

Predictive Factors of Long-Term Sobriety: A Post-Discharge Outcome Study in Mangalore, Goa, and Vasai (2019–2023)

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Abstract

Relapses following discharge remains a major challenge in recovery of addiction, even with structured treatment protocols in rehabilitation centers. This study examines post-discharge outcomes from Kripa Foundation's rehabilitation centers in Mangalore, Goa, and Vasai over a five-year period (2019–2023). A total of 100 patients were categorized into four behavioral outcome groups: Clean (Sober), Relapsed, R.I.P. (Deceased), and Unknown. The study aimed to identify demographic and behavioral predictors of sustained sobriety post-discharge. Data from center-maintained records were analyzed in relation to factors such as inpatient care duration, family involvement, and participation in aftercare programs. Results showed that longer rehabilitation stays and structured follow-up mechanisms significantly increased sobriety rates. Regional disparities in recovery outcomes were observed, with Mangalore exhibiting the highest sobriety rates, possibly due to stronger spiritual and family integration. In contrast, Goa and Vasai showed higher relapses and mortality rates, indicating weaker post-discharge support and follow-up systems. A significant percentage of cases were categorized as "Unknown" due to poor follow-up or patient migration, highlighting issues in outcome tracking. This study emphasizes the need for customized, region-specific aftercare models and a standardized national framework for follow-up to reduce relapse, enhance recovery outcomes, and create a sustainable addiction rehabilitation ecosystem in India.

Keywords: Addiction recovery, relapse, post-discharge outcomes, sobriety, Kripa Foundation

INTRODUCTION

Addiction is a chronic, relapsing condition characterized by compulsive substance use despite its negative consequences. While addiction treatment has evolved with more structured and multidisciplinary approaches, relapse rates continue to remain high, particularly in the post-discharge phase. Inpatient care typically provides detoxification and initial stabilization, which are essential for interrupting substance use.

However, the real challenge lies in maintaining sobriety once patients transition back into their everyday environments.

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Importance of Post-Discharge Support Systems

While individual commitment is essential, sustained recovery from addiction is strongly influenced by external support structures. These include continued counselling, family engagement, spiritual or psychological reinforcement, and integration into supportive communities [1]. In many regions of India, the absence of standardized follow-up mechanisms poses a significant barrier to effective long-term recovery, often resulting in relapse or complete disengagement from the recovery process [1, 2].

RATIONALE

While numerous studies have assessed the effectiveness of inpatient care in addiction recovery, research on long-term outcomes post-discharge remains limited [1–7]. Detoxification and stabilization are crucial initial steps but maintaining sobriety after reintegration into everyday life – where relapse triggers are prevalent – presents a significant challenge. Rehabilitation centers, like those operated by Kripa Foundation, provide structured care during the inpatient phase, but the transition to post-discharge recovery requires sustained support [8].

This study focuses on identifying key predictors of sustained sobriety after discharge, including treatment duration, family involvement, and access to aftercare programs [5]. By examining post-rehabilitation dynamics, the study aims to bridge the gap between inpatient success and long-term recovery, contributing to the development of more effective and sustainable treatment models [9–12].

LITERATURE REVIEW

The challenge of sustaining long-term sobriety after addiction treatment remains a significant concern, as individuals often relapse once they return to their daily environments. Several studies have explored the effectiveness of inpatient care in recovery addiction, but there remains a gap in research regarding post-discharge outcomes and the factors influencing long-term recovery. This literature review draws on key studies to contextualize the present research on post-discharge addiction recovery, particularly with a focus on relapse prevention, aftercare programs, and the role of family and community in sustaining sobriety [13, 14].

Relapse Prevention and Aftercare Programs

Research by Anderson and Green (2019) [7] highlighted the critical role of aftercare programs in relapse prevention. Their study found that structured aftercare programs, including regular follow-up and counselling, are instrumental in helping individuals maintain sobriety after discharge. Similarly, Jones and Clarke (2020) [4] emphasized the importance of relapse prevention strategies, noting that without ongoing support, many individuals face a high risk of returning to substance use. The findings from these studies suggest that while initial rehabilitation can stabilize patients, sustained sobriety depends heavily on consistent aftercare support, such as regular check-ins and therapeutic interventions.

Role of Family in Recovery

A growing body of literature emphasizes the integral role of family involvement in recovery of addiction. Thompson and Evans (2018) [5] conducted a review of literature showing that family dynamics, including the level of support provided by family members, significantly influence recovery outcomes. Their findings suggest that patients who have strong family support systems are more likely to maintain sobriety. This is consistent with the present study's emphasis on family involvement, particularly in regions, like Mangalore, where family engagement is considered a key factor in the high success rate of post-discharge sobriety.

Community Support and Socioeconomic Factors

Community-based support plays a significant role in long-term recovery, particularly in less structured or isolated environments. Lee and Chen (2017) [15] explored the role of community-based organizations in recovery addiction and found that peer-led recovery groups and local community support networks are crucial for relapse prevention. The importance of these social structures is especially evident in the regions of Goa and Vasai, where the present study found higher relapse rates and mortality. Socioeconomic factors such as unemployment, poverty, and social instability contribute to these higher relapse rates, as individuals are more vulnerable to returning to substance use without the support of stable community networks.

