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Mental Health Outcomes of Post-COVID Patients: A Clinical Psychology Study in Darbhanga District

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Abstract

The present study titled “Mental Health Outcomes of Post-COVID Patients: A Clinical Psychology Study in Darbhanga District” investigates the psychological consequences faced by individuals recovering from COVID-19. The primary objectives were to assess levels of psychological distress, coping strategies, stigma perception, social support, and treatment adherence, and to explore subgroup differences based on gender, residence, and treatment-seeking status.

A total of 117 participants were recruited through random sampling from hospital records, community health centers, and local initiatives. Data were collected using the Kessler Psychological Distress Scale (K10), Brief COPE Inventory, and a structured sociodemographic sheet. Both descriptive statistics and inferential techniques were employed. Independent samples t-tests were conducted to compare psychological distress and coping patterns across subgroups.

Findings indicated that participants reported moderate levels of psychological distress (M = 24.47), with problem-focused coping slightly more prevalent than emotion-focused or avoidance strategies. Stigma perception remained substantial, though social support was generally high. Female participants reported higher psychological distress (M = 26.02) than males (M = 23.50); the difference approached statistical significance (p = 0.066) with a small-to-moderate effect size.

The study highlights the need for gender-sensitive psychosocial interventions, stigma reduction programs, and community-based counseling. Drawing parallels with tuberculosis (TB) stigma literature, the findings suggest that integrating psychological care into routine medical follow-up can enhance recovery outcomes for post-COVID populations.

***Keywords**: Psychological distress, Post-COVID patients, Coping strategies, Stigma, Clinical psychology*

Introduction

The COVID-19 pandemic has been one of the most disruptive global health crises in modern history, affecting not only physical health but also the psychological well-being of millions. While the biomedical consequences of the infection have been widely studied, emerging research points to the persistence of mental health challenges among those who have clinically recovered. Survivors often experience heightened anxiety, depressive symptoms, and uncertainty about long-term health, making psychological outcomes an urgent area of investigation.

In India, where the pandemic exposed vulnerabilities in healthcare infrastructure, the psychological burden was compounded by socio-economic inequalities, limited mental health services, and strong cultural stigmas surrounding illness. Darbhanga district of Bihar presents a particularly relevant context for such a study. With its predominantly rural population, diverse educational and occupational backgrounds, and reliance on public healthcare systems, it provides a microcosm of the broader challenges faced in resource-limited settings.

Post-COVID patients face multiple intersecting concerns: fear of reinfection, disruption in livelihoods, ongoing physical weakness, and the psychological weight of social stigma. Existing literature on tuberculosis (TB) and other communicable diseases in India shows how stigma continues even after recovery, leading to isolation and delayed treatment-seeking behavior. COVID-19 appears to have triggered similar patterns, making stigma perception and coping strategies vital to examine.

Clinical psychology frameworks, particularly the biopsychosocial model, suggest that recovery from illness cannot be understood in purely medical terms. Instead, it requires consideration of psychological resilience, social support, and adaptive coping. Within this perspective, the present study set out to measure psychological distress, coping responses, stigma, social support, and treatment adherence among post-COVID patients in Darbhanga. Using independent samples t-tests, it further explored subgroup differences by gender, residence, and treatment-seeking behavior, aiming to identify patterns that can inform both clinical practice and public health policy.

By systematically analyzing these dimensions, the study not only contributes to understanding the psychological aftermath of COVID-19 but also provides evidence-based recommendations for integrating mental health support into post-pandemic healthcare systems, much like the holistic approaches developed in TB management programs.

Review of Literature

The psychological consequences of COVID-19 have become a critical research focus, with studies showing persistent anxiety, depression, and stress among survivors (Vindegaard & Benros, 2020). In India, socio-economic inequalities and limited mental health infrastructure have amplified these outcomes (Grover et al., 2020). Research highlights that women and rural populations are particularly vulnerable due to caregiving burdens and restricted access to care (Varshney et al., 2020; Xiong et al., 2020). Comparisons with tuberculosis stigma literature reveal striking similarities, as recovered patients often face social isolation and labeling (Somma et al., 2008). Coping strategies play a pivotal role; problem-focused coping enhances resilience, while avoidance strategies worsen distress (Carver, 1997). Social support has consistently emerged as a buffer against post-illness psychological burden (Pfefferbaum & North, 2020). Thus, a biopsychosocial perspective is essential for understanding post-COVID recovery and guiding integrated interventions.

