasin et al. 1997; Hasin & Grant 1995; Robins, Locke, & Regier 1991) and confounded by the question,). What is recovery, and by what criteria is this status achieved or lost?

There are considerable differences between recent consensus definitions of recovery and the definition of recovery used to conduct epidemiological studies, Consensus definitions of recovery have focused on three broad criteria: 1) reduction of AOD problems to subclinical levels either through abstinence or deceleration of the frequency, intensity, and consequences of AOD use; 2) improvements in global health; and 3) pro-social community reintegration (e.g., reduced injury to community, positive community reintegration—citizenship; Betty Ford Consensus Panel 2007; McLellan 2010; SAMHSA 2011; White 2007a). These criteria reinforce the notion of recovery as more than the removal of alcohol and drugs from an otherwise unchanged life. They further reflect findings from early recovery studies that some individuals who achieve sustained abstinence following alcohol or other drug dependence may remain substantially impaired in terms of their physical and emotional health and interpersonal functioning (De Soto, O'Donnel, & De Soto 1989; Pattison et al. 1968; Gerard, Sanger, & Wile 1962).

Reports on recovery prevalence in the United States include the Epidemiologic Catchment Area Study (Robins, Locke, & Regier 1991), the National Comorbidity Survey (Kessler et al. 1994), the National Health Interview (Hasin & Grant 1995), the National Longitudinal Alcohol Epidemiologic Survey (Hasin et al. 2007; Hasin et al. 1997; Dawson 1996), and the National Epidemiologic Survey on Alcohol and Related Conditions (Compton et al. 2007; Dawson et al. 2008, 2005). These studies have defined recovery in terms of remission rates, most frequently defined as adults in the general population who met lifetime criteria for an SUD but did not meet SUD diagnostic criteria in the past year.

Remission rates for alcohol use disorders in these studies ranged between 5.3-12.9% of the adult U.S. population (depending on whether they focused on remission from all alcohol use disorders or only alcohol dependence). One study of adult drug use disorder remission in the U.S. reported a remission rate of 8.3%, and two population studies of remission from all SUDs reported remission rates of 10.8% and 15.5% of the adult population. Applying rates from these studies to the current U.S. adult population,

there are an estimated 21-30 million adults in SUD remission, not including remission from nicotine dependence (For review, see White 2012).

The Partnership at Drugfree.org and the New York State Office of Alcoholism and Substance Abuse Services (OASAS) recently conducted a national survey of 2,526 adults, ages 18 or over, using a variation of remission measurement in the form of the question, “Did you once have a problem with drugs or alcohol, but no longer do?” Ten percent of American adults surveyed answered in the affirmative to that question (Feliz 2012). Based on an estimated 2011 adult population of 242, 322, 633 (US Census Bureau 2012), the Partnership and OASAS survey would generate an estimate of adults in recovery in the U.S. of more than 24 million—a figure comparable to the much more methodologically sophisticated epidemiological studies. While there is growing evidence of a substantial population of people in recovery from SUDs, little is known about the demographic and health profile of such individuals—particularly those in remission who have not participated in addiction treatment or an addiction recovery mutual aid group.

In 2004, the Philadelphia Department of Behavioral Health and Intellectual disAbility Services (DBHIDS) launched a recovery-focused transformation of the City’s behavioral health care system (Achara-Abrahams, Evans, & King 2011; Evans 2007). A process of recovery resource mapping was used to help guide the transformation process. Alcohol and other drug (AOD) problem indicator data and community recovery capital (e.g., addiction treatment services, recovery mutual aid meetings, recovery homes, recovery community centers, etc.) were plotted by city ZIP codes to: 1) strategically allocate recovery support resources where they were most needed within the City, and 2) to use recovery-focused benchmark data, including recovery prevalence data, to evaluate the effectiveness of the systems transformation process as a whole and to evaluate particular neighborhood-focused recovery support initiatives. The present paper summarizes the results of a survey of recovery prevalence in Philadelphia and the surrounding counties that was part of this recovery resource mapping process.

