

Mental Health Services and Personal Recovery in California: A Population-Based Analysis

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Objective: Personal recovery measures have been examined among treatment-seeking individuals enrolled in high-quality care. The authors examined whether utilization of mental health services as typically delivered is associated with personal recovery among adults with clinically significant psychological distress.

Methods: The Kessler Psychological Distress Scale (K-6) measured respondents' (N=1,954) psychological distress level. The authors also assessed five dimensions of personal recovery—hope, life satisfaction, empowerment, connectedness, and internalized stigma. Multivariable linear regression analyses were used to examine relationships between personal recovery and treatment, self-reported treatment completion, provider type, and adequacy of care, adjusting for covariates including K-6 score.

Results: Participants who received care >12 months prior to the survey reported lower levels of hope (95% confidence

interval [CI]=−0.36, −0.06, $p<0.01$), empowerment (95% CI=−0.26, −0.02, $p<0.05$), and connectedness (95% CI=−0.37, −0.06, $p<0.01$) than those who had not received treatment. Those who received care in the past 12 months reported lower levels of hope (95% CI=−0.47, −0.14, $p<0.001$) and life satisfaction (95% CI=−0.42, −0.05, $p<0.01$). However, treatment completion was associated with higher levels of empowerment (95% CI=0.02, 0.56, $p<0.05$) and hope (95% CI=0.04, 0.62, $p<0.05$) and lower levels of stigma (95% CI=−1.21, −0.21, $p<0.01$) compared with noncompletion. Differences according to provider type and adequacy of care were nonsignificant.

Conclusions: Utilization of mental health services was associated with lower levels of personal recovery, which may indicate that care—as typically utilized and received—does not promote personal recovery. Longitudinal research is needed to determine causal relationships underlying these associations.

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The concept of personal recovery informs the goals of treatment, rehabilitation, and support services for individuals with psychiatric illness (1–3). It also reflects a historic shift from a focus on symptom reduction to wider considerations of individual well-being consonant with the World Health Organization's landmark definition of health (4). Overemphasis on symptom reduction risks neglecting dimensions of personal recovery such as hope, empowerment, and life satisfaction (3, 5). From a policy perspective, the concept of personal recovery has been applied to national efforts to improve mental health care, including peer-provided services, psychiatric advance directives, illness management programs, and supportive housing (6). The notion of personal recovery is also embedded in the language of the Affordable Care Act and Medicaid expansions (7, 8) and has been incorporated into the movement toward patient-centered care (9).

While a plurality of studies have found positive associations between personal recovery and clinical markers of improvement, others have found less concordance. For example, in a recent systematic review and meta-analysis, Van Eck and

HIGHLIGHTS

- Past studies that have examined features of personal recovery such as hope, empowerment, and life satisfaction have focused on treatment-seeking individuals who receive high-quality care in clinical research settings.
- This observational study examined personal recovery in a representative sample of adults in California with elevated psychological distress.
- In this sample (N=1,954), those who received care reported lower personal recovery levels compared with those who had not received treatment.
- However, a minority of individuals who reported completing treatment also reported better personal recovery scores, indicating that the overall discrepancies observed may be partially due to low prevalence of treatment completion among those who recently received mental health services in California.

colleagues (10) concluded that positive, negative, and affective symptoms of schizophrenia were modestly but significantly correlated with both hope and empowerment. They also observed high heterogeneity in relationships between symptoms and recovery among studies; in six of 20 studies reviewed, they found no relationship or an association in the opposite direction from expectations. Rossi and colleagues (11) performed a cluster analysis to examine these specific relationships at the individual level and identified typologies in which features of personal and clinical recovery were unrelated. Similar findings have been obtained among individuals coping with depression, anxiety, and psychosis (12, 13). The evidence indicates that markers of clinical recovery are inconsistently related to markers of personal recovery and that patients could therefore benefit from an increased focus on personal recovery in treatment (14). This view, in turn, has driven researchers to begin developing treatments to explicitly promote personal recovery alongside clinical recovery (15–17) and to identify and track features of treatment, such as the provider-patient relationship, that may play a critical role in facilitating personal recovery (18, 19).