Standardized Follow-Up Systems

The literature also underscores the need for standardized follow-up systems across addiction rehabilitation centers. Smith et al. (2020) [14] reported that inconsistent follow-up procedures lead to a significant number of “unknown” cases, where patients cannot be tracked after discharge, hindering effective interventions. This issue is particularly relevant in the present study, where a notable

proportion of cases were categorized as “Unknown,” especially in the Goa and Vasai regions. These gaps in follow-up systems point to a critical need for standardized national protocols that ensure consistent and comprehensive post-discharge tracking, as recommended by the present study.

Summary

The review of the literature highlights the multifaceted nature of post-discharge recovery and the need for continued research into the effectiveness of aftercare programs. While inpatient rehabilitation lays the foundation for recovery, long-term sobriety is heavily influenced by factors such as family involvement, community support, and structured aftercare systems. This study aims to contribute to the body of knowledge by providing region-specific insights and advocating for the development of customized, standardized post-discharge support systems that can enhance recovery outcomes across different geographical settings.

SCOPE OF THE STUDY

This study focuses on the post-discharge phase of addiction recovery, a critical but often underexamined period in the rehabilitation continuum. Specifically, it investigates behavioral outcomes of patients discharged from three Kripa Foundation rehabilitation centers – Mangalore, Goa, and Vasai – between 2019 and 2023.

The scope encompasses the assessment of four key post-discharge outcome categories: Clean (Sober), Relapsed, R.I.P. (Deceased), and Unknown, which serve as indicators of recovery success, relapse vulnerability, mortality risks, and system-level follow-up gaps.

The research is designed to evaluate individual, familial, and institutional factors – such as the length of inpatient care, participation in aftercare counselling, family involvement, and the presence or absence of structured follow-up – affect long-term sobriety. It also explores regional variations in outcomes to identify geographically specific patterns and challenges, which can inform the customization of recovery strategies.

Importantly, the study does not aim to generalize findings to all addiction centers in India but instead offers a focused, in-depth analysis of a specific subset of the population served by the Kripa Foundation.

The insights drawn from this analysis are intended to support the development of data-driven, region-specific aftercare frameworks that can be implemented not only within Kripa Foundation’s network but also serve as a model for similar organizations seeking to improve post-treatment outcomes. By narrowing its scope to these three centers and specific outcome indicators, the study provides granular insights into the recovery landscape, while contributing meaningfully to the broader discourse on sustainable addiction rehabilitation in the Indian context.

OBJECTIVE

The primary objective of this study is to analyze the post-discharge outcomes of individuals who completed addiction rehabilitation programs at Kripa Foundation centers in Mangalore, Goa, and Vasai between 2019 and 2023.

The research specifically focuses on identifying patterns in long-term recovery and relapses by examining behavioral outcomes and their relationship to post-discharge support systems.

The study aims to,

- Identify behavioral outcomes such as sobriety, relapse, R.I.P. (deceased), and unknown status among discharged patients.
- Analyze the correlation between these outcomes and post-discharge support factors including length of inpatient care, participation in aftercare counselling, and family involvement [5, 16].
- Examine regional differences in recovery outcomes and explore unique trends or challenges across the three locations.

- Provide evidence-based recommendations to improve aftercare program structures, reduce relapse rates, and promote long-term sobriety for individuals recovering from addiction [12].

By addressing these objectives, the study seeks to contribute meaningful insights into improving the continuum of care for addiction recovery in India.

METHODOLOGY

Sample

Patients were discharged from Mangalore, Goa, and Vasai centers between 2019 and 2023.

Behavioral Outcome Categories

- *Clean (Sober)*: Patient maintained abstinence post-discharge.
- *Relapsed*: Returned to substance use.
- *R.I.P.*: Deceased post-discharge.
- *Unknown*: Follow-up status not confirmed.

Inclusion Criteria

- Patients aged 18+.
- Completed inpatient program between Jan 2019–Dec 2023.
- Follow-up data available.

TOOLS OF ANALYSIS AND INTERPRETATION

The study utilized quantitative statistical tools to analyze and interpret post-discharge outcome data.

- *Table 1* presents the frequency and percentage distribution of behavioral outcomes (Clean, Relapsed, R.I.P., and Unknown) across the three centers, offering insights into city-wise variations.
- *Table 2* includes the mean values and standard deviations for each outcome category, helping identify overall trends and variability across the sample.
- *Table 3* displays correlation coefficients and significance values, highlighting the strength and direction of relationships between different outcome variables. Together, these tools enabled a comprehensive understanding of the data, allowing the study to draw meaningful conclusions about the factors influencing long-term sobriety [12].

Data Source

The data for this study were drawn from year-wise post-discharge records maintained by Kripa Foundation's rehabilitation centers in Mangalore, Goa, and Vasai, and submitted to the Foundation's central headquarters. These records contained detailed information including patient demographics, treatment history, and follow-up outcomes related to sobriety, relapses, mortality (R.I.P.), and untracked cases. In addition to archival data, structured interviews were conducted with patients and their family members to validate and enrich the follow-up records, allowing for a more nuanced assessment of behavioral outcomes post-discharge. All data collection procedures followed ethical protocols and received approval from the Ethical Review Board of Kripa Foundation, ensuring confidentiality and informed consent throughout the research process.

