Understanding the Shared Meaning of Recovery From Substance Use Disorders: New Findings From the What is Recovery? Study

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ABSTRACT

BACKGROUND: Substance use disorder (SUD) resolution typically involves a long-term, comprehensive process of change now widely referred to as "recovery." Yet, definitions of recovery vary substantially, producing significant confusion. To support formal recovery definitions, we aimed to systematically identify recovery elements that are central to those in recovery and shared regardless of subgroup/pathway.

METHODS: Data were from the What is Recovery? Study, involving a diverse, national, online survey of people in recovery (N = 9341). Surveys included a 35-item recovery measure reflecting 4 domains; participants reported whether or not each element definitely belonged in their recovery definitions. Analyses examined item endorsements overall and among 30 subgroups defined *a priori* (by sociodemographics, substance use characteristics, and help-seeking history) to determine where items met study-specific centrality thresholds (ie, endorsement by ⩾80% and top-10 ranking, by endorsement level). We then classified items as "core" if meeting centrality thresholds both overall and for all 30 subgroups, and "prevalent" if meeting centrality thresholds overall and for 26 to 29 subgroups.

RESULTS: Four "core" recovery elements emerged, including a process of growth or development; being honest with oneself; taking responsibility for the things one can change; and reacting in a more balanced way. Four "prevalent" recovery elements also emerged, referencing the ability to enjoy life and handle negative feelings without substance use; abstinence and/or nonproblematic substance use; and living a life that contributes. Subgroups differing most in their endorsements included those reporting mild/moderate SUD severity; non-abstinent recovery; and no specialty treatment or mutual-help group attendance.

CONCLUSIONS: Recovery elements identified here partially reflect some stakeholder definitions, but offer greater specificity and include novel elements (eg, personal integrity). Elements may point to areas of functioning that are damaged in the addiction process and can support an addiction-free life. Findings should inform institutional recovery definitions; SUD services and research; and communications about recovery.

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Introduction

Overview

The past 2 decades have brought an explicit recognition across researchers, service providers, and institutional stakeholders that substance use disorder (SUD) resolution is not equivalent to abstinence, decreased substance use, or remission. Rather, SUD resolution involves a long-term process of growth accompanied by and even requiring sustained changes across numerous life domains, with the term "recovery" being embraced to refer to this process.[1-4] Dovetailing with this development, emphasis has shifted from short-term interventions closely targeting substance use to "recovery-oriented" systems of care supporting the whole person. The Substance Abuse and Mental Health Services Administration (SAMHSA) exemplifies and has championed this shift.[5,6]

Under this new paradigm, a clear, specific definition of recovery becomes foundational to guiding SUD services delivery; evaluating SUD prevention and intervention; studying predictors of recovery in the community; and communicating with the public. *Accordingly, the current paper aims to support formal definitions of recovery by systematically identifying core elements of recovery that are central to those in recovery and shared regardless of subgroup or pathway.*

Existing recovery definitions and those in recovery

By now, at least 5 major institutions in the U.S. have developed formal recovery definitions: SAMHSA, the Betty Ford Institute, the American Society for Addiction Medicine (ASAM), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the National Institute on Drug Abuse (NIDA; see Table 1). Institutional definitions have often attempted to bridge the perspectives of those in recovery, researchers, service providers, and other professionals, and they tend to agree on defining recovery as a process of change entailing improved well-being across multiple life domains. Related, Witkiewitz et al,[4] reviewing stakeholder definitions and the scientific literature, suggested an overarching definition of recovery as "a process of behavior change characterized by improvements in biopsychosocial functioning and purpose in life" (p. 9). However, a closer look reveals important differences even in these general themes. For example, the Betty Ford definition describes recovery as a lifestyle (vs a process), and the NIAAA definition emphasizes that AUD remission and cessation from heavy drinking alone (irrespective of other changes) are sufficient to consider a person "recovered." Further, institutional definitions differ significantly in their specifics, including whether recovery (a) is defined by intentions, efforts, achievements, or all 3 (eg, ASAM references all 3, but NIAAA refers to being "recovered" as an achievement); (b) requires abstinence, and from what substance and for how long (eg, 3 definitions reference abstinence and 3 do not); and (c) requires or results in changes in life domains beyond substance use and problems, and which (eg, ASAM describes changes in many specific areas, whereas SAMHSA's latest definition addresses just three broad domains). Meanwhile, additional recovery definitions have proliferated among researchers and institutions within the U.S. and internationally.[4,7] This suggests only an evolving understanding of recovery. Indeed, some stakeholders have emphasized that their definitions are living documents meant to change with time.[2,8,9]

One pathway toward greater consensus on defining recovery is to more *systematically and more fully incorporate* the perspectives of those in recovery. There are 2 reasons to emphasize recovering people's perspectives in SUD recovery definitions. First, people in recovery are core stakeholders in recovery definitions, constituting SUD service providers, SUD service consumers, and members of the broader community. Adopting a recovery definition that closely reflects this community's perspective both conveys respect and supports effective communications about recovery. Second, people in recovery can offer unique insights about what sustains a healthy life free from addiction.[13,14] Based on their experience, recovering people can help to identify areas of functioning that support a person's substance use and life goals—elements that can, indeed, be subjected to empirical study as predictors of substance use and other outcomes.