Research on the relationship between treatment and personal recovery has been limited in two respects. First, studies generally draw from nonrepresentative populations (10), investigating outcomes in clinical research settings that fail to reflect the realities of health care delivery in lower-resourced communities (15). Second, the vantage point for analysis omits comparisons between individuals who receive mental health care and those who do not, leaving unresolved the relationship between personal recovery and treatment itself. This demographic is considerable: roughly 25% of adults in the United States with moderate-to-severe psychological distress have not received treatment in the past year (20).

We examined the relationship between treatment (versus nontreatment) and personal recovery in a representative sample of adults in California with mild/moderate-to-serious psychological distress (21). Specifically, we examined five dimensions of personal recovery: life satisfaction, hope, connectedness, empowerment, and internalized stigma. Among those who received treatment in the past year, we further examined relationships between personal recovery and treatment completion, provider specialty, and intensity of care (22).

METHODS

Sample

We obtained information about a representative cross-section of adults in California experiencing symptoms of psychological distress from the California Well-Being Survey (CWBS). The CWBS sample was drawn from participants in the 2013 and 2014 California Health Interview Surveys (CHIS), a telephone survey administered to a representative sample of over 55,000 California households (23). Adults ages 18 and older who completed the CHIS in English or Spanish and scored >8 on the Kessler Psychological Distress Scale (K6) (24) were recruited to the CWBS. A cutoff score ≥ 8 was used

to classify individuals with mild/moderate-to-serious psychological distress, in accordance with *DSM-5* criteria (25–27) and as established by the instrument's developer (28, 29). Multiple studies have used this threshold (K6 score ≥ 8) or lower (e.g., K6 score ≥ 5) to detect probable mild/moderate-to-serious mental illness; in contrast, a threshold of K6 score ≥ 12 suggests probable serious mental illness (29–34). The study sample was restricted to participants who experienced elevated psychological distress (K6 score ≥ 8) in the year prior to sample selection.

The CWBS tracked stigma related to diagnosis of a psychiatric illness as well as discrimination, well-being, and exposure to prevention and early intervention activities (21). CWBS interviews were conducted in two waves, May–August 2014 and January–March 2016, and we pooled results across time points. Response rates were 45% and 46% for the 2014 and 2016 CWBS, respectively ($N=1,954$). We obtained informed consent and study procedure approval from the RAND Corporation Institutional Review Board.

Measures

Demographic measures. The CWBS captured basic demographic information about participants, including age (18–39, 40–59, ≥ 60), sex (female, male), and race-ethnicity (Latino, non-Latino, African American, Asian American, other), which were selected as covariates for analysis. Participants were also differentiated by the spoken language in which they completed the survey (Spanish, English). Last, we included self-reported employment status (employed, unemployed) as a measure of socioeconomic status.

K6 distress scale. K6 scores were reassessed at the time of the survey. The K6 is a well-established and validated measure used among adult populations. It measures several dimensions of psychological distress during the month in the past year when symptoms—nervousness, hopelessness, restlessness, depressed state, worthlessness, and lack of motivation—were at their worst. At the time of the survey, 63% ($N=1,231$) of individuals continued to express elevated distress (K6 score ≥ 8), while the rest fell below this threshold.

Treatment history. To measure lifetime mental health treatment use, the CWBS asked, “Have you ever sought treatment for a mental health problem (yes/no)?” To assess mental health service use, the CWBS asked participants, “In the past 12 months, have you seen your primary care physician or a general practitioner for problems with your mental or emotional health or your use of alcohol or drugs? (yes/no)” and, “In the past 12 months, have you seen any other professional, such as a counselor, psychiatrist, or social worker for problems with your mental or emotional health or your use of alcohol or drugs (yes/no)?” A follow-up item was included to identify those who used treatment solely for substance use, and any such individuals were recoded as not receiving mental health treatment in the past 12 months. Treatment for substance misuse is often

circumscribed in scope to curbing addiction behavior and takes place at special treatment facilities outside the mental health system (35).