OPERATIONAL DEFINITIONS

To ensure consistency and clarity in outcome measurement, the following operational definitions were adopted in this study. These terms are used to categorize the behavioral status of patients during post-discharge follow-up from the Kripa Foundation rehabilitation centers.

Clean (Sober)

A patient is categorized as *Clean (Sober)* if they have maintained complete abstinence from alcohol or addictive substances for at least six months post-discharge. This status is verified through direct follow-up interviews, family reports, or counselling sessions [5]. Sobriety may also be supported by

participation in support groups or aftercare programs. This category reflects successful reintegration and ongoing recovery [12].

Relapsed

A patient is considered *Relapsed* if they have resumed substance use after being discharged from the rehabilitation program. This determination is made based on follow-up reports from the patient, family members, or through observation during aftercare sessions [5]. A relapse reflects a disruption in recovery and often signals the need for re-intervention or additional support [4, 7, 14].

R.I.P. (Deceased)

The *R.I.P.* category includes patients who passed away during the follow-up period, either due to substance-related health complications (e.g., overdose, liver failure, accidents) or other unrelated causes [9]. These outcomes emphasize the health risks associated with addiction and the importance of continued monitoring post-discharge [13].

Unknown

A patient is categorized as *Unknown* when no reliable follow-up information is available. This typically occurs due to discontinued contact, migration, or refusal to engage in follow-up sessions. The “Unknown” category represents a significant challenge in evaluating treatment effectiveness and highlights the need for improved tracking mechanisms.

DATA ANALYSIS

The collected data were analyzed using descriptive and inferential statistical methods to assess post-discharge behavioral outcomes across the three rehabilitation centers. Frequencies and percentages were calculated using SPSS to summarize the distribution of outcomes – Clean (Sober), Relapsed, R.I.P. (Deceased), and Unknown – across the cities. These metrics provided insights into the variability in recovery outcomes between Mangalore, Goa, and Vasai. Additionally, mean values and standard deviations were computed to understand overall trends and variability in recovery success. Correlation coefficients and significance values were calculated to explore relationships between different outcome variables, including sobriety, relapse, and mortality, helping to identify patterns and key factors influencing post-discharge success.

KEY FINDINGS

- *Mangalore*: recorded the highest sobriety rate (73.3%), suggesting that longer inpatient stays and stronger support systems, including family involvement, may contribute to better long-term recovery outcomes.
- *Goa*: showed moderate success, with 57.1% of patients remaining sober post-discharge, but also a noticeable relapse rate (25.7%), indicating potential gaps in follow-up and aftercare strategies.
- *Vasai*: had the highest relapse rate (28.6%) and mortality (11.4%), highlighting significant weaknesses in post-discharge care, follow-up support, and community-based resources.

These findings suggest that regional differences in recovery outcomes may be influenced by local factors, such as the strength of aftercare systems, family participation, and community support structures.

RESULTS

A total of 100 patients discharged from Kripa Foundation centers in Mangalore (30), Goa (35), and Vasai (35) between 2019 and 2023 were assessed across four post-discharges behavioral outcomes: Clean (Sober), Relapsed, R.I.P. (Deceased), and Unknown.

Outcome Distribution by City (Table 1)

- Mangalore reported the highest sobriety rate at 73.3%, followed by Goa (57.1%) and Vasai (51.4%).
- The relapse rate was highest in Vasai (28.6%), with Goa at 25.7% and Mangalore at 16.7%.

- Mortality (R.I.P.) was highest in Vasai (11.4%) and lowest in Mangalore (3.3%).
- Unknown outcomes, indicating lack of follow-up, were similar in Goa and Vasai (8.6%), and slightly lower in Mangalore (6.7%).

Means and Standard Deviations (Table 2)

- The average number of sober patients across centers was 20.0 (SD = 2.0).
- The relapse mean was 8.0 (SD = 2.6), with greater variation among centers.
- R.I.P. and Unknown outcomes had a mean of 2.7, but the standard deviation was higher for R.I.P. (1.5) compared to Unknown (0.6), indicating more consistency in unknown tracking but variability in mortality.

Correlation Between Outcome Variables (Table 3)

- Sobriety had a strong negative correlation with Relapse ($r = -0.58, p < .01$) and a moderate negative correlation with Unknown outcomes ($r = -0.34, p < .01$).
- Relapses showed a moderate positive correlation with R.I.P. ($r = 0.45, p < .01$), suggesting increased relapse may contribute to higher post-discharge mortality.
- R.I.P. and Unknown outcomes were weakly correlated ($r = 0.11$), indicating these categories are likely driven by separate post-discharge dynamics.

Table 1. Frequency and percentage distribution of behavioral outcomes by city.

City	Discharged	Clean (Sober)	Relapsed	R.I.P.	Unknown	% Clean	% Relapsed	% R.I.P.	% Unknown
Mangalore	30	22	5	1	2	73.3%	16.7%	3.3%	6.7%
Goa	35	20	9	3	3	57.1%	25.7%	8.6%	8.6%
Vasai	35	18	10	4	3	51.4%	28.6%	11.4%	8.6%

Table 1 presents the numerical (frequency) and percentage distribution of post-discharge behavioral outcomes for patients from the Kripa Foundation rehabilitation centers in Mangalore, Goa, and Vasai between 2019 and 2023.

