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Full title: Two levels, two logics? Exploring predictors of recovery-oriented care: findings from the RECOR-PRO survey

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Abstract

Objective

Gaps persist between values, policies, and practice of recovery-oriented care, stressing the need to identify implementation levers. This study examined the relationship between staff-reported recovery-oriented practices (ROP) and recovery-oriented service delivery (ROSD), and the sociodemographic, dispositional, and organizational factors associated with each.

Methods

In the RECOR-PRO survey, French mental health professionals (N = 555) completed standardized measures of recovery beliefs, attitudes toward ROP, organizational culture, ROP, and ROSD. Hierarchical regressions assessed the incremental contribution of each factor category, while separate category-specific regressions identified the variables most strongly associated with each outcome.

Results

ROP and ROSD were only weakly correlated (r = .14–.28), and ROSD was not significantly associated with ROP after accounting for sociodemographic and dispositional factors. Dispositional factors added the most explained variance for ROP (ΔR^2 = .35), notably attitudes toward specific recovery strategies, whereas organizational factors added the most for ROSD (ΔR^2 = .25), notably coworker expectations, leadership, and quality improvement. Category-specific regressions corroborated this pattern. Shared factors included lived experience of mental illness, use of standardized recovery tools, professional utility, and coworker expectations.

Conclusions

ROP and ROSD appear to be distinct yet interrelated levels of recovery-oriented care, supporting theoretical models and measures that distinguish individual from collective dimensions. More practically, the study identifies candidate implementation levers for recovery-oriented care, specific to each level or shared, such as coworker expectations and use of recovery-focused tools. These findings highlight the need for multilevel interventions combining support for practitioners with organizational change, rather than training professionals alone.

Introduction

For much of the history of psychiatry, serious mental illnesses (SMI) have been conceptualized as progressive and irreversible conditions (Jimenez, 1988; Lieberman et al., 2008), often experienced as “a prognosis of doom” (Deegan, 1997). Decades of research have since established substantial evidence for the possibility of recovery from SMI (Lieberman et al., 2008; Slade & Longden, 2015; Warner, 2010), spanning both clinical recovery, defined as symptom remission and functional improvement, and personal recovery, understood as the process of establishing “*a fulfilling, meaningful life and a positive sense of identity founded on hopefulness and self-determination*” (Andresen et al., 2003). Through sustained advocacy, this latter consumer-defined notion has gained widespread recognition in mental health systems, and the World Health Organization now identifies the transformation of services to support personal recovery as a global imperative (WHO, 2021). Accordingly, many countries have revised their public health strategies to promote recovery-oriented care (Piat et al., 2010; Subandi et al., 2023). Implementation, however, remains challenging (Erondu & McGraw, 2021; Lorien et al., 2020; Slade et al., 2014). Researchers consistently describe a gap between the approach’s well-established values, their translation into mental health policies, and their effective implementation in routine practice. Furthermore, they emphasize the need to identify the mechanisms and conditions that promote recovery-oriented care (Le Boutillier et al., 2011, 2015a; Piat et al., 2021; Subandi et al., 2023).

Conceptualizing Recovery-Oriented Care: Individual and Collective Practices

Recovery-oriented care is commonly defined as “*the extent to which mental health staff and services attempt to facilitate or promote personal recovery*” (Williams et al., 2012), and encompasses the “*underlying principles, values, knowledge, attitudes, skills, and behaviors*” through which professionals, teams and organizations support people in recognizing, taking responsibility for, and defining

their own recovery (Australian Government Department of Health, 2013). Among the few models attempting to structure this heterogeneity, the framework of Le Boutillier et al. (2011), remains the most influential. Derived from a qualitative analysis of 30 policy and practice guidance documents, it synthesizes recovery-supporting care into four overarching practice domains: (i) promoting citizenship (e.g., respecting users' rights and fostering social inclusion), (ii) supporting personally defined recovery (e.g., person-centered, holistic, and strengths-based approaches), (iii) working relationships (e.g., partnership-building, fostering hope, supporting autonomy), and (iv) organizational commitment (e.g., promoting recovery through culture, structure, and leadership).

Critically, this framework implies that recovery-oriented care operates at both individual and collective levels (Australian Government Department of Health, 2013; Na et al., 2025) although the term "recovery-oriented practice" is frequently used interchangeably for both. At the individual level, recovery-oriented practice (ROP) covers providers' specific knowledge and skills (e.g., personalized recovery planning, shared decision-making, strengths-based assessment) informed by core recovery values such as belief in recovery, valuing lived experience, and relational symmetry (Davidson et al., 2009; Oades & Anderson, 2012; Slade, 2009). At the collective level, recovery-oriented service delivery (ROSD) refers to the systemic structures and processes that enable recovery-supportive environments, such as embedding recovery principles into policies, leadership, team functioning, and care models (Anthony, 2000; Davidson et al., 2021; SAMHSA, 2009; Subandi et al., 2023). This multi-level perspective, emphasizing the distinction between individual and collective dimensions in recovery-oriented care, remains largely under-researched. This gap extends to how the determinants of recovery-oriented care have themselves been studied, a critical point for its implementation within services and practices.

Determinants of Recovery-Oriented Care

International research has predominantly focused on individual-level determinants of recovery-oriented care, referred in this study as dispositional characteristics, i.e., recurrent cognitive, affective, and behavioral tendencies distinguishing individuals (American Psychological Association, n.d.). In the case of recovery-oriented care, these dispositions mostly concern mental health professionals (MHPs) beliefs and attitudes toward recovery. Indeed, research show that MHPs often lack clarity about the concept of recovery, conflating personal and clinical definitions as well as their implications for practice (Chester et al., 2016; Gyamfi et al., 2020; Le Boutillier et al., 2015a). Additionally, some professionals still hold stigmatizing beliefs (e.g., perceiving service users as unmotivated for recovery) or pessimistic views about recovery prospects (Luigi et al., 2020; Morera et al., 2017). Demographic and professional characteristics such as age, role, clinical experience, or training background may also influence recovery beliefs, although evidence remains limited (Gyamfi et al., 2020; Luigi et al., 2020). Several reviews have concluded that this variability in staff knowledge, beliefs, and attitudes may hinder the implementation of recovery-oriented practices (Chatwiriyaphong et al., 2023; Chester et al., 2016; Lorien et al., 2020; Piat et al., 2021; Waldemar et al., 2016). This focus on dispositional factors reflects a conceptualization of recovery-oriented care as individual behavior driven by cognitive and affective processes, such as beliefs and attitudes (e.g., theory of planned behavior; Ajzen, 1991). Consequently, repeated calls have been made to train MHPs in recovery values, attitudes, and skills (Bedregal et al., 2006; Silverstein & Bellack, 2008; Williams et al., 2016a). Yet the impact of the resulting programs on practice appears limited (e.g., Cook et al., 2016; Oades et al., 2005; Slade et al., 2015). A meta-analysis by Eiroa-Orosa and García-Mieres (2019) found moderate effects on MHPs' attitudes and knowledge but no significant improvement in practice behaviors, suggesting that contextual and systemic factors also shape implementation of recovery-oriented care.

More recent work has indeed emphasized organizational determinants, although mostly on qualitative grounds. The systematic review by Le Boutillier et al. (2015a) showed that organizational priorities profoundly shape MHPs' understanding of recovery and the ways it can be operationalized in practice. This has led the authors to describe a "service-defined" recovery, distinct from clinical and personal recovery. Related studies have identified key organizational-level factors enabling recovery-oriented care, such as a shared organizational recovery vision, recovery-supportive leadership, collaborative team culture, and alignment of procedures and policies with recovery principles (Chester et al., 2016; Fleury et al., 2018; Le Boutillier et al., 2011, 2015b; Waldemar et al., 2016). Conversely, environmental barriers such as inpatient settings, resource limitations, lack of community programs, and a predominant focus on risk management may undermine recovery-supportive efforts (Chatwiriyaphong et al., 2023; Chester et al., 2016; Erondu & McGraw, 2021; Lorien et al., 2020; Waldemar et al., 2016). This systemic perspective recognizes that MHPs work within systems governed by structural, procedural, and cultural norms that can constrain or enable their individual recovery-oriented practice. It converges with implementation science, which holds that successful adoption of evidence-based practices requires alignment between individual factors and organizational context (e.g., Damschroder et al., 2009). A review by Piat et al. (2021) supports this perspective in the mental health context, identifying culture, resources, staff turnover, and leadership as critical implementation factors for recovery-supportive interventions.

