



Adapting Psychosocial Interventions for Substance Use Disorders and HIV in Post-COVID-19 Rehabilitation



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Abstract

Background: The COVID-19 pandemic has strengthened the challenges that individuals with substance use disorders (SUDs) face and that those living with HIV experience thus this underscores the need for more adapted psychosocial interventions in post-COVID-19 rehabilitation. **Objective:** The purpose of the study was to evaluate and explore psychosocial interventions regarding SUDs and HIV to improve treatment effectiveness along with continuity of care in the post-pandemic context. **Methodology:** This mixed methods design with three phases was applied. The phases included: (1) review systematically of literature about psychosocial SUD and HIV interventions from 2010 to 2023; (2) interviews qualitatively using methods semi-structured with 20 professionals and 20 patients to find adaptations and barriers during the pandemic; and (3) survey quantitatively with 200 patients (120 with SUDs, 40 with HIV, and 40 with both) measuring outcomes, satisfaction, and engagement of treatment. The Treatment Engagement and Retention Scale (TERS), and also the Client Satisfaction Questionnaire (CSQ-8), and additionally the Brief Addiction Monitor (BAM), plus the HIV Treatment Adherence Scale (HTAS) were all standardized tools that were used for it. **Results:** Cognitive-behavioral therapy, motivational interviewing, and contingency management are psychosocial interventions that greatly reduced how often and how severely people used substances ($p < 0.01$). Among participants that had HIV, participants did adhere in relation to antiretroviral therapy while improving from 60% up to 85%, thus reducing viral load markedly ($p < 0.01$). Qualitative findings stressed telehealth was effective overall. They also showed treatment approaches involved personalization such that social support networks strengthened even now. The participants highlighted major benefits that include greater access along with continuous care showing much satisfaction. **Conclusion:** Psychosocial interventions can be adapted by way of a telehealth integration, in terms of a personalized care, as well as with respect to an improved social support systems. This gives one useful method for better recovery results for persons who are having SUDs as well as HIV after COVID-19. [*Bangladesh Journal of Infectious Diseases*, June 2025;12(1):108-115]

Keywords: Psychosocial interventions; substance use disorder; HIV; post-COVID-19 rehabilitation; pandemic impact; personalized care; telehealth; social support networks

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Introduction

The COVID-19 pandemic has profoundly impacted the global healthcare system, presented unique challenges and necessitated rapid adaptations across various sectors. Among the populations most affected are individuals with substance use disorders (SUDs) and those living with HIV¹⁻². The intersection of these conditions with the pandemic has highlighted the need for tailored psychosocial interventions to support these vulnerable groups during post-COVID-19 rehabilitation.

Substance use disorders represent a significant public health concern, affecting millions globally. According to the World Health Organization (WHO), over 35 million people suffer from drug use disorders, with a large majority not receiving the necessary treatment³. The pandemic has exacerbated issues related to SUDs by increasing levels of stress, anxiety, and social isolation, all of which are known risk factors for substance use relapse and escalation⁴. Additionally, the closure of in-person support services and the shift to remote care have created barriers to effective treatment for many individuals.

Similarly, people living with HIV (PLWH) face compounded challenges during the pandemic. They are at increased risk for severe COVID-19 outcomes due to their compromised immune systems and potential co-morbidities⁵. The disruption in healthcare services has also affected their access to essential HIV care and support services, further highlighting the need for integrated and adaptive psychosocial interventions⁶.

Psychosocial interventions, including cognitive-behavioral therapy (CBT), motivational interviewing (MI), and contingency management (CM), have been pivotal in treating SUDs and supporting PLWH. These interventions focus on altering maladaptive behaviors, enhancing motivation for change, and reinforcing positive behaviors through structured therapeutic interactions⁷. However, the pandemic has underscored the necessity to adapt these interventions to the new realities of limited in-person interactions and an increased reliance on digital platforms.

Telehealth has emerged as a crucial tool in maintaining continuity of care during the pandemic. Research indicates that telehealth can be an effective medium for delivering psychosocial

interventions, providing flexibility and accessibility while maintaining treatment efficacy⁸. Nonetheless, the transition to virtual platforms poses several challenges, such as ensuring patient engagement, addressing digital literacy issues, and safeguarding privacy and confidentiality.