While those developing formal recovery definitions have often recognized the value of incorporating recovering people's perspectives, a solid empirical foundation for doing so has been lacking. To date, only 2 major studies have addressed how people in recovery from SUDs themselves define it, and no study has identified a recovery definition that is truly shared across the heterogeneous population of recovering people.

Two studies on how people in recovery define recovery

In an early study, Laudet[1] surveyed 289 inner-city residents with resolved DSM-IV crack/heroin abuse or dependence recruited through newspaper announcements and flyers. The study used quantitative and qualitative data across 3 time points to examine recovery definitions and experiences, asking whether recovery (1) requires total abstinence from drugs and alcohol and (2) is defined solely by substance use or also extends to other domains. Asked, "Which of the following statements most closely corresponds to your personal definition of recovery?," most (85%-87%) endorsed "no use of any drug or alcohol" over any use of any substance. In response to an open-ended item, "How would you define recovery from drug and alcohol use?," participants frequently mentioned abstinence (40%), a new life (22%), well-being (13%), a process of working on yourself (11%), living life on life's terms/accepting what comes (10%), self-improvement (9%), and learning to live drug free (8%). Across time points, almost all (eg, 97% at baseline) agreed or strongly agreed that "recovery is a continuous process that never ends." Laudet concluded, "recovery requires abstinence from all mood-altering substances but goes beyond substance use; rather it is a process of self-improvement and an opportunity at a new and better life" (p. 12). Notably, however, the study excluded those reporting past-30-day illicit drug use at baseline, which may have affected results.

More recently, Kaskutas et al[15] conducted the What is Recovery? Study, a very large, multi-part study focused on capturing recovery as defined by those in recovery. The team generated 167 candidate recovery elements based on the World Health Organization quality of life scales; recovery-related publications and websites; and input from over 30 people in self-defined recovery. Candidate items were reduced to 47 based on pre-testing, including online surveys (N = 238) and extensive qualitative interviews (N = 54) with people in recovery. Finally, items were administered in online surveys of 9341 individuals self-identifying as in recovery, recovered, or having overcome a prior problem with alcohol/drugs. Participants indicated the extent to which each element belonged in their personal definitions of recovery. Over 90% of the sample endorsed 6 elements as definitely belonging, defining recovery as a process of growth or development; being honest with myself; taking responsibility for the things I can change; reacting in a more balanced way; and the ability to enjoy life and handle negative feelings without substance use.

Table 1. Definitions of recovery developed by major U.S. institutions.

YEAR	INSTITUTION	PURVIEW	SOURCE/S	DEFINITION
2005	Substance Abuse and Mental Health Services Administration (SAMHSA)	Substance use disorders	Definition developed by SAMHSA's National Summit on Recovery, comprised of over 100 stakeholders such as recovering individuals, family members, mutual aid organizations, systems professionals, and treatment providers.	"A process of change through which an individual achieves abstinence and improved health, wellness, and quality of life" (p. 5).[10]
2007	Betty Ford Institute	Substance "dependence"	Definition developed by the Betty Ford Consensus Panel, comprised of 12 interested researchers, treatment providers, recovery advocates, and policymakers.	"A voluntarily maintained lifestyle characterized by sobriety, personal health, and citizenship" (p. 222). Sobriety (defined as primary and necessary) refers to abstinence from alcohol and all other nonprescribed drugs; personal health refers to improved quality of personal life (such as physical health, psychological health, independence, and spirituality); citizenship refers to "living with regard and respect for those around you" (p. 222).[2]
2010	Substance Abuse and Mental Health Services Administration (SAMHSA)	Substance use and mental health disorders	Definition developed by SAMHSA's 2010 meeting with behavioral health leaders, mental health consumers, and individuals in addiction recovery. The definition was revised with further input from behavioral health leaders and other stakeholders.	"A process of change though which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential" (p. 3).[11]
2018	American Society for Addiction Medicine (ASAM)	Addiction	Definition based on "current knowledge and approaches [and]. . . decades of experience of people living with addiction" (p. 1).[9]	"An active process of continual growth that addresses the biological, psychological, social and spiritual disturbances inherent in addiction." Recovery must include: (1) the aim of improved quality of life and enhanced wellness as identified by the individual, (2) an individual's consistent pursuit of abstinence from the substances or behaviors toward which pathological pursuit had been previously directed or which could pose a risk for pathological pursuit in the future, (3) relief of an individual's symptoms including substance craving, (4) improvement of an individual's own behavioral control, (5) enrichment of an individual's relationships, social connectedness, and interpersonal skills, and (6) improvement in an individual's emotional self-regulation (p. 1).[9]
2020	National Institute on Alcohol Abuse and Alcoholism (NIAAA)	Alcohol use disorders	Definition developed by an internal scientific team, comprised of experts in treatment and recovery, who reviewed (a) the scientific literature to identify and evaluate correlates of recovery and (b) prior definitions of recovery from AUD and other drug use. The definition was revised based on feedback from 30 experts and stakeholders including researchers, clinicians, and individuals from recovery-based organizations.	"A process through which an individual pursues both remission from alcohol use disorder (AUD) and cessation from heavy drinking" whereby "an individual may be considered 'recovered' if both remission from AUD and cessation from heavy drinking are achieved and maintained over time." NIAAA also notes, "For those experiencing alcohol-related functional impairment and other adverse consequences, recovery is often marked by the fulfillment of basic needs, enhancements in social support and spirituality, and improvements in physical and mental health, quality of life, and other dimensions of well-being. Continued improvement in these domains may, in turn, promote sustained recovery" (p. 4).[8]
2021	National Institute on Drug Abuse (NIDA)	Substance use disorders	Not described.	"A process of change through which people improve their health and wellness, live self-directed lives, and strive to reach their full potential." NIDA also notes, "Even people with severe and chronic substance use disorders can, with help, overcome their illness and regain health and social function. This is called remission. Being in recovery is when those positive changes and values become part of a voluntarily adopted lifestyle. While many people in recovery believe that abstinence from all substance use is a cardinal feature of a recovery lifestyle, others report that handling negative feelings without using substances and living a contributive life are more important parts of their recovery."[12]