Study Rationale and Objectives

Taken together, these literatures suggest that recovery-oriented care is shaped by both individual and organizational factors, yet these factors have rarely been examined jointly. Research has predominantly focused on individual and dispositional factors, most often addressed through education and training. This approach has shown its limits, as organizational contexts may condition whether and how MHPs adopt recovery-oriented practices (Fleury et al., 2018). Empirical evidence on organizational determinants, however, remains scarce and predominantly qualitative. A parallel limitation concerns the outcome itself: the distinction between individual-level ROP and collective-level ROSD has received little empirical attention, despite theoretical models suggesting that both levels might interact. Unpacking the relative contribution of individual and organizational factors to each outcome could help identify which level of intervention is most likely to close the implementation gap.

Therefore, the present study aimed to explore the relationship between two distinct staff-reported outcomes, recovery-oriented practice (ROP) and recovery-oriented service delivery (ROSD), and the factors associated with each. The bivariate association between ROP and ROSD was first examined, before two complementary questions were addressed to compare their correlates: (a) how much each factor category (sociodemographic-professional, dispositional, and organizational) contributes to predicting each outcome, and (b) which specific variables within each category are most strongly associated with each.

Method

Study Design and Procedure

This article reports data from the larger RECOR-PRO study, a nationwide survey exploring the recovery-oriented practices of mental health professionals working in France. The study received ethical approval from an Institutional Review Board (*blinded for review*) and was co-constructed at all stages with a steering committee composed of expert clinicians, people with lived experience of mental illness, administrators, and researchers. An online survey was developed and hosted on the LimeSurvey® platform. Both convenience and snowball sampling strategies were used: calls for participation were disseminated through the authors' professional networks (including social media) and relayed by participants. Eligible participants had to be over 18 years old and currently working in the mental health field; there were no additional exclusion criteria.

After providing informed consent, participants completed a survey divided into four sections: (i) beliefs about recovery, attitudes toward recovery-oriented practices, frequency of recovery-oriented practices (ROP), and perceived recovery-orientation of service delivery (ROSD); (ii) sociodemographic and professional characteristics; (iii) recovery-supportive organizational culture; and (iv) for participants self-identifying as having lived experience of mental illness, questions about mental illness disclosure in the workplace, which are not presented in this article. Participants were directed to different sections depending on their professional characteristics. In particular, those who reported working alone (e.g., private practice) were not administered the ROSD and organizational culture measures, as these scales assess team-based and organizational-level processes that are not applicable to individual work contexts.

Measures

At the time of survey development, no validated French staff-rated measures were available to assess the constructs of interest. To maximize robustness and validity, pre-existing standardized instruments were adapted rather than newly developed: questionnaires were translated and culturally adapted to French following best-practice international guidelines (Leong et al., 2016) and, when only user-rated versions were available, reworded to reflect MHPs' perspectives. Following best practices in survey design and cross-cultural adaptation (Passmore et al., 2002; Slattery et al., 2011; Terwee et al., 2018), the survey was pilot-tested with ten individuals (MHPs, people with lived experience, and researchers) before launch. In line with COSMIN recommendations (Terwee et al., 2018), the pilot assessed the comprehensibility of instructions, item content, and response formats.

Beliefs About Recovery

The Global INSPIRE scale (G-INSPIRE; Kotera et al., 2025) assessed participants' beliefs about mental health recovery. Originally a 20-item user-rated measure covering the five CHIME dimensions (Leamy et al., 2011), with adequate psychometric properties in UK and Japanese samples, it was adapted for staff in this study. Participants rated the extent to which each item contributes to mental health

recovery on a 5-point unipolar scale (1 = “Does not at all contribute to recovery” to 5 = “Contributes a great deal to recovery”). Total scores ranged from 20 to 100, with higher scores indicating greater belief of CHIME dimensions contribution to recovery.

ROP and Attitudes Toward ROP

The Recovery-Promoting Relationship Scale (RPRS; Russinova et al., 2013) was used to measure both ROP and attitudes toward ROP. We retained only the 16 items of the recovery-promoting strategies index, distributed across three dimensions (Hopefulness, Empowerment, Self-Acceptance), and adapted them to be staff-rated (e.g., item 4, “*Helping clients feel they can have a meaningful life*”). Participants completed two versions differing in instructions and response options: (a) the Frequency RPRS (F-RPRS) assessed ROP, with participants rating how frequently they apply each strategy in their own practice (1 = “Never” to 5 = “Systematically”); (b) the Usefulness RPRS (U-RPRS) assessed attitudes toward ROP, with participants rating how useful each strategy is to their recovery-supportive practice (1 = “Not at all useful” to 5 = “Very useful”). Scores on each version ranged from 16 to 80, with higher scores indicating greater ROP and more favorable attitudes toward ROP, respectively.

Recovery-Oriented Service Delivery (ROSD)

The Recovery Self-Assessment–Revised provider version (RSAR; O’Connell et al., 2005) assessed perceived recovery-oriented service delivery (e.g., item 10, “*Staff listen to and respect the decisions that program participants make about their treatment and care.*”). Its user-rated version has been validated in the French context and has demonstrated appropriate psychometric properties (Felix et al., 2026). The 32 items are distributed across three dimensions – Person-Centeredness, Social Inclusion, and Organizational Engagement – and rated on a 5-point Likert scale (1 = “Strongly disagree” to 5 = “Strongly agree”). Total scores ranged from 32 to 160, higher scores indicating greater perception of recovery-oriented service delivery.

Recovery-Supportive Organizational Culture

The Recovery Climate and Culture Scale (RCCS; Evans et al., 2020), which has shown adequate psychometrics among United States Veterans Affairs staff, assessed recovery-supportive organizational culture. Its 28 items evaluate seven domains: Expectations, Values, Leadership, Education and Training, Rewards, Policy, and Quality Improvement. All items except the three binary-rated Policy items use a 5-point Likert scale where 1 indicates absence of the element and 5 its strong presence. Total scores ranged from 25 to 125, higher scores reflecting a more recovery-supportive perceived culture.

Non-standardized Measures

Feeling of professional utility was assessed using three items adapted from Valery et al. (2023), addressing the perceived usefulness of one’s work in the care pathway, its role in service users’ recovery, and one’s own effectiveness (e.g., “*My work with people with mental illness plays an important role in their recovery*”). Responses were recorded on a 7-point Likert scale from 1 (“Strongly disagree”) to 7 (“Strongly agree”), with total scores ranging from 3 to 21. Higher scores indicate greater feeling of professional utility.

Attitudes toward positive risk-taking were measured using a single item developed for this study: after being provided with a definition of positive risk-taking, participants were asked “*In your practice, do you support people in taking positive risks?*”, with responses recorded on a 7-point Likert scale from 1 (“Strongly unsupportive”) to 7 (“Strongly supportive”). Higher score indicate greater attitude toward positive risk-taking

Analyses

All statistical analyses were performed using R version 4.2.2. Descriptive statistics were first computed for all study variables, including distributional characteristics, correlations and internal consistency (Cronbach’s α). Two dependent variables were examined separately throughout: ROP (F-RPRS total score) and ROSD (RSAR total score). First, Pearson correlations with Holm correction were computed to explore bivariate associations between ROP and ROSD total and subscale scores. Then, two complementary multivariate analytical strategies were used, addressing objectives (a) and (b) outlined above. All predictor and outcome scores were standardized (z-scores) prior to inclusion in the regression models.