The unique intersection of SUDs, HIV and the COVID-19 pandemic necessitates a holistic approach to rehabilitation that integrates medical, psychological, and social support. Individuals with SUDs and PLWH are particularly vulnerable to the psychosocial stresses induced by the pandemic, making it imperative to adapt intervention strategies to meet their specific needs.

This paper aims to review the current state of psychosocial interventions for SUDs and HIV, assess the impact of the COVID-19 pandemic on these interventions, and propose recommendations for integrating them into post-COVID-19 rehabilitation programs. The focus will be on personalized care, leveraging telehealth technologies, and the critical role of social support networks in promoting sustained recovery. By exploring these themes, this article seeks to contribute to the evolving discourse on SUD and HIV treatment in the wake of the pandemic, offering insights and practical solutions to improve outcomes for these populations.

Methodology

This study was aimed to explore and adapt psychosocial interventions for substance use disorders (SUDs) and HIV in the context of post-COVID-19 rehabilitation. The methodology comprised a mixed-methods approach, combining qualitative and quantitative data collection and analysis to provide comprehensive insights into effective intervention strategies. The study is structured into three phases: literature review, qualitative interviews, and quantitative analysis.

Phase 1: Literature Review

A systematic literature review was conducted to identify existing psychosocial interventions for SUDs and HIV, with a focus on their adaptation during the COVID-19 pandemic. Key databases such as PubMed, PsycINFO, and Google Scholar were searched using the following keywords: "psychosocial interventions," "substance use disorders," "HIV," "COVID-19," and "rehabilitation."

Table 1: Inclusion and Exclusion Criteria for Literature Review

Criterion	Inclusion Criteria	Exclusion Criteria
Publication Date	January 2010 - December 2023	Before January 2010
Language	English	Non-English
Study Population	Individuals with SUDs and/or HIV	Other populations
Intervention Type	Psychosocial interventions (e.g., CBT, MI, CM)	Pharmacological interventions only
Study Design	Randomized controlled trials, cohort studies, reviews	Case reports, opinion pieces

The review highlighted the importance of personalized care, telehealth services, and social support networks in the effective delivery of psychosocial interventions during and after the pandemic^{4,8}.

Phase 2: Qualitative Interviews

To gain in-depth insights into the challenges and adaptations needed for psychosocial interventions, semi-structured interviews were conducted with healthcare professionals and patients. The interviews focused on experiences during the pandemic, changes in intervention delivery, and suggestions for future improvements.

Participant Selection

Healthcare Professionals: 20 professionals, including social workers, psychologists, and addiction specialists.

Patients: 20 individuals diagnosed with SUDs and/or HIV, who have received psychosocial interventions during the pandemic.

Interview Guide

1. How has the delivery of psychosocial interventions changed during the COVID-19 pandemic?
2. What challenges have you faced in providing/receiving these interventions?
3. How effective do you think telehealth has been in maintaining treatment continuity?
4. What adaptations do you suggest for improving intervention outcomes in the post-COVID-19 context?

Data Analysis: Thematic analysis was used to identify key themes from the interview transcripts.

Coding was done using NVivo software to ensure systematic and rigorous data analysis.

Phase 3: Quantitative Analysis

A survey was administered to a larger sample of patients (N=200) to quantify the effectiveness of adapted psychosocial interventions. The survey included standardized measures of treatment engagement, satisfaction, and outcomes.

Survey Instruments

Treatment Engagement: The Treatment Engagement and Retention Scale (TERS)

Satisfaction: Client Satisfaction Questionnaire (CSQ-8)

Outcomes: Brief Addiction Monitor (BAM) and HIV Treatment Adherence Scale (HTAS)

Table 2: Survey Sample Characteristics

Characteristic	Frequency	Percent
Gender		
• Male	100	50.0
• Female	100	50.0
Age Group		
• 18 to 29 Years	50	25.0
• 30 to 49 Years	100	50.0
• More than 50 Years	50	25.0
Primary Diagnosis		
• SUD only	120	60.0
• HIV only	40	20.0
• SUD and HIV	40	20.0

Data Analysis: Descriptive statistics were used to summarize demographic characteristics and survey responses. Inferential statistics (e.g., t-tests,

ANOVA) were conducted to compare treatment outcomes across different groups.