Methodology

Survey Sponsorship. To establish a baseline of recovery prevalence data for Philadelphia and its surrounding counties, DBHIDS collaborated with the Public Health Management Corporation (PHMC) to incorporate recovery-focused items into PHMC’s 2010 Southeastern Pennsylvania (SEPA) Household Health Survey. This survey began in 1983 and since 1994, has collected data on the health status and health care experiences of adults and children living in Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties every two years. The Survey was administered for PHMC by Abt SRBI, a market research firm based in New York City, between June and October 2010.

Sampling. The 2010 Household Health Survey was conducted through telephone interviews with people 18 years of age and older living in 10,006 households in Southeastern Pennsylvania. All telephone households within Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties were eligible to be selected for the sample, as were cell phone users. The sample was stratified by 54 service areas to ensure sufficient representation within smaller geographic subareas. These 54 areas, which combine clusters of ZIP codes, were developed by PHMC using service area information provided by Community Health Data Base members. Each of the 54

service areas has approximately 30,000 to 75,000 adult residents, based upon 2010 population estimates derived from the 2000 U.S. Census. Projection weights were used to estimate a population count based on the survey sample.

Interview Questions. Three questions were added to the PHMC survey to assess recovery prevalence in the targeted catchment areas. Respondents were asked if they “once had an AOD problem that was no longer a problem in their life” and whether someone within their family or someone they personally knew once had such a problem but had resolved it.

Interview Process. The interviews averaged 22 minutes in length. All interviews were administered by telephone, with most households (9,000 total) contacted on home phones (“landlines”) using a computerized Random Digit Dialing (RDD) methodology so that households with unpublished numbers and residents who had recently moved would be included in the sample. In households with more than one eligible adult, the adult who last had a birthday was selected as the adult respondent. When needed, the interviews were conducted in Spanish. When a randomly selected adult respondent was unable to be interviewed because of health impairments or language barriers, the interview was conducted with an adult proxy in the household. Of the 10,006 total interviews conducted, 1,006 were conducted by cell phone. Cell phone respondents received the same survey questionnaire as landline respondents. Dialing was by hand, as TCPA (the Telephone Consumer Protection Act) rules prohibit dialing wireless numbers using automated equipment. The adult who answered the cell phone was the selected respondent, as long as he/she was at least 18 years old and lived in Bucks, Chester, Delaware, Montgomery, or Philadelphia Counties.

Analysis: To present the survey data, dichotomous measures were created for each of the indicators evaluated (See left column of Tables 1-5) and unweighted data (weighted data are presented in discussion of prevalence in the population) were used to run crosstabulations and Odds Ratios.

Results

Recovery Prevalence The adult remission rate in the 2012 PHMC survey was 9.45% (11.4% for Philadelphia and 7.5% in the four surrounding counties). That rate converts to an estimated 269,000 adults self-reporting recovery status in the five-county survey catchment area. The 9.45% self-reported remission rate is comparable to the remission rates reported above in the national epidemiological surveys of AOD problems. In a related question, 16.0% of adults in SEPA reported that there was a person in their household or family who was in recovery from an alcohol or drug problem (16.8% for Philadelphia and 15.5% in the four surrounding counties).

Recovery Profile Adults self-reporting recovery status differ demographically from those not self-reporting recovery status. Adults in recovery when compared to adults not self-identifying as being in recovery are more likely to be male (65.4% compared to 44.6%) and Black (31.4% versus 20.2%) and less likely to be White/Caucasian (62% versus 73.4%). There were no significant differences among Hispanics across self-reported recovery status. Adults in recovery and adults not self-identified as being in recovery share similar age distributions. Close to one third of adults in both groups (37.2% and 29.6%) are under the age of 40. While nearly one in three SEPA adults who are not in recovery (27.3%) are age 60 or older, fewer than one in five SEPA adults in recovery are age 60 or older (18.3%).

Personal Assets and Recovery Status Adults in recovery have fewer personal assets than adults not in recovery (See Table 1).

