Addressing Psychosis in South Asia: A Systematic Review of Psychosis Prevalence and Acceptability and Feasibility of a Community-Based Theatre Pilot

‘Someone to Support Me’

Ashley Boscoe

DClinPsy thesis (Volume 1), 2024

University College London

UCL Doctorate in Clinical Psychology

Thesis declaration form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

Name: Ashley Boscoe

Date: 15th July 2024

Overview

The first chapter, "Prevalence of Psychosis in South Asia: A Systematic Review and Meta-Analysis," examines psychosis prevalence in South Asia, revealing significant disparities in mental health services and stigma across the region. Analysing 36 studies from 2,302 records, it found higher prevalence rates and notable country-specific variations. Despite limitations such as heterogeneity in study designs, data scarcity, and reliance on hospital-based samples, the findings highlight the need for accurate data to inform policies and community-based interventions. The review calls for improved mental health policies and culturally sensitive research to address psychosis across the lifespan in South Asia.

The second chapter, titled "'Someone to Support Me': Tackling Psychosis Stigma in Pakistan through Forum Theatre - A Community-Based Implementation Pilot," examines the use of participatory arts to reduce psychosis stigma in Pakistan. This empirical study involved co-producing a forum theatre production with individuals who have lived experiences of psychosis, their caregivers, and performers. Using a mixed-methods approach, the study found that the intervention was partially successful in raising awareness and reducing stigma. The strengths of this study include its innovative and culturally sensitive methodology. However, limitations such as challenges in measuring long-term impact and sustainability, as well as feedback indicating power imbalances in participation, highlight the need for meaningful co-production and sustainable strategies in low-resource settings.

The third chapter, "Navigating Research from a Distance: Cultural Collaboration and Reflexivity in Global Mental Health Research," provides a reflexive and critical appraisal of the research process. It discusses the challenges and benefits of cross-cultural research in global mental health, emphasising reflexivity and the influence of cultural and sociopolitical contexts. Highlighting the complexities of applying Western methodologies in LMIC contexts, the chapter advocates for more culturally sensitive research practices and greater collaboration with local stakeholders to enhance the relevance and impact of mental health research globally.

Impact Statement

This thesis investigates the prevalence of psychosis, the acceptability and feasibility of a stigma reduction intervention, and the methodological challenges of cross-cultural research in South Asia. By examining these important outcomes, the research provides valuable insights and practical implications for improving mental health services and policies in low- and middle-income countries (LMICs).

The thesis underscores several clinical implications, emphasising the urgent need to improve mental health services in South Asia by addressing the treatment gap through community-based interventions. Hospitals in the region often cover vast geographical areas, resulting in inadequate mental health care for rural and agricultural communities. Implementing early detection and intervention strategies is essential to alleviate the burden on hospital services. The systematic review revealed higher prevalence rates of psychosis in South Asia compared to global averages. However, high heterogeneity across studies necessitates cautious interpretation. Despite these limitations, it is evident that further research and financial investment are necessary to better understand the epidemiology of psychosis in South Asia and other LMICs. Emerging patterns indicate cultural differences in risk factors; for example, Urbanicity, a significant risk factor for psychosis in Western countries, has not shown the same relevance in South Asia. This discrepancy highlights the importance of understanding cultural differences in mental health risk factors.

The empirical study's mixed-methods approach assessing the acceptability and feasibility of community-based interventions, offered a model for similar research in other low-resource settings. The use of forum theatre in Pakistan, involving individuals with lived experiences of psychosis and their caregivers, highlights the potential of culturally resonant participatory arts methodologies in reducing stigma and raising awareness. This finding demonstrates the critical importance of integrating local cultural contexts into mental health interventions to enhance their effectiveness and sustainability. Additionally, the reflexive account in the third chapter advocates for incorporating cultural sensitivity and stakeholder collaboration in global mental health research, fostering shared learning and mutual benefits.

Overall, this thesis provides a framework for understanding and addressing mental health issues in South Asia. It calls for improved methodological rigour in study design, the adoption of culturally sensitive, community-based interventions, the use of innovative methodologies like participatory arts for stigma reduction, and a reflexive approach to cross-cultural research. By embracing these recommendations, researchers, mental health professionals, and policymakers can significantly enhance the quality and accessibility of mental health services, ultimately improving outcomes for diverse populations across South Asia.

Table of Contents

List of Tables

Part One: Systematic Review

Part Two: Empirical Paper

List of Figures

Part One: Systematic Review

Part Two: Empirical Paper

Acknowledgements

I would like to express my deepest gratitude to everyone who has supported me throughout this journey, starting way before the doctorate, that has enabled me to have the privilege of training to be a Clinical Psychologist. Being the first person in my family to pursue education beyond school, the fact I am writing acknowledgements for a doctoral level thesis feels surreal and only possible because of the shoulders of others. There are many, whom without their support and collaboration, this thesis would not be possible.

Firstly, I extend my heartfelt thanks to my supervisors Dr Madiha Shaikh and Dr Ciaran O'Driscoll for their unwavering support. Your encouragement and guidance have been instrumental in shaping this thesis and getting me to the finish line.