Incremental contribution of factor categories (Objective a). For each outcome, a hierarchical block-wise regression entered predictors in three successive blocks, following a theoretically driven order: (1) individual variables, i.e., sociodemographic and professional

characteristics; (2) dispositional variables (beliefs and attitudes); and (3) organizational variables, including recovery-supportive organizational culture. ROSD was included as a predictor of ROP, based on theoretical assumptions positioning organizational context as an overarching condition shaping individual practice (e.g., Na et al., 2025). Total scores were used to maximize interpretability, limit multicollinearity, and preserve statistical power. These analyses were conducted on a complete-case sample (N = 374) to ensure comparability of each block. The incremental contribution of each block was evaluated by comparing nested models via ANOVA (F-test for ΔR^2), with Cohen's partial f^2 as the associated effect size, using conventional thresholds: small ($f^2 \geq .02$), medium ($f^2 \geq .15$), and large ($f^2 \geq .35$). Statistical significance was set at $p < .05$, and effect sizes for individual predictors were reported as partial eta-squared (η^2p), using conventional thresholds: small ($\eta^2p \geq .01$), medium ($\eta^2p \geq .06$), and large ($\eta^2p \geq .14$).

Variable-level associations within factor categories (Objective b). To identify which specific variables within each factor category were most strongly associated with ROP and ROSD, three independent (non-nested) regression models corresponding to the same three factor categories were conducted for each outcome, this time using subscale rather than total scores. Unlike the hierarchical models, these analyses were based on complete-case data computed separately for each model, resulting in variable sample sizes. Effect sizes were reported as partial eta-squared, using the same thresholds.

Model checking. For all regression models, standard assumptions were verified, including multicollinearity (Variance Inflation Factors < 5), homoscedasticity of residuals (Breusch-Pagan test), independence of residuals (Durbin-Watson test), and linearity (Rainbow test). When violations of homoscedasticity and/or residual autocorrelation were detected, heteroscedasticity-consistent (HC) or heteroscedasticity- and autocorrelation-consistent (HAC) covariance matrix estimators were applied using the *sandwich* package (Zeileis, 2004).

Results

Participants

Data collection took place between October 2024 and April 2025. The study was accessed N = 3,734 times. A total of N = 744 participants completed the first questionnaire (G-INSPIRE), among whom N = 555 provided sufficient sociodemographic information. Most participants were female (74%), with a mean age of 42.56 years (SD = 10.24). The sample primarily comprised nurses (20.9%), psychologists (17.4%), peer-support workers (11.3%), therapeutic support workers (9.3%), managers and coordinators (8.4%), occupational therapists (7.3%), and psychiatrists (6.7%). Participants were equally distributed across the three main public psychiatry sectors in France: in-patient care (30.4%), out-patient/ambulatory care (36.8%), and community mental health services (35.3%). Detailed participant characteristics are presented in Table 1.

Table 1
Participants Sociodemographic and Professional Characteristics (n = 555)

Variable	n (%)	M (SD)	Range
Age		42.56 (10.24)	20–73
Gender			
Male	140 (25.2)		
Female	411 (74.1)		
Education level (years)		15.37 (3.92)	2–27
Close to someone with mental illness			
Yes, family	213 (38.4)		
Yes, someone else	158 (28.5)		
No	225 (40.5)		
Lived experience of mental illness (Yes)	156 (28.2)		
Profession			
Nurse	115 (20.9)		
Psychologist	96 (17.4)		
Peer-support worker	62 (11.3)		
Therapeutic support worker	52 (9.4)		
Management / Coordination	46 (8.4)		
Occupational therapist	40 (7.3)		
Psychiatrist	37 (6.7)		
Director/administrator	35 (6.4)		
Social worker	28 (5.1)		
Other	39 (7.1)		
Professional experience (years)		12.60 (9.63)	0–40
Job tenure (years)		5.55 (5.91)	0–34
Job sector			
Inpatient care	169 (30.4)		
Outpatient care	204 (36.8)		
Community care	196 (35.3)		
Private practice	38 (6.8)		
Multidisciplinary team (Yes)	508 (91.5)		
Mobile team (Yes)	172 (34.0)		
Team has peer-support worker(s)			
Yes, unpaid	37 (6.6)		
Yes, professional	241 (43.4)		
No	242 (43.6)		
Has received training in mental health recovery (Yes)	346 (62.3)		

Variable	n (%)	M (SD)	Range
Type of recovery training			
Initial training	69 (12.4)		
Continuing professional development	249 (44.9)		
Conferences, seminars, etc.	158 (28.5)		
Use of recovery-promoting instruments (Yes)	405 (73)		
Type of recovery-promoting instruments			
Standardized instruments to assess users' specific needs	297 (53.5)		
Recovery plans co-constructed with users	312 (56.2)		
Standardized outcome measures of personal recovery	162 (29.2)		

Descriptive Statistics

Descriptive statistics and Cronbach's alphas for the study variables are displayed in Table 2. The distribution of ROP and ROSD scores across demographics (profession, care setting, and personal familiarity with mental illness), as well as the correlation matrix for all study outcomes are available as Supplementary Material. Ceiling effects were observed in several variables, particularly for the G-INSPIRE recovery beliefs subscales (skew > 2 for Connectedness, Hope, and Meaning; skew > 1 for Identity and Empowerment) and for the item assessing attitudes toward positive risk-taking (skew > 1). Negative skewness was also noted for the Hope dimension of the U-RPRS and the Values dimension of the RCCS. Overall, participants reported high levels of ROP (M = 65.66, SD = 7.99, theoretical range = 16–80), whereas greater variability was observed for ratings of ROSD (M = 117.87, SD = 22.88, theoretical range = 32–160).

Table 2
Descriptive Statistics of Study Outcomes

Variable	No. of items	n	α	M	SD	Range	Skew	Kurtosis
Beliefs about recovery (G-INSPIRE)								
Total score	20	555	.95	90.15	10.07	20–100	-2.69	13.53
Connectedness	4		.89	18.66	2.17	4–20	-3.32	16.34
Hope	4		.85	18.35	2.29	4–20	-2.49	9.95
Identity	4		.82	17.47	2.66	4–20	-1.37	2.91
Meaning in Life	4		.81	18.43	2.10	4–20	-2.72	12.60
Empowerment	4		.80	17.23	2.52	4–20	-1.28	3.24
Attitudes towards ROP (U-RPRS)								
Total score	16	528	.87	71.75	6.18	39–80	-0.8	1.31
Hope	7		.79	31.14	3.19	12–35	-1.06	2.4
Empowerment	5		.67	22.86	1.99	15–25	-1	0.87
Self-acceptance	4		.64	17.75	1.88	9–20	-0.74	0.71
ROP (F-RPRS)								
Total score	16	528	.89	65.66	7.99	33–80	-0.65	1.01
Hope	7		.81	28.72	3.82	12–35	-0.69	0.99
Empowerment	5		.74	20.71	2.86	10–25	-0.7	0.51
Self-acceptance	4		.62	16.22	2.25	6–20	-0.6	0.87
Feeling of professional utility	3	555	0.82	17.55	2.64	5–21	-0.91	1.47
Attitudes towards positive risk-taking	1	555	N/A	6.10	0.98	1–7	-1.41	3.52
Recovery-oriented service delivery (RSAR)								
Total score	32	481	.96	117.87	22.88	34–160	-0.63	0.04
Person-centeredness	17		.93	65.39	11.91	18–85	-0.84	0.69
Organizational engagement	6		.85	18.897	5.69	6–30	-0.22	-0.60
Social inclusion	5		.84	18.67	4.45	5–25	-0.56	-0.36
Recovery-supportive organizational culture (RCCS)								
Total score	25	436	.91	83.96	17.1	32–125	-0.18	-0.16
Expectations	5		.84	19.87	4.13	5–25	-0.86	0.38
Values	3		.65	13.27	1.81	3–15	-1.23	2.35
Leadership	5		.90	18.76	5.09	5–25	-0.91	0.16
Education and training	5		.88	14.69	5.52	5–25	-0.18	-0.80
Rewards	3		.96	6.84	3.74	3–15	0.52	-0.99
Policy	3		N/A	N/A	N/A	N/A	N/A	N/A
Quality improvement	4		.82	10.64	4.29	2–20	0.21	-0.81

Variable	No. of items	n	α	M	SD	Range	Skew	Kurtosis

Note. ROP = Recovery-Oriented Practice, G-INSPIRE = Global INSPIRE; U-RPRS = Recovery Promoting Relationships Scale – Usefulness; F-RPRS = Recovery Promoting Relationships Scale – Frequency; RSAR = Recovery-Self Assessment Scale Revised; RCCS = Recovery Climate and Culture Scale. Descriptive statistics were not computed for the RCCS Policy subscale, due to the binary response format (Yes/No).