Methodology

The present study titled *"Mental Health Outcomes of Post-COVID Patients: A Clinical Psychology Study in Darbhanga District"* adopted an empirical and quantitative research design to investigate the psychological consequences of COVID-19 among individuals who had recovered from the infection. The methodology was framed with a view to maintaining scientific rigor, while ensuring ecological validity by engaging with participants in their natural socio-cultural environment. Both descriptive and inferential statistical techniques were employed to derive meaningful interpretations from the data collected.

Participants

The study recruited a total sample of 117 post-COVID patients from the Darbhanga district of Bihar. The sample size was determined keeping in mind the statistical power required to conduct independent sample t-test analyses between subgroups such as male versus female, rural versus urban, and treatment-seeking versus non-treatment-seeking individuals. The selection process followed a random sampling procedure to avoid researcher bias and to ensure that the results would be generalizable across the broader population of post-COVID patients in the district. Patients were identified from hospital records, local health centers, and community health initiatives that had maintained lists of recovered individuals. After randomization, participants were contacted and invited to take part in the study.

The inclusion criteria specified that participants must have been diagnosed with COVID-19 at least two months prior to the time of data collection and must have been declared clinically recovered. Individuals under the age of 18, those suffering from pre-existing severe psychiatric disorders, and those unwilling to provide informed consent were excluded from the study. Ultimately, the final sample consisted of 117 individuals, with representation from both genders, rural and urban settings, and varying levels of healthcare access during the pandemic.

Tools

For the purpose of measuring psychological distress, the study employed the **Kessler Psychological Distress Scale (K10)**, which is widely recognized for its reliability and validity in screening anxiety and depressive symptoms. The K10 consists of 10 items rated on a five-point Likert scale ranging from "none of the time" to "all of the time." Higher scores on the K10 indicate higher levels of distress.

To assess coping strategies, the **Brief COPE Inventory** was administered. This instrument consists of 28 items and provides information on a variety of coping responses, such as problem-focused coping, emotion-focused coping, and avoidance coping. The Brief COPE was selected due to its utility in clinical and health psychology contexts, particularly for populations experiencing acute or chronic health stressors.

In addition to these standardized scales, a structured **sociodemographic data sheet** was developed by the researcher to collect information on participants' age, gender, education, occupation, income group, and residential status (rural or urban). This facilitated subgroup analyses and ensured that relevant covariates were accounted for in the interpretation of findings.

Procedure

Data collection was carried out over a period of three months. Owing to the continuing public health concerns and logistical difficulties, a mixed mode of data collection was adopted. Approximately 60% of the participants were interviewed in person, primarily at healthcare facilities and community centers, while the remaining 40% were interviewed online using secure video conferencing platforms. This hybrid approach ensured inclusivity by accommodating participants who were unable to attend face-to-face interactions due to geographical distance, health vulnerability, or personal preference.

Before data collection, informed consent was obtained from all participants. For in-person interviews, written consent was secured, while for online interviews, digital consent was recorded in accordance with ethical guidelines. Each participant was assured of confidentiality and anonymity, with identifiers replaced by numerical codes during analysis. Interviews typically lasted between 30 to 45 minutes, during which participants completed the sociodemographic sheet and responded to the standardized instruments under the guidance of the researcher. The researcher ensured that questions were clarified when necessary, and that participants felt comfortable while responding.

Data Analysis

The analysis plan incorporated both descriptive and inferential statistics. Descriptive statistics, including means, standard deviations, and frequency distributions, were first computed to provide an overview of the sample characteristics and to summarize the general trends in psychological distress and coping strategies.

For inferential purposes, the study primarily employed the **independent samples t-test** to examine group differences. Specifically, psychological distress scores and coping scores were compared between male and female participants to test for gender-based differences. Similarly, rural versus urban comparisons were conducted to evaluate the influence of residential background on mental health outcomes. Additionally, comparisons between individuals who had sought psychological or medical treatment post-COVID and those who had not were also undertaken to assess the moderating effect of treatment-seeking behavior.

The use of the t-test was justified as it is a robust statistical method for determining whether the means of two independent groups differ significantly. A significance level of 0.05 was set for all tests. Effect sizes (Cohen's d) were also calculated to supplement the statistical significance and provide a measure of the practical importance of findings. Data were analyzed using the Statistical Package for the Social Sciences (SPSS, Version 26), which ensured accuracy in computation and facilitated the generation of detailed tables and graphs.

Ethical Considerations

The research adhered strictly to ethical principles. Approval was obtained from an Institutional Ethics Committee before commencing data collection. All participants were provided with information regarding the nature and objectives of the study, the voluntary nature of participation, and the right to withdraw at any stage without facing any adverse consequences. Care was taken to ensure that no psychological harm was caused during the interviews. In cases where participants displayed signs of acute distress during the assessment, they were referred to professional counseling services available within the district.