A special thank you to IRD and in particular Onaiza Qureshi and Zahra Khan for their continuous support and collaboration. I've thoroughly enjoyed working together and learning from your expertise; your openness and dedication has greatly enriched this work. I am extremely grateful to all the participants in Pakistan who generously shared their experiences and stories. Your contributions have been vital to the success of this research.

To my tutor, Dr Amanda Williams, thank you for your constant support, encouragement, and invaluable advice throughout this process. Your mentorship has been a guiding light and I am grateful for your grounding influence.

I am deeply appreciative of my partner, whose patience, understanding, and love has sustained me during this challenging journey. And to my friends and family, your encouragement and belief in me have been a source of strength. I am grateful for your constant support and understanding. Finally, I would like to thank all the UCL trainees who have been part of this journey. Your solidarity and shared experiences have made clinical training truly memorable.

Thank you all for being a part of this journey and for your invaluable contributions. This thesis would not have been possible without each and every one of you.

Part One: Literature Review

Prevalence of Psychosis in South Asia: A Systematic Review and Meta Analysis

Abstract

Introduction

The systematic review aimed to provide a meta-analysis for psychosis prevalence specific to the South Asian (SA) population. Most SA countries are low-middle income with a sparsity of data noted in previous reviews. In SA, cultural stigma and traditional views on mental illness may lead to underreporting or misdiagnosis. Variations in the availability, accessibility, and quality of mental health services can affect prevalence rates.

Methods

From 2,302 studies identified, 1,441 records were screened, 200 studies were assessed for eligibility, and 36 were included. A random-effects model was used to calculate pooled prevalence rates and 95% confidence intervals, and meta-regression analyses assessed the impact of publication year, study quality, population group and country on prevalence estimates.

Results

A random-effects meta-analysis revealed significant variability in psychosis point prevalence across Bangladesh (13%), India (4%), Nepal (4%), Pakistan (17%), and Sri Lanka (59%). Lifetime prevalence was 1% for Bangladesh, India, and Pakistan, 3% for Nepal, and 4% for Sri Lanka. Meta-regressions showed differences based on country, population group, and study quality, but high heterogeneity persisted, indicating unexplained variability. A key limitation is the reliance on non-random, hospital-based samples, particularly in Sri Lanka, where a single non-representative study was used, inflating prevalence estimates.

Discussion

This study provides a comprehensive analysis of psychosis prevalence in South Asian countries, revealing higher rates than previously reported. Prevalence estimates were reported by country, following epidemiological conventions, but variability in settings and non-

random sampling likely inflated the pooled estimates. While moderator analyses attempted to address these issues, all prevalence estimates should be considered with caution. The findings highlight the need for improved mental health policies focused on early detection and community-based interventions to reduce the burden on hospital services. Future research should prioritise representative sampling, standardised diagnostic criteria, and culturally sensitive approaches to address high heterogeneity and enhance the understanding of psychosis prevalence in South Asia.

Introduction

Psychosis encompasses symptoms such as delusions (false beliefs), hallucinations (seeing or hearing things others do not), cognitive difficulties, and negative symptoms like diminished motivation and pleasure in activities. Individuals with psychosis may lose touch with reality, experiencing sensations others cannot verify, leading to confusion, distress, and isolation (Kirakosyan & Frolova, 2022). Common delusions include persecutory, grandiose, religious, and nihilistic types.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) and the International Classification of Diseases, Tenth Revision (ICD-10) classify primary psychotic disorders along a spectrum, with schizophrenia at the severe end (Arciniegas, 2015). Psychosis is a key feature of schizophrenia spectrum disorders (schizophrenia, schizoaffective disorder, delusional disorder, schizophreniform disorder, and brief psychotic disorder). It can also occur during major depressive episodes, in bipolar disorder during manic or depressive episodes, or in some neurological conditions (Arciniegas, 2015).

With approximately 21 million people globally living with the condition, schizophrenia is one of the top 20 causes of disability worldwide (Keepers, 2020), a large proportion of which come from low- and middle-income countries (LMICs) with the highest treatment gaps at around 90% (Charlson et al., 2018). In 2016, the Global Burden of Disease (GBD) study provided a comprehensive analysis of health conditions, including psychosis, across twenty age groups, 7 super-regions, 21 regions, and 195 countries and territories (Abd-Allah et al., 2017). The study highlighted significant insights into the global burden of psychosis. The prevalence of psychosis was found to be approximately 2.8 per 1,000 people globally, underscoring the substantial impact of this mental health disorder on diverse populations (Abd-Allah et al., 2017). Although schizophrenia is generally considered a low-prevalence disorder, it is estimated to account for 1.7% of all years of life lived with disability globally, indicating a substantial disease burden (Abd-Allah et al., 2017). This significant impact is hypothesised to be partly due to its onset in early adulthood, comorbid physical health conditions, and persistent, fluctuating symptoms in about two-thirds of those affected, even with treatment (American Psychiatric Association, 2013; Charlson et al., 2018).

Prevalence and Epidemiology

Epidemiological research is instrumental in identifying risk factors and potential causes of physical and mental health conditions and introducing preventative measures to the relevant populations (Friedman & Kao, 2014). A useful metric for the epidemiology of disorders is to calculate the incidence (new cases) and prevalence (all cases within a specified period) which allows a means of exploring geographical and temporal variation. Incidence rates can provide an informative snapshot supporting the identification of risk factors whilst prevalence rates enable the exploration of impact and recovery of the disorder over time (Saha, Chant & McGrath, 2008).