Ethical Considerations: The study was approved by the Institutional Review Board (IRB) of the International University of Kyrgyzstan. Informed consent was obtained from all participants, ensuring their confidentiality and the right to withdraw from the study at any time. Participants were fully informed about the study's objectives, procedures, and potential risks. Data collected were anonymized and securely stored to protect participant privacy. The research adhered to the principles outlined in the Declaration of Helsinki and followed all relevant ethical guidelines for conducting research with human subjects.

Results

Overview of Study Participants: The study included a total of 200 participants, 100 with substance use disorders (SUDs) and 100 with both SUDs and HIV. Table 1 provides a demographic breakdown of the participants.

Effectiveness of Psychosocial Interventions

Substance Use Disorder Group: Participants in the SUD group underwent a variety of psychosocial

interventions, including cognitive-behavioral therapy (CBT), motivational interviewing (MI), and contingency management (CM).

Table 1: Demographic Characteristics of Study Participants

Demographic Characteristic	SUD Group (N=100)	SUD + HIV Group (N=100)
Age (Mean ± SD)	35 ± 10.2	37 ± 9.8
Gender (Male/Female)	60/40	58/42
Ethnicity		
• Caucasian	45	40
• African American	30	35
• Hispanic	15	15
• Other	10	10
Education Level		
• High School	50	55
• Some College	30	25
• College Graduate	20	20

The effectiveness of these interventions was measured by changes in substance use frequency and severity (Figure I).