Associations Between Recovery-Oriented Practice (ROP) and Recovery-Oriented Service Delivery (ROSD)

Bivariate correlations between ROP and ROSD are presented in Table 3. ROP and ROSD total scores were significantly but weakly correlated (r = .278, 95% CI [.192, .360], p < .001). Correlations involving subscales were of similar or smaller magnitude (r = .140 to .274).

Table 3
Bivariate Correlations Between Recovery-Oriented Practice (ROP) and Recovery-Oriented Service Delivery (ROSD)

Variable 1	Variable 2	*r*	95%CI LL	95%CI UL	*t*	*p*
F-RPRS Total	RSAR Total	0.278	0.192	0.360	6.219	< .001
	RSAR *Person-centeredness*	0.274	0.187	0.356	6.110	< .001
	RSAR *Organizational engagement*	0.220	0.131	0.305	4.840	< .001
	RSAR *Social inclusion*	0.228	0.140	0.313	5.038	< .001
F-RPRS *Hope*	RSAR Total	0.268	0.181	0.350	5.961	< .001
	RSAR *Person-centeredness*	0.260	0.172	0.343	5.770	< .001
	RSAR *Organizational engagement*	0.227	0.138	0.311	4.996	< .001
	RSAR *Social inclusion*	0.217	0.129	0.302	4.775	< .001
F-RPRS *Empowerment*	RSAR Total	0.260	0.173	0.343	5.781	< .001
	RSAR *Person-centeredness*	0.259	0.172	0.342	5.760	< .001
	RSAR *Organizational engagement*	0.202	0.113	0.288	4.434	< .001
	RSAR *Social inclusion*	0.209	0.120	0.294	4.578	< .001
F-RPRS *Self-acceptance*	RSAR Total	0.204	0.115	0.290	4.470	< .001
	RSAR *Person-centeredness*	0.202	0.113	0.288	4.439	< .001
	RSAR *Organizational engagement*	0.140	0.049	0.228	3.030	.003
	RSAR *Social inclusion*	0.178	0.088	0.265	3.883	< .001

Note. Pearson correlations with 95% confidence intervals, based on complete observations (n = 463). P-values were adjusted for multiple comparisons (Holm).

LL = Lower Limit; UL = Upper Limit.

F-RPRS = Recovery Promoting Relationship Scale – Frequency, measuring frequency of recovery-oriented practices (ROP).

RSAR = Recovery Self-Assessment Scale Revised, measuring recovery-oriented service delivery (ROSD).

Predictors of Recovery-Oriented Practice (ROP)

Incremental contribution of factor categories (Objective a). Results of the hierarchical regression predicting ROP (F-RPRS total score) are presented in Table 4. Sociodemographic and professional characteristics alone (Block 1) accounted for an adjusted R^2 of .112. Adding dispositional variables (Block 2) significantly improved model fit, $\Delta R^2 = .35$, $F(4, 359) = 59.79$, $p < .001$, $f^2p = 0.67$ (large effect), raising the adjusted R^2 to .461. The subsequent addition of organizational variables (Block 3) also significantly improved model fit, although with a markedly smaller increment, $\Delta R^2 = .02$, $F(2, 357) = 8.33$, $p < .001$, $f^2p = 0.05$ (small effect). The final model yielded an

adjusted R^2 of .482, $F(16, 357) = 22.72$, $p < .001$. Interestingly, ROSD did not significantly predict ROP once individual and dispositional factors were accounted for ($\beta = .076$, $p = .210$).

Variable-level associations within factor categories (Objective b). Table 5 displays results from the three regression models separately testing each factor category predicting ROP (F-RPRS total score). *Sociodemographic and professional characteristics* explained 9% of ROP variance (Model 1, $F(10, 429) = 5.37$, $p < .001$). Use of recovery-promoting tools was positively associated with ROP ($\beta = .421$, $p < .01$, $\eta^2p = .022$), whereas education level ($\beta = -.097$, $p < .01$, $\eta^2p = .016$) and lived experience of mental illness ($\beta = -.359$, $p < .01$, $\eta^2p = .020$) were negatively associated, all with small effect sizes. *Dispositional variables* explained 44% of ROP variance (Model 2, $F(10, 517) = 42.4$, $p < .001$). Among recovery beliefs, the Hope dimension was negatively ($\beta = -.114$, $p = .015$, $\eta^2p = .011$) and the Identity dimension positively ($\beta = .137$, $p = .017$, $\eta^2p = .011$) associated with ROP, with small effect sizes. Attitudes toward ROP were positively associated for both the Hope ($\beta = .310$, $p < .001$, $\eta^2p = .074$) and Empowerment ($\beta = .184$, $p < .001$, $\eta^2p = .041$) domains; feeling of professional utility was also positively associated with ROP ($\beta = .336$, $p < .001$, $\eta^2p = .081$, medium). *Organizational variables* explained 15% of ROP variance (Model 3, $F(9, 412) = 9.20$, $p < .001$), with small positive associations for the Expectations ($\beta = .238$, $p < .001$, $\eta^2p = .027$) and Education and Training ($\beta = .222$, $p < .001$, $\eta^2p = .034$) dimensions of organizational culture. None of the RSAR subscales measuring ROSD were significantly associated with ROP.

Table 4
Blockwise Multiple Linear Regression Predicting Recovery-Oriented Practice (F-RPRS Total Score as Criterion)

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*R²adj*	*ΔR²*	*F (df)*	*f²p*	*f²p* 95%LL
Intercept	-0.157	0.080	-1.962	.051	.011	.000						
Block 1: Sociodemographic and professional variables								.112				
Age	0.055	0.057	0.949	.343	.003	.000						
Gender	0.049	0.091	0.533	.594	.001	.000						
Education level	-0.044	0.030	-1.446	.149	.006	.000						
Close to someone with mental illness	-0.003	0.088	-0.031	.976	.000	.000						
Lived experience of mental illness	-0.204	0.105	-1.949	.052	.011	.000						
Use of recovery-promoting tools	0.185	0.127	1.460	.145	.006	.000						
Has received training in mental health recovery	-0.001	0.112	-0.010	.992	.000	.000						
Team has peer-support worker(s)	-0.201	0.084	-2.381	.018*	.016	.001	Small					
Professional experience	0.052	0.054	0.965	.335	.003	.000						
Job tenure	0.071	0.049	1.462	.145	.006	.000						
+ Block 2: Dispositional variables								.461	.35	59.789*** (4, 359)	0.67	0.50
Recovery beliefs[a] - Total	0.004	0.047	0.088	.930	.000	.000						
Attitudes toward ROP[b] - Total	0.504	0.054	9.336	< .001***	.196	.139	Large					
Feeling of professional utility	0.269	0.059	4.583	< .001***	.056	.023	Small					
Attitudes toward positive risk-taking	-0.010	0.043	-0.223	.824	.000	.000						
+ Block 3: Organizational variables								.482	0.02	8.330*** (2, 357)	0.05	0.01
ROSD[c] - Total	0.076	0.061	1.255	.210	.004	.000						
Organizational culture[d] - Total	0.129	0.062	2.088	.038*	.012	.000						

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*R²adj*	*ΔR²*	*F (df)*	*f²p*	*f²p* 95%LL

Note. N = 374, complete case analysis (listwise deletion) was used to ensure comparability of nested models across all blocks. ROP = Recovery-Oriented Practice; F-RPRS = Recovery Promoting Relationship Scale – Frequency; ROSD = Recovery-Oriented Service Delivery; LL = Lower Limit. Standardized regression coefficients (β), standard errors, t- and p-values, and effect sizes (η²p) for individual predictors are reported from the final model, which includes all predictors simultaneously; predictors are grouped by block for interpretive clarity only. The following thresholds were used for partial eta squared (η²p): small (η²p ≥ .01), medium (η²p ≥ .06) and large (η²p ≥ .14). Confidence intervals for η²p are one-sided by construction, with upper limits fixed at 1.00. Model parameters were corrected for heteroscedasticity using HC estimator. Final model displayed the following parameters: R²adj = .482; F(16, 357) = 22.72, p < .001***. Blocks were compared with analysis of variance, representing the incremental contribution of each block when added to the previous model. The following parameters are reported for the differences between blocks: ΔR² = unadjusted R² difference; F = ANOVA statistic t; f²p = Cohen's partial f squared effect size statistic. Confidence intervals for f²p are one-sided by construction, with upper limits fixed at infinity. *p<.05; **p<.01; ***p<.001.