There are three key types of prevalence measured in epidemiological studies: point, period and lifetime prevalence (see definitions in the Table below). Given that the course of psychosis/schizophrenia can range from one month to several decades, there is no significant difference between point and period prevalence estimates of less than one month (Streiner, Patten, Anthony & Cairney, 2009).

Table 1 Point, Period and Lifetime Prevalence Definitions

Prevalence Type	Description (Streiner, Patten, Anthony & Cairney, 2009)
Point	The proportion of people in the population who are experiencing the disorder at the time of data collection

Period	The proportion of a population that exhibits a particular disease over a specific time-period
Lifetime	The proportion of a population that has experienced a particular disease at any point in their lifetime. *Lifetime prevalence ≥ point prevalence.*

To calculate prevalence, the total number of people experiencing a disorder is divided by the total population at risk. Prevalence of mental health disorders has traditionally been reported as a rate per one thousand of the sample/population (Dube, 1968; Padmavathi, Rajkumar, Kumar, Manoharan, & Kamath, 1988). However, more recent research has started reporting prevalence as the percentage of the total population experiencing the disorder (DeVlyder et al, 2018; Jha et al., 2019). For consistency and comparison with the literature, this review will report point and lifetime prevalence of psychosis as a percentage, in line with current epidemiological reporting standards.

Accurate prevalence estimates are crucial for health planning and resource allocation, as they enable policymakers and healthcare providers to understand the scale and distribution of psychosis within populations (Friedman & Kao, 2014). This information informs decisions on where to focus resources and interventions, such as targeting high-prevalence areas for enhanced mental health services, training for healthcare professionals, and public health campaigns to reduce stigma and improve early detection and treatment (Patel et al., 2007). Understanding prevalence also aids in developing healthcare infrastructure and services tailored to the specific needs of different communities. Regions with higher prevalence rates may require more specialised mental health facilities, increased availability of psychiatric interventions and the deployment of trained mental health professionals (Patel et al., 2007; Corell et al., 2022). Additionally, prevalence data supports the evaluation of existing mental health programmes, allowing for adjustments based on the changing needs and demographics of the population (Friedman & Kao, 2014; Saha, Chant & McGrath, 2008; Correll et al., 2022; Patel et al., 2007).

Global Psychosis Prevalence

A previous systematic review of 188 studies, conducted across 46 countries found the median point prevalence estimate for psychosis to be 4.6 per 1,000 (0.46%), 3.3 per 1000 (0.33%) people for period prevalence and 4.0 per 1000 (0.4%) people for lifetime prevalence (Saha, Chant, Welham & McGrath, 2005). These estimates fall within the range of an earlier review by Jablensky (2000) who reported that most included studies produced prevalence estimates in the range of 1.4 to 4.6 per 1000 population (0.14%-0.46%).

More recently, the global age-standardised point prevalence of schizophrenia was estimated as 0.28% (95% uncertainty interval (UI): 0.24–0.31) based on 2016 data, with no significant variation by sex, country or region (Charleson et al., 2018). While Moreno-Küstner, Martín and Pastor (2018) found the mean prevalence for studies using point prevalence as 0.39%/3.9 per 1000 (95% CI, 3.28–4.52) and the lifetime prevalence as 0.96%/9.57 per 1000 population (95% CI, 9.01–10.13) with high heterogeneity across studies (I^2 = 99.8%).

Rationale for Studying Psychosis Prevalence in South Asia: Regional Disparities and Implications

Many prevalence reviews are conducted globally, including countries across income levels, yet often overrepresenting high income countries (HIC), while the scarcity of representation of LMIC countries within the analysis, is often cited as a limitation (Charleson et al., 2018). When reviews have reported prevalence data in LMICs, for example in India, lower prevalence rates of schizophrenia have been reported, however there has rarely been representative coverage across different countries (Jablensky, 2000; Saha, Chant, Welham and McGrath, 2005). Conducting a systematic review of the prevalence of psychosis in South

Asia (SA), rather than in a broader LMIC context, is essential due to the unique socioeconomic, cultural, and healthcare landscapes of the region. South Asia is comprised of India, Pakistan, Bangladesh, Sri Lanka, Maldives, Bhutan, Afghanistan and Nepal, which presents distinct challenges and variations in mental health care access, stigma, and diagnostic practices compared to other LMICs. Mental health disorders, including psychosis, are often underreported, and poorly understood due to these regional disparities (Patel et al., 2007). Additionally, socioeconomic factors like poverty, low educational attainment, and high levels of stigma significantly impact the recognition and treatment of psychosis in SA (Karim, Saeed, Rana, Mubbashar & Jenkins, 2004; Raguram, Weiss, & Channabasavanna, 1996). By focusing specifically on SA, the review can provide more accurate prevalence data, which can inform tailored interventions and policy recommendations that address the region's specific needs and challenges, ultimately contributing to improved mental health outcomes and reduced treatment gaps (Charlson et al., 2018).

