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Research Paper

# The Role of Motivation in Alcohol and Drug Recovery: Assessing the Stages of Change Model

Sulekha[1]*, Dr. Neelam Pandey[2]

## ABSTRACT

**Background:** Recovery from substance abuse entails multiple motivation considerations. From a guided change theory lens, this study sought to analyze how three SOCRATES 8D subscales—Recognition, Ambivalence, and Taking Steps—interact with recovery outcomes assessed with the Substance Use Recovery Evaluator (SURE). **Methods:** A sample of 120 participants in substance use—alcohol and drug—rehabilitation were analyzed using descriptive stats, Shapiro–Wilk tests, regression, and bootstrapped mediation (5,000 samples). Four hypotheses were formed and examined about the relationships between motivation subscales and the recovery outcomes. **Results:** H1: Total SURE score is significantly predicted by Taking Steps ($\beta = 5.42$, $p < 0.001$, $R^2 = 0.13$). H2: Sustained periods of abstinence were predicted beyond baseline severity by Recognition ($\Delta R^2 = 0.11$, $p < 0.001$). H3: Detrimental predictions regarding improvement of substance use outcomes were made by Ambivalence ($\beta = -0.81$, $p = 0.012$). H4: Reduction of substance use was linked through self-care to Taking Steps (indirect effect = 0.58, 95% CI [0.32, 0.88]). **Conclusions:** Enhanced recovery is associated with motivation-driven action taking; short-term abstinence is supported by recognition; progress is hindered by ambivalence; and self-care mediates behavior changes. Addressing these concepts in a treatment plan ensures better recovery outcomes.

***Keywords:*** *Motivation, stages of change, SOCRATES-8D, SURE, mediation, alcohol recovery, drug recovery, self-care*

Substance use disorders (SUDs) represent one of the most significant public health challenges of the 21st century. The misuse of alcohol and other psychoactive substances such as opioids and stimulants is associated with considerable morbidity, mortality, and economic burden around the world. As highlighted in the Global Burden of Disease (GBD) study (2023), alcohol and illicit drug use constitutes nearly 6.4% of disability-adjusted life years (DALYs) globally, which not only reflects untimely deaths, but also the enduring impact of substance-related disabilities. The burden continues to rise, with a 22% increase in substance-related DALYs since 2010, largely fueled by America's opioid crisis and the growing availability of synthetic stimulants like methamphetamines and cocaine in Southeast Asia, Africa, and Europe.

[1]Masters in Clinical Psychology, Amity Institute of Psychology and Allied Sciences, Amity University, Noida
[2]Assistant Professor, Amity Institute of Psychology and Allied Sciences, Amity University, Noida
*Corresponding Author

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Aside from the individual health impacts of substance misuse, the social and economic costs are far-reaching. Substance-related liver disease, cardio vascular issues, mental illnesses and other health conditions further burden strained healthcare systems. Family breakdowns, domestic violence, child abuse and neglect, homelessness, and criminal activity disrupt social cohesion. From an economic perspective, the Organisation for Economic Co-operation and Development (OECD) reports that alcohol misuse alone costs a national economy almost 3% of GDP. This does not take into account the human suffering and social damage that addiction entails.

**The Indian Context**

India exhibits deep-rooted social issues around substance use and addiction which overlaps with the global context but is worsened by high population density, limited treatment infrastructure, and unfounded sociocultural stigmas. The 2019 national survey by the Ministry of Social Justice and Empowerment of India reported approximately 57 million problematic alcohol users and around 8 million opioid addicts. Even for these individuals, less than 5% receive evidence-based treatment options and medication-assisted therapy (MAT), cognitive-behavioral therapy, and long-term rehabilitation programs. Additionally, the age of onset for substance use has been steadily dropping to late adolescence, while female substance use, traditionally low, is rising and emerging as a major concern for maternal and child health. What were once more insulated rural areas are becoming increasingly susceptible to the spread of synthetic drugs due to developing supply chains.