[a] Measured with Global INSPIRE scale ; [b] Measured with Recovery Promoting Relationship Scale - Usefulness (U-RPRS) ; [c] Measured with the Recovery Self-Assessment Scale Revised (RSAR) ; [d] Measured with the Recovery Climate and Culture Scale (RCCS)

Table 5
Independent Regression Models Predicting Recovery-Oriented Practice (F-RPRS Total Score as Criterion)

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*F*	*df*	*R²adj*
Model 1: Sociodemographic and professional variables								5.37 ***	10, 429	.09
Intercept	-0.272	0.087	-3.122	.002**	.022	.005				
Age	0.137	0.065	2.093	.037*	.010	.000				
Gender	0.176	0.106	1.662	.097	.006	.000				
Education level	-0.097	0.037	-2.668	.008**	.016	.002	Small			
Close to someone with mental illness	0.006	0.102	0.06	.952	.000	.000				
Lived experience of mental illness	-0.359	0.121	-2.971	.003**	.020	.004	Small			
Use of recovery-promoting tools	0.421	0.135	3.124	.002**	.022	.005	Small			
Has received training in mental health recovery	0.133	0.109	1.219	.223	.003	.000				
Team has peer-support worker(s)	0.125	0.095	1.309	.191	.004	.000				
Professional experience	0.016	0.065	0.242	.809	.000	.000				
Job tenure	0.053	0.048	1.105	.270	.003	.000				
Model 2: Dispositional variables								42.4 ***	10, 517	.44
Intercept	-0.016	0.034	-0.463	.644	.000	.000				
Recovery beliefs[a] - Connectedness	-0.035	0.049	-0.715	.475	.001	.000				
Recovery beliefs - Hope	-0.114	0.047	-2.430	.015*	.011	.001	Small			
Recovery beliefs - Identity	0.137	0.057	2.390	.017*	.011	.001	Small			
Recovery beliefs - Meaning	-0.033	0.057	-0.579	.563	.001	.000				
Recovery beliefs - Empowerment	0.052	0.052	1.000	.318	.002	.000				
Attitudes toward ROP[b] - Hope	0.310	0.048	6.432	< .001***	.074	.042	Medium			
Attitudes toward ROP - Empowerment	0.184	0.039	4.676	< .001***	.041	.017	Small			
Attitudes toward ROP - Self-acceptance	0.043	0.047	0.928	.354	.002	.000				
Feeling of professional utility	0.336	0.050	6.733	< .001***	.081	.047	Medium			
Attitudes toward positive risk-taking	0.019	0.033	0.570	.569	.001	.000				

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*F*	*df*	*R²adj*
Model 3: Organizational variables								9.20 ***	9, 412	.15
Intercept	0.008	0.047	0.18	.858	.000	.000				
ROSD[c] - Person-centeredness	0.020	0.081	0.253	.800	.000	.000				
ROSD - Organizational engagement	0.083	0.105	0.789	.431	.002	.000				
ROSD - Social inclusion	-0.025	0.083	-0.296	.767	.000	.000				
Organizational culture[d] - Expectations	0.238	0.071	3.362	.001**	.027	.007	Small			
Organizational culture - Values	0.092	0.052	1.757	.080	.007	.000				
Organizational culture - Leadership	-0.004	0.064	-0.059	.953	.000	.000				
Organizational culture - Education and training	0.222	0.058	3.829	< .001***	.034	.011	Small			
Organizational culture - Rewards	0.011	0.051	0.21	.833	.000	.000				
Organizational culture - Quality improvement	-0.109	0.067	-1.639	.102	.006	.000				

Note. *p<.05; **p<.01; ***p<.001. LL = Lower Limit; F-RPRS = Recovery Promoting Relationship Scale - Frequency; ROP = Recovery-Oriented Practices; ROSD = Recovery-Oriented Service Delivery. Standardized regression coefficients are displayed. The following thresholds were used for partial eta squared (η²p): small (η²p ≥ .01), medium (η²p ≥ .06) and large (η²p ≥ .14). Confidence intervals are reported for η²p and are one-sided; the upper limit is fixed at 1.00 by construction. Model 1 parameters were corrected for heteroscedasticity and autocorrelated residuals using HAC estimator; Model 2 and Model 3 parameters were corrected for heteroscedasticity using HC estimator.

[a] Measured with Global INSPIRE scale

[b] Measured with Recovery Promoting Relationship Scale - Usefulness (U-RPRS)

[c] Measured with the Recovery Self-Assessment Scale Revised (RSAR)

[d] Measured with the Recovery Climate and Culture Scale (RCCS). Policy subscale items were excluded due to binary format.

Predictors of Recovery-Oriented Service Delivery (ROSD)

Incremental contribution of factor categories (Objective a). Results of the hierarchical regression predicting ROSD (RSAR total score) are presented in Table 6. Sociodemographic and professional characteristics alone accounted for an adjusted R^2 of .166. Adding dispositional variables (Block 2) significantly improved model fit, $\Delta R^2 = .09$, $F(4, 359) = 11.89$, $p < .001$, $f^2p = 0.13$ (small effect), raising the adjusted R^2 to .255. The addition of organizational culture (Block 3) produced a substantially larger increment, $\Delta R^2 = .25$, $F(1, 358) = 191.37$, $p < .001$, $f^2p = 0.53$ (large effect), yielding a final adjusted R^2 of .513, $F(15, 358) = 27.25$, $p < .001$.

Variable-level associations within factor categories (Objective b). Table 7 displays results from the three regression models separately testing each factor category predicting ROSD (RSAR total score). *Sociodemographic and professional variables* explained 15% of ROSD variance (Model 4, $F(10, 409) = 8.48$, $p < .001$). Lived experience of mental illness was negatively associated with ROSD ($\beta = -.360$, $p < .001$, $\eta^2p = .026$, small), whereas use of recovery-promoting tools ($\beta = .334$, $p < .01$, $\eta^2p = .018$, small) and the presence of peer-support workers in the team ($\beta = .726$, $p < .001$, $\eta^2p = .117$, medium) were positively associated. *Dispositional variables* explained 15% of ROSD variance (Model 5, $F(10, 452) = 9.37$, $p < .001$): none of the recovery beliefs dimensions were significantly associated with ROSD. Among attitudes toward ROP, only the Self-Acceptance domain of attitudes toward ROP was significantly associated, although negatively and with a small effect size ($\beta = -.165$, $p = .017$, $\eta^2p = .012$). Feeling of professional utility was positively associated with ROSD ($\beta = .307$, $p < .001$, $\eta^2p = .092$, medium). *Organizational variables* explained 62% of ROSD variance (Model 6, $F(6, 429) = 120.9$, $p <$

.001). Three organizational culture dimensions showed positive associations with ROSD: Expectations showed the largest association ($\beta = .541$, $p<.001$, $\eta^2p = .325$, large), while Leadership ($\beta = .178$, $p<.001$, $\eta^2p = .047$) and Quality Improvement ($\beta = .132$, $p<.001$, $\eta^2p = .030$) were positively associated with small effect sizes.