South Asian countries are all classified as lower-middle-income economies according to the latest classification by the World Bank, except for Afghanistan, which is classified as a low-income economy (Soubbotina, 2004; The World Bank Group, 2024). Financial constraints and a lack of data on the prevalence of mental health conditions are significant barriers to improving provision (Karim, Saeed, Rana, Mubbashar & Jenkins, 2004). Mental health difficulties are often stigmatised in many SA communities, and traditional views on psychosis may be interpreted through a cultural lens that understands them as supernatural or spiritual phenomena rather than medical conditions (Raguram, Weiss, & Channabasavanna, 1996; Natekar, Charnangikar, & Deshmukh, 2021; Kar, 2018). These cultural beliefs and societal norms can significantly influence the recognition, reporting, and understanding of psychosis and can potentially lead to underreporting or misdiagnosis.

Socioeconomic conditions, including poverty, education, and employment, are critical determinants of mental health. The World Bank Group (2024) reports that SA has some of the highest poverty rates in the world. Economic hardship limits access to food, safe shelter, and healthcare, including mental health services. The region faces unique socioeconomic challenges, such as a large informal labour market, which increases vulnerability to mental health issues due to job insecurity and poor working conditions (International Labour Organisation, 2018). Employment opportunities contribute to a sense of purpose and social inclusion, and differences in the labour market across regions may influence the likelihood of developing mental health issues (Murthy, 2017). High levels of poverty, low educational attainment, and illiteracy, particularly in rural areas, can be additional barriers to accessing mental health information and available treatments, leading to delayed help-seeking and underreporting of psychotic disorders (Saraceno, Barbui, & Kastrup 2007; Lund et al., 2010). Mental health awareness is crucial in empowering people with knowledge about coping skills, reducing stigma, and promoting help-seeking behaviours (Lund et al., 2010).

The availability, accessibility, and quality of mental health provision are critical in determining accurate prevalence rates of psychosis. In regions where mental health services are limited, individuals with psychosis may go undiagnosed or untreated. This is particularly salient in SA, where mental health infrastructure is often under-resourced and underdeveloped, with significant disparities between urban and rural areas (Patel et al., 2007). For example, rural populations have fewer healthcare resources than urban areas yet constitute large proportions of India’s demographics (Ganguli, 2000). Insufficient funding, limited access to appropriately trained mental health professionals, and inadequate diagnostic processes may result in lower reported rates of psychosis, as many cases are not recorded in official statistics (Patel et al., 2007; Thara & Patel, 2010).

Regional Data Scarcity

A scoping search revealed no previous systematic reviews exclusively examining the prevalence of schizophrenia or psychosis in South Asia, with many reviews highlighting a scarcity of literature across countries in this region. Previous global prevalence studies often under-represent South Asian countries, leading to a lack of comprehensive data specific to the region. For instance, only two studies based in India contributed to the global prevalence estimates in reviews by Jablensky (2000) and Saha, Chant, Welham and McGrath (2005), highlighting a historical low representation of South Asian countries in global reports (Dube & Kumar, 1972; Rajkumar, Kumar, Manoharan, & Kamath, 1988).

A more recent and representative review provided age-standardised prevalence estimates across all South Asian countries: India (0.25%), Maldives (0.28%), Sri Lanka (0.28%), Afghanistan (0.16%), Bangladesh (0.24%), Bhutan 0.25%), Nepal (0.24%), and Pakistan (0.25%) (Charlson et al., 2018). However, the authors noted that most epidemiological data came from high-income countries and emphasised the need for more representative data from low- and middle-income regions such as South Asia, for accurate prevalence estimates (Charlson et al., 2018).

Urban and Rural Populations

Studies in high income countries have consistently shown higher rates of psychosis in urban areas compared to rural communities. In India, higher incidence rates of psychosis were found in urban areas (point: 0.66%; lifetime: 3.05%) compared to rural areas (point: 0.2%, lifetime: 0.3%) (Hegde et al., 2023). McGrath et al. (2004) reported similar findings, noting that older studies appeared to report higher rates for urban populations compared to more recent studies. This urban-rural disparity in psychosis prevalence aligns with global trends, where urbanisation is associated with higher rates of psychiatric disorders (Vassos, Pedersen, Murray, Collier & Lewis, 2012; Krabbendam & van Os, 2005).

Elevated socio-environmental stressors such as social fragmentation, overcrowding, pollution, and competition associated with urban living can increase the risk of schizophrenia (Vassos, Pedersen, Murray, Collier & Lewis, 2012; Kirkbride et al., 2008). Some studies have demonstrated a dose-response relationship between exposure to urban living in childhood and the risk of developing schizophrenia (Pedersen & Mortensen, 2001). Ethnic minority status and migration in urban areas may also constitute an increased risk of psychosis, depending on the historical and cultural context of the host country. Migrants and ethnic minorities in urban settings have higher rates of psychosis compared to native populations, thought to be associated with experiences of discrimination, social adversity, and acculturative stress (Selten & Cantor-Graae, 2005). In contrast, rural areas often show lower reported prevalence, this could be due to underdiagnosis resulting from limited access to mental health services and social stigma. There is limited data exploring the impact of urbanicity on psychosis in South Asian populations.

Clinical and Community Populations

Prevalence rates are typically lower in community settings compared to hospital data, as the latter reflects more severe cases in higher concentrations due to detection in clinical environments. However, community prevalence estimates of psychosis are still important due to the broader range of severity, the public health implications of early detection, and access to healthcare. Community-based studies can be resource-intensive, expensive, and require robust methodologies to provide accurate data. They often include door-to-door surveys, standardised diagnostic tools administered by trained professionals, and culturally sensitive approaches to effectively identify and diagnose psychosis (Khan, Iqbal, & Waheed, 2020).

