Original Article

# EXPLORING THE NEXUS: METHAMPHETAMINE-INDUCED PSYCHOSIS, CO-MORBID MENTAL DISORDERS, AND ASSOCIATED RISKS AMONG DEPENDENT INDIVIDUALS IN TERTIARY CARE HOSPITAL OF PESHAWAR

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## ABSTRACT

***Objective:*** *This study examined the risk of lifetime and present methamphetamine-induced psychosis in dependent individuals. The relationship between methamphetamine-induced psychosis and mental co-morbidity was examined.*

***Study design :*** *A Cross-sectional study*

***Duration and place of study :*** *tertiary care hospital of Peshawar from January 2022 to January 2023*

***Methods****: This Cross-sectional study done simultaneously at a Peshawar Tartary care hospital from January 2022 to January 2023. The Mini International Neuropsychiatric Interview (M.I.N.I.) was used to interview DSM-IV-diagnosed methamphetamine users for psychosis and other Axis I psychiatric disorders. Social demographics and drug use history were acquired via interviews or medical records.*

***Results****: There was a history of psychotic symptoms in 65 (45.4% of the total) participants, and 23 (15.6% of the total) patients at the present time. After adjusting for other covariates, there was a substantial association between heavy methamphetamine use, childhood methamphetamine-induced psychosis, and co-morbid major depressive disorder (n-24, 16.2%), bipolar disorder (n-6, 5.8%), and antisocial personality disorder (n-14, 10.8%). The only variables linked to present psychosis were major depressive illness (n-6, 5.8% of the population) and antisocial personality disorder (n-4, 4.2% of the population).*

***Conclusion****: this study sheds light on the interplay between methamphetamine use, psychosis, and co-morbid mental disorders. Early detection and integrated treatment approaches are vital for mitigating the adverse effects of substance abuse and improving mental health outcomes in affected individuals.*

***Keywords:*** *Methamphetamine, Psychosis, Co-morbidity, Dependent individuals, Mental disorders*

## INTRODUCTION

Methamphetamine misuse is becoming a global public health problem, with rising rates seen in different parts of the world [1]. Methamphetamine use is highly linked to significant mental morbidity, including psychosis, in addition to its effects on physical health [2]. Methamphetamine-induced psychosis is one of the worst effects of methamphetamine misuse, marked by delusions, hallucinations, and disordered thinking [3]. Methamphetamine-induced psychosis has complex neurobiological roots that include altered glutamate signaling, dysregulation of dopamine neurotransmission, and structural modifications in critical brain areas associated with psychosis [4]. These neurochemical changes highlight the difficulties in treating methamphetamine-related mental side effects and play a role in the development of psychotic symptoms.

Methamphetamine-induced psychosis is ac-

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Date Received: Aug-10-2022
Date Accepted: Aug-03-2023
Date Revised: Sep-02-2023
Available Online: Dec-05-2023

knowledged as a separate psychiatric entity, although its genesis and course are influenced by a multitude of circumstances. These include the method of administration, genetic predisposition, comorbid mental health disorders, and the amount and duration of methamphetamine usage [5]. Furthermore, the clinical presentation and responsiveness to therapy are further complicated by the connection between the use of methamphetamine and pre-existing mental vulnerabilities[6].

Methamphetamine-induced psychosis is complex, and treating it effectively necessitates a thorough grasp of its epidemiology, clinical features, and risk factors [7]. Nonetheless, there are still a lot of unanswered questions about the best ways to manage this illness [8]. Methamphetamine-related psychosis may be difficult to treat with traditional antipsychotic drugs; this emphasizes the need for innovative pharmacological and psychological therapies catered to the specific requirements of those who are affected [9].

Research attempts to clarify the underlying processes and guide evidence-based therapies are urgently needed, given the rising incidence of methamphetamine use and its accompanying mental problems [10]. By examining the frequency of past and current methamphetamine-induced psychosis in dependent people and its correlation with co-occurring mental illnesses, this study aims to support this effort. This project seeks to expand our understanding of methamphetamine-induced psychosis and guide targeted therapies to improve outcomes for afflicted persons by addressing the research gaps identified in the literature.

## METHODS

From January 2022 to January 2023, a cross-sectional research was carried out in a territorial care hospital in Peshawar. In order to evaluate psychosis and other Axis I mental disorders, methamphetamine users with DSM-IV diagnoses were examined using the Mini International Neuropsychiatric Interview (M.I.N.I.). Information was gathered about drug usage history and social demographics.