Kaskutas et al's[15] findings might seem to imply 6 core recovery elements. However, high overall endorsement rates can mask lower endorsement rates for specific subgroups of people in recovery, particularly where those subgroups are small. Indeed, Kaskutas et al[15] found that endorsement of recovery elements varied across length of recovery, substance of choice, 12-step exposure, treatment exposure, and current substance use. (See also Witbrodt et al[16].) Similarly, Laudet[1] found that recovery definitions in her sample varied across length of recovery, substance of choice, and 12-step and treatment exposure; differences also emerged across race/ethnicity and gender. *This underlines the need for additional research to determine whether there are specific elements common to recovering people's definitions regardless of their sociocultural identity, addiction history, and recovery pathway, an investigation not pursued to date in any dataset.*

Current objective

The current study undertook a secondary analysis of the What is Recovery? data to identify those recovery elements that are highly endorsed by most recovering people across 30 theoretically relevant subgroups. Subgroups were defined, a priori, to reflect individual characteristics deemed most likely to impact one's recovery definition, including major sociodemographics (eg, gender, race/ethnicity), substance use problem characteristics (eg, primary problem, length of recovery), and help-seeking history (eg, use of specialty treatment, mutual-help only, or neither). By developing a single, shared definition of recovery *as those in recovery see it*, we aimed to provide an empirical basis for informing institutional definitions of recovery and SUD services and research. Due to the current study's exploratory nature, we did not formulate hypotheses.

Materials and Methods

Data Source

Data were from the What is Recovery? Study, Phase 2, involving an online survey of 9341 individuals who self-identified as in recovery from an alcohol/drug problem; recovered from an alcohol/drug problem; in medication-assisted recovery; or having had a prior problem with alcohol/drugs that they no longer had (see Kaskutas et al[15]). This parent study was funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA; R01AA017954). A special strength of the What is Recovery? Study—and one supporting the current analysis—is the wide-ranging, multi-pronged recruitment strategy, which yielded representation of critical subgroups often missed in research on SUD resolution (eg, those with mild/moderate SUDs, in independent recovery, and in medication-assisted recovery). Outreach involved partnership with over 200 research partners regionally and nationally, comprised of treatment programs, recovery organizations, and mutual-help groups. Additional recruitment routes included study announcements in multiple venues (eg, Craigslist, recovery magazines and radio programs, newspaper health sections, and conferences) and word of mouth. Though recruitment was limited to U.S. research partners, participation was not restricted to U.S. residents and some participants (n = 749, or 8%) reported residing outside the U.S.

Table 2. What Is Recovery? Study sample referral sources (N = 9341).

SOURCE	%
General study announcements	24.1
Craigslist	12.1
Social media	7.1
Advertisements	3.8
Conferences	1.1
Word of mouth (via family, friends, or acquaintances)	14.7
Recovery organizations	11.9
Faces and Voices of Recovery	6.1
Recovery Community Organizations	5.1
The National Alliance for Medication Assisted Recovery	0.4
White Bison	0.2
Northstar Community Recovery	0.1
Mutual-help groups	11.8
12-Step alternative mutual-help groups	6.9
12-Step groups	4.5
Alano clubs	0.4
Treatment and alumni groups	11.6
Treatment programs	6
Alumni groups	5.2
The Veteran's Administration	0.4
Other	23.3
Missing	2.6

Potential participants accessed a study website, which included a link to the anonymous, confidential online survey. Surveys were collected from July to October of 2012, and took about 15 minutes; participants were not incentivized. The study was approved by the Institutional Review Board (IRB) of the Public Health Institute. Prior analyses suggest that the demographic profile of the Phase 2 respondents is similar to that of other internet-based recovery and treatment samples.[17] Table 2 displays participant responses to a question asking how they heard about the study; see top of Tables 4 to 6 for sample characteristics.