Inpatient data from many South Asian countries indicate psychosis can constitute a significant portion of psychiatric inpatient admissions. Retrospective chart reviews provide data on the variability in inpatient admissions across several South Asian countries. In India, psychosis accounted for between 8% and 14.3% of admissions (Haldar, Sagar, Malhotra, & Kant., 2017; Wig, Varma & Khanna, 1978). In Pakistan, this ranged similarly (Khan et al., 2020; Sarwat, Nawab, & Nisar, 2015), in Nepal the estimate is 20% (Aich, Dhungana, & Muthuswamy, 2012), and in Sri Lanka, the estimate is 30% (Hapangama, Kuruppuarachchi, & Pathmeswaran, 2013).

Review Aims and Objectives

The principal aim of this review is to conduct a systematic review and meta-analysis of existing studies that report on the prevalence of psychosis within South Asian countries. This research seeks to synthesise and critically analyse data to provide more accurate prevalence estimates for the region. In accordance with established reporting conventions in prevalence reviews, the study will also perform subgroup analyses where significant heterogeneity is identified. These subgroup analyses will be stratified by factors such as country, population group (clinical/community), year of publication and study quality, thereby offering a more comprehensive understanding of variability across multiple cultural contexts.

Methods

We conducted a systematic review and meta-analysis of published studies, reporting prevalence rates of psychosis in South Asia. The review protocol was registered with the international prospective register of systematic reviews ('Prevalence of Psychosis in South Asia': PROSPERO 2022 CRD42022335842 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42022335842) complying with guidelines for the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). No amendments were made after registration.

Search Strategy

The PRISMA guidelines informed procedures for this systematic review (BMJ, 2020). Studies reporting the prevalence of psychosis in South Asian countries were included from the inception of respective databases until March 31, 2024. The search strategy was developed in consultation with a team of researchers and fine-tuned with input from an information specialist. Authors AB and JV conducted the search, focusing on studies that addressed both the prevalence of psychosis/schizophrenia and their occurrence in South Asian populations.

The search was carried out across 4 databases Web of Science (including Medline and Web of Science core databases), Psycinfo, EMBASE and SCOPUS. The references of selected papers deemed relevant were also examined to identify other pertinent studies that might not have been captured in the initial search. The search strategy is listed below.

(TITLE-ABS- KEY (prevalence OR risk OR frequency OR epidemiology) AND TITLE-ABS-KEY (“south asia" OR afghanistan OR bangladesh OR bhutan OR india OR nepal OR pakistan OR "sri lanka" OR maldives) AND TITLE-ABS-KEY (psychosis OR schizoaffective OR schizop OR psychotic OR "hearing voices" OR fep)*

Inclusion Criteria

Studies were included in this review if they provided primary data on the prevalence of psychosis or schizophrenia and specified whether diagnoses were based on the DSM (APA, 2004) or ICD (WHO, 2003) criteria. When multiple studies or reports used the same dataset, preference was given to the study providing the most comprehensive data for final analysis, as highlighted in the results section. There were no restrictions based on study design, language, or publication date. For longitudinal or cohort studies, only baseline data was extracted. Data pertaining to psychosis prevalence in inpatient and outpatient settings was considered separately from community-based studies, which were analysed independently.

Exclusion Criteria

Studies which reported psychotic experiences or phenomena without specifying a diagnosis according to DSM or ICD criteria or confirmed psychiatrist diagnosis were excluded. Given the focus on populations in South Asian countries, studies reporting prevalence in South Asian populations residing elsewhere were also excluded. Studies with fewer than 250 participants were excluded to support robust prevalence estimates from studies with representative samples (Saha, Chant & McGrath, 2008).

Screening

After completing all searches, the results were imported into the reference management software EndNote. Two reviewers (JV & AB) independently reviewed titles and abstracts for inclusion criteria. Full text reports were sought for retrieval, for studies with barriers to access, attempts to hand search key journals and databases were made in the first instance. Attempts to contact the authors were made if this was feasible with the information and time resources available. For studies where abstracts lacked sufficient information, full-text screening was performed. A third reviewer then blindly screened 10% at stage two to establish interrater reliability, with 86% agreement. The final stage of screening involved excluding studies with duplicate or inadequate data. Disagreements were resolved in consensus discussions between authors when necessary (MS, RD, & AB). The PRISMA flow chart in Figure 1 outlines the screening process at each stage of selection.

Data extraction

Following completion of the screening process, relevant information was extracted using predefined tables. Extracted information encompassed study design (e.g., chart review, cross-sectional survey), participant numbers, diagnostic criteria (DSM/ICD), country, and region. Each study's specific prevalence estimates and associated determinants (e.g., age, gender, urbanicity) were recorded. Studies were categorised by prevalence type (point and/or lifetime) and population subset (e.g., community, hospital) for analysis.

Confidence intervals and standard effect sizes were extracted if reported by the studies. Data was extracted by two reviewers (JV & AB) and entered a pre-designed data extraction form. Each entry was then double checked by one of the author's (RD) and steps were taken to minimise duplication of data to ameliorate any errors made in the extraction process.