As Table 1 indicates, SEPA adults in recovery have less education, less housing stability, lower employment, lower household incomes, and greater use of government subsidies than persons not reporting recovery status. Nearly one in five adults in recovery did not graduate from high school, and less than one in five has a college degree. Less than half of SEPA adults in recovery are employed full- or part-time, and adults in recovery are nearly four times as likely to describe themselves as unable to work as are those not in recovery. People in recovery are less likely to own their own home and more likely to report great difficulty in affording housing. Adults in recovery are more likely than those not reporting recovery status to live below the poverty level and to receive SSI, SSDI, or food subsidies.

Table 1: Personal Assets by Recovery Status for SEPA Household Health Survey Respondents (N =10,006)

Asset Measure	Persons in Recovery	Persons not in Recovery	Odds Ratio (CI)
No High School Diploma	17.2%	6.1%	3.190 (2.607-3.903)
No College Degree	79.7%	57.2%	2.939 (2.464-3.507)
No Full or Part-Time Employment	56.1%	43.6%	1.656 (.971-1.389)
Unemployed and Looking	11.4%	6.0%	2.026 (1.604-2.560)
Unable to Work	22.1%	5.9%	4.504 (3.734-5.432)
Rent Home	43.9%	21.9%	2.788 (2.396-3.243)
Difficulty Affording Housing	60.7%	44.5%	1.920 (1.653-2.230)
Household Income Below 100% of Poverty Level	19.8%	7.8%	2.925 (2.421-3.534)
Household Income Below 150% of Poverty Level	36.7%	15.8%	3.083 (2.644-3.595)
Household Income Below 200% of Poverty Level	45.4%	23.6%	2.696 (2.329-3.122)
Receiving Supplemental Security Income	21.1%	10.1%	2.391 (1.989-2.874)

Receiving Social Security Disability	19.0%	7.7%	2.788 (2.295-3.386)
Receiving Food Stamps or SNAP Benefits	30.2%	9.5%	4.111 (3.481-4.855)

Social Capital and Recovery Status Adults in recovery have less family and social capital than adults not reporting recovery status. Table 2 compares the family and social capital of those who are and are not self-identified as persons in recovery.

Adults in recovery are less likely to be married and more likely to be separated or divorced than adults not self-identified as being in recovery. Adults in recovery are less likely to participate in local community groups and feel social connection with their neighbors. They are also more likely than adults not in recovery to know someone outside their immediate family who is in recovery (52.1% vs. 26.8%), but 47.9% of those adults in recovery did not know another person in recovery. Combined with the finding of generally lower levels of social capital for recovery, this suggests that many SEPA adults are initiating and sustaining recovery without significant general and recovery-specific social support.

Table 2: Family and Social Capital by Recovery Status for SEPA Household Health Survey Respondents (N = 10,006)

Family/Social Capital Measure	Persons in Recovery	Persons not in Recovery	Odds Ratio (CI)
Not Married	67.8%	48.5%	2.2371 (1.919-2.611)
Current Status Divorced or Separated	19.0%	10.5%	2.012(1.666-2.429)
Participate in a Community Group	52.4%	43.9%	1.407 (1.218-1.626)
Neighbors Not Willing to Help	51.8%	61.6%	1.490 (1.287-1.727)
Neighbors can't be Trusted	66.2%	82.0%	2.326 (1.976-2.732)
Don't Feel They Belong in their Neighborhood	83.4%	89.4%	1.678 (1.374-2.049)
Know Someone Outside Family in Recovery	52.1%	26.8%	2.973 (2.570-3.440)

Health and Recovery Status A significant portion of adults in recovery from alcohol or other drugs experience continued physical health problems (See Table 3). Nearly one third (35.5%) of adults in recovery describe their health as fair or poor compared with 16.6% of adults not in recovery. SEPA adults in recovery also report higher rates of asthma, diabetes, and high blood pressure as well as higher rates of emergency room visits compared to adults not self-identifying as persons in recovery. Persons in recovery report slightly higher levels of obesity and overweight compared with community members not in recovery.