Measures

Recovery elements. As described, surveys included a 47-item measure of recovery elements developed in Phase 1 of the

What is Recovery? Study via an extensive, iterative, mixed-methods process. Items were crafted to address specific recovery aspects salient in heterogeneous recovery pathways; participants indicated whether each element "definitely belongs in your definition of recovery," "somewhat belongs in your definition of recovery," "does not belong in your definition of recovery, but may belong in other people's definition of recovery," or "does not really belong in a definition of recovery." Exploratory and confirmatory factor analyses reduced the measure from 47 to 35 items spanning 4 factors and constituting our main focus: Abstinence (3 items), Essentials (15 items), Enriched (10 items), and Spirituality (7 items).

For the present study, an additional item was created assessing endorsement of at least some abstinence *and/or* nonproblematic use. This composite item helps address the possibility that recovering people may include *some* substance use goal as part of their recovery definitions without agreeing on the specific goal. Coding incorporated responses to (a) the 3 items from the Abstinence factor, separately assessing abstinence from alcohol, abstinence from non-prescribed drugs, and no "abuse" (sic) of prescription drugs and (b) an item defining recovery as "nonproblematic alcohol or drug use," which was excluded from the 35-item measure above as it did not load on any factor. The item was coded as positive if respondents endorsed any one of the 3 Abstinence items and/or nonproblematic use as definitely belonging in their recovery definitions, and negative otherwise. As an exploratory analysis, we also created a variable reflecting endorsement of at least one abstinence item (ie, excluding nonproblematic use), but opted to include nonproblematic use because the abstinence-only item ranked below the top 10 overall (with endorsement of 88%).

Sociodemographics. Surveys assessed gender, race, ethnicity, education, and age. Race/ethnicity was recoded as Non-Hispanic White, Non-Hispanic Black, Latinx/Hispanic, and Other; those coded Other were omitted from analyses addressing racial/ethnic differences due to insufficient sample sizes.

Substance use problem characteristics. Primary substance use problem was assessed by inquiring, "What was your primary substance of choice?"; options included a comprehensive list of substances. Another item solicited participants' recovery self-definitions: "Which category best describes how you define yourself now, with respect to your prior alcohol or drug use?"; options included "I am in recovery," "I am recovered," "I used to have an alcohol or drug problem, but don't any more," and "I am in medication-assisted recovery." Responses to these 2 items were recoded into 4 categories reflecting primary substance use history: alcohol, opiate without medication-assisted recovery, opiate with medication-assisted recovery, and all else. To assess length of recovery, recovery self-definition was fed into a subsequent question, "How long have you considered yourself to be [self-definition]?," with 7 options, recoded into <1 year, 1 to 5 years, 5 to 10 years, and >10 years. Lifetime DSM-5 substance use disorder severity was assessed based on the lifetime version of the Mini International Neuropsychiatric Interview (MINI[18]), which is a short, structured diagnostic interview for SUDs as defined by the Diagnostic and Statistical Manual of Mental Disorders, FourthEdition (DSM-IV[19]), and the International Statistical Classification of Diseases and Related Health Problems, Tenth Edition (ICD-10[20]); an additional item assessed craving. Responses were recoded into mild/moderate (2-5 symptoms) and severe (6+ symptoms). Finally, current abstinence status was determined from 2 questions asking respondents to indicate which categories, among several, best described their (a) drinking status and (b) drug use, including any use of non-prescribed drugs and using prescribed drugs more than directed. Coding contrasted any current abstinence (from alcohol, drugs, or both) versus none.

Help-seeking history. Lifetime treatment participation was assessed with a yes/no question: "Have you ever gone to a treatment program? By 'treatment program,' we mean places like a detox center, methadone clinic, DUI program, hospital, residential program, or outpatient program for alcohol and drug problems." To assess mutual-help group meeting attendance, respondents were asked to indicate which 12-step and non-12-step meetings they had ever attended from a list of options, including "none." We coded help-seeking history from these 2 variables as specialty treatment with or without mutual-help group attendance; mutual-help group attendance only; and neither specialty treatment nor mutual-help group attendance. Mutual-help group attendance type among all attendees was recoded as 12-step only; 12-step plus a 12-step alternative; and 12-step alternative only.

Analysis

First, we coded our 30 theoretically relevant subgroups, including 12 sociodemographic subgroups (Table 4), 12 substance use problem characteristic subgroups (Table 5), and 6 help-seeking history subgroups (Table 6). Next, we computed level of agreement across the total sample and within all subgroups that each of the 36 recovery elements (ie, 35 standard items and the composite item) "definitely belongs in my definition of recovery." Third, we determined whether items met study-specific centrality thresholds for each subgroup, defined as endorsement by ⩾80% participants and ranking (by endorsement level) within the top 10 of all items. Finally, we classified items as "core" if meeting centrality thresholds both overall and across all 30 subgroups. Responding to emergent results, we also classified elements as "prevalent" if they met centrality thresholds in all but 3 to 4 subgroups, reflecting wide if not universal acceptance. Thresholds for identifying core and prevalent elements, and results, were considered with reference to existing conceptualizations of recovery and our team's extensive formative work in this area, conducted to develop the initial recovery definition measure. We examined rank as well as raw

Table 3. Overall item classification and participant endorsement for 10 top-ranked (by endorsement level) items in recovery definition measure.