Statistical Analysis

Meta-analytic models were employed to pool the prevalence data for psychosis. A random effects model was utilised to calculate the pooled prevalence rates and 95% confidence intervals, employing a logit transformation. For all models, Cochran's Q statistic and I^2 were calculated to assess heterogeneity. Multiple studies had reported estimates from the same dataset; therefore, sample overlap was evaluated, and priority was given to the study with the largest sample size (N) prior to model execution. The second set of analyses included meta-regression analysis to determine the estimated effect size attributable to methodological or clinical factors that may result in bias or lack of consistency across studies, therefore including year of publication, quality assessment, country and population group as moderators. All analyses were conducted in RStudio (version 4.4.0) using the Meta and Metafor packages. Synthesised results were displayed using rainforest plots.

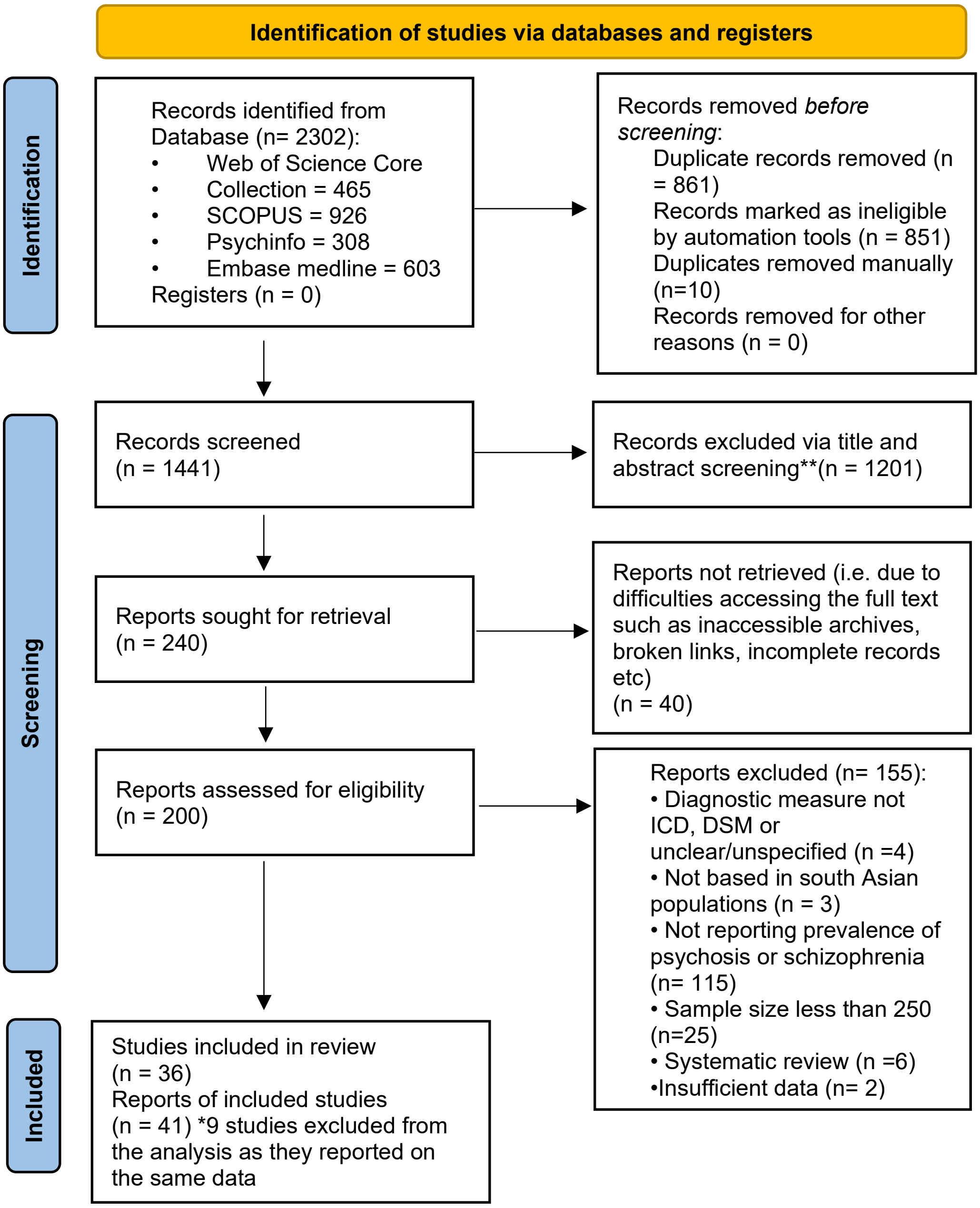
Quality assessment

The study quality was assessed using the Joanna Briggs Institute (JBI) critical appraisal tool for assessing the quality of prevalence studies (Munn, Moola, Lisy, Riitano & Tufanaru, 2014). This tool includes a checklist for analytical cross-sectional studies based on 9 questions, each evaluated with a score of 1 or 0 (yes=1, no=0, unclear or not applicable=0). Three authors formed pairs of raters (AB & JV, JV & ZK) and blindly double-rated the quality of the studies according to the appropriate criteria (see Table 2 for checklist items). The overall score for each article was expressed as a percentage and categorised based on the degree of risk of bias. Articles were classified by risk of bias using the JBI checklist: high risk (20-50% "yes" scores), moderate risk (50-80% "yes" scores), and low risk (80-100% "yes" scores). The inter-rater reliability was assessed using percentage agreement between the reviewers for the 9 JBI criteria for each study and ranged from 56% to 100% agreement (see Appendix A).