Treatment characteristics. Provider type was classified as general medical provider, mental health specialist, or both. Treatment status among those with service use in the past 12 months was assessed by asking participants whether they had “completed the recommended full course of treatment.” “Yes” responses were coded as having “completed” treatment. “No” responses were coded as having left treatment, and those still in care were classified as still in treatment. Minimally adequate care was defined based on provider type, treatment type, and frequency of outpatient visits and was assessed by using the following question: “In the past 12 months, how many visits did you make to a professional for problems with your mental or emotional health or use of alcohol or drugs? Do not count overnight hospital stays.” Participants who reported either four or more outpatient visits with a general medical doctor (inclusive of pharmacotherapy) or eight or more outpatient visits with a mental health specialist (regardless of pharmacotherapy) were defined as having received minimally adequate care on the basis of the characteristics and standards of minimally adequate care established in the literature (36–38).

Recovery measures. The CWBS measured five constructs, or facets, of personal recovery, overlapping with the commonly utilized CHIME framework developed by Leamy and colleagues (39). Specifically, the CWBS assesses connectedness, hope, internalized stigma, life satisfaction, and empowerment. We measured hope and empowerment with the Recovery Assessment Scale (RAS), one of the most commonly used validated scales that assesses personal recovery (40). RAS items are scored on a 5-point Likert scale (1=strongly agree; 5=strongly disagree). Hope is measured by four items, such as, “Fear doesn’t stop me from living the way I want to” (Cronbach’s $\alpha=0.84$); empowerment is measured by five items, including, “I believe I can meet my current personal goals” ($\alpha=0.78$).

Internalized stigma was measured with the six-item Internalized Stigma of Mental Illness Scale (41), which assesses individuals’ subjective experience of not being a fully contributive member of society. Items are reported on a 4-point ordinal scale (1=strongly agree; 4=strongly disagree) and include statements such as, “I feel inferior to others who haven’t had a mental health problem” ($\alpha=0.80$). Life satisfaction was measured with the five-item Satisfaction With Life Scale, a brief, well-validated measure of subjective, global satisfaction (42). Items are reported on a 5-point Likert scale (1=strongly agree; 5=strongly disagree) and include statements such as, “In most ways my life is close to my ideal” ($\alpha=0.89$). Last, connectedness was assessed with two questions that are frequently used and well-validated measures of social support: “How often do you get the social and

emotional support you need?” (1=always; 5=never) (43) and “I have people I can count on” (1=strongly agree; 5=strongly disagree) (Pearson’s $r=0.57$) (44).

Statistical Analysis

Bivariable associations between outcomes and participant characteristics were tested with F tests. We conducted multivariable linear regression analyses to examine relationships between personal recovery measures and treatment receipt, timing of treatment (within past 12 months versus more than 12 months prior), treatment completion (among those receiving care within the past 12 months), provider type, and standard of care (among those completing treatment in the past 12 months). When examining completion, provider type, and standard of care, analyses were restricted to treatment in the past 12 months, an interval over which we expected the effect of treatment completion to be associated with the condition of interest. Demographic variables—age, sex, race-ethnicity/language of survey, and symptom severity—were included as covariates. Separate models were run for each recovery measure. Effect sizes were reported as Cohen’s d, measured as the coefficient of interest (β) divided by pooled standard deviation.

After regression analyses, we used the recycled predictions method to estimate three marginal effects: treatment completion versus no treatment, treatment completion with a mental health specialist versus no treatment, and treatment completion among those who received minimally adequate care versus no treatment (45).

All analyses were weighted to account for the CHIS sample design, nonresponse (associated with age, sex, race-ethnicity, home ownership, California region, and educational attainment), and whether respondents had both a cell phone and landline (46). Weights incorporated a full sample weight plus 80 replicate weights. We conducted analyses by using SAS/STAT, version 9 for Linux.

RESULTS

Descriptive Statistics

Table 1 provides an overview of demographic characteristics of the sample ($N=1,954$). Sixty-seven percent of participants ($N=1,306$) received treatment at some point. Roughly two-thirds of treatment users ($N=821$) received treatment in the past 12 months. Among those receiving treatment in the past 12 months, most were still in care, and about equal percentages of the rest had left care versus completed care. About 60% of treatment users in the past 12 months saw a mental health specialist either alone or in conjunction with a general medical provider.