RECOVERY SCALE ITEM (WITH STEM "RECOVERY IS. . .")	ITEM CLASSIFICATION[a]	% AGREEING ELEMENT "DEFINITELY BELONGS IN MY RECOVERY DEFINITION"	NUMBER OF SUBGROUPS (OF 30) FOR WHOM ITEM MET CENTRALITY THRESHOLDS[b]
A process of growth or development	Core	94.5	30
Being honest with myself	Core	93.2	30
Taking responsibility for the things I can change	Core	92.4	30
Being able to enjoy life without drinking or using drugs like I used to	Prevalent	91.5	27
Reacting to life's ups and downs in a more balanced way than I used to	Core	91.4	30
Handling negative feelings without using drugs or drinking like I used to	Prevalent	90.5	27
Abstinence (from alcohol, drugs, and/or Rx drug abuse) and/or nonproblematic alcohol/drug use	Prevalent	90.1	26
Living a life that contributes to society, to your family, or to your betterment	Prevalent	88.2	26
Having tools to try to feel peace when I need to	None	86.9	17
Being grateful	None	86.7	21

[a]Items classified as "core" if meeting centrality thresholds overall and across all 30 subgroups; items classified as "prevalent" if meeting centrality thresholds overall and in 26 to 29 subgroups.
[b]Centrality thresholds included endorsement by ⩾80% participants and ranking (by endorsement level) within the top 10 of all recovery items.

endorsement levels because response biases may differ across subpopulations and because rank conveys important information about the relative salience of different recovery elements.

Results

Table 3 displays overall item classification and participant endorsement for the 10 top-ranked (by endorsement level) items within the 36-item recovery definition measure. (Items ranked 11 and below could not be classified as "core" or "prevalent," and were omitted.) Four items met thresholds for "core" classification: "a process of growth or development," "being honest with myself," "taking responsibility for the things I can change," and "reacting to life's ups and downs in a more balanced way than I used to." Endorsement for these items exceeded 90%. Another 4 items were classified as "prevalent": "being able to enjoy life without drinking or using drugs like I used to," "handling negative feelings without using drugs or drinking like I used to," "some abstinence and/or nonproblematic alcohol or drug use," and "living a life that contributes to society, to your family, or to your betterment."

All top 10 items were endorsed by over 86% of the sample. Further, all top 10 items were from the Essentials and Enriched domains, excepting the substance use item and "being grateful" (a Spirituality item); none of the Abstinence items were ranked within the top 10 (results not shown).

To provide more detail and again targeting the 10 top-ranked items overall, Tables 4 to 6 display item centrality status, participant endorsement, and item rank (by endorsement level) across subgroups defined by sociodemographics (Table 3), substance use problem characteristics (Table 4), and help-seeking history (Table 5). For each subgroup and item, shading signifies that centrality thresholds were met, with darker shading signifying higher (⩾90.0%) levels of agreement. (Again, centrality thresholds included endorsement by ⩾80% participants and ranking within the top 10 of all recovery items.)

Notably, those items that ranked in the top 3 overall (ie, a process, honesty, and responsibility) also ranked within the top 3 in most (21 of 30) subgroups, demonstrating their wide acceptance. Three subgroups revealed especially different item endorsements: those with mild/moderate SUD severity, non-abstinent recovery, and no lifetime use of either specialty treatment or mutual-help groups. These subgroups showed relatively low item endorsements, and for each subgroup, 3 of the 4 "prevalent" elements failed to meet centrality thresholds. Two additional subgroups (ie, those indicating an opiate problem history with medication-assisted recovery and those with 12-step alternative experience only) showed somewhat different endorsement patterns, though most or all of the "core" and "prevalent" items met centrality thresholds.

Discussion

A shared recovery definition

The current study sought to identify core (or, central and shared) elements of recovery *as those in recovery see it* using data from a very large, national survey of people in recovery from alcohol and/or drug problems representing diverse pathways and substance use histories. Criteria for "core" elements were that items be endorsed by at least 80% of respondents and

Table 4. Item centrality status, participant endorsement, and item rank (by endorsement level) *by sociodemographic subgroups* for 10 top-ranked items overall in recovery definition measure.

	GENDER		RACE/ETHNICITY			EDUCATION				AGE		
	MALE	FEMALE	NON-HISPANIC WHITE	LATINX/ HISPANIC	NON-HISPANIC BLACK/AFRICAN AMERICAN	HIGH SCHOOL GRADUATE	SOME COLLEGE/ TECHNICAL SCHOOL	COLLEGE GRADUATE	GRADUATE DEGREE	18-35	36-65	66 PLUS
	N = 4204	N = 5010	N = 7703	N = 432	N = 662	N = 1051	N = 3541	N = 2353	N = 2343	N = 1705	N = 6755	N = 814
Recovery scale item (with Stem "Recovery is. . .")	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank
A process of growth or development	1	1	1	1	1	1	1	1	1	1	1	3
Being honest with myself	2	2	2	2	2	3	2	2	3	2.5	2	2
Taking responsibility for the things I can change	3	3	3	3	3	2	3	3	4	2.5	3	4
Being able to enjoy life without drinking or using drugs like I used to	4.5	4	4	5	8	4	5	5	5	6	4	5
Reacting to life's ups and downs in a more balanced way than I used to	6	5	5	8	4	5.5	4	4	6	5	5	6
Handling negative feelings without using drugs or drinking like I used to	7	6	7	4	6	5.5	6	7	7	4	6	7
Some abstinence and/or nonproblematic alcohol or drug use	4.5	7.5	6	9	>10	>10	8	6	2	7	7	1
Living a life that contributes to society, to your family, or to your betterment	8	9	8	7	9	7	7	9	9	8	8	10
Having tools to try to feel peace when I need to	>10	7.5	9	>10	>10	>10	>10	8	8	10	10	>10
Being grateful	9	10	10	10	5	10	10	10	10	>10	9	9