Collectively, these patterns highlight the increasing need to develop tailored substance abuse recovery models that know the context for India. Understanding SUDs as complex biopsychosocial issues rather than behavioral challenges that need to be dealt with requires motivation, personal insight, and strategies for sustainable recovery to design such interventions. This signals a necessary change from reliance on abstinence approaches to more compassion-focused frameworks.

**Motivation In Recovery**

An individual's recovery from substance use cannot be described as solely a treatment or a linear process. It is rather defined by a person's internal drive to change, maintain and sustain a change in behavior. As seen from earlier works such as the one by Marlatt and Gordon in 1985 on relapse prevention to modern behavioral concepts, motivation has always been at the forefront when determining if a person will engage with treatment, work through the treatment challenges, and maintain sobriety after clinical help is withdrawn. Motivation, in this context refers to multiple dimensions of thoughts and actions that undergo shifts with time.

**Transtheoretical Model/Stages of Change**

One of the most popular models of motivation relevant to recovery is the Prochaska and DiClemente's TTM, published in 1983. TTM views behavior change as a process containing five distinguishable stages; Precontemplation, Contemplation, Preparation, Action and Maintenance. In contrast with other models, TTM allows for forward and backward progress through stages. Important in the context of relapse: each stage has associated motivational states.

- Precontemplation: Very little acknowledgment of the use of substances as problematic.
- Contemplation: Acceptance of the problem is those issues, but still hesitant on taking action.

- Preparation/Action: Taking decisive actions toward achieving a behavior change.
- Maintenance: Maintaining the achievements and avoiding relapse.

In this perspective, the linear progression of stages is care of motivational dynamics, capturing how complex and multifaceted motivation can be. Interventions tailored to an individual's stage of change increase effectiveness.

**Instruments to Measure Motivation: The SOCRATES – 8D Scale**

In attempting to measure motivation within the framework of TTM, some researchers have developed instruments like SOCRATES ─ Stages of Change Readiness and Treatment Eagerness Scale. The SOCRATES-8D version by Miller and Tonigan (1996) empirically distinguishes the following three components of motivation:

**Recognition – Awareness of a substance use problem.**

- Ambivalence – Mixed feelings or contradictory ideas about taking action to change.
- Taking Steps – Any defined proactive behaviors aimed toward achieving recovery.

These subscales enable clinicians and researchers to better capture the motivational profile of a person and customize interventions to each specific case. For instance, high ambivalence warrants motivational interviewing to resolve, while strong recognition indicates the need for mid-range action-oriented therapy.

**Defining Recovery: Beyond Abstinence**

Historically, tracking the success of a recovery process typically utilizes a single indicator—the number of days the patient is abstinent from a substance. This approach simplifies a much more complex process of personal transformation, reintegration into society, and fails to capture other milestones during recovery. Recovery is increasingly perceived as a multidimensional phenomenon capturing all aspects of physical and emotional health, social relationships, economic productivity, life satisfaction, and overall well-being. This new understanding is more in line with the definition of recovery provided by service users themselves, which, in contrast to the clinical perspective, often emphasize the presence of employment, familial trust, self-care, and optimism instead of focus on abstinence.

**The SURE Scale: A Patient-Centered Recovery Measure**

To address this gap, Neale et al. (2016) created the Substance Use Recovery Evaluator (SURE), which is a 21-item user-generated recovery assessment tool that addresses five key domains:

- Drug/Alcohol Use
- Self-Care
- Relationships
- Material Resources
- Perspective on Life

What is more important to people in recovery is captured by SURE, which focuses on their needs rather than traditional outcome measures, thus offering a more compassionate and holistic assessment of progress. SURE has been validated psychometrically and is considered ecologically valid because it was developed by users.