Table 2 presents average scores for the five personal recovery measures by demographic characteristics and psychological distress levels rated on the K6 as 0–7, none/low; 8–12, mild/moderate; and ≥ 13 , serious. In all instances, personal recovery varied significantly with level of psychological distress ($p<0.05$), and higher distress was associated with

lower recovery scores. Personal recovery scores also varied by sex, age, and race-ethnicity/language ($p < 0.05$).

Regression Models

Treatment versus nontreatment. Table 3 presents results from multivariable, covariate-adjusted regression analyses examining the association between treatment and personal recovery measures. Individuals who reported receipt of care in their lifetime but not in the past 12 months (21%, sample weighted) reported lower levels of connectedness ($\beta = -0.21$, Cohen's $d = 0.30$), empowerment ($\beta = -0.14$, $d = 0.25$), and hope ($\beta = -0.21$, $d = 0.31$) compared with those who had never received mental health treatment (39%). The group differences in life satisfaction and internalized stigma were nonsignificant.

Respondents who reported receipt of mental health care in the past 12 months (41%) reported lower levels of hope ($\beta = -0.31$, $d = 0.42$), and life satisfaction ($\beta = -0.24$, $d = 0.28$) as well as heightened levels of stigma ($\beta = 0.44$, $d = 0.22$, 95% CI = 0.00, 0.88) compared with those who had never received mental health care. The group differences for connectedness and empowerment were nonsignificant. Figure 1 shows effect sizes (Cohen's d) and p value ranges associated with each comparison.

Treatment completion. In additional multivariable models conducted for respondents who received care in the past 12 months, we compared personal recovery levels among participants who left care (18%), stated that they completed care (22%), and were still in treatment (60%). Models were adjusted for age, sex, race-ethnicity, employment status, and level of psychological distress. No significant differences in any personal recovery dimensions were observed between those who left care and those currently in treatment. Compared with respondents who left care, those who completed care reported higher levels of empowerment ($\beta = 0.29$, $d = 0.24$, 95% CI = 0.02, 0.56) and hope ($\beta = 0.33$, $d = 0.25$, 95% CI = 0.04, 0.62) as well as lower levels of internalized stigma ($\beta = -0.71$, $d = 0.31$, 95% CI = -1.21, -0.21). Recycled predictions indicated that participants who reported completion of treatment nonetheless reported lower personal recovery scores on each of the dimensions assessed when compared with the no-treatment group (all $p < 0.05$), the one exception being a nonsignificant difference in terms of internalized stigma.

TABLE 1. Demographic and treatment characteristics among adults in California with clinically significant psychological distress (N=1,954)

Characteristic	Unweighted N	Weighted		
		N	M	SD
Psychological distress				
K6 score ^a	1,954	8,693,758	10.90	5.63
Personal recovery				
Connectedness	1,936	8,643,243	3.93	.85
Hope	1,902	8,536,766	4.01	.78
Empowerment	1,907	8,566,177	4.47	.60
Internalized stigma	1,077	4,205,430	2.66	1.05
Life satisfaction	1,911	8,565,950	3.46	1.03
Weighted %				
Race-ethnicity/language				
Latino/English	284	2,296,046	26.4	.44
Latino/Spanish	205	1,447,064	16.6	.37
Black/English	76	426,003	4.9	.22
Asian/English	59	605,839	7.0	.25
Other/English	159	456,944	5.3	.22
White/English	1,171	3,461,861	39.8	.49
Sex				
Male	640	3,420,291	39.3	.49
Female	1,312	5,270,108	60.6	.49
Age				
18–39	383	4,290,336	49.4	.50
40–59	784	3,216,471	37.0	.48
≥60	787	8,693,758	13.7	.34
Employment status				
Employed or self-employed	757	4,785,160	55.0	.50
Unemployed	131	843,388	9.7	.30
Not employed or missing	1066	3,065,210	35.3	.48
Treatment history				
Received care	1,306	5,292,551	61.3	.49
Received care >12 months prior to survey	485	1,794,240	20.8	.41
Received care within 12 months prior to survey	821	3,498,311	40.5	.49
Treatment characteristics				
Left care ^b	101	617,334	17.7	.38
Completed care ^b	132	770,780	22.0	.41
Still in care ^b	588	2,110,197	60.3	.49
Saw general provider only ^c	42	312,029	40.5	.49
Saw mental health professional only ^c	57	310,863	40.3	.49
Saw general provider and mental health professional ^c	33	147,889	19.2	.39
Received minimally adequate care ^c	42	265,045	34.4	.48

^a K6, Kessler Psychological Distress Scale.