Table 3: Health Indicators by Recovery Status for SEPA Household Health Survey Respondents (N =10,006)

Health Indicator Measure	Persons in Recovery	Persons not in Recovery	Odds Ratio (CI)
Rating Health as Fair or Poor	35.5%	16.6%	2.778 (2.380-3.236)
Asthma Diagnosis	18.2%	14.4%	1.320 (1.094-1.593)
Diabetes Diagnosis	18.2%	12.2%	1.602 (1.326-1.937)
Physical, Mental, or Emotional Disability	35.9%	13.0%	3.753 (3.208-4.390)
High Blood Pressure	42.5%	35.6%	1.334 (1.153-1.544)
Past Year ER Visit	41.8%	27.3%	1.915 (1.653-2.219)
Overweight or Obese	67.3%	6.8%	1.217 (1.043-1.419)

Access to Healthcare and Recovery Status Adults in recovery from alcohol or other drugs face barriers to healthcare. More adults in recovery (14.2%) report having no regular source of health care (no regular place to go when sick or needing health-related advice) compared with 10.0% of adults not in recovery reporting similar circumstances. Of adults in recovery with a regular source of care, only about two thirds (68.5%) get that care at a doctor's office, with the rest identifying their regular source of care as a community health center, outpatient clinic, emergency department, or other source. In contrast, 87.6% of adults not in recovery identify a doctor's office as their regular source of care.

More than one in five SEPA adults in recovery between the ages of 18 and 64 (22.3%) have no public or private health insurance compared with 10.1% of SEPA adults not in recovery in that same age group. Nearly two thirds of adults in recovery without health insurance (62.7%) have visited an ER rather than a doctor's office for care in the past year because they had nowhere else to go (compared with 49.1% of uninsured adults not in recovery). Adults in recovery with health insurance are more likely to be covered by Medicaid than are insured adults not in recovery (25.7% versus 10.1%). Among adults with health insurance, adults in recovery are more likely than adults not in recovery to have been uninsured at some point in the past year (13.7% as compared with 6.1%).

Recovery Status and Healthcare Screenings Many adults in recovery for alcohol or other drugs forego or delay health care and routine screenings (See Table 4).

As indicated in Table 4, during the past year, adults in recovery were less likely than community members not in recovery to seek health and dental care and to fill needed prescriptions due to their costs. Adults in recovery were less likely to receive a mammogram or prostate exam in the past year, but more likely than other community members to have an HIV test in the past year.

Table 4: Health Care/Screening by Recovery Status for SEPA Household Health Survey Respondents (N =10,006)

Health Care/Screening Measure	Persons in Recovery	Persons not in Recovery	Odds Ratio (CI)
Did not Seek Needed Care in Past Year Due to Cost	20.4%	10.2%	2.254 (1.875-2.709)
Did not Get Needed Prescription Due to Cost	25.2%	14.6%	1.963 (1.658-2.325)
Did not Get Dental Care Due to Cost	37.6%	21.4%	2.210 (1.900-2.571)
Women Getting No Mammogram in Past Year	39.4%	34.4%	1.237(.969-1.579)
Men Getting No Prostate Exam in Past Year	53.9%	39.9%	1.760 (1.387-2.232)
No HIV Testing in Past Year	68.9%	82.2%	.480 (.409-.564)

Recovery Status and Management of Health Risks Many adults in recovery have health-related behaviors that increase their risk of disease (See Table 5). More than four in five adults in recovery (81.5%) have been cigarette smokers compared with 43.7% of adults not in recovery. Nearly half of adults in recovery (49.4%) currently smoke compared to only 17.0% of adults not in recovery. Adult smokers in recovery also smoke more than smokers not in recovery. In Philadelphia, for example, smokers in recovery are more likely than other smokers to smoke a pack or more per day (41.0% compared with 32.4%). More than half (58.5%) of smokers in recovery tried to quit smoking during the past year—most (54.3%) via cold turkey, with only 29.8% using nicotine replacement therapy (Malinowski Weingartner et al., 2011). Nearly three in ten adults in recovery (26.8%) reported in the SEPA survey that somebody smokes inside their home compared with 11.5% of adults not in recovery. The health risks of people in recovery also extend to the arenas of exercise and diet, e.g., not exercising at all (16.5% of adults in recovery versus 11.4% of adults not in recovery), not eating any daily servings of fruit (7.2% versus 2.7%), and eating fast food three or more times per week (10.6% versus 5.7%).