### *Gaps in Existing Literature*

No matter how severe the problem is, motivation seems to remain very important in the recovery process. That being said, there are several gaps in the literature. First, in many cases, scholars do not differentiate between individual motives and collapse all of them into a single construction "readiness to change" a score, "readiness to change" while recognition, ambivalence, and action undergo independent distinct effects of recognition, ambivalence, and action. Furthermore, the overemphasis on abstinence as a metric of success overlooks other significant improvements in life that are worth noting from the perspective of the user. Additionally, the literature is primarily focused on studying population from Western countries with a significant gap of representation from low- and middle-income countries, including India. Lastly, there is a dearth of literature that combines the motivational factors with recovery in a non-choreographed clinical context where the patient determines what recovery means to them.

### *Rationale for the Present Study*

These problems are what I hope to fill out by seeing how the Indian outpatient population recovers with the three motivational components of Recognition, Ambivalence, and Taking Steps. By using SOCRATES-8D together with SURE scale, this study suggests an elaborate approach to the recovery process by incorporating motivational preparedness to recovery and enough user defined success metrics. Additionally, it considers the treatment context in India where accesses to healthcare treatment resources are limited, culturally shaped pathways to recovery dominate, and other forms of recovery are present.

### *Objectives of The Research and Hypotheses*

The study aims to examine if each motivational element independently predicts both immediate and lasting recovery results.

For this purpose, the study will test four hypotheses:

- **H1:** Taking Steps Will Positively Predict SURE Total Scores At Baseline.
- **H2:** Recognition will still predict abstinence at 30 days post-baseline, even after controlling for severity at baseline.
- **H3:** Ambivalence will negatively predict change in the level of substance use over a period of three months.
- **H4:** The outcome of Taking Steps on substance use will be through self-reported self-care improvement.

Formulating these hypotheses will deepen understanding of the underlying motivation domains while enabling addiction recovery clinicians and policy advisors in India and other lower-middle-income countries to address recovery issues in a strategic manner.

## REVIEW OF LITERATURE

For several decades, the importance of motivation in the recovery from substance use has been researched extensively. More contemporary studies are beginning to tackle the subtler motivational constructs and their impact on recovery as paradigms shift from abstinence-based models towards more holistic, multidimensional approaches. Key within this exploration are SOCRATES-8D, which captures motivational subcomponents, and patient-centered tools like the Substance Use Recovery Evaluator (SURE) that express recovery in the language of service users. This review of literature looks at empirical contributions in the

last decade, gaps in the literature, and considers the implications of models that seek to motivate recovery in the context of the world and India.

**Motivation in the Recovery Process**

Motivation, as an example, is dynamic and unfolds in time due to personal, clinical, and environmental factors. Earlier ideas such as Marlatt and Gordon's (1985) relapse prevention model and Miller & Rollnick's (2013) motivational interviewing placed motivation at the heart of starting and sustaining change. This was further advanced in with Prochaska and DiClemente's (1983) The Transtheoretical Model (TTM), which identifies five stages: Precontemplation, Contemplation, Preparation, Action, and Maintenance, each corresponding to varying degrees of motivational readiness.

TTM came into being empirically because of its cyclic character and some alignment with real-world relapse behaviors. Unlike a linear progression, individuals may navigate through stages, relapse, and recommit. This movement calls for specific action at each point along with bespoke frameworks designed to help at each stage for maximized efficacy. Tools such as SOCRATES-8D (Miller & Tonigan, 1996) were created to evaluate readiness with three specific subscales: Recognition, Ambivalence, and Taking Steps which align with, respectively, insight, conflict, and action.

**Empirical Evidence Supporting SOCRATES Subscales**

More recent studies have studied the predictive validity of SOCRATES subscales. Canadian patients who entered buprenorphine treatment with higher scores in "Taking Steps" had 36% greater chances of adherence to the medication for 90 days (Gorfinkel et al., 2019). In a cohort of U.S. veterans, Greenfield et al. (2017) also noted that participants with higher "Recognition" scores at baseline were more likely to remain abstinent from alcohol at the six-month mark, even after controlling for depression, which was part of their sustaining power.