Table 2: Joanna Briggs Institute (JBI) Critical Appraisal Tool Criterion

	JBI Checklist Criterion
1	Was the sample frame appropriate to address the target population?
2	Were study participants recruited in an appropriate way?
3	Was the sample size adequate?
4	Were the study subjects and the setting described in detail?
5	Was the data analysis conducted with sufficient coverage of the identified sample?
6	Were valid methods used for the identification of the condition?
7	Was the condition measured in a standard, reliable way for all participants?
8	Was there appropriate statistical analysis?
9	Was the response rate adequate, and if not, was the low response rate managed appropriately?

Figure 1 PRISMA flow chart



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Results

Search Results

In total, 2302 studies were identified from database searches. After removing duplicates, 1441 studies were screened by title and abstract, and 200 were assessed for full-text eligibility. Of these, 155 were excluded mainly for not reporting psychosis or schizophrenia prevalence or having a sample size smaller than 250 participants. Other exclusion reasons included diagnostic ambiguity, non-SA-based studies, systematic reviews, and insufficient data. This left 45 eligible studies, but 9 were excluded due to overlapping data sources, resulting in 36 studies included in the meta-analysis.

Quality Assessment

The included studies were evaluated across nine key criteria to determine their methodological quality and reliability according to the Joanna Briggs Institute (JBI) checklist. Trends across the studies indicated a wide variation in quality. Out of the total studies assessed, 11 were identified as high-risk bias, such as those by Aich, Dhungana and Muthuswamy (2012) and Chowdhry (1966), which scored 38.89% and 11.11%, respectively. A significant number (18 studies) fell into the moderate-risk bias category, including studies like Basu, Sarkar and Mattoo (2013) with 55.56% and Dube (1968) with 77.78%. In contrast, 7 studies, such as those by Alam et al., (2024) and Gawde, Nasirabadi, Shah, and Nagaonkar, (2013), achieved perfect scores, indicating low risk of bias at 100%. In general, although many studies showed robust statistical analysis and reliable measurement of conditions, there were consistent concerns regarding the appropriateness of sample frames, participant recruitment methods, and management of response rates, all of which affect the quality and reliability of the studies. (See full assessment in appendix A).

Characteristics of Included Studies

There were 46 data points as some studies reported across several countries and others reported both lifetime and point prevalence. Dube (1968) and Hegde et al., (2023) reported both point and lifetime prevalence, and Jha et al., (2019) provided separate point and lifetime prevalence data for both child and adult populations. Additionally, Appuhamy et al., (2023) provided estimates for three countries, while DeVylder et al., (2018) included data for four countries. Studies reported data on India (total N=467,299), Pakistan (total N=68,459), Bangladesh (total N=15,798), Nepal (N=12,428) and Sri Lanka (N=13,286). No studies reported prevalence estimates for Afghanistan, Maldives, or Bhutan.

The sample frames across studies varied significantly, from small clinical samples to large community surveys and spanned from 1968 to 2024. Specialist populations were also investigated, such as children and adolescents, neuropsychiatric presentations in older adults (Aich, Dhungana & Muthuswamy, 2012), health-related issues such as obesity and sexual health (Appuhamy et al., 2023; Vijayalakshmi et al., 2023), industrial workers (Satija, Patni, and Nathawat, 1984), and children with learning disabilities (Lakhan, 2013). Gender varied across studies, with most including both male and female participants. Two studies focused on female participants only (Gupta & Sengupta, 2022; Vijayalakshmi et al., 2023). Overall, the studies included a wide range of ages reported on from 0 years to 99 years old, with many studies focusing on working adult populations, but also covering children, adolescents, and older adults.

The type of prevalence reported varied, with some studies reporting both point and lifetime prevalence. Point prevalence was the most reported, with estimates provided in thirty studies, while lifetime prevalence was less frequently reported, appearing in 7 of the included studies. The diagnostic criteria utilised in the studies were either clinically diagnosed by a psychiatrist and/or they adhered to either ICD or DSM standards. The tools employed included psychiatric and other diagnostic interviews, the Mini-International Neuropsychiatric Interview (M.I.N.I.), and the WHO Composite International Diagnostic Interview (CIDI).

The below includes a narrative commentary on the studies included in the analysis by country.

Bangladesh

Bangladesh's studies on point prevalence include four key investigations spanning from 1966 to 2024, with sample sizes ranging from N=320 to 7270. These studies included both clinical and community settings, revealing much higher prevalence rates in clinical settings (62%-70%) compared to community settings (1%-1.17%). Gender differences were notable: women had higher rates in clinical settings (Chowdhury, 1966; Alam et al., 2024), whereas men had higher rates in community settings (Hosain, Chatterjee, Ara, & Islam, 2007). The studies used various diagnostic tools, including DSM-5, ICD-10, and psychiatrists' interviews based on unspecified diagnostic criteria.