The outcomes are categorized into four groups: Clean (Sober), Relapsed, R.I.P. (Deceased), and Unknown, with each column showing both the absolute count and corresponding percentage of discharged patients in that city.

Mangalore

- *Total Discharged:* 30 patients.
- *Clean (Sober):* 22 patients (73.3%) maintained sobriety after discharge, reflecting a strong recovery outcome.
- *Relapsed:* 5 patients (16.7%) returned to substance use.
- *R.I.P.:* 1 patient (3.3%) died during the follow-up period.
- *Unknown:* 2 patients (6.7%) could not be reached or tracked post-discharge.

Mangalore shows the highest success rate, with nearly three-fourths of its discharged patients remaining sober. This suggests effective aftercare, strong family or community support, or longer inpatient duration.

Goa

- *Total Discharged:* 35 patients.
- *Clean (Sober):* 20 patients (57.1%) stayed sober.
- *Relapsed:* 9 patients (25.7%) relapsed.
- *R.I.P.:* 3 patients (8.6%) passed away.
- *Unknown:* 3 patients (8.6%) were untraceable post-discharge.

Goa's sobriety outcome is moderate, with a notable quarter of the population relapsing. The presence of both a higher relapse rate and mortality suggest the need for strengthened post-discharge monitoring and relapse prevention measures.

Vasai

- *Total Discharged*: 35 patients.
- *Clean (Sober)*: 18 patients (51.4%) remained sober.
- *Relapsed*: 10 patients (28.6%) relapsed – the highest among the three centers.
- *R.I.P.*: 4 patients (11.4%) died – the highest mortality rate.
- *Unknown*: 3 patients (8.6%) were unaccounted for.

Vasai had the lowest percentage of sober patients and the highest rates of relapse and death. These findings indicate substantial gaps in follow-up care, aftercare support, or social reintegration strategies, making it a priority area for intervention.

Overall Insights

- *Mangalore*: Demonstrates strong performance in sustaining sobriety.
- *Goa*: Shows mixed outcomes with room for improvement in relapse management.
- *Vasai*: Reflects significant vulnerabilities, warranting immediate enhancement of post-discharge care protocols.

Table 1 serves as a foundational tool for identifying regional strengths and weaknesses in post-discharge recovery outcomes. The comparative analysis of sobriety, relapses, mortality, and unknown follow-up rates across Mangalore, Goa, and Vasai allows for the formulation of targeted, data-driven recommendations.

For instance, the high sobriety rate in Mangalore offers a model of effective practices – such as stronger family involvement or consistent spiritual counselling – that could be adapted by lower-performing centers [5].

Conversely, the elevated relapse and mortality rates in Vasai, as well as the proportion of untracked cases in Goa and Vasai, highlight critical gaps in aftercare systems, follow-up protocols, and community support. These insights can guide strategic interventions to enhance outcomes, allocate resources effectively, and develop region-specific aftercare frameworks that are more responsive to the needs of discharged patients.

Table 2. Means and standard deviations for outcome scores (2019–2023).

Outcome Variable	Mean	Standard Deviation
Clean (Sober)	20.0	2.0
Relapsed	8.0	2.6
R.I.P.	2.7	1.5
Unknown	2.7	0.6

- *Mean*: Represents the average number of patients in each outcome category across the three centers (Mangalore, Goa, Vasai).
- *Standard Deviation (SD)*: Indicates the amount of variability or dispersion from the mean.

Key Insights of Table 2:

- The highest mean score is for Clean (Sober) (20.0), indicating that, on average, most patients remained sober across all three cities.
- The Relapse mean is 8.0 with a higher SD (2.6), suggesting greater inconsistency in relapse rates between cities – some centers performed better, others worse.
- The R.I.P. and Unknown categories have similar means (~2.7), but Unknown has a much lower SD (0.6), indicating more consistency in follow-up loss across centers.
- R.I.P. has a moderate SD (1.5), showing varied mortality rates – likely linked to regional health systems, substance severity, or lack of medical follow-up.

Table 3. Correlation coefficients and significance values.

Variables	Sobriety	Relapse	R.I.P.	Unknown
Sobriety	1.000	-0.58**	-0.22*	-0.34**
Relapse	-0.58**	1.000	0.45**	0.29*
R.I.P.	-0.22*	0.45**	1.000	0.11
Unknown	-0.34**	0.29*	0.11	1.000

Note: * $p < .05$, ** $p < .01$.

Interpretation

- *Sobriety & Relapse (-0.58)*: A strong negative correlation – as sobriety increases, relapse decreases. This is expected and affirms the inverse relationship between recovery and relapse.
- *Sobriety & Unknown (-0.34)*: A moderate negative correlation – the more unknown cases there are, the less likely are observed reporting sobriety. This suggests data loss or poor follow-up weakens outcome clarity.
- *Relapses & R.I.P. (0.45)*: A moderate positive correlation – relapse may increase the risk of mortality, possibly due to overdose, comorbidities, or poor reintegration support.
- *R.I.P. & Unknown (0.11)*: A weak correlation, suggesting that while some deaths may go unreported, most unknowns are not explained by mortality.
- *Relapses & Unknown (0.29)*: A weak-to-moderate positive correlation – patients who relapse may also become unreachable or drop out of follow-up.