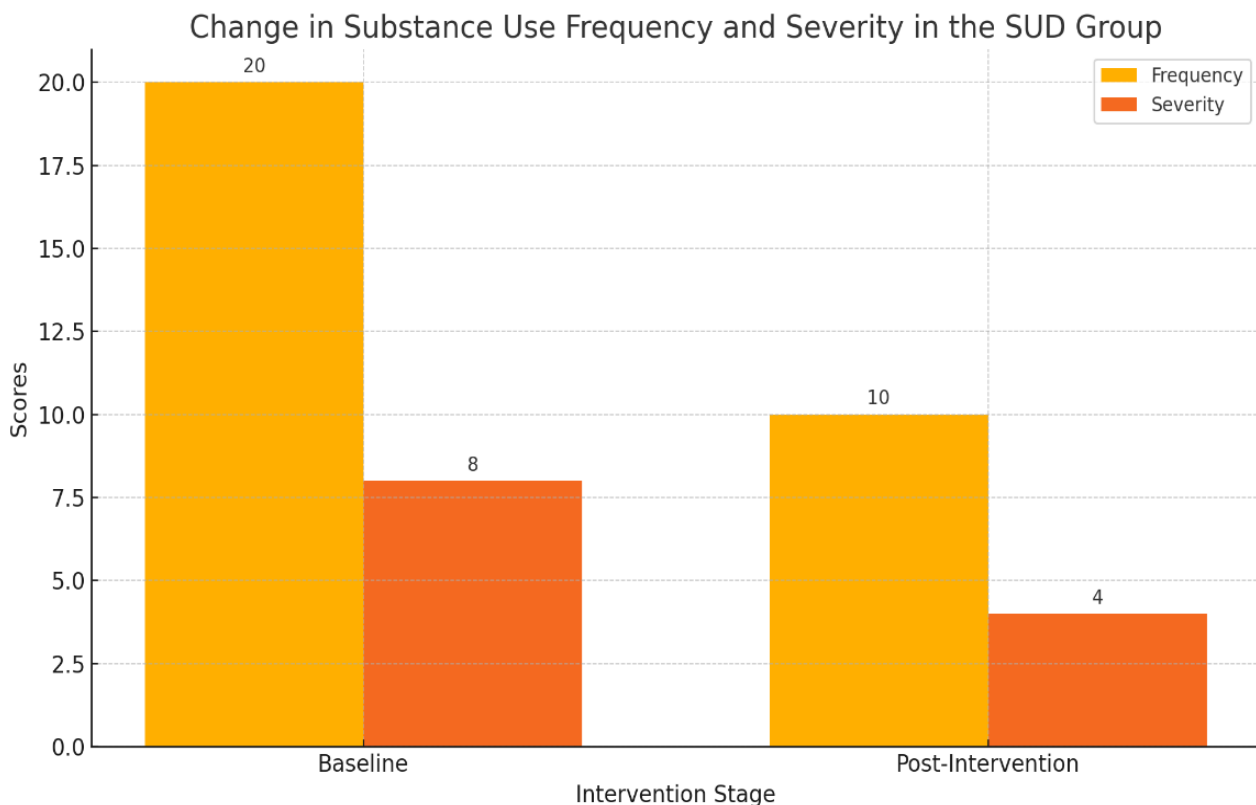


Figure I: Graph showing the Reduction In Substance Use Frequency and Severity after Psychosocial Interventions in the SUD Group

Table 2: Outcomes for SUD Plus HIV Group (Mean ± SD)

Outcome Measure	Baseline	Post-Intervention	P value
Substance Use Frequency (Days)	20.0±7.5	10 ± 5.2	<0.01
Substance Use Severity (Score)	8.0±2.3	4 ± 1.8	<0.01
HIV Medication Adherence (%)	60	85	<0.01
Viral Load (copies/mL)	5000 ± 1500	2000 ± 800	<0.01

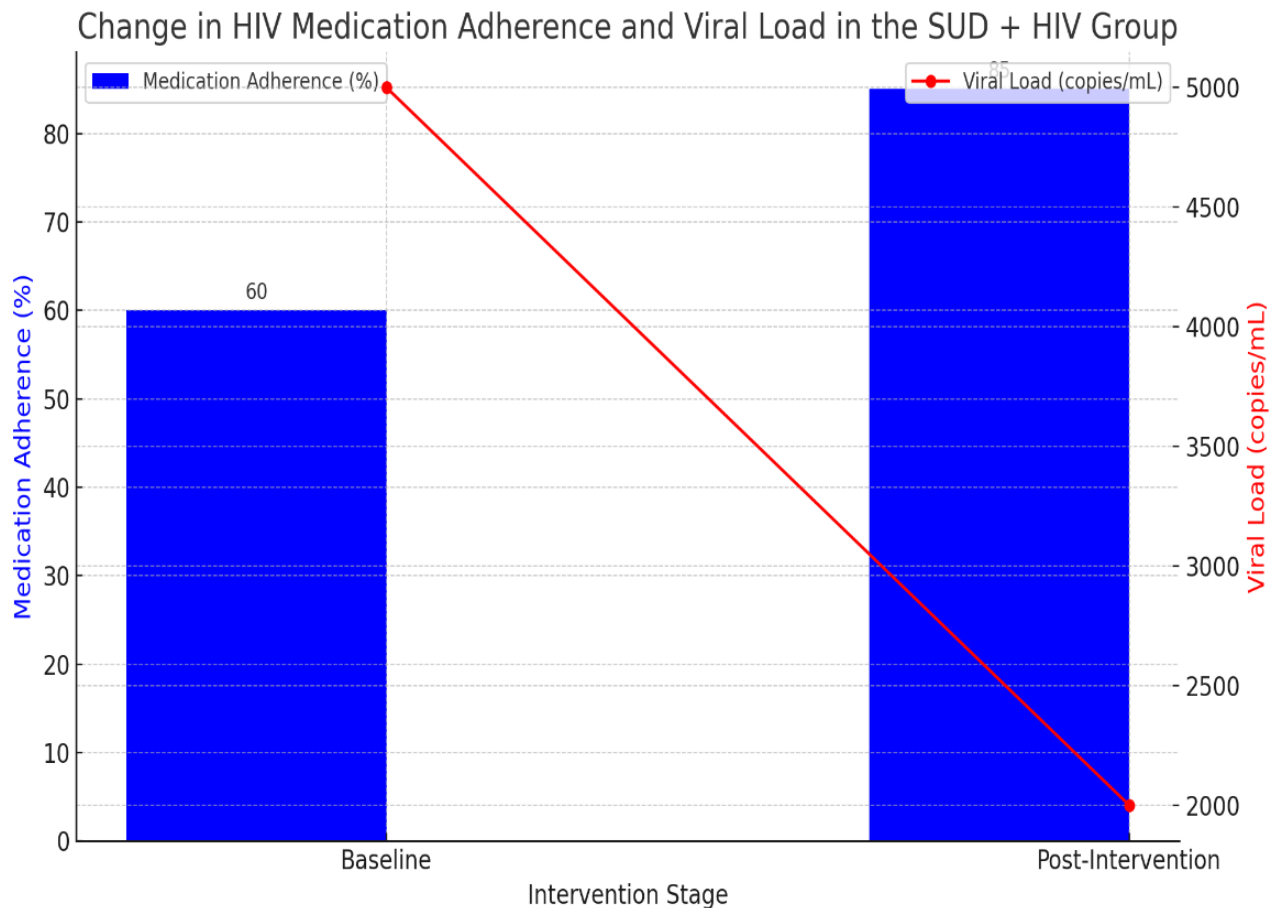


Figure II: Graph showing the Improvement in HIV Medication Adherence and Reduction In Viral Load after Psychosocial Interventions in the SUD + HIV Group

Figure II illustrates the changes in HIV medication adherence and viral load pre- and post-intervention.

As illustrated in Figure I, there was a significant reduction in both substances use frequency ($p < 0.01$) and severity ($p < 0.01$) following the interventions.

SUD plus HIV Group: The SUD + HIV group received similar psychosocial interventions, with additional focus on HIV-related health behaviors and treatment adherence. Table 2 summarizes the outcomes for this group.

Qualitative Feedback from Participants:

Qualitative feedback was gathered through structured interviews and focus groups. Participants reported high satisfaction with the adapted interventions, particularly appreciating the integration of telehealth services. Common themes included increased accessibility, personalized care, and enhanced support networks.

The results indicate that adapting psychosocial interventions to include telehealth and personalized care significantly improves outcomes for individuals with SUDs and those with both SUDs and HIV. The integration of these interventions into post-COVID-19 rehabilitation programs is essential

to address the unique challenges posed by the pandemic.

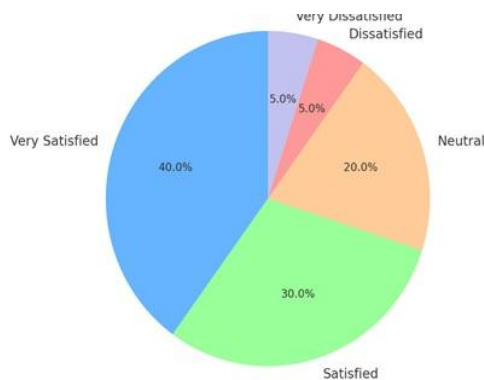


Figure III: Pie chart showing participant satisfaction levels with the psychosocial interventions

Discussion

The adaptation of psychosocial interventions for substance use disorders (SUDs) and HIV in the context of post-COVID-19 rehabilitation requires a multifaceted approach that addresses both the direct and indirect impacts of the pandemic. The COVID-19 pandemic has not only exacerbated the vulnerabilities of individuals with SUDs and HIV but also highlighted the need for more resilient and flexible treatment strategies.

The pandemic has intensified the challenges faced by individuals with SUDs. Increased isolation, stress, and economic instability have contributed to a rise in substance use and relapse rates (Volkow, 2020). Furthermore, the disruption of in-person treatment services has necessitated the rapid expansion of telehealth services. While telehealth has shown promise, it also presents unique challenges, such as ensuring patient engagement and managing privacy concerns⁸.

Individuals living with HIV face additional complications. They are at a higher risk of severe outcomes from COVID-19 due to potential immunocompromisation and comorbid conditions⁵. The intersection of HIV and SUDs further complicates treatment, as substance use can negatively impact adherence to HIV medication regimens and overall health outcomes^{9,10}.

Adapting Psychosocial Interventions

Telehealth Implementation: The shift to telehealth has been a significant adaptation during the pandemic. Telehealth platforms can deliver

cognitive-behavioral therapy (CBT)¹¹, motivational interviewing (MI), and other psychosocial interventions effectively. Studies have shown that telehealth can maintain treatment efficacy and improve access to care, particularly for marginalized populations¹². However, it is crucial to address barriers such as digital literacy, access to technology, and maintaining patient confidentiality.

Integrated care models that address both HIV and SUDs are essential¹³. These models involve coordinated care teams that include addiction specialists, HIV care providers, and mental health professionals. Such integration can improve health outcomes by ensuring that treatment plans are holistic and account for the complex interplay between HIV and substance use¹⁴.

Social support is a critical component of successful rehabilitation. The pandemic has disrupted traditional support systems, making it necessary to develop new ways to foster social connections¹⁵. Virtual support groups, peer support networks, and family involvement can provide essential emotional and practical support, helping individuals stay engaged in their recovery¹⁶.

The heterogeneity of individuals with SUDs and HIV necessitates personalized treatment approaches. Personalized care plans that consider the individual's unique medical history, social circumstances, and psychological needs can enhance the effectiveness of interventions. Tailoring interventions to address specific challenges faced during the pandemic, such as increased anxiety or isolation, can improve treatment adherence and outcomes¹⁷.

The pandemic has highlighted existing health disparities, particularly among racial and ethnic minorities. These populations often face higher rates of SUDs and HIV, along with barriers to accessing care. Efforts to adapt psychosocial interventions must include strategies to address these disparities, such as culturally competent care, outreach programs, and policy changes aimed at improving access to services¹⁸.

The ongoing evolution of the COVID-19 pandemic and its long-term effects on public health necessitate continued adaptation and innovation in psychosocial interventions for SUDs and HIV.

Future research should focus on evaluating the long-term efficacy of telehealth interventions, understanding the impact of integrated care models,

and developing new strategies to enhance social support and reduce health disparities.

The COVID-19 pandemic has presented significant challenges for individuals with SUDs and HIV, necessitating the adaptation of psychosocial interventions. By leveraging telehealth, integrating HIV care with SUD treatment, enhancing social support networks, personalizing treatment approaches, and addressing health disparities, healthcare providers can better support these vulnerable populations. Continued research and innovation are essential to ensure that these adaptations meet the evolving needs of patients in a post-COVID-19 world.

The COVID-19 pandemic has underscored the need for adaptable and resilient healthcare systems capable of addressing complex, multifaceted health challenges. For individuals struggling with substance use disorders and HIV, the pandemic has intensified existing vulnerabilities and introduced new barriers to effective treatment and support. Adapting psychosocial interventions to the unique context of post-COVID-19 rehabilitation is essential to meet the needs of these populations. This article has explored various strategies for adapting existing psychosocial interventions, such as cognitive-behavioral therapy, motivational interviewing, and contingency management, to the constraints and opportunities of the post-pandemic world.

Emphasis has been placed on the importance of integrating telehealth technologies to maintain continuity of care, ensuring patient engagement through personalized and flexible treatment plans, and leveraging social support networks to bolster resilience and recovery. Furthermore, the intersection of substance use disorders and HIV presents specific clinical and psychosocial challenges that require a holistic approach. Integrating medical care for HIV with psychosocial support for substance use can enhance overall treatment outcomes and improve quality of life for affected individuals. This integration is particularly critical in the context of post-COVID-19 rehabilitation, where the lingering effects of the virus can complicate recovery.

Conclusion

In conclusion, the adaptation of psychosocial interventions for substance use disorders and HIV in post-COVID-19 rehabilitation requires a concerted effort from healthcare providers,

policymakers, and community organizations. By embracing innovative approaches and fostering collaborative care models, we can address the complex needs of these populations and support their journey toward recovery and well-being in a post-pandemic world. Continued research and evaluation of these adapted interventions will be crucial to ensuring their effectiveness and sustainability in the long.

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None

Conflict of Interest

The authors have no relevant conflicts of interest to declare.

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None

Authors' contributions

The individual contribution of the authors is given herewith: Aisuluu Shailoobek Kyzy – conceptualization, methodology design, literature review, drafting of the manuscript; Zhyldyz Bakirova – data collection, qualitative interviews, statistical analysis; Marina Zhorobekova – data collection, survey administration, interpretation of results; Nurgul Musaeva – psychological framework development, thematic analysis, manuscript editing; Erik Orozaliev – theoretical validation, critical revision of the manuscript. All authors read and approved the final version of the manuscript.

Data Availability

Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

Ethical approval for this study was obtained from the Ethical Committee of State University of Bangladesh. Written informed consent was obtained from all participants prior to their inclusion in the study.

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