Most included studies showed a low risk of bias (Hosain, Chatterjee, Ara, & Islam, 2007, Alam et al. 2024, Appuhamy et al., 2023), however one study (Chowdhury 1966) had a quality score of 11.11% with an agreement of 77.78%, indicating a high risk of bias. A single study by DeVylder et al., (2018) focused on lifetime prevalence, involving a large urban sample of N=215,682 participants with nearly equal gender distribution. The study found a prevalence rate of 1%, with urbanicity not associated with psychosis. This study had a quality score of 88.89%, agreement of 77.78%, and low risk of bias.

India

India had the largest number of studies and sample sizes for point prevalence, with a significant dataset of N=403,029 participants and individual sample sizes ranging from

N=262 to 192,980. These studies, spanning from 1968 to 2023, included diverse settings such as hospitals and community, with prevalence rates varying widely (<1%-57%). The samples studied included specialist populations such as industrial migrant workers (Satija et al., 1984), children aged 3-18 years with learning disabilities (Lakhan, 2013), women's sexual health (Vijayalakshmi et al., 2023), and obesity in clinical settings (Appuhamy et al., 2023).

Four studies had a low risk of bias (Gawde, Nasirabadi, Shah, & Nagaonkar, 2013, Appuhamy et al., 2023, Hegde et al., 2023), fifteen studies had a moderate risk of bias (Dube 1968, Sethi, Gupta, Mahendru, & Kumari, 1974, Nandi et al., 1979, Thacore, Gupta & Suraiya, 1975, Padmavathi, Rajkumar, Kumar, Manoharan, & Kamath, 1988, Khairkar et al., 2012, Nuevo et al., 2012, Basu, Sarkar & Mattoo, 2013, Lakhan 2013, Haldar, Sagar, Malhotra & Kant, 2017, Shaji et al.,2017, Vallath, Narasimhan, Priyanka, Varadarajan & Ravikanth, 2023, Gupta & Sengupta 2022, Gupta, Sachdeva, Kumar, & Singh, 2023), and five studies had a high risk of bias (Wig, Varma & Khanna, 1978, Malhotra & Chaturvedi 1984, Satija, Patni &Nathawat, 1984, Garekar et al., 2015, Vijayalakshmi et al., 2023). Two studies, Dube (1968) and Hegde et al., (2023), assessed lifetime prevalence in hospital and community settings, respectively, with a large, pooled sample size (N=64,270) and a consistent prevalence rate of 1%. Dube (1968) had a quality score of 77.78%, agreement of 77.78%, and moderate risk of bias, while Hegde et al., (2023) had a quality score of 100%, agreement of 100%, and low risk of bias.

Nepal

Nepal's point prevalence studies included two key investigations by Aich, Dhungana and Muthuswamy (2012) and Jha et al., (2019). Aich, Dhungana and Muthuswamy (2012) focused on older adults in a hospital setting, revealing high prevalence among inpatients. Jha et al.'s (2019) community-based study included children and adults, showing higher prevalence in agricultural occupations. The pooled sample size was N=1970 (range N=267-1371). The diagnostic tool used was DSM-5, with purposive sampling in selected districts.

One study out of the two included in the pooled point prevalence analysis showed moderate risk of bias (Jha et al., 2019), and one study showed high risk of bias (Aich, Dhungana, & Muthuswamy, 2012) with a quality score of 38.89% and rater agreement of 77.78%. Two studies (DeVylder et al., 2018 and Jha et al., 2019) focused on lifetime prevalence, covering community samples of children and adults. These studies reported a 3% prevalence rate. DeVylder et al., (2018) had a quality score of 88.89%, agreement of 77.78%, and low risk of bias, while Jha et al., (2019) had a quality score of 72.22%, agreement of 66.66%, and moderate risk of bias.

Pakistan

Five studies from Pakistan focused on hospital settings, with sample sizes ranging from N=6501 to 34,802, totaling N=61,958 participants. These studies generally included all age groups and used various diagnostic tools. One study had a low risk of bias (Appuhamy et al., 2023), one study had a moderate risk of bias (Imran, a, Asif, Shoukat, & Azeem, 2021), and four studies had a high risk of bias (Niaz, Hassan, Husain, & Siddiqui, 2004, Sarwat, Nawab, & Nisar, 2015, Khan et al., 2020, Hashmi et al., 2023). DeVylder et al., (2018) conducted the sole study on lifetime prevalence, involving a community sample of adults. The study found a prevalence rate of 1% and had a quality score of 88.89%, agreement of 77.78%, and low risk of bias.

Sri Lanka

Sri Lanka had the smallest sample size (N=325) with one study reporting point prevalence by Hapangama, Kuruppuarachchi, and Pathmeswaran (2013). This hospital-based study focused on adults with substance use and severe mental illness, reporting a high prevalence of 59%. The quality score was 61.11%, with rater agreement of 77.78%, indicating moderate risk of bias. Three studies investigated lifetime prevalence, including Wijesinghe, Dissanayake & Dassanayake (1978), DeVylder et al., (2018), and Doherty et al., (2019), with a total sample size of N=12,961. These studies included community and hospital samples focusing on various demographics. The prevalence rate was 4%. Wijesinghe, Dissanayake & Dassanayake (1978), had a quality score of 72.22%, rater agreement of 88.98%, and moderate risk of bias; DeVylder et al., (