^b Treatment characteristics among participants self-reporting any receipt of mental health care in the past year.

^c Treatment characteristics among participants self-reporting completion of mental health care in past year.

Treatment characteristics. We ran two additional sets of regression analyses to examine associations between treatment features and personal recovery scores among respondents reporting completion of mental health care in the past 12 months (N=132; weighted percentage of the full sample=9%). Models were run unadjusted and then were

TABLE 2. Mean scores for dimensions of personal recovery among adults in California (N=1,954), by demographic characteristics and level of psychological distress

Characteristic	Connectedness ^a		Hope ^b		Empowerment ^b		Internalized stigma ^c		Life satisfaction ^d	
	M	SD	M	SD	M	SD	M	SD	M	SD
Psychological distress										
Low	4.20***	2.20	4.39***	1.74	4.62***	1.75	2.02***	3.28	3.93***	3.50
Mild/moderate	3.99**	2.64	4.08***	2.18	4.48*	2.18	2.43***	3.94	3.45**	3.52
Serious (reference)	3.67	3.08	3.65	2.18	4.34	1.75	2.98	2.30	3.09	3.50
Sex										
Male	3.88*	2.20	3.93***	2.62	4.37***	1.75	2.79**	2.95	3.22***	2.79
Female (reference)	3.97	2.20	4.07	1.74	4.53	1.31	2.58	1.97	3.62	2.58
Age										
18–39	4.00	2.64	4.11*	1.74	4.60*	1.31	2.72	2.30	3.55	2.62
40–59	3.84	2.62	3.92	3.05	4.39	2.18	2.70	3.28	3.4	3.50
≥60	3.93	2.64	3.93	2.62	4.19	3.06	2.32	2.95	3.31	3.50
Presently employed										
Yes	3.97	1.32	4.14	1.74	4.52*	1.31	2.49	3.28	3.59*	2.19
No	3.81	4.84	3.57	3.93	4.29	3.06	2.9	1.97	3.03	4.37
Race-ethnicity/language										
Latino/English	4.02	3.52	4.09**	3.49	4.55**	1.75	2.71**	4.59	3.49	4.37
Latino/Spanish	3.88	4.84	4.20	3.93	4.53	3.49	2.72	7.88	3.86	5.68
Black/English	3.76	7.48	4.09	6.11	4.57	6.55	2.85	10.83	3.37	8.31
Asian/English	4.09	5.28	3.97	6.11	4.51	3.06	3.04	14.11	3.54	7.87
Other/English	3.49**	6.16	3.95	4.80	4.46	3.49	2.77*	5.58	2.97	7.43
White/English (reference)	3.95	2.64	3.89	2.18	4.37	1.75	2.57	1.97	3.34	3.06

^a Possible scores range from 1 to 5, and higher scores indicate higher levels of personal recovery.

^b Hope and empowerment were measured with the Recovery Assessment Scale. Items are scored on a 5-point Likert scale. Possible scores range from 1 to 5, and higher scores indicate higher levels of personal recovery.

^c Internalized stigma was measured with the six-item Internalized Stigma of Mental Illness Scale. Items are scored on a 4-point ordinal scale. Possible scores range from 1 to 4, and higher scores indicate lower levels of personal recovery.

^d Life satisfaction was measured with the five-item Satisfaction With Life Scale. Items are scored on a 5-point Likert scale. Possible scores range from 1 to 5, and higher scores indicate higher levels of personal recovery.