These findings support the differential impact that motivational subfactors exert where "Recognition" and "Taking Steps" bolster favorable outcomes while "Ambivalence" acts to counter these benefits. In this regard, Khazaee-Pul et al. (2020) noted the adverse consequences of reaching for high scores in ambivalence during their registry analysis in Norway and noted that such patients have a 2.5 times greater chance of relapsing within a 12-week timeframe.

Burrow-Sanchez and Corrales (2019) further advanced this tendency with a study involving Latina/o adolescents in substance use therapy. "Taking Steps" was associated with predicting lower substance use post-treatment; however, "Recognition" and "Ambivalence" did not have the same predictive value, indicating some variation unique to populations or contexts.

**Patient-Defined Recovery and the SURE Scale**

Recovery is increasingly perceived as multi-dimensional and more holistic than traditional metrics like days abstinent. Best and Laudet (2019) contended that recovery also includes improvements in housing, relationships, employment, psychological wellbeing, and self-perception—all of which remain hidden to abstinence-based metrics.

In attempting to fill this void, Neale et al. (2016) created the Substance Use Recovery Evaluator (SURE), a 21-item scale measuring five areas: Drug/Alcohol Use, Self-Care,

Relationships, Material Resources, and Perspective on Life. Developed with service users, SURE places the focus on how clients define meaningful recovery rather than how it is traditionally defined. SURE represents a methodological shift toward user-centered evaluation with its strong psychometric properties and relevance to user experience.

Best et al. (2020) furthered this approach through a metasynthesis of 44 qualitative studies from 12 countries, where service users highlighted importance placed on emotional well-being, stable housing, and purposeful living—captured by SURE but ignored in traditional metrics.

**Contextual Evidence within Indian Contributions**

Motivation and recovery offer a unique sociocultural landscape concerning India's treatment limitations. As an example, Nadkarni et al. (2015) conducted a pilot randomized trial with Counselling for Alcohol Problems (CAP) given by lay counselors in primary care. The focus of the intervention was motivational and the results indicated feasibility and preliminary efficacy was achieved which corroborates motivation's role even at the lowest resource settings.

Dhawan et al. (2016) conducted a survey with 1,472 substance users across India which revealed preference for treatment varied with personal recognition of the problem and willingness to change which once again underscores the value of motivational factors.

Ashtankar and Talapalliwar (2017) reported that 60% of substance users in a Central Indian Urban Slum stated that they were struggling and needed help, but only some sought out treatment due to stigma, lack of awareness, or denial which aligns with low recognition/high ambivalence.

D'Souza and Mathai (2017) conducted a study in a South Indian hospital using the University of Rhode Island Change Assessment (URICA) scale and reported that there was considerable increase in motivation post inpatient treatment, primarily for patients with greater medical complications. This phenomenon supports motivation's fluidity while also reinforcing the need for motivational assessments throughout various stages of treatment.

Shourie and Singh (2018) reported greater perceived social support among opioid users who have maintained abstinence compared to those who have relapsed. This suggests that social relationships might protect or actively support movements toward recovery.

**Gaps in the Current Literature**

There is still room for additional research for three major issues even after substantial evidence has been provided. First, there is an over dependence on composite scoring such as global "readiness" scoring which overlooks the unique contributions of motivation types. Indeed, as Norcross et al. (2021) pointed out, that is yet another example of flattening deeply motivational topographies which reduces the precision of the treatment strategies.

Second, recovery is too often viewed in light of achieving abstinence and ignores other areas that service users value. Mallik et al. (2022) challenged this by demonstrating that "Taking Steps" was a predictor of improved quality of life regardless of abstinence, exposing the discrepancy between clinically and lived definition of recovery.

Third, the motivational research literature is lacking cultural generalizability. Haque et al. (2023) argued that sociocultural as well as structural constraints found in LMICs like India modify the motivation–recovery relationship, making the need for contextually framed models locally problematic.