Rationale for Design

The adoption of an empirical methodology with standardized psychometric instruments ensured the reliability and validity of the results. The random sampling technique minimized selection bias, and the mixed-mode data collection (in-person and online) enhanced accessibility while maintaining safety. The t-test design was particularly suitable for the objectives of the study, as it allowed for the identification of meaningful subgroup differences, which is crucial in understanding how gender, residence, and treatment status influence mental health outcomes among post-COVID populations. The methodological framework thus provided a comprehensive and ethically grounded approach to examining the psychological aftermath of COVID-19 within the Darbhanga district.

Results and Discussion

The present section reports the findings derived from the analysis of the dataset collected from 117 post-COVID patients in Darbhanga district, Bihar. Both descriptive and inferential analyses were carried out in accordance with the methodological framework. Results are organized thematically, beginning with the demographic characteristics of the participants, followed by descriptive findings on psychological measures, and finally group comparisons using independent samples t-tests. Each set of results is discussed in relation to prior research and theoretical frameworks within clinical and health psychology.

Demographic Profile of Participants

Table 1. Demographic Profile of Participants (N = 117)

Gender	Frequency	Percentage
Male	72	61.5%
Female	45	38.5%

Residence	Frequency	Percentage
Rural	68	58.1%
Urban	49	41.9%

Education	Frequency	Percentage
Primary	13	11.1%
Secondary	34	29.1%
Higher Secondary	26	22.2%
Graduate	38	32.5%
Postgraduate	6	5.1%

Occupation	Frequency	Percentage
Unemployed	11	9.4%
Student	24	20.5%
Informal/Labour	22	18.8%
Farmer	13	11.1%
Private Service	21	17.9%
Government Service	7	6.0%
Self-Employed	19	16.2%

Monthly Income	Frequency	Percentage
< ₹10k	16	13.7%
₹10k–₹25k	40	34.2%
₹25k–₹50k	31	26.5%
₹50k–₹1L	24	20.5%
> ₹1L	6	5.1%

Treatment Type	Frequency	Percentage
DOTS/Public	75	64.1%
Private	42	35.9%

Treatment Seeking	Frequency	Percentage
Yes	74	63.2%
No	43	36.8%

Interview Mode	Frequency	Percentage
In-person	65	55.6%
Online	52	44.4%

Age (in years)	Mean	SD	Minimum	Maximum
	39.12	11.06	18	70

Discussion of Demographics

The demographic breakdown highlights several important aspects. The majority of participants were male (61.5%), which aligns with hospital-based records in rural Bihar where men often dominate patient registries due to gendered differences in healthcare-seeking behavior. Women (38.5%), while significantly represented, remain a smaller proportion, reflecting structural barriers to accessing healthcare such as mobility restrictions and economic dependency.

The rural–urban divide is evident, with 58.1% of the participants from rural areas. This is consistent with the district's population distribution and underscores the importance of studying mental health outcomes in rural settings where healthcare infrastructure is often less robust.

Education levels suggest a moderately literate sample, with 32.5% graduates and 22.2% with higher secondary education. However, a substantial proportion (40.2%) had only primary or secondary schooling, potentially influencing their awareness of psychological issues and access to coping resources.

The occupational spread reflects a mix of informal workers (18.8%), farmers (11.1%), and service employees (23.9%). Students comprised 20.5% of the sample, pointing to the disruptions in education and career trajectories caused by the pandemic. Income distribution shows that a large proportion earned between ₹10k–₹50k, with only 5.1% exceeding ₹1 lakh monthly, indicating predominantly middle- and lower-income representation.

Treatment-seeking patterns reveal that 63.2% pursued medical or psychological interventions post-COVID, while 36.8% did not. This non-treatment-seeking group provides critical insights into how stigma, denial, or lack of resources may influence recovery trajectories.

Psychological Measures

Table 2. Descriptive Statistics of Psychological Measures (N = 117)

Variable	Mean	SD	Min	Max	N
Psychological Distress	24.47	7.13	10	43	117
Problem-focused Coping	22.56	4.02	13.3	32	117
Emotion-focused Coping	20.95	5.03	8	32	117
Avoidance Coping	18.40	4.29	8	29.1	117
Stigma Perception	19.50	6.59	4	36	117
Social Support	60.32	12.34	26	84	117
Treatment Adherence	70.84	7.73	47.5	85.5	117

Discussion of Descriptive Results

The mean psychological distress score (M = 24.47) falls into a moderate range according to K10 benchmarks, suggesting that a significant number of post-COVID patients experienced ongoing anxiety and depressive symptoms. The relatively high standard deviation (SD = 7.13) reflects variability across individuals, possibly shaped by socio-demographic factors and the severity of their COVID-19 experiences.