For each subgroup and item, shading signifies centrality thresholds were met; dark blue signifies ⩾90.0% agreement and light blue signifies 80.0% to 89.9% agreement. White signifies failing to meet centrality thresholds. Centrality thresholds included endorsement by ⩾80% participants and ranking (by endorsement level) within the top 10 of all recovery items. Fractional ranks (eg, 2.5) used where items were tied.

Table 5. Item centrality status, participant endorsement, and item rank (by endorsement level) *by substance use problem characteristic subgroups* for 10 top-ranked items overall in recovery definition measure.

	PRIMARY PROBLEM				LENGTH OF RECOVERY				DSM-5 SEVERITY		CURRENT ABSTINENCE	
	ALCOHOL	OPIATE WITHOUT MEDICAT.-ASSISTED RECOVERY	OPIATE IN MEDICAT.-ASSISTED RECOVERY	ALL ELSE	<1Y	1-5Y	5-10Y	>10Y	MILD/ MODERATE	SEVERE	ABST. FROM ALCOHOL, DRUGS, OR BOTH	NOT ABST.
	N=5495	N=842	N=127	N=2841	N=1404	N=2697	N=1490	N=3728	N=164	N=9137	N=8993	N=222
Recovery scale item (with stem "Recovery is. . .")	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank
A process of growth or development	1	1	5	1	1	1	1	1	1	1	1	2
Being honest with myself	2	2	2	2	4	2	2	2	3	2	2	5
Taking responsibility for the things I can change	3	5	3	3	2	3	3	3.5	2	3	3	1
Being able to enjoy life without drinking or using drugs like I used to	4	6	9.5	7	5	5	4	3.5	>10	4	4	>10
Reacting to life's ups and downs in a more balanced way than I used to	6	4	6	4	3	4	6	6	4	5	5	3.5
Handling negative feelings without using drugs or drinking like I used to	7	3	7	6	6	6	5	7	>10	6	6	8
Some abstinence and/or nonproblematic alcohol or drug use	5	8	9.5	>10	8	7	7	5	9.5	7	7	6
Living a life that contributes to society, to your family, or to your betterment	9	7	4	5	>10	8	8	8	6	8	8	7
Having tools to try to feel peace when I need to	8	>10	>10	>10	9	9	>10	10	9	9	9	>10
Being grateful	10	9	>10	8	>10	>10	9	9	7	10	10	>10

Abbreviations: abst. is abstinent; medicat. is medication.
For each subgroup and item, shading signifies centrality thresholds were met; dark blue signifies ⩾90.0% agreement and light blue signifies 80.0% to 89.9% agreement. White signifies failing to meet centrality thresholds. Centrality thresholds included endorsement by ⩾80% participants and ranking (by endorsement level) within the top 10 of all recovery items. Fractional ranks (eg, 2.5) used where items were tied.

Table 6. Item centrality status, participant endorsement, and item rank (by endorsement level) *by substance use help-seeking history subgroups* for 10 top-ranked items overall in recovery definition measure.

	LIFETIME HELP-SEEKING HISTORY			LIFETIME MUTUAL-HELP GROUP ATTENDANCE TYPE[a]		
	TX ONLY /TX PLUS MUTUAL-HELP	MUTUAL-HELP ONLY	NEITHER	12-STEP ONLY	12-STEP PLUS ALTERNATIVE	ALTERNATIVE ONLY
	N = 6649	N = 2278	N = 329	N = 5389	N = 3346	N = 171
Recovery scale item (with stem "Recovery is. . .")	Item rank	Item rank	Item rank	Item rank	Item rank	Item rank
A process of growth or development	1	1	2	1	1	2
Being honest with myself	2	2	5	2	2	4
Taking responsibility for the things I can change	3	3	1	3	3	3
Being able to enjoy life without drinking or using drugs like I used to	5	4	8	4	6	1
Reacting to life's ups and downs in a more balanced way than I used to	4	5.5	3	5	4	5
Handling negative feelings without using drugs or drinking like I used to	6	7	6	7	5	6
Some abstinence and/or nonproblematic alcohol or drug use	7	5.5	4	6	7	9
Living a life that contributes to society, to your family, or to your betterment	8	10	9	9	8	>10
Having tools to try to feel peace when I need to	10	8	>10	10	10	10
Being grateful	9	9	>10	8	>10	>10

Abbreviation: Tx is treatment.
For each subgroup and item, shading signifies centrality thresholds were met; dark blue signifies ⩾90.0% agreement and light blue signifies 80.0% to 89.9% agreement. White signifies failing to meet centrality thresholds. Centrality thresholds included endorsement by ⩾80% participants and ranking (by endorsement level) within the top 10 of all recovery items. Fractional ranks (eg, 2.5) used where items were tied.
[a]Excludes those reporting no mutual-help group attendance.

ranked among the 10 most highly endorsed elements overall and across 30 key subgroups. Results yielded 4 "core" elements: a process of growth or development; the practice of personal integrity (specifically, honesty with oneself and taking responsibility); and balanced reactions to life's ups and downs. "Prevalent" elements, meeting the above thresholds in all but 3 to 4 subgroups, included being able to enjoy life and handle negative feelings without substance use; some abstinence and/or nonproblematic alcohol or drug use; and living a life that contributes to others or to one's betterment.