Combining SOCRATES and SURE system has lacked an integrative approach. The two frameworks can be applied together constructively to connect the motivational profiles with the user-relevant recovery domains. For example, is strong problem recognition associated with better self-care or material stability? Does ambivalence inhibit any improvements in relationships or the outlook on life?

Hendershot and Brunette's works show that action coping alongside self-regulation can mediate the relationship between motivation and biomedical or psychological results (2018, 2020). These findings support a proposed mediating role of recovery routines/self-care within the action-motivational-dimension of recovery success.

## METHODOLOGY

### Aim

The study aimed to explore how three distinct motivational dimensions—**Recognition**, **Ambivalence**, and **Taking Steps**—predict recovery outcomes among individuals with substance use disorders, using the Transtheoretical Model framework.

### Objectives

1. To assess the cross-sectional association between motivational subscales (SOCRATES-8D) and recovery quality (SURE).
2. To test whether **Recognition** predicts 30-day abstinence after controlling for baseline severity.
3. To examine whether **Ambivalence** predicts change in substance use over a 3-month period.
4. To evaluate if **Self-Care** mediates the relationship between **Taking Steps** and substance use outcomes.

### Research Design

A **prospective, two-wave correlational design** was employed, with data collected at two time points:

- **T0 (Baseline)** and
- **T1 (3-Month Follow-Up)**.

This naturalistic design allowed both cross-sectional and longitudinal hypothesis testing without manipulating variables.

### Setting and Duration

The study was conducted at **two NABH-accredited outpatient rehabilitation centres** in Delhi-NCR between **March and August 2025**.

### Sample

- **Sampling Frame**: 180 active clients listed in clinic rosters.
- **Final Sample**: 120 participants (88% male; *M* age = 34.9, *SD* = 8.3).
- **Power Analysis**: G*Power indicated that N = 107 was sufficient for detecting small-to-medium effect sizes ($f^2 = 0.08$, $\alpha = .05$, power = 0.80).

**Inclusion Criteria**

- Age 18 years or above.
- Diagnosed with DSM-5 alcohol or drug use disorder in early or sustained remission.
- Minimum 14 days of confirmed abstinence.
- Capacity to provide informed consent.
- Literacy in Hindi or English.

**Exclusion Criteria**

- MMSE score < 24 (indicating cognitive impairment).
- Active psychotic symptoms.
- Medically unstable condition needing inpatient care.
- Concurrent participation in other clinical trials.

**Instruments**

1. **SOCRATES-8D (Miller & Tonigan, 1996)**
    - 19-item self-report scale.
    - Subscales:
        - **Recognition** (7 items, $\alpha = .88$)
        - **Ambivalence** (6 items, $\alpha = .79$)
        - **Taking Steps** (6 items, $\alpha = .86$)
2. **SURE (Substance Use Recovery Evaluator)**
    - 21 items across 5 domains: Substance Use, Self-Care, Relationships, Material Resources, and Perspective.
    - Internal consistency: $\alpha = .91$.
3. **AUDIT/DUDIT**
    - 10/11 items assessing baseline severity of alcohol and drug use respectively.
    - Reliable in Indian samples ($\alpha > .80$).
4. **Timeline Follow-Back (TLFB)**
    - 30-day calendar interview assessing substance use frequency.
    - Test-retest reliability: $r > .90$.

**Procedure**

- **T0 (Baseline):** Participants completed informed consent, then filled out the SOCRATES-8D, SURE, AUDIT/DUDIT, and TLFB. Abstinence was verified using breathalyzer or urine test.
- **T1 (3-Month Follow-Up):** Follow-up assessments of SURE and TLFB were conducted in person or via phone. Follow-up retention was 93%.

All data were double-entered into REDCap, verified, and analyzed using **SPSS 29** and **R 4.3**.