Table 6

Blockwise Multiple Linear Regression Predicting Recovery-Oriented Service Delivery (RSAR Total Score as Criterion)

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*R²adj*	*ΔR²*	*F (df)*	*f²p*	*f²p* 95%LL
Intercept	-0.021	0.059	-0.347	0.729	0.000	0.000						
Block 1: Sociodemographic and professional variables								.166				
Age	-0.019	0.050	-0.390	0.697	0.000	0.000						
Gender	-0.073	0.085	-0.856	0.392	0.002	0.000						
Education level	-0.001	0.037	-0.039	0.969	0.000	0.000						
Close to someone with mental illness	0.088	0.077	1.144	0.253	0.004	0.000						
Lived experience of mental illness	-0.211	0.091	-2.312	0.021*	0.015	0.001	Small					
Use of recovery-promoting tools	0.073	0.104	0.705	0.481	0.001	0.000						
Has received training in mental health recovery	-0.285	0.084	-3.397	0.001**	0.031	0.008	Small					
Team has peer-support worker(s)	0.310	0.087	3.577	< .001***	0.035	0.010	Small					
Professional experience	0.046	0.050	0.912	0.362	0.002	0.000						
Job tenure	-0.044	0.052	-0.837	0.403	0.002	0.000						
+ Block 2: Dispositional variables								.255	.09	11.888*** (4, 359)	0.13	0.07
Recovery beliefs[a] - Total	0.103	0.058	1.757	0.080	0.009	0.000						
Attitudes toward ROP[b] - Total	-0.031	0.052	-0.583	0.560	0.001	0.000						
Feeling of professional utility	0.123	0.046	2.644	0.009**	0.019	0.003	Small					
Attitudes toward positive risk-taking	0.024	0.043	0.554	0.580	0.001	0.000						
+ Block 3: Organizational variables								.513	.25	191.37*** (1, 358)	0.53	0.40
Organizational culture[c] - Total	0.606	0.046	13.059	< .001***	0.323	0.260	Large					

Note. N = 374, complete case analysis (listwise deletion) was used to ensure comparability of nested models across all blocks. ROP = Recovery-Oriented Practices; ROSD = Recovery-Oriented Service Delivery; RSAR = Recovery Self-Assessment Scale; LL = Lower Limit. Standardized regression coefficients (β), standard errors, t- and p-values, and effect sizes (η²p) for individual

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*R²adj*	*ΔR²*	*F (df)*	*f²p*	*f²p* 95%LL
predictors are reported from the final model, which includes all predictors simultaneously; predictors are grouped by block for interpretive clarity only. The following thresholds were used for partial eta squared (η²p): small (η²p ≥ .01), medium (η²p ≥ .06) and large (η²p ≥ .14). Confidence intervals for η²p are one-sided by construction, with upper limits fixed at 1.00. Model parameters were corrected for heteroscedasticity using HC estimator. Final model displayed the following parameters: Adj. R^2 = .513; $F(15, 358)$ = 27.25, p<.001***. Blocks were compared with analysis of variance, representing the incremental contribution of each block when added to the previous model. The following parameters are reported for the differences between blocks: ΔR² = unadjusted R² difference; F = ANOVA statistic t; f²p = Cohen's partial f squared effect size statistic. Confidence intervals for f²p are one-sided by construction, with upper limits fixed at infinity.													
*p<.05; **p<.01; ***p<.001.													
[a] Measured with Global INSPIRE scale													
[b] Measured with Recovery Promoting Relationship Scale - Usefulness (U-RPRS)													
[c] Measured with the Recovery Climate and Culture Scale (RCCS)													

Table 7
Independent Regression Models Predicting Recovery-Oriented Service Delivery (RSAR Total Score as Criterion)

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*F*	*df*	*R²adj*
Model 4: Sociodemographic and professional variables								8.48 ***	10, 409	.15
Intercept	-0.167	0.069	-2.435	.015*	.014	.001				
Age	0.033	0.062	0.529	.597	.001	.000				
Gender	-0.022	0.106	-0.211	.833	.000	.000				
Education level	0.024	0.047	0.504	.615	.001	.000				
Close to someone with mental illness	0.078	0.099	0.786	.432	.002	.000				
Lived experience of mental illness	-0.360	0.109	-3.288	.001**	.026	.006	Small			
Use of recovery-promoting tools	0.334	0.122	2.750	.006**	.018	.003	Small			
Has received training in mental health recovery	-0.087	0.103	-0.849	.396	.002	.000				
Team has peer-support worker(s)	0.726	0.098	7.376	< .001***	.117	.073	Medium			
Professional experience	0.081	0.066	1.239	.216	.004	.000				
Job tenure	-0.100	0.064	-1.573	.117	.006	.000				
Model 5: Dispositional variables								9.37 ***	10, 452	.15
Intercept	-0.022	0.046	-0.490	.624	.001	.000				
Recovery beliefs[a] - Connectedness	-0.022	0.064	-0.344	.731	.000	.000				
Recovery beliefs - Hope	0.097	0.065	1.510	.132	.005	.000				
Recovery beliefs - Identity	0.111	0.066	1.675	.095	.006	.000				
Recovery beliefs - Meaning	0.015	0.071	0.217	.829	.000	.000				
Recovery beliefs - Empowerment	0.019	0.079	0.238	.812	.000	.000				
Attitudes toward ROP[b] - Hope	0.110	0.070	1.564	.118	.005	.000				
Attitudes toward ROP - Empowerment	0.030	0.063	0.480	.632	.001	.000				
Attitudes toward ROP - Self-acceptance	-0.165	0.069	-2.386	.017*	.012	.001	Small			
Feeling of professional utility	0.307	0.045	6.770	< .001***	.092	.054	Medium			
Attitudes toward positive risk-taking	0.044	0.047	0.928	.354	.002	.000				

Variable	*β*	SE	*t*	*p*	*η²p*	*η²p* 95%LL	Eff. Size	*F*	*df*	*R²adj*
Model 6: Organizational variables								120.9 ***	6, 429	.62
Intercept	0.018	0.029	0.631	.528	.001	.000				
Organizational culture[c] - Expectations	0.541	0.038	14.381	< .001***	.325	.268	Large			
Organizational culture - Values	0.045	0.031	1.439	.151	.005	.000				
Organizational culture - Leadership	0.178	0.039	4.579	< .001***	.047	.019	Small			
Organizational culture - Education and training	0.037	0.033	1.113	.266	.003	.000				
Organizational culture - Rewards	0.050	0.034	1.499	.135	.005	.000				
Organizational culture - Quality improvement	0.132	0.036	3.649	< .001***	.030	.009	Small			

Note. *p<.05; **p<.01; ***p<.001. LL = Lower Limit; RSAR = Recovery Self-Assessment Scale Revised; ROP = Recovery-Oriented Practices; ROSD = Recovery-Oriented Service Delivery. Standardized regression coefficients are displayed. The following thresholds were used for partial eta squared (η²p): small (η²p ≥ .01), medium (η²p ≥ .06) and large (η²p ≥ .14). Confidence intervals are reported for η²p and are one-sided; the upper limit is fixed at 1.00 by construction. Model 4 parameters were corrected for heteroscedasticity using HC estimator; Model 5 parameters were corrected for autocorrelated residuals using HAC estimator.

[a] Measured with Global INSPIRE scale

[b] Measured with Recovery Promoting Relationship Scale - Usefulness (U-RPRS)

[c] Measured with Recovery Climate and Culture Scale (RCCS). Policy subscale items were excluded due to binary format.

Discussion

This study explored predictors of recovery-oriented care from mental health professionals' perspectives. To our knowledge, it is the first study to jointly examine individual and organizational predictors while treating individual practice (ROP) and collective service delivery (ROSD) as two distinct outcomes. Two main findings are identified: ROP and ROSD were only weakly related, and they were associated with largely different sets of determinants.

Two Weakly Related Dimensions of Recovery-Oriented Care

At the bivariate level, Pearson correlations between the two outcomes were small (r = .140 to .278 across total scores and dimensions). At the multivariate level, ROSD did not significantly predict ROP, either in the organizational category-specific model (η²p ranging from 0.00 to 0.002 across RSAR subscales) or in the fully adjusted model including sociodemographic, dispositional, and organizational factors (η²p = 0.004). This showed that despite the small bivariate correlation, ROSD did not bring a unique additional contribution to ROP when accounting for other factors. This result challenges assumptions about a direct relationship between individual and service-level recovery orientation within MHPs' self-reports. Qualitative reviews have consistently stressed how crucial organizational alignment – reflected in policies, goals, missions, values, and practice frameworks – is for recovery-oriented practice (Chester et al., 2016; Le Boutillier et al., 2015a; Waldemar et al., 2016). Among the scarce available quantitative data, Stuber et al. (2014) found that ROSD significantly predicted providers' recovery-promoting competencies, and Na and Solomon (2026) identified a similar pattern even when controlling for recovery knowledge and attitudes, although no effect sizes were provided. Notably, both used different measures of ROP (Competency Assessment Instrument; Chinman et al., 2003) and ROSD (Recovery-Oriented Services Evaluation; Campbell-Orde et al., 2005). Our results nuance this literature, suggesting that providers may engage in ROP, or at least report doing so, even when working in settings perceived as not collectively supporting recovery. This interpretation aligns with research arguing that MHPs do not passively endure adverse work contexts but strive to defend a clinical support of recovery that

reflects their core values (Nugent et al., 2017; Williams et al., 2016a). The association between ROP and ROSD may nonetheless become more apparent longitudinally, as qualitative sources highlight the competing priorities and professional exhaustion that can result from sustaining recovery-supportive efforts within organizations not aligned with recovery principles (Chester et al., 2016; Erondu & McGraw, 2021; Le Boutillier et al., 2015b; Nugent et al., 2017; Waldemar et al., 2016).