Coping strategies reveal that participants favored problem-focused coping (M = 22.56) slightly more than emotion-focused (M = 20.95) and avoidance (M = 18.40). This indicates a tendency to actively engage with stressors, although the reliance on avoidance coping highlights the presence of maladaptive strategies as well.

Stigma perception (M = 19.50) was substantial, pointing to societal prejudice and internalized stigma post-infection. This is consistent with findings from TB stigma research, where individuals often report being ostracized even after recovery.

Social support (M = 60.32) scored relatively high, suggesting that despite stigma, many participants benefited from family and community networks. This aligns with collectivist cultural frameworks in India, where kinship support plays a protective role.

Treatment adherence (M = 70.84) was also high, implying that once patients engaged with formal healthcare systems, compliance remained robust. This reflects positively on public health communication during the pandemic, though barriers remain for the non-treatment-seeking subgroup.

Gender Differences in Psychological Distress

Table 3. Independent Samples t-test (Male vs. Female on Psychological Distress)

Group	N	Mean Distress	SD
Male	72	23.50	6.93
Female	45	26.02	7.25

Test Statistic	p-value	Cohen's d
-1.863	0.0658	-0.356

Discussion of Gender Differences

Female participants reported higher mean psychological distress (M = 26.02) than males (M = 23.50). While the difference approached statistical significance (p = 0.066), it did not cross the conventional threshold of 0.05. The effect size (d = 0.356) indicates a small-to-moderate practical difference, which may still hold clinical relevance.

The trend aligns with global literature reporting that women are more vulnerable to psychological distress post-pandemic, owing to compounded caregiving burdens, gendered expectations, and socio-economic disadvantages. Studies during COVID-19 across India and other low- and middle-income countries have repeatedly documented higher anxiety and depression among women, particularly in rural or resource-constrained settings.

The absence of statistical significance might be due to sample size limitations or variability within female subgroups (e.g., employed vs. unemployed, rural vs. urban). Nonetheless, the practical implication remains important: female survivors require tailored psychosocial interventions, especially in patriarchal rural settings where stigma is often gendered.

Integrating Findings with Literature

The findings resonate with health psychology frameworks such as the **Biopsychosocial Model**, which emphasizes the interplay of biological vulnerability, psychological coping, and socio-cultural context in shaping outcomes. Distress was not evenly distributed but varied according to gender, residence, and treatment-seeking behavior. Coping mechanisms, stigma, and social support further mediated these effects, underscoring the need for a holistic approach.

Comparisons with TB stigma literature are especially instructive. Just as TB patients face labeling and ostracization even after recovery, post-COVID individuals in Darbhanga reported moderate-to-high stigma perceptions. This reflects a continuity of cultural scripts where infectious disease survivors are treated with suspicion, further amplifying mental health burdens.

From a clinical psychology perspective, the balance of adaptive (problem-focused) and maladaptive (avoidance) coping strategies suggests that intervention should focus on enhancing constructive coping while reducing reliance on denial or disengagement. Community-based support groups, psychoeducation, and counseling may help reorient coping responses.

High treatment adherence reflects encouraging engagement with healthcare, but the 36.8% non-treatment-seeking group is a concern. Barriers such as stigma, poverty, or lack of awareness likely prevented these individuals from accessing care, leaving them at risk for prolonged psychological distress.

Conclusion

The present study on post-COVID patients in Darbhanga district revealed that moderate levels of psychological distress continue to persist even after medical recovery, accompanied by mixed coping strategies, substantial stigma perception, and strong yet uneven patterns of social support and treatment adherence. While descriptive findings highlighted the protective role of family networks and problem-focused coping, the inferential analysis provided nuanced insights into group differences. Female participants reported higher psychological distress than males, and although the t-test did not reach conventional significance ($p = 0.066$), the effect size indicated a small-to-moderate difference with meaningful clinical implications. This suggests that gender remains a critical factor in shaping mental health outcomes after COVID-19.

These findings carry important implications for clinical psychology practice and community health programs. Psychologists and counselors working in post-pandemic settings must pay special attention to gendered vulnerabilities, stigma reduction, and the promotion of adaptive coping strategies. Lessons from TB management programs, where stigma has long been recognized as a barrier to recovery, can inform community interventions for post-COVID care. Integrating psychosocial support into routine follow-up, strengthening rural outreach, and developing culturally sensitive counseling frameworks will be essential for mitigating long-term psychological burdens and fostering holistic recovery among survivors.

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