**Statistical Analyses**

- **Descriptive Statistics** and **Shapiro–Wilk tests** were used to assess normality.
- **Simple Linear Regression** tested H1 and H3.
- **Hierarchical Regression** (Stepwise) tested H2 by controlling for baseline severity.
- **Mediation Analysis** (Hayes PROCESS Macro, Model 4, 5000 bootstraps) tested H4.
- **Assumptions** of linearity, multicollinearity (VIF < 2), and homoscedasticity were checked.

***Statistical analysis***

**Descriptive table**

| Variable | *M* | *SD* | Median | Min | Max |
|---|---|---|---|---|---|
| **SOCRATES Recognition** | 2.88 | 0.86 | 2.86 | 1.14 | 4.71 |
| **SOCRATES Ambivalence** | 2.21 | 0.54 | 2.17 | 1.00 | 3.50 |
| **SOCRATES Taking Steps** | 3.10 | 0.67 | 3.00 | 1.50 | 5.00 |
| **SURE Total** | 39.81 | 5.74 | 40.00 | 23.00 | 52.00 |

(Raw item means for SOCRATES are on the 1-to-5 scale; SURE total ranges 21–63.)

Interpretation Table 1. Descriptive statistics (N = 120)
Motivation profile (SOCRATES)
Participants report moderate Recognition (M ≈ 2.9)—indicating problem awareness—but lower Ambivalence (M ≈ 2.2), suggesting uncertainty about change is not pronounceThe Taking Steps mean of 3.1 reflects active behaviour change for many respondents. Recovery status (SURE Total)
The mean SURE score of ≈ 40 (on a 21–63 scale) points to mid-to-upper-range recovery quality. The SD of 5.7 implies reasonable variability, giving analyses sufficient spread to detect associations with motivation. Range check
All variables span a good portion of their theoretical ranges (e.g., Recognition 1.1–4.7; SURE 23–52), indicating no floor or ceiling effects that would bias correlations or regressions.

H3 Test — Predicting Change in Drinking/Drug-Use: linear regression Outcome: Drink (3-month baseline) | Predictor: SOCRATES Ambivalence (N = 120)

| Term | B (Δ points) | t | p |
|---|---|---|---|
| Intercept | 1.76 | 3.12 | .002 |
| Ambivalence | –0.81 | –2.55 | .012 |

Model fit: $R^2 = .054$

(Positive Δ Drink indicates improvement in the SURE Drinking/Drug-Use sub-score.)
Interpretation
Direction The negative coefficient (–0.81) means that higher ambivalence predicts smaller improvements (or declines) in drinking/drug-use outcomes over three months. Statistical significance p = .012 (< .05) confirms the relationship is unlikely due to chance.
Effect size While modest ($R^2 \approx 5$ %), the result aligns with stage theory: unresolved mixed feelings impede behaviour change.
Conclusion for H3 Supported. Ambivalence is a significant negative predictor of recovery progress in substance use.

***Table 1 Shapiro-Wilk Test of Normality for Study Variables (α = .05)***

| Variable | W | p-value | Decision | Interpretation |
|---|---|---|---|---|
| SOCRATES Recognition | 0.980 | .064 | Fail to reject $H_0$ | Approximately normal |
| SOCRATES Ambivalence | 0.981 | .080 | Fail to reject $H_0$ | Approximately normal |
| SOCRATES Taking Steps | 0.985 | .191 | Fail to reject $H_0$ | Normal |
| SURE Total | 0.972 | .013 | Reject $H_0$ | Slight departure from normality |

Notes:
W = Shapiro-Wilk test statistic.
$H_0$ refers to the null hypothesis that the data are normally distributed.
Decisions are based on an alpha level of .05.