* $p < .05$, ** $p < .01$, *** $p < .001$, for a significant association between characteristic and recovery.

adjusted for age, sex, employment status, race-ethnicity, and level of psychological distress. Specifically, we looked at the relationships between provider type (mental health specialist, generalist) and outcomes and between minimally adequate care and outcomes. Neither model identified any significant patterns of associations.

DISCUSSION

To our knowledge, this is the first study to examine the relationship between receipt of mental health services and personal recovery in a large, population-based sample. Among adults in California reporting mild/moderate-to-serious psychological distress, only 41% of individuals reported receiving outpatient mental health care in the past 12 months—comparable to prior research (47). Of those, 40% sought care from only a general medical provider. This finding is substantially different from samples in prior studies on personal recovery, which examined only individuals who received care, typically from mental health specialists and in the recent past. Against this backdrop, we found that receipt of outpatient mental health services was associated with lower levels of self-reported personal recovery on four of the five dimensions studied, even after adjusting for differences in psychological distress. Individuals who received mental health services

endorsed lower personal recovery scores in the dimensions of hope, empowerment, life satisfaction, and connectedness compared with those who never received treatment. Previous investigations on this topic have focused on narrowly defined patient populations, such as individuals receiving treatment for schizophrenia. Associations between symptom reduction and personal recovery in such populations have been wide ranging (10, 48, 49).

One explanation for this discrepancy is that past research has focused on clinical care in which treatment efficacy and fidelity to protocols are closely monitored. We found that, among individuals who reported completion of treatment, outcomes were more favorable, particularly with regard to empowerment and hope, two concepts that have elsewhere been associated with recovery-oriented treatment (50). However, their outcomes were still worse than those who went untreated, and individuals who completed treatment were a minority in the sample (22%, $N=132$), underscoring the fact that, at the population level, high quality and consistency of care are not guaranteed.

Relationships varied across specific personal recovery dimensions. For people receiving treatment more than 12 months prior to the survey, treatment was associated with less empowerment and less connectedness than nontreatment. Recent treatment had no statistically significant association with these

TABLE 3. Associations between utilization of mental health services prior to survey and five dimensions of personal recovery^a

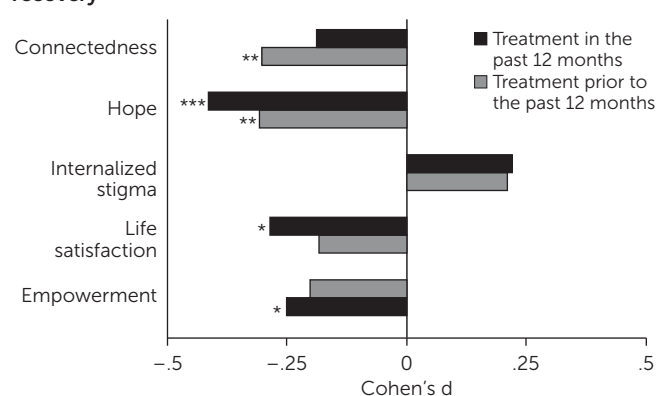
Personal recovery dimension	Estimate (β)	95% CI	p
Used care <12 months prior			
Connectedness	-.14	-.31, .03	.095
Hope	-.31	-.47, -.14	<.001
Internalized stigma	.44	.00, .88	.051
Life satisfaction	-.24	-.42, -.05	.012
Empowerment	-.14	-.29, .01	.075
Used care >12 months prior			
Connectedness	-.21	-.37, -.06	.008
Hope	-.21	-.36, -.06	.007
Internalized stigma	.43	-.02, .89	.063
Life satisfaction	-.17	-.36, .03	.104
Empowerment	-.14	-.26, -.02	.027

^a Five models separately predicted each recovery dimension from timing of care, adjusted for level of psychological distress, age, sex, employment status, and race-ethnicity/spoken language. The reference group is no care.

outcomes but was associated with lower levels of life satisfaction compared with levels among those never treated. Recent—and in many cases, ongoing—engagement in therapy may make it difficult for individuals to endorse this construct, measured with statements such as, “In most ways my life is close to ideal.” The construct of hope appeared to be the dimension of personal recovery most robustly related to treatment, showing negative associations with both past-year and less recent treatment; hope also represented the strongest associations of all the recovery dimensions. Past research has identified hope as “central to personal recovery” and as a foundational motivator leading to other aspects of personal recovery, such as identity, meaning, and personal responsibility (14, 51). Thus, this finding is of particular importance.