Table 5: Behavioral Risk Factors and Recovery Status for SEPA Household Health Survey Respondents (N = 10,006)

Behavioral Risk Measure	Persons in Recovery	Persons not in Recovery	Odds Ratio (CI)
Lifetime Smoking	81.5%	43.7%	5.689 (4.740-6.829)
Current Smoking	49.4%	17.0%	4.757 (4.101-5.519)
Exposed to Smoke in Home	26.8%	11.5%	2.826 (2.388-3.344)
Report no Regular Exercise	16.5%	11.4%	1.541 (1.266-1.876)
Report no Daily Serving of Fruit	7.2%	2.7%	2.805 (2.077-3.788)
Report Fast Food 3 or More Times per Week	10.6%	5.7%	1.953 (1.536-2.484)

Access to other Health Resources and Recovery Status Many adults in recovery have limited access to the resources they need in order to make healthy choices. Nearly one in five (19.9%) adults in recovery reported that the quality of groceries in their neighborhood is fair or poor compared to 11.9% of adults not in recovery. One third of adults in recovery (33.1%) have to travel outside their neighborhood to go to a supermarket compared with 28% of adults not in recovery.

Emotional Health and Recovery Status Many adults in recovery are affected by psychological and emotional difficulties. More than one in three adults in recovery (38%) have been diagnosed with a mental health condition compared to only 12.3% of adults not in recovery. Nearly two thirds of adults in recovery who have a mental health condition (66.2%) receive treatment for that mental health condition—greater than the 60.2% of adults not in recovery that receive treatment for a diagnosed mental health condition(s). More than one in five adults in recovery (21%) report experiencing an extreme amount of stress compared to only 9.1% of adults not in recovery.

Discussion

Limitations. Past epidemiological studies that have attempted to measure the prevalence of recovery in the general population have relied on the measure of remission—the prevalence of persons reporting meeting lifetime SUD diagnostic criteria but not past year SUD diagnostic criteria (Compton et al. 2007; Dawson 1996; Dawson et al. 2008, 2005; Kessler et al. 1994; Hasin et al. 2007; Hasin et al. 1997; Hasin & Grant 1995; Robins, Locke, & Regier 1991). Such study designs are expensive and difficult to replicate for cities and counties wishing to use recovery prevalence data for planning and evaluation purposes. DBHIDS and PHMC added a small number of questions to an existing public health survey instrument, and defined recovery as an affirmative response to the question: “Did you once have an alcohol or other drug problem that is no longer a problem in your life?”—a question similar to that recently used in the Partnership OASAS recovery prevalence study (Feliz 2012). Without SUD

diagnostic criteria or other measures of problem severity embedded within the survey questions, it is quite possible that aggregate affirmative responses to this question inflate the estimate of adults “in recovery” by including persons with transient subclinical, AOD-related problems. Responses to questions about recovery status may be affected by social desirability bias, resulting in an under-reporting of recovery status. Aggregate negative responses to the question could also be deflated by the inclusion of persons in recovery who, though in remission and/or abstinent, continue to see themselves as having an alcohol or other drug problem that needs active management on par with other chronic disorders such as asthma, diabetes or heart disease. Defining recovery using a single factor (remission/ problem resolution) also belies the increased understanding of recovery as a multidimensional state.

The category of persons not reporting recovery status in the SEPA survey is also ambiguous in that it includes people who have never used alcohol or drugs, people who have used alcohol or drugs without self-perceived problems, people who have present and continuing AOD problems, and people who once had but no longer have AOD problems but choose not to self-identify that status. These categorical ambiguities limit study conclusions.