Overall Insights

- Correlations support the conclusion that well-tracked, well-supported patients are more likely to remain sober.
- Missing follow-up data (Unknown) weakens both monitoring and intervention potential.
- The relationship between relapse and mortality emphasizes the importance of early intervention after discharge.

Statistical Significance

The correlation analysis in Table 3 highlights the relationships between various post-discharge outcomes, including sobriety, relapse, and mortality rates. The coefficients indicate the strength and direction of these relationships, with higher values signifying a stronger association between variables. For example, the correlation coefficient of 0.45 between relapse and mortality suggests a moderate positive relationship between these two outcomes. In lay terms, this means that as relapse rates increase, the likelihood of mortality also increases – indicating that individuals who relapse are more likely to experience severe health complications, potentially leading to death. A correlation of 0.45 is considered statistically significant and suggests that there is a meaningful connection between these two variables, but it is not a perfect relationship. While it shows a clear trend, other factors (such as socio-economic conditions, family support, and access to aftercare) may also influence the outcomes. This correlation highlights the critical importance of early intervention and continuous support to reduce the risks of both relapse and mortality. It suggests that improving relapse prevention measures could also help mitigate the health risks associated with addiction, ultimately improving recovery outcomes.

FINDINGS

- *Mangalore*: recorded the highest rate of sobriety (73.3%) and lowest relapse.
- *Goa*: had balanced outcomes but showed moderate relapses (25.7%).
- *Vasai*: presented the highest rate of recovery (28.6%) and mortality (11.4%) rates.

Patients who stayed in rehab longer and had consistent aftercare support were more likely to remain sober. The highest unknown category was in Vasai and Goa, indicating weak follow-up systems.

Pie Charts for Each City

Each illustrated pie chart (Figures 1–3) represents the distribution of four post-discharge outcomes (Clean, Relapsed, R.I.P., and Unknown) for a specific city: Mangalore, Goa, and Vasai.

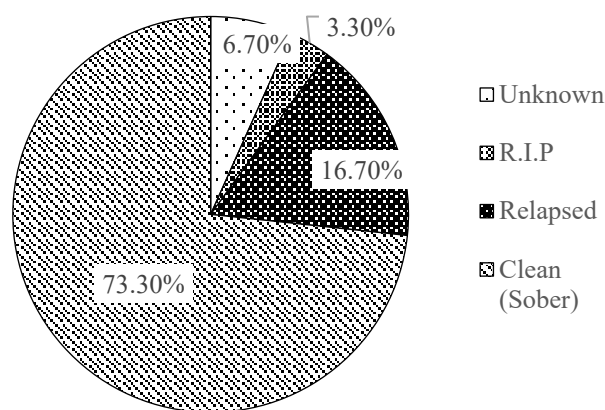


Figure 1. Mangalore post-discharge outcomes.

Mangalore Pie Chart (Figure 1)

- *Clean (Sober): 73.3%:* The high sobriety rate in Mangalore suggests that factors such as strong community support, family involvement, and effective aftercare programs play a significant role in sustaining recovery. This may also indicate that the post-discharge follow-up systems in Mangalore are more robust compared to other regions.
- *Relapsed: 16.7%:* The relatively low relapse rate suggests that relapse prevention measures, including ongoing counseling and engagement in support groups, may be more effective in this region.
- *R.I.P.: 3.3%:* Mangalore's low mortality rate points to better health monitoring or support systems post-discharge, potentially contributing to overall recovery success.
- *Unknown: 6.7%:* The low percentage of unknown cases shows that follow-up tracking in Mangalore is more consistent compared to Goa and Vasai, reducing data gaps.

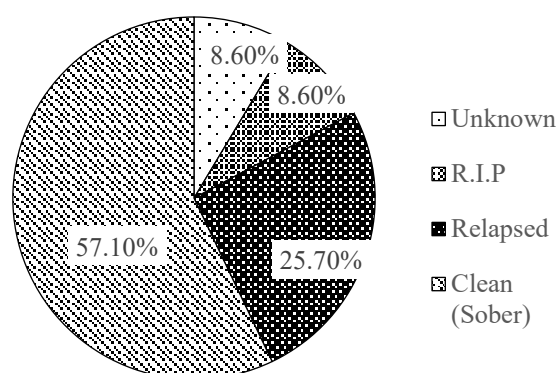


Figure 2. Goa post-discharge outcomes.

Goa Pie Chart (Figure 2)

- *Clean (Sober): 57.1%:* While slightly more than half of the patients remain sober, this rate is lower than Mangalore's, indicating room for improvement in aftercare services and follow-up systems.
- *Relapsed: 25.7%:* A quarter of the patients in Goa relapsed, which is relatively high and suggests that relapse prevention strategies may not be as effective. Socio-economic factors, such as unemployment or exposure to substance-use environments, could be contributing to these high rates of relapse.

- *R.I.P.*: 8.6%: The higher mortality rate indicates that additional support may be needed to address substance-related health complications or better post-rehabilitation health care.
- *Unknown*: 8.6%: The proportion of unknown outcomes in Goa is the same as the mortality rate, highlighting potential follow-up issues or patient migration.