## RESULTS

The participants' ages ranged from 18 to 65 overall. The mean age n = 58 (40%) Major Depressive Disorder Manic Depression n - 51 (35%). n-22(15%) Antisocial Personality Disorder Among the 145 patients, the average age was 44.2 ± 8.1 years. 15.6% of participants were in psychosis at the time of the research, whereas 45.4% had a history of psychotic symptoms linked to methamphetamine use. There has been a notable correlation shown between co-morbid major depressive illness, bipolar disorder, and antisocial personality disorder with heavy methamphetamine use and methamphetamine-induced psychosis in childhood. 16.2% of people had major depressive illness, 5.8% had bipolar disorder, and 10.8% had antisocial personality disorder. Antisocial personality disorder (4.2%) and severe depressive disorder (5.8% of the population) were the main conditions linked to present psychosis. These relationships were validated when confounders were taken into account, emphasizing the complex interplay between co-morbid mental diseases and methamphetamine-induced psychosis.

**Table 1: Participant Characteristics**

| Characteristic | Value |
|---|---|
| Age (years) | 44.2 ± 8.1 |
| Age Range | 18-65 |
| Total Participants | 145 |

**Table 2: Prevalence of Co-morbid Mental Disorders**

| Mental Disorder | Number (n) | Prevalence (%) |
|---|---|---|
| Major Depressive Disorder | 58 | 40 |
| Bipolar Disorder | 51 | 35 |
| Antisocial Personality Disorder | 22 | 15 |

**Table 3: Psychosis Related to Methamphetamine Use**

| Psychotic Symptoms | Prevalence (%) |
|---|---|
| History of Psychotic Symptoms | 45.4 |
| Current Psychosis | 15.6 |

**Table 4: Association of Mental Disorders with Methamphetamine Use and Psychosis**

| Mental Disorder | Prevalence (%) |
|---|---|
| Major Depressive Disorder | 16.2 |
| Bipolar Disorder | 5.8 |
| Antisocial Personality Disorder | 10.8 |

**Table 5: Association of Present Psychosis with Mental Disorders**

| Mental Disorder | Prevalence (%) |
|---|---|
| Major Depressive Disorder | 5.8 |
| Bipolar Disorder | 5.8 |
| Antisocial Personality Disorder | 4.2 |

## DISCUSSION

Methamphetamine-induced psychosis represents a significant challenge in both clinical and public health settings, with far- broad ramifications for those impacted and society at large. In order to provide readers a thorough grasp of the intricate interactions that exist between methamphetamine use, psychosis, and co-morbid mental diseases, this article explores the study's main results and their consequences. It does this by drawing on pertinent literature. Prevalence of Methamphetamine-Induced Psychosis: Among those who were dependent on methamphetamine, there was a significant prevalence of both present (15.6%) and lifetime (45.4%) psychosis. These results align with other studies emphasizing the elevated risk of psychosis linked to methamphetamine use [11]. The prevalence rates highlight the critical need for focused treatments to address the detrimental effects of methamphetamine misuse on mental health.Connection to Co-occurring Mental Disorders: The study's key discovery was the strong correlation between co-morbid mental illnesses, such as major depressive disorder, bipolar disorder, and antisocial personality disorder, and methamphetamine-induced psychosis. These results are consistent with previous research describing the intricate connection between drug misuse and mental health conditions [12, 13]. The use of methamphetamine may intensify preexisting psychological vulnerabilities, resulting in the emergence or aggravation of mood and personality problems.Implications for Clinical Practice: There are a number of clinical practice implications for the study's findings. First and foremost, medical practitioners need to be cautious while checking patients who are dependent on methamphetamine for co-occurring mental illnesses, including major depressive disorder and antisocial personality disorder, as well as psychotic symptoms. The timely provision of appropriate treatment and support services can be facilitated by early diagnosis and intervention, leading to improved outcomes for those who are impacted [14]. To successfully manage methamphetamine-induced psychosis and co-morbid disorders, comprehensive treatment methods that target both drug use and mental symptoms are necessary [15]. Implications for Public Health: The study emphasizes the necessity of comprehensive harm reduction and preventive programs that target methamphetamine use and the mental health issues that are linked to it from the standpoint of public health. These tactics might include laws intended to lessen the supply and demand for methamphetamine, access to mental health care, and community-based education initiatives [16]. Additionally, avoiding drug misuse and enhancing mental well-being at the population level require addressing socioeconomic determinants of health such poverty and social inequality [17].

Limitations and Future Directions: The study has a number of limitations that should be taken into account notwithstanding its contributions. First off, the cross-sectional design makes it impossible to determine a direct link between co-morbid mental diseases, psychosis, and methamphetamine use. To clarify the temporal dynamics and trajectory of these correlations across time, longitudinal studies are required. Moreover, underreporting of sensitive information on drug use and mental health and reporting bias may result from the dependence on self-report and clinical interviews.

## CONCLUSION

The substantial burden of methamphetamine-induced psychosis and its correlation with co-occurring mental problems in methamphetamine-dependent persons are highlighted by this study. The results emphasize the necessity of integrated methods for drug use and mental health symptoms screening, diagnosis, and treatment. Healthcare providers and legislators may lessen the burden of substance abuse-related psychosis and enhance the general wellbeing of those impacted by methamphetamine use by addressing the intricate interactions between the drug and mental health.

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