The present elements *partially reflect* some existing definitions (collectively) describing recovery as an actively pursued process of change, and as involving self-growth, better emotional self-regulation, and increased citizenship or purpose (see Table 1). Results also dovetail somewhat with conceptions of recovery among Laudet's[1] interviewees, who described recovery as a continuous process involving self-improvement (similar to honesty with oneself, taking responsibility, and living a life that contributes), improved well-being and learning to live drug-free (similar to enjoying life and handling negative feelings without substance use) and accepting what comes (similar to reacting in a balanced way).

Our findings also stand to advance existing recovery definitions. First, our "core" and "prevalent" recovery elements are more specific than elements of most formal definitions, and may distinguish areas of functioning that are central to recovery (especially, healthy emotional functioning) from those that are peripheral (such as physical health, social functioning, and overall quality of life). Second, findings point to *new elements* for potential inclusion in formal definitions—namely, honesty with oneself and taking responsibility. These elements were among the 3 most highly endorsed elements overall and for most subgroups, but are not identified in any known, formal recovery definition. Third, findings offer new directions for thinking about substance use in relation to recovery definitions. People have disagreed strongly on whether and how substance use should be part of a recovery definition, and have often thought about substance use in terms of abstinence. We found that most respondents, regardless of subgroup/pathway, endorsed *some substance use goal* as central to recovery, whether abstinence (from alcohol, non-prescribed drugs, and/or prescription drug misuse) and/or nonproblematic use. However, the individual abstinence items were among those least highly endorsed overall. This may suggest a value for including commitment to some substance use goal in recovery definitions without emphasizing abstinence as the only goal. More broadly, results highlight that, for those in recovery, recovery is not *the same as* improvements in substance use or SUD symptom remission. Rather, recovery is understood to be a process of growth or development involving expansive (and often actively pursued) changes both intrapersonally and socially, with changes in substance use constituting but some part of that process. This underlines the wisdom of a multi-faceted recovery definition.

A critical question concerns why the identified "core" and "prevalent" elements—including personal integrity, general emotional balance, the ability to experience positive emotions and cope with negative emotions without substance use, and living a life that contributes—are widely considered central to recovery. Emotional functioning was a particular focus, surfacing in 3 of the 8 "core"/"prevalent" items. The prominence of these elements, collectively, may reflect recognition of the damage that addiction inflicts in each of these specific areas. Restoration of what was lost then becomes the hallmark of recovery. (For related ideas, see Krentzman[22]). Reciprocally, these elements may be considered necessary for maintaining freedom from addiction, as lack of honesty, making excuses for one's behavior, poor emotional functioning, and excessive self-focus could precipitate relapse. Supporting these ideas, building honesty, accepting responsibility, and caring for others (related to living a life that contributes) form the core of the 12-step program.[23]

Some groups are different

A few subgroups revealed qualitatively different recovery definitions, most notably those with mild/moderate SUD severity, non-abstinent recovery, and no lifetime use of either specialty treatment or mutual-help groups. These subgroups showed distinct item rankings and relatively low item endorsements generally. This may indicate only weak ties to the mainstream recovery community and, importantly, divergent experiences of addiction and recovery in these subgroups, both of which may imply different recovery-related needs, strengths, and beliefs. Markedly, items reflecting enjoying life and handling negative feelings without substance use failed to make the cut uniformly (*and only*) in these 3 subgroups, which may reflect (real or perceived) limited impacts of substance use on emotional response and/or less reliance on substances for emotional coping. Meanwhile, taking responsibility was the top-ranked item for both (*and only*) those with non-abstinent recovery and no treatment or mutual-help group use, possibly suggesting an emphasis on self-reliance.

Somewhat different endorsement patterns also emerged for those indicating an opiate problem history with medication-assisted recovery and those with 12-step alternative experience only. Those with an opiate problem history in medication-assisted recovery ranked "a process of growth and development" lower than any other subgroup (though it was fifth). This may reveal a somewhat greater emphasis on recovery as a fixed achievement or return to normalcy, possibly connected with the stigma attached to using medications for opiate use disorders and the desire to be perceived as "better."[21,24,25] The most highly ranked element for this subgroup was "freedom from feeling physically sick" (first, 93%)—a striking result as this item fell outside the top 10 for all other subgroups; this subgroup also endorsed "taking care of my physical health more

than I did before" more highly (11th, 85%) than did any other. This focus on physical health may reflect a more medicalized perspective on SUD resolution and the especially severe health consequences and co-occurring conditions often associated with opiate use.[21,24,26]