Recovery Prevalence. Three questions related to recovery from alcohol and other drug problems were added to the 2010 Southeastern Pennsylvania (SEPA) health survey. Of the more than 10,000 individuals interviewed, 9.45% of survey respondents reported having had an alcohol or drug problem that was no longer a problem in his or her life. This compares to rates of SUD remission reported in national epidemiological studies (10.8%; Kessler, et al. 2005a,b), combined rates for separate studies of alcohol and drug use disorder remission rates (5.3%; Dawson et al. 2008; 8.3%; Compton et al. 2007), and the rate from a just-released national telephone survey of recovery prevalence whose wording of the key recovery status question was close to that used in the SEPA survey (10%; Feliz 2012). Caution is warranted in thinking of the categories of “in recovery” and “not in recovery” as fixed states. Studies of clinical populations show a high degree of movement between these states in the three years following addiction treatment (Scott, Foss, & Dennis 2005), and studies of “natural recovery” (recovery without aid of professional treatment) in community populations also reveal such early instability (Moos & Moos 2005). Measuring time in recovery in future cross-sectional surveys of recovery prevalence would add a dimension that could have great import to planning local recovery support services across the stages of recovery.

What is clear from the present study and the national epidemiological studies of recovery is that there is a large population of people in recovery who could be potentially mobilized to promote recovery-focused social policies and expand local recovery support services (White 2009a)—a process that is already underway in many U.S. communities (White 2007b).

Demography of Recovery. The demographic profile of those in recovery in SEPA is similar to that reported in a recent national survey of adults in recovery (Feliz 2012). People in recovery are more likely to be male than female and more likely to be middle aged than a young or older adult. The dominance of middle-age recovery prevalence is congruent with the concept of addiction/treatment careers and the progressive acceleration of AOD use and related consequences that often precede recovery initiation (Anglin et al. 2001). The lower recovery representation among older adults may represent generational patterns of AOD problem development, age-related rates of recovery initiation, and age-related differences in comfort in self-reporting recovery

status. It could also reflect attrition in recovery prevalence in the transition from middle adulthood to older adulthood via erosion of recovery stability during late life transitions or a higher mortality rate of people in recovery (Scott et al. 2011; Gossop et al. 2002; Hser et al. 2001; Zanis & Woody 1998; Edwards 1989). Comparing demographic data related to AOD problems with the demographic profile of people in recovery could help policy makers target recovery support resources to locations and populations in greatest need of services.

Family and Social Recovery Capital. The SEPA study revealed that adults in recovery are less connected to family, neighborhood, and community life than adults not in recovery. This could reflect the damage done to family, social, and community relationships as a consequence of excessive and prolonged AOD use and the effects of social stigma on community re-integration during recovery. This would suggest the value of community-based recovery support services specifically focused on repair of relationships with family and kinship networks and guidance through the transitions from cultures of drug use to cultures of recovery to recovery-supportive relationships within the larger community (White 2009b).

A striking finding was that 47.2% of SEPA adults in recovery reported not knowing another person in recovery outside their family. Studies of recovery in treated populations have underscored the role of general social support and recovery-specific support in enhancing long-term outcomes (Groh et al. 2007; Laudet, Morgen, & White 2006; McCrady 2004; Broome, Simpson, & Joe 2002; Beattie & Longabaugh 1999; Humphreys, Moos, & Cohen 1997). The SEPA study suggests that many people are sustaining SUD recovery without participation in the peer-based mutual support available in most treatment settings and in all recovery support groups.

Recovery Health Profile. While mortality rates among persons treated for SUDs decline and many areas of personal and social functioning improve with sustained abstinence (Hibbert & Best 2011; Scott et al. 2011), it is clear that many people entering recovery bring burdens of impaired physical and emotional health and social isolation that can compromise their future quality of life as well as their life expectancies. SEPA adults in recovery, compared to those not identifying recovery status, report greater health-related problems, greater barriers in seeking health care, greater risk behaviors associated with chronic health problems, and less social capital to manage the effects of such problems.