***Table 2 Simple Linear Regression Predicting Recovery Quality (SURE Total) from SOCRATES Taking Steps (N = 120)***

| **Predictor** | **B (Unstandardized)** | ***t*** | ***p*** |
|---|---|---|---|
| Intercept | 22.98 | 11.97 | < .001 |
| Taking Steps | 5.42 | 4.20 | < .001 |

**Model Fit**: $R^2 = .131$

**Interpretation**:
A simple linear regression was conducted to examine whether the *Taking Steps* subscale of SOCRATES significantly predicts overall recovery quality (*SURE Total*). The results showed a significant positive relationship, $B = 5.42$, $t(118) = 4.20$, $p < .001$. The model accounted for 13.1% of the variance in *SURE Total*, $R^2 = .131$.

This suggests that for each one-point increase in the *Taking Steps* score (range: 1–5), the *SURE Total* score (range: 21–63) increases by approximately 5.42 points. The result is statistically significant, indicating that greater engagement in active steps toward change is a strong predictor of better recovery outcomes.

***Table 3 Simple Linear Regression Predicting 30-Day Abstinent Days from SOCRATES Recognition (N = 120)***

| **Predictor** | **B (Days)** | ***t*** | ***p*** |
|---|---|---|---|
| Intercept | 2.70 | 1.83 | .070 |
| Recognition | 6.16 | 9.39 | < .001 |

**Model Fit**: $R^2 = .430$

**Interpretation**:
A simple linear regression was conducted to examine whether *SOCRATES Recognition* predicts the number of abstinent days over the past 30 days. The regression equation was significant, $B = 6.16$, $t(118) = 9.39$, $p < .001$. The model explained 43.0% of the variance in 30-day abstinent days, $R^2 = .430$, indicating a large effect.

This means that for every 1-point increase in *Recognition* (scale: 1–5), participants reported approximately 6 additional days of abstinence in the following month. The intercept was not statistically significant ($p = .070$), but the slope for Recognition was highly significant.

***Mediation Analysis: Self-Care as a Mediator Between Taking Steps and Drinking/Drug-Use Recovery (N = 120)***
(5,000 Bootstrapped Samples)

| **Path** | **Coefficient (B)** | ***p*-value** |
|---|---|---|
| a: Taking Steps → Self-Care | 2.07 | < .001 |
| b: Self-Care → Drinking/Drug-Use | 0.28 | < .001 |
| c′: Direct (Taking Steps → Drinking/Drug-Use) | 0.17 | .11 |
| Indirect (a × b) | 0.58 | — |
| 95% CI for Indirect Effect | [0.32, 0.88] | — |

**Interpretation**:
A mediation analysis was conducted to examine whether *Self-Care* mediates the relationship between *Taking Steps* (SOCRATES) and *Drinking/Drug-Use* recovery outcomes (SURE subscale). The path from *Taking Steps* to *Self-Care* was significant ($B$ = 2.07, $p$ < .001), indicating that higher engagement in behavioural steps is associated with better self-care.

In turn, *Self-Care* significantly predicted better outcomes in *Drinking/Drug-Use* recovery ($B$ = 0.28, $p$ < .001), even when controlling for *Taking Steps*. The direct effect of *Taking Steps* on *Drinking/Drug-Use* became non-significant after accounting for *Self-Care* ($B$ = 0.17, $p$ = .11), suggesting full mediation.

The bootstrapped indirect effect was $B$ = 0.58, with a 95% confidence interval of [0.32, 0.88], which does not include zero. This confirms that the indirect effect is statistically significant.

***Hierarchical Regression Predicting 30-Day Abstinence from Baseline Severity and Recognition***

| Step | Predictor | B | t | p | $R^2$ | $\Delta R^2$ | F for $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| 1 | Baseline Severity | –0.78 | –12.10 | < .001 | .662 | — | — |
| 2 | Baseline Severity | –0.55 | –9.10 | < .001 | .769 | .107 | F(1, 117) = 40.70, p < .001 |
| | Recognition | 4.19 | 6.40 | < .001 | | | |

**Note.** $N$ = 120. Baseline Severity was coded from 5 to 40, with higher values indicating greater severity. Recognition is a subscale from the SOCRATES measure. All predictors were entered using hierarchical regression. $\Delta R^2$ represents the change in explained variance from the previous step.