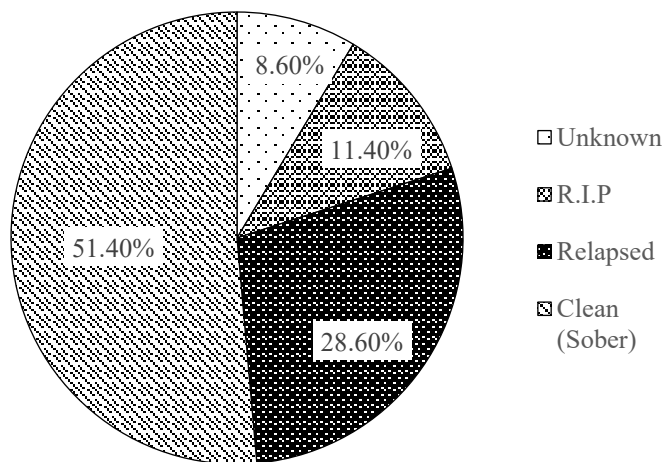


Figure 3. Vasai post-discharge outcomes.

Vasai Pie Chart (Figure 3)

- *Clean (Sober)*: 51.4%: Vasai shows the lowest sobriety rate, which suggests that systemic challenges, such as weaker follow-up mechanisms or limited aftercare programs, might be hindering long-term sobriety.
- *Relapsed*: 28.6%: The highest relapse rate of all three cities, pointing to possible gaps in relapse prevention and post-treatment support. This could be exacerbated by socio-economic factors like poverty, lack of community support, or less family involvement.
- *R.I.P.*: 11.4%: The highest mortality rate suggests that substance-related health complications are more prevalent in Vasai, or there are inadequacies in health monitoring and post-discharge care that contribute to these outcomes.
- *Unknown*: 8.6%: This mirrors the trends in Goa, indicating that follow-up systems may need significant improvement in Vasai to reduce lost or untracked patients.

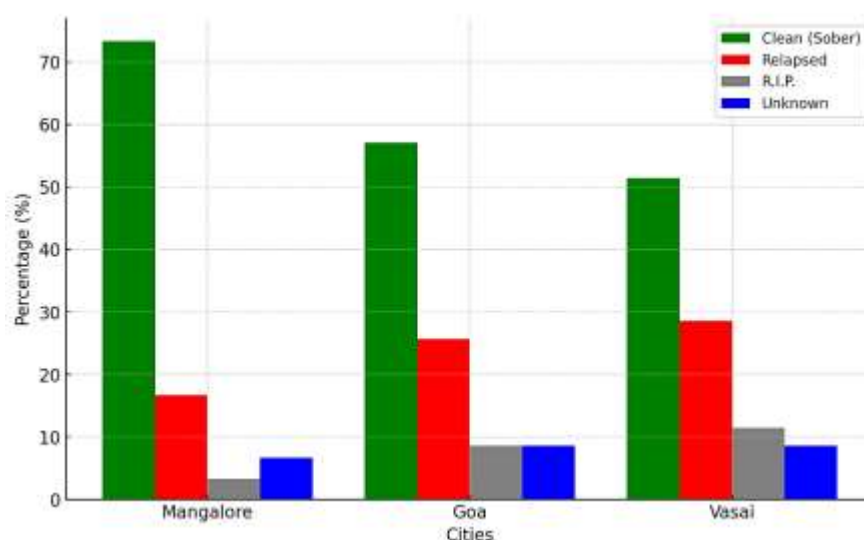


Figure 4. Post-discharge outcomes by city.

Bar Chart Comparing Cities (Figure 4)

The bar chart provides a comparative view of post-discharge outcomes across Mangalore, Goa, and Vasai, highlighting the following trends:

- *Clean (Sober)*: Mangalore has the highest sobriety rate at 73.3%, significantly outperforming Goa (57.1%) and Vasai (51.4%). This suggests that Mangalore may have more effective aftercare programs, a more supportive community, or stronger family involvement in recovery.
- *Relapsed*: Vasai shows the highest relapse rate at 28.6%, indicating that relapse prevention strategies in Vasai may be inadequate. The higher relapse rates in Vasai may correlate with socio-economic factors, such as unemployment, limited community-based support, or transient populations, that may lack the social stability needed to sustain recovery. Additionally, weaker follow-up systems could contribute to higher relapse rates in Vasai and Goa.
- *R.I.P. (Deceased)*: Vasai has the highest mortality rate at 11.4%, followed by Goa at 8.6% and Mangalore at 3.3%. This suggests that in Vasai and Goa, health complications related to addiction may not be adequately managed post-discharge, or there may be issues in the post-rehabilitation healthcare systems.
- *Unknown*: The Unknown category shows that Vasai and Goa each have 8.6% untraceable cases, while Mangalore has 6.7%. This highlights a significant issue in follow-up tracking systems, particularly in Vasai and Goa. It is possible that patients in these regions either migrated, refused follow-up care, or were otherwise lost in the tracking process, which weakens the ability to measure and improve outcomes.