The prevailing acute care model of addiction treatment rests on the assumption that the transition from recovery initiation to stable recovery maintenance and concomitant improvements in global health and social functioning will continue following addiction treatment without continued professional monitoring and support. High rates of post-treatment resumption of AOD use (more than 50% as reviewed by White 2008b) following addiction treatment and the quality of life data from the present survey challenge this assumption. There have been growing calls to extend addiction treatment from an acute care model of intervention to models of sustained recovery management, particularly for those persons with the most severe, complex, and chronic SUDs (Dennis & Scott 2007; McLellan, Lewis, O'Brien, & Kleber 2000; White 2008b). The primary purpose of such advocacy has been to ensure post-treatment recovery stabilization and maintenance. The present survey results suggest a different agenda: reducing addiction-related burdens brought into the recovery process and enhancing quality of life and health in long-term recovery for treated and untreated populations in recovery. The increased integration of primary health care, mental health care, and

addiction treatment inherent in current health care reforms may offer increased opportunities for achieving these multiple goals (Mechanic 2012; Buck 2011).

The role smoking (nicotine addiction) plays in increased morbidity and mortality of people in recovery from other SUDs deserves intensified attention in the addictions field. The SEPA survey reveals a high rate of smoking among people in recovery, chronic health conditions associated with smoking, and a desire and efforts by people in recovery to quit smoking. Other studies of people with past or present SUDs confirm high rates of smoking, heavy smoking, smoking-related diseases, and smoking-related mortality (Hurt, et al. 1996; Hser, McCarthy, & Anglin 1994). These findings in tandem with evidence that smoking cessation improves recovery outcomes for other drug dependencies (Kalman et al. 2010; Prochaska, Delucchi, & Hall 2004; Kohn, Tsoh, & Weisner 2003) have triggered efforts to integrate smoking cessation into addiction treatment (Knudsen et al. 2010). The SEPA study confirms the need for such efforts and for similar community-based efforts to support smoking cessation among people in recovery who are not involved in addiction treatment.

Recovery Status and Barriers to Health Care. Adults in recovery reported less access and utilization of health care resources than adults not reporting recovery status. The reduced access to regular health care and prescription medications reported by people in recovery is likely linked to lower income levels and lower levels of public and private health insurance coverage. Combined with reports of behavioral risks related to smoking and inadequate diet and exercise, these findings suggest that models of sustained recovery management integrate on-site primary health care or assertive linkage to primary health care within their service protocols.

Future Research. Regular replications of recovery surveys could examine recovery prevalence changes over time by key demographic variables, the influence of professional treatment, recovery mutual aid, or alternative recovery support mechanisms, and the prevalence of particular recovery pathways and styles of recovery. *Conclusions.* Questions related to the resolution of AOD problems can be added to existing community surveys to provide valuable information for service system planning and evaluation. This five-county Southeastern Pennsylvania population survey of recovery from AOD problems adds to the body of studies documenting a significant population of adults (approximately 10% of the adult population) who have experienced and subsequently resolved an AOD problem. The finding that people in recovery experience greater health problems, greater obstacles to health care, and greater behavioral risks predictive of compromised health and life expectancies than other community members calls for integrating primary health care into strategies of long-term recovery management for both treated and untreated populations seeking to resolve AOD-related problems. This study confirms the value of conceptualizing addiction as a chronic disorder not just in terms of the often long course of active drug use and the frequent cycles of remission and reoccurrence, but also for the physical, emotional, and social legacies that extend far into the long-term personal and family recovery processes.

Problems of physical health and problems of compromised personal assets (specifically in the arenas of education, employment, income, housing, and health insurance), family alienation, and social marginalization do not spontaneously remit on the heels of recovery initiation. Existing models of professional and peer interventions may open the doorway to recovery, but new models are needed to help people achieve and sustain global health and positive community reintegration in long-term recovery.

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