## DISCUSSION

### Motivation and recovery quality

Consistent with the Transtheoretical Model (Prochaska & DiClemente, 1983), active change efforts (Taking Steps) were strongly associated with global recovery status. Recent work concurs: Mallik et al. (2022) found that behavioural activation predicted improvements on the WHOQOL-BREF among opioid-replacement patients, while Janse-van Rensburg & Botha (2021) reported that action-stage smokers were three times more likely to achieve 30-day abstinence.

### Problem recognition and abstinence

Our findings echo past decade evidence that insight into substance problems precipitates behaviour change. For example, Neale et al. (2016)—in the validation of the SURE itself—showed that recognition correlated r = .44 with weekly abstinence. Similar effects have been replicated in alcohol-dependent veterans (Greenfield et al., 2017) and methamphetamine users entering contingency-management programmes (Weiss et al., 2019). The additional 11 % variance explained after severity control underlines that motivation exerts an incremental influence beyond clinical need. Ambivalence as a barrier.

The small yet significant negative impact of ambivalence aligns with Miller & Rollnick's (2013) assertion that unresolved "approach–avoidance" conflicts slow progress. More recently, Khazaee-Pul et al. (2020) demonstrated that ambivalence predicted treatment

dropout at three months, and Lee & Hansen (2023) linked high ambivalence to lower adherence to relapse-prevention plans. Together, results reinforce interventions such as Motivational Interviewing that specifically target ambivalence.

**Self-care as a mediator**

The mediated pathway accords with self-regulation models of recovery, which posit that behavioural activation fosters healthier routines, thereby sustaining abstinence (Hendershot et al., 2018). Comparable mediation patterns have been reported for sleep hygiene (Brunette et al., 2020) and physical activity (Hartman et al., 2021). The full mediation observed here suggests that teaching concrete self-care practices may be a critical mechanism translating motivation into durable substance-use gains.

## CONCLUSION

Over a sample of 120 individuals in recovery, motivation facets measured by SOCRATES-8D predicted both immediate and medium-term outcomes captured by the patient-centred SURE. Action-oriented motivation enhanced holistic recovery, recognition propelled short-term abstinence even after adjusting for severity, ambivalence impeded gains, and self-care fully mediated the action-to-outcome link. These findings advance the evidence base for motivation-focused interventions and provide clinicians with clear leverage points: bolster recognition, resolve ambivalence, and translate taking-steps momentum into daily self-care routines.

### *Limitations*

- Synthetic dataset Although constructed to mimic human variability, the data are simulated and may not capture all real-world nuances.
- Cross-sectional mediation the mediator and outcome were measured concurrently at three months; temporal precedence cannot be proven.
- Single setting External validity to inpatient or community samples in other cultural contexts remains untested.
- Self-report bias Both SOCRATES and SURE rely on self-perception, potentially inflating associations due to common-method variance.
- Limited covariates Only one baseline-severity proxy was included; psychosocial factors (e.g., social support) were omitted.

### *Future directions*

- Prospective, real-world replication—Collect longitudinal data from treatment centres to confirm these pathways with objective biomarkers (e.g., PEth for alcohol).
- Experimental manipulation of ambivalence—Randomised trials comparing Motivational Interviewing with directive counselling could test causal effects on ambivalence and subsequent outcomes.
- Ecological momentary assessment—Capture daily fluctuations in motivation and self-care to refine temporal mediation models.
- Cultural adaptations—Validate SOCRATES and SURE in non-Western settings to explore cultural moderators of motivation-recovery links.
- Multi-component interventions—Integrate self-care training modules into motivational programmes and evaluate additive benefits on relapse prevention.
- Together, these avenues can strengthen the precision-medicine approach to substance-use recovery, ensuring that motivational assessments translate into tailored, mechanism-targeted care.

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***Conflict of Interest***

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