For those with 12-step alternative experience only, the top-ranked item was, uniquely, a "prevalent" item: "being able to enjoy life without drinking or using drugs like I used to" (endorsed by 92%), whereas "being honest with myself" was not included in the top 3. This subgroup was also the only one for whom "taking care of my mental health more than I did before" met centrality thresholds (seventh, 85%). These findings could reflect the preference for framing addiction as a psychological (not moral) problem common in 12-step alternatives.[27]

Answering unanswered questions

Findings can begin to answer the basic questions posed in the Introduction, at least from the perspective of those in recovery. Regarding whether recovery (a) is manifested in intentions, efforts, achievements, or all 3, for recovering people recovery does seem to imply certain achievements (eg, recovery is "being honest with myself," not "trying to be honest. . ."), but, as a process of growth or development, involves continual improvements. Recovery also requires daily renewal; to point, "being honest with myself" suggests an ongoing practice and not a fixed accomplishment. Regarding whether recovery (b) requires abstinence, recovering people might generally suggest that total abstinence is not essential, but commitment to some substance use goal is. Last, regarding whether recovery (c) requires or results in changes in life domains beyond substance use and problems, recovering people would generally agree that changes in domains beyond substance use are fundamental, as shown for example by the prominence of personal integrity elements in recovery definitions.

Implications and directions for future research

The current study's main goal was to support improvements to existing recovery definitions, and results can indeed do so (as discussed above). Results may support decisions on what areas of functioning should be deemed central, less central, and peripheral to recovery, particularly where empirical research exists on associations between recovery elements and substance use outcomes.

Results can also help inform clinical practice and public communications about recovery. Findings that certain recovery elements are both central and shared may suggest that service providers (particularly those with experiential knowledge) focus greater attention on these areas. Building strengths in domains outside of substance use is consistent with positive psychology approaches to addiction[22] and with research suggesting roles for factors such as positive affect[28,29] and meaning in life[30] in recovery. Meanwhile, in discussing SUD resolution, scientists, providers, and institutions might highlight the positive aspects of recovery (as defined by those in recovery) toward mitigating the stigma of having a substance use problem history.

Last, results can inform outcome measurement. A validated measure of SUD recovery would be useful to both researchers and practitioners. Related, Neale et al[14,31-33] recently published a 21-item recovery outcome measure. Though this measure represents a clear advance over existing measures, the current results, offering a systematically developed summary of recovering people's concept of recovery, could help inform refinements and/or additional measures.

Limitations

Some limitations stem from the data source. Data collection was conducted exclusively online, which may have biased the sample toward younger people, White people, and those higher on socioeconomic status.[34] Additionally, because people in recovery nationally are a hard-to-reach population, the What is Recovery? Study could not use representative sampling techniques or ascertain sample generalizability. However, sample demographics are almost identical to Faces and Voices of Recovery's Life in Recovery Survey, also conducted exclusively online in 2012,[35] and the demographic profile of treated individuals in our sample is similar to the demographic profiles of other large, national treatment samples.[17] Moreover, representivity of the total sample vis a vis those in SUD recovery nationally is not a major concern given our focus on theoretically defined subgroups. Meanwhile, study data are now approximately a decade old, and it is unclear whether recovery definitions have changed over this period.

Additionally, we may have failed to capture salient recovery elements due to omissions or problems with item wording. For example, the recovery elements measure used here did not address either abstinence from, or controlled use of, one's *primary substance of choice.* Still, our measure resulted from a very rigorous, iterative developmental process involving substantial input from people in recovery, so any omissions should be limited. Finally, some of the "core" and "prevalent" recovery elements we identified are ambiguous. It is not clear, for example, whether "being honest with myself" implies honesty with regard to substance use and/or other life questions. This emphasizes the value of future work adopting a qualitative approach to better understand the meaning of the shared recovery elements identified here. Such work will be critical to developing a strong operational definition of recovery based on the perspectives of people in recovery. Because study participants were predominantly U.S. residents, future work examining recovery definitions outside the U.S. would also be highly informative, and could help to determine whether recovery definitions are culturally relative.

Conclusions

Despite limitations, the present study, capitalizing on an extremely large, unique dataset, makes a major contribution in developing a shared definition of recovery from the perspective of those in recovery. The Betty Ford Institute Consensus Panel[2] expressed doubt regarding any effort to define recovery globally, noting, "there is reason to believe that there is no complete consensus on the definition even among those in recovery" (p. 222). SAMHSA[10] went further, stating, "stakeholders agreed that recovery is a complex and dynamic process and that race, ethnicity, gender, sexual orientation, family history, lifecycle stage, environment, culture and other factors combine with an individual's unique experiences, strengths, values, perspectives, needs and desires to yield a recovery process unique to each person" (p. 4). While these statements may be true, recovery is probably not completely relative. Current results describe a coherent, fundamental definition of recovery that holds for most recovery pathways.

Author's Note

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Author Contributions

Drs. Zemore and Kaskutas led the overall conceptualization of this study. Dr. Zemore led the analysis, with some support from Dr. Ziemer. All authors contributed to refining the analysis, interpreting the results, and contextualizing the study in the context of existing literature.

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