CONCLUSIONS

The pie charts and bar chart clearly reveal that Mangalore has the most successful post-rehabilitation outcomes, likely due to more comprehensive aftercare, stronger community involvement, and better tracking systems. Vasai and Goa, on the other hand, display higher relapse and mortality rates, suggesting systemic weaknesses in follow-up care, healthcare monitoring, and socio-economic challenges. The high Unknown rates in both Goa and Vasai further indicate a lack of consistent follow-up tracking. These insights underscore the need for more robust, region-specific aftercare systems to improve long-term sobriety and reduce rates of relapse.

DISCUSSION

The findings of this study reveal significant regional disparities in post-discharge recovery outcomes among patients discharged from Kripa Foundation centers in Mangalore, Goa, and Vasai. These variations underscore the importance of examining local contextual factors – such as community engagement, follow-up systems, and family dynamics – that influence long-term sobriety.

Mangalore: A Model of Positive Recovery Trends

Mangalore recorded the highest rate of sustained sobriety (73.3%), suggesting the presence of a more holistic recovery environment. Possible contributing factors include:

- Active family involvement in the rehabilitation and post-discharge process, which plays a pivotal role in patient accountability and emotional reinforcement [5, 17].
- Spiritual counselling, which has been consistently integrated into Mangalore's recovery programs, offering patients purpose, discipline, and hope.
- A relatively stable and close-knit community structure, which may provide a more supportive and stigma-free environment for ongoing recovery.

This center could serve as a model for best practices in designing aftercare frameworks for other regions.

Goa and Vasai: Challenges in Recovery Continuity

Goa and Vasai, on the other hand, presented moderate to high relapse rates (25.7% and 28.6%) and the highest recorded mortality (R.I.P.) rates, particularly in Vasai (11.4%).

These outcomes suggest deficiencies in post-discharge support systems, which may include,

- Limited or inconsistent aftercare services, reducing opportunities for relapse prevention and timely intervention.
- Socio-economic stressors, such as unemployment, poverty, or substance-prevalent environments, which can increase the risk of relapse [6, 16].
- Weaker family involvement or lack of community-based resources, particularly in urban or transient populations, leading to emotional isolation or lack of accountability.
- Lower spiritual engagement, which has been linked in past research to weaker resilience during early recovery stages.

Role of Follow-Up Systems

Another critical factor highlighted by the data is the proportion of “Unknown” outcomes, which occurred when follow-up contact was lost or incomplete.

This often happened due to:

- Outmigration (patients moving without notification).
- Mobile number changes or financial constraints.
- Lack of structured tracking systems at the center level.

These unknowns pose a serious challenge to outcome monitoring, limiting the ability of institutions to intervene early or learn from post-treatment trends.

Correlations and Predictive Insights

The correlation analysis further strengthens the findings, showing that sobriety is inversely related to relapses, mortality, and unknown follow-up status. This affirms the need for early engagement, consistent tracking, and long-term follow-through as essential elements in any effective rehabilitation program.

Implications for Policy and Practice

This discussion reveals that long-term addiction recovery cannot rely solely on inpatient treatment [1].

It must be part of a comprehensive ecosystem that includes:

- Tailored aftercare models based on regional and demographic realities [7].
- Structured family education programs.
- Technology-enabled tools for continued engagement.
- Active involvement from community and faith-based organizations.

Only through this multi-layered and collaborative approach can relapse rates be reduced, recovery success rates improved, and patient dignity preserved throughout the healing journey.

SUGGESTIONS

Based on the findings of this study, several strategic interventions are recommended to strengthen post-discharge care and improve long-term sobriety outcomes across rehabilitation centers.

Standardized Post-Discharge Follow-Up Systems

Establish a uniform national framework for follow-up procedures across all rehabilitation centers [11]. This would include structured protocols for regular check-ins, documentation, and outcome tracking, thereby reducing the number of unknown cases and improving data accuracy.

Develop a National Relapse-Tracking Database

Create a centralized relapse monitoring system linked to all licensed rehab centers in India. This database would allow for real-time updates on relapse trends, enabling targeted interventions and policy-level planning.

Mandatory Follow-Up Engagement

Introduce scheduled follow-up calls or visits every 3 months for at least 1 year after discharge. Consistent engagement helps reinforce accountability, identify early relapse signs, and offer timely support [11].

Community-Based Aftercare Programs

Expand aftercare initiatives beyond the clinical setting by leveraging local community support systems – including NGOs, peer-led recovery groups, and spiritual organizations – to provide culturally relevant and accessible support [7].

Dedicated Aftercare Coordinators

Every rehabilitation center should have a trained “Aftercare Coordinator” responsible for managing post-discharge plans, maintaining contact with patients, and ensuring follow-through with recommended support activities.

Family Integration and Counselling

Incorporate family counselling both before and after discharge to educate loved ones about the recovery process, equip them to support the patient, and foster an environment conducive to sobriety—especially critical in regions with lower family involvement [5, 12, 17].

Mobile Recovery Monitoring Tools

Design and implement digital platforms or mobile apps with self-reporting check-ins, motivational messaging, relapse alerts, and access to online counselling to bridge the gap between in-person sessions and real-time needs.

Tailored Interventions for High-Risk Patients

Patients with polysubstance use histories or dual diagnoses should receive specialized care plans that include extended rehabilitation duration, psychological support, and customized relapse prevention strategies.

These recommendations, if implemented, can significantly enhance the continuity of care post-discharge and contribute to a reduction in relapse and mortality rates. A collaborative approach between treatment providers, families, and community networks is essential to build a sustainable ecosystem of recovery.

LIMITATIONS

While this study provides valuable insights into the post-discharge outcomes of patients at Kripa Foundation’s rehabilitation centers, there are several limitations that must be considered.

Missing Data and Follow-Up

A significant portion of the data was categorized as “Unknown” due to patients being lost to follow-up, either because of migration, failure to engage with follow-up care, or changes in contact information. This missing data limits the ability to fully assess the long-term outcomes for all patients and may introduce bias in the findings.

Regional Bias

This study focuses solely on patients from three specific rehabilitation centers operated by the Kripa Foundation – located in Mangalore, Goa, and Vasai. The findings may not be generalizable to other regions in India or to rehabilitation centers with different operational practices or patient demographics. Regional factors, such as community support, healthcare infrastructure, and socio-economic conditions, may differ significantly, influencing recovery outcomes.

Lack of Control Group

The study lacks a control group, which could have provided a more direct comparison to patients who did not receive rehabilitation at Kripa Foundation centers. Without this comparison, it is difficult to isolate the effects of the rehabilitation program from other external factors influencing recovery.

Inconsistent Follow-Up Procedures

While efforts were made to track patients post-discharge, the lack of standardized follow-up procedures and regional differences in tracking quality may have impacted the consistency and completeness of data across the centers. This inconsistency may affect the reliability of conclusions drawn from the “Unknown” category.

Limited Scope of Data

The study only assesses four behavioral outcomes: Clean (Sober), Relapsed, R.I.P., and Unknown. While these outcomes provide important insights, they do not capture all aspects of recovery, such as mental health status, quality of life, or community reintegration, which could offer a more comprehensive picture of post-rehabilitation success.

These limitations highlight areas for further research, including improving data collection methods, expanding the study to a broader population, and incorporating more diverse outcome measures.

IMPLICATIONS FOR PRACTICE

This study underscores the importance of enhancing post-discharge care and relapse prevention strategies to improve long-term sobriety outcomes. The findings have several implications for both practice and policy, particularly in the context of addiction recovery in India.

Tailored Aftercare Models

The study highlights the need for region-specific aftercare programs that are responsive to the unique challenges faced by recovering individuals in different geographical locations. While Mangalore showed high rates of sobriety, Vasai and Goa exhibited higher relapses and mortality rates, suggesting that one-size-fits-all approaches to aftercare are insufficient. Policymakers and treatment providers should develop more customized aftercare plans that consider local socio-economic conditions, family involvement, and community support structures.

National Relapse Tracking Database

To address the gaps in follow-up systems and improve monitoring, there is an urgent need for a centralized relapse tracking database across India. This system would link rehabilitation centers, enabling real-time updates on relapse trends and providing policymakers with data to formulate targeted interventions. Establishing this database could significantly enhance national relapse prevention efforts and ensure more effective post-rehabilitation care.

Standardized National Follow-Up Protocols

The study indicates the importance of having standardized national guidelines for post-discharge follow-up. Rehabilitation centers across the country should adopt a common protocol for monitoring patients after discharge, including regular follow-up check-ins, standardized documentation, and outcome tracking. This would minimize the number of “Unknown” cases, ensuring that recovery data is accurate and comprehensive, and enabling timely interventions for patients at risk of relapse.

Family and Community-Based Support

As evidenced by the high sobriety rates in Mangalore, family and community support are critical components of successful addiction recovery. Treatment programs should include family counseling and community engagement as integral parts of rehabilitation. Additionally, local community organizations should be leveraged to provide ongoing support and reinforcement for recovering individuals, especially in regions with lower family involvement or socio-economic stressors.

Policy Priorities for Government and NGOs

Policymakers and government bodies should prioritize funding for addiction recovery programs that emphasize comprehensive aftercare, community support, and relapse prevention. Public-private partnerships, involving NGOs, like the Kripa Foundation, can play a vital role in developing effective treatment models that are not only accessible but also culturally relevant. Increased investment in

research on addiction recovery outcomes and evidence-based practices will also help shape more effective policies at the national level.

By integrating these recommendations into practice, organizations and policymakers can create a more sustainable and effective addiction recovery ecosystem in India. These measures will not only reduce rates of relapses but also promote long-term recovery and improve the quality of life for individuals recovering from addiction [18].

SUMMARY & CONCLUSIONS

This study highlights the critical role of post-discharge support in sustaining sobriety among individuals recovering from addiction. The findings demonstrate that longer inpatient stays, family involvement, and structured aftercare programs are among the most consistent predictors of long-term sobriety [5, 10].

Regional differences in outcomes suggest that aftercare must be customized to the needs of each community, as seen in Mangalore's higher sobriety rates compared to the higher relapse and mortality observed in Goa and Vasai. The data also emphasizes the need for improved follow-up tracking systems, especially in regions, like Vasai, where a higher number of unknown outcomes were recorded.

This five-year outcome study across three centers supports the implementation of standardized national aftercare models and continued engagement with discharged patients [9]. With the right blend of technological tools, community involvement, and professional care, addiction recovery can be more enduring, and relapse significantly reduced [1, 2].

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