Distinct Determinant Profiles Across the Two Outcomes

The two outcomes were associated with different categories of factors. When entered after sociodemographic variables, dispositional characteristics accounted for the largest increment in explained variance for ROP ($\Delta R^2 = .35$, $f^2p = .67$, large effect), while further adding organizational characteristics only came with a small increment ($\Delta R^2 = .02$, $f^2p = .05$, small effect). Conversely, organizational characteristics accounted for the largest increment in explained variance for ROSD when entered after sociodemographic and dispositional characteristics ($\Delta R^2 = .25$, $f^2p = .53$, large effect). Although increments depend on blocks entry order, this pattern was corroborated by the separate models, in which dispositional variables explained 44% of ROP variance versus 15% for organizational variables, and organizational variables explained 62% of ROSD variance versus 15% for dispositional variables. This pattern suggests that individual practices may be more strongly shaped by professionals' psychological dispositions, while collective service delivery appears more dependent on perceived organizational elements, team culture, and broader system-level dynamics.

For ROP, attitudes toward specific recovery-oriented practices were the most consistent predictors within the dispositional block: professionals who perceived these practices as more useful in promoting recovery reported engaging in them more frequently. Surprisingly, beliefs about recovery, a core construct of the literature, were only weakly and inconsistently related to recovery-oriented care, with Hope beliefs even showing a small negative association with ROP. Previous quantitative research has been restricted by measurement approaches conflating providers' knowledge, beliefs, and attitudes: by clearly distinguishing beliefs about recovery from attitudes toward specific recovery-promoting practices, our results suggest that abstract recovery beliefs may not translate directly into practice behaviors, whereas favorable attitudes toward concrete practices could play a more decisive role in routine utilization. This partially contrasts with reviews emphasizing how favorable views of mental illness and recovery contribute to practice adoption (Chester et al., 2016; Jackson-Blott et al., 2019; Winsper et al., 2020) and with the few quantitative studies reporting positive associations between such beliefs and ROSD (Mak et al., 2018; Stacy & Rosenheck, 2019) or ROP (Petros & Solomon, 2020). Our results converge, however, with a recent study among French MHPs (Valery et al., 2024) and with reviews reporting that positive beliefs commonly fail to translate into actual practice (Chatwiriyaphong et al., 2023; Gyamfi et al., 2020; Waldemar et al., 2016). This pattern is consistent with the Theory of Planned Behavior (Ajzen, 1991), which underpinned the REFOCUS training program (Slade et al., 2015): attitudes toward the behavior strongly predicted ROP, as did the Expectations dimension of organizational culture, plausibly reflecting perceived peer norms. How such attitudes might be targeted through training and supervision warrants further research.

For ROSD, three dimensions of recovery-supportive organizational culture emerged as predictors. Expectations between coworkers showed the largest association, indicating the potential influence of peer norms on how providers perceive their work environment. Recovery-supportive leadership was also a significant predictor, consistent with research emphasizing supervisors' role in modelling recovery values and guiding teams in adopting recovery-focused practice models (Brown et al., 2010; Chester et al., 2016; Olmos-Gallo et al., 2011; Piat et al., 2021). Quality improvement was the third significant dimension: participants reporting greater efforts to systematically integrate service users' perspectives also perceived service delivery as more recovery-oriented. This provides novel empirical support for embedding lived experience at all levels of service planning and evaluation (Anthony, 2000; Le Boutillier et al., 2011; Roe et al., 2022). Together, these three dimensions may serve as tangible indicators of an organization's commitment to recovery, operationalizing key components of Le Boutillier et al.'s (2011) framework and likely reflecting the "recovery vision" described as necessary to mobilize and sustain collective engagement. Finally, the presence of peer support workers within teams significantly predicted higher perceived recovery-orientation, reinforcing the hypothesis that peer workers may act as catalysts for organizational culture change (Ibrahim et al., 2020; Jones et al., 2020).

Factors Shared Across ROP and ROSD

Few variables were significantly associated with both outcomes. Sociodemographic and professional characteristics had little explanatory power overall, education level showing only a small negative association with ROP ($\eta^2p = .016$). This contrasts with previous quantitative findings that age, education level, recovery training, and clinical experience predicted ROSD (McLoughlin & Fitzpatrick, 2008; Roth et al., 2021; Tsai & Salyers, 2010) and ROP (Stuber et al., 2014), as well as MHPs' attitudes toward recovery (Luigi et al., 2020). It reinforces the idea that engaging in recovery-oriented care, although it may require specific knowledge and skills,

may be accessible to all professionals regardless of background or predispositions (Roberts & Boardman, 2014; Slade, 2009; Slade et al., 2014).

Participants who reported lived experience of mental illness consistently rated both lower ROP and ROSD, albeit with small effect sizes. We identified no previous study specifically comparing recovery-oriented care ratings between MHPs with and without lived experience. This result echoes previous findings of discrepancies between provider and service user ratings of ROSD (Coffey et al., 2019; Leamy et al., 2016), although such dissimilarities were not observed in several other studies (e.g., Conway et al., 2018; Kidd et al., 2010; O'Connell et al., 2005). The broad field of peer-support research suggests potential mechanisms that could explain this result, including a more demanding knowledge of recovery principles amongst practitioners with lived experienced, self-stigma, professional identity conflicts, or differences in training experiences (Byrne et al., 2015; Kemp & Henderson, 2012; King et al., 2020; Richards et al., 2016; Stuetzle et al., 2023; Vandewalle et al., 2016).

Use of recovery-supporting tools (needs assessment instruments, personal recovery plans, or personal recovery outcome measures) was positively associated with both outcomes, with small effect sizes. This partly contradicts a previous cross-sectional survey in which no association was found between ROSD and standardized assessment tool use, although with a different scope (evaluations for mental health problems/substance abuse; client satisfaction; see Fleury et al., 2018). This result supports the value of recovery-focused measurement-based approaches: instruments focusing on mental health recovery may both enhance individual practice and serve as tangible evidence of organizational commitment to recovery support (Felix et al., 2024; Roe et al., 2022; Slade, 2010; Zappa et al., 2026).

Feeling of professional utility emerged as another shared predictor, underlining the importance of professionals' sense of effectiveness and purpose. This is consistent with Self-Determination Theory (Deci & Ryan, 2012): a strong sense of professional utility may reflect more internalized motivation to support recovery. Previous research indeed showed that increasing professionals' internalized motivation fosters the adoption of recovery-oriented practices (Williams et al., 2016a, 2016b). Conversely, this result could also suggest a beneficial effect of working within recovery-oriented work environments.

Finally, the Expectations dimension of organizational culture predicted both ROP and ROSD: participants who perceived higher mutual expectations among coworkers to adopt recovery-supporting practices reported both greater individual engagement in ROP and stronger perceptions of ROSD. Shared professional identities, shaped by collective norms aligned with recovery values, may therefore be powerful levers for implementation (Aarons & Sawitzky, 2006; Damschroder et al., 2009). Previous research has highlighted the importance of building a shared meaning of recovery-oriented practice across providers (Le Boutillier et al., 2015b) as a condition for effective multidisciplinary collaboration (Chester et al., 2016; Fleury et al., 2018; Waldemar et al., 2016).