Second, we found that self-reported completion of treatment was associated with higher levels of empowerment and lower levels of stigma compared with leaving care prior to completion. These findings are consistent with the notion that internalized stigma may be a motivating factor in leaving treatment (52, 53) and that stigma tends to persist over time (54). Previous research indicates that iatrogenic effects of therapeutic interventions are predicted by heightened internalized stigma and lack of social support (55). Additionally, individuals who did not find treatment useful may have opted to discontinue, a rational choice, but one that underscores the need for improved treatment.

We did not identify any significant pattern of relationships between provider type, such as mental health specialist (psychiatrist, psychologist, licensed social worker), and personal recovery outcomes or between minimally adequate care and personal recovery. Given the small subsample we examined to inspect these relationships (N=132) compared with the larger sample for all other analyses, we were underpowered to detect effects. Additional rounds of the CWBS may enable the study of these relationships in further detail.

FIGURE 1. Effect sizes (Cohen's d) of receiving treatment versus not receiving treatment, for five dimensions of personal recovery^a

^a For treatment in past 12 months and prior to past 12 months, the reference group is no treatment.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Our cross-sectional design cannot determine whether relationships are causal. For two reasons, we find that observed results are unlikely to be driven by individuals with greater psychological distress self-selecting into mental health care. First, analyses were adjusted for level of psychological distress to directly account for this possibility. Second, we did not find that receipt of care from a mental health specialist was associated with lower personal recovery scores compared with generalist care. Past evidence indicates that individuals with more-severe symptoms are more likely to seek care from a mental health specialist (56). Thus, if individuals with greater psychological distress were in fact self-selecting into specialty care, lower personal recovery levels among those seeing mental health specialists would be expected. We did not find this association.

Collectively, the pattern of results suggests that negative associations between mental health treatment and dimensions of personal recovery may in part reflect poor care retention or indicate barriers to access. Among those who completed treatment in the past 12 months, a significant number received services from a general medical provider (40%) rather than a trained mental health specialist. This finding is consistent with studies indicating a shortage of mental health specialists in parts of California (57), which reflects U.S. national trends (58). Likewise, data suggest that those with greater mental health needs often have poorer access to care, including financial and logistical barriers that may have undermined these individuals' ability to remain in care until completion (59–61).

This study had several limitations. First, the data represent pooled cross-sectional estimates; as such, causality cannot be inferred, and there remains the possibility of omitted variable bias as well as the possibility that those with lower personal recovery, independent of symptom severity, self-selected into care. To more fully explore the relationship between mental health treatment and personal recovery,

longitudinal studies are needed. Second, the data set does not include clinical diagnoses. Our intention was to expand the research focus to encompass individuals who had not received treatment and therefore were unlikely to have received a formal diagnosis. Third, all study measures relied on self-reporting. Those who did not respond to the survey may have differed from those who responded, and thus responses may have been biased.

It should also be noted that, although our sample is representative of adults in California with elevated psychological distress, findings may have limited external validity in other states. Likewise, although the state of California is economically, racially, and ethnically diverse, sample size limited the statistical power for subgroup analyses in which one might explore differences in outcomes according to these or other population characteristics. This would be a fruitful avenue for future research.

CONCLUSIONS

The findings presented provide evidence that mental health treatment is associated with lower levels of hope, empowerment, life satisfaction, and connectedness among adults in California reporting mild/moderate-to-serious levels of psychological distress. Although data are cross-sectional, the large, diverse, population-based sample and relatively consistent pattern of results across dimensions of personal recovery make a compelling case for further investigation. Treatment completion was also positively associated with dimensions of personal recovery, which underscores an area for future clinical research: attempting to improve outcomes among individuals experiencing psychological distress, including with interventions that assume a personal recovery orientation, make substantial efforts to engage individuals in treatment, and monitor personal recovery outcomes.

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