Limitations

Several limitations should be considered when interpreting these findings. First, the recruitment strategy likely introduced selection bias, attracting participants already familiar with recovery concepts, which may limit generalizability to professionals with little training or exposure to recovery-oriented care. Second, the cultural specificity of the study, conducted within the mental health system in France, may restrict transferability to contexts with different healthcare structures, professional norms, and cultural attitudes toward recovery. Third, the cross-sectional design precludes causal inference and any test of how the two practice levels may influence one another over time. The factors highlighted in this study should therefore be cautiously interpreted as correlates of ROP and ROSD, especially as their temporal sequence relative to the outcomes remains undetermined. For instance, a sense of professional utility or the use of recovery-oriented tools may be as much a consequence as a driver of recovery-oriented practice. Longitudinal studies are needed to examine whether these factors precede changes in ROP and ROSD. Fourth, ROSD was assessed through each professional's individual perception of their service's recovery orientation, rather than as a collective property of teams or organizations. The weak association between ROP and ROSD observed in this study may therefore partly reflect a measurement effect, as individual perceptions of the service may differ from the shared reality of a team. Future studies could examine the ROP-ROSD relationship using multilevel models in which professionals are nested within teams or structures, with ROSD treated as a collective construct (e.g., team-aggregated ratings).

Methodologically, most instruments used have not yet been validated in the French context, which may compromise the interpretability of certain scale scores. While internal consistency estimates were reported and found to be mostly satisfying, future research should establish their construct validity and reliability in this setting. Notably, the F-RPRS and U-RPRS shared the same items but differed in instructions and response scale, which may have inflated their association through common method variance. Several elements

nonetheless nuance this possibly: the correlations between the two versions were small to moderate rather than near-total, and only some dimensions of attitudes toward ROP remained associated with ROP in multivariable models. Additionally, exclusive reliance on self-report measures may have introduced social desirability bias, possibly contributing to the ceiling effects and restricted variance observed for the recovery beliefs scale. This raises concerns about the discriminant validity of such instruments in contexts where recovery principles are widely endorsed. This reflects a broader measurement challenge in recovery research: when respondents are aware that recovery-supportive responses are socially valued, self-report tools may fail to detect meaningful differences in actual practice. Addressing this issue may require more nuanced assessment strategies, such as objective behavioral indicators or multi-informant designs incorporating service users' perspectives. These approaches could better differentiate conceptual endorsement of recovery principles from their real-world implementation.

Implications and Perspectives

From a theoretical standpoint, current models of recovery-oriented care derive primarily from qualitative research (Le Boutillier et al., 2011) and, while acknowledging the need for organizational approaches, tend to underemphasize the individual–collective distinction and its implications for transforming practice (Evans et al., 2020; Fleury et al., 2018). Our findings suggest a possible distinction between individual-level (ROP) and collective-level (ROSD) recovery-oriented care, which appeared weakly related and were associated with different types of determinants. Moreover, these results empirically support models that explicitly integrate this distinction (such as Na et al., 2025).

Relatedly, the findings carry implications for the measurement of recovery-oriented care. The systematic review by Leamy et al. (2023) highlights the considerable heterogeneity of tools used in research, which variously assess knowledge of recovery principles, beliefs and attitudes toward recovery, or the practical application of recovery principles in services. This heterogeneity may itself reflect the lack of theoretical consensus in defining recovery-oriented care and contribute to the well-identified implementation gap (Le Boutillier et al., 2011, 2015a). The conceptual distinction identified here is an argument for future quantitative research to carefully distinguish individual and collective recovery-oriented care levels, either by measuring them independently or by developing instruments that explicitly integrate both.

Lastly, and perhaps most practically, this study informs the implementation of recovery-oriented care. While many interventions have been developed for this purpose (for a systematic review, see Eiroa-Orosa & García-Mieres, 2021), they tend to focus primarily on training professionals' recovery-related knowledge, beliefs, and skills, and few explicitly target collective service delivery or organizational change processes (Jackson-Blott et al., 2019). Our results suggest why this gap may be problematic, as comprehensive implementation may require dual-level interventions targeting simultaneously ROP and ROSD. By empirically distinguishing factors associated with ROP, factors associated with ROSD, and factors associated with both, this study identifies candidate targets for such dual-level interventions. If confirmed longitudinally, these factors could represent implementation levers to activate. For instance, individual practitioners could be supported in developing recovery-oriented skills and attitudes, while collective-level efforts focus on culture change through management, leadership development and user-led quality improvement. Mutual expectations between coworkers could serve as a shared indicator and lever for change, as well as developing peer support roles and the use of standardized recovery-focused instruments. Encouragingly, several of these candidate levers, such as leadership and use of standardized instruments for measurement and feedback, converge with implementation drivers documented in developed areas of evidence-based practice such as supported employment programs (Schneider & Akhtar, 2012; Torrey et al., 2012), supporting their relevance for recovery-oriented care.

Several directions for future research emerge from these findings. First, longitudinal designs are needed to examine whether and how organizational culture relates to individual practice over time, and to test whether the factors identified here prospectively predict changes in recovery-oriented care. Such evidence would strengthen their credibility as candidate levers and justify testing them in dedicated interventions, whose effects on recovery-oriented care could then be evaluated. Second, ROSD could be studied as a collective property, using multilevel models to disentangle individual perceptions from shared team-level realities. Third, multi-informant designs including the perspectives of service users, family members, and institutional decision-makers would help distinguish endorsement of recovery principles from their real-world implementation, and ensure that future interventions are meaningful, inclusive, and systemically informed. Finally, replication in other countries would help identify cultural specificities, given that recovery and mental health care are culturally situated.

Conclusion

This study provides novel quantitative evidence that recovery-oriented care in mental health may unfold across two distinct yet interrelated levels, individual practice (ROP) and collective service delivery (ROSD), which were only weakly related and were associated with largely different factors. ROP was most closely related to professionals' dispositions, in particular their attitudes toward specific recovery-oriented strategies, whereas ROSD was most closely related to organizational culture, especially mutual expectations among coworkers, leadership, and quality improvement. A few factors were associated with both outcomes, such as coworker expectations, feeling of professional utility, and the use of recovery-focused tools. These cross-sectional findings support going beyond approaches that place responsibility for recovery-oriented care on individual professionals alone, in favor of dual-level strategies combining support for practitioners with organizational change. Such strategies may be key to effectively transform services in line with the values that underpin the global recovery movement.

Declarations

Author Contribution

S.F.: Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data Curation, Writing – Original Draft, Writing – Review & Editing, Visualization, Project administration. M.Ca.: Conceptualization, Methodology, Validation, Investigation, Writing – Review & Editing. A.S.: Conceptualization, Methodology, Validation, Investigation, Writing – Review & Editing. C.A.: Conceptualization, Methodology, Validation, Investigation, Writing – Review & Editing. J.B.-G.: Conceptualization, Methodology, Investigation. A.C.: Conceptualization, Methodology, Investigation, Resources, Supervision. G.D.: Conceptualization, Methodology, Validation, Investigation, Resources, Writing – Review & Editing, Supervision. J.-M.D.: Conceptualization, Methodology, Investigation. M.D.: Conceptualization, Methodology, Investigation. S.G.: Conceptualization, Methodology, Validation, Investigation, Writing – Review & Editing. B.H.: Conceptualization, Methodology, Investigation. R.L.: Conceptualization, Methodology, Investigation. H.R.: Conceptualization, Methodology, Validation, Investigation, Writing – Review & Editing. D.S.: Conceptualization, Methodology, Investigation. B.S.: Conceptualization, Methodology, Investigation. E.T.: Conceptualization, Methodology, Investigation. K.-M.V.: Conceptualization, Methodology, Investigation. M.Co.: Conceptualization, Methodology, Validation, Investigation, Resources, Writing – Review & Editing, Supervision. Y.K.: Conceptualization, Methodology, Validation, Investigation, Resources, Writing – Review & Editing, Supervision. A.P.: Conceptualization, Methodology, Validation, Investigation, Resources, Writing – Review & Editing, Supervision, Project administration. All authors read and approved the final manuscript.

Data Availability

The datasets generated and analysed during the current study are not publicly available and cannot be shared, as they contain personal data protected under the European General Data Protection Regulation (GDPR) and participants did not provide consent for their data to be shared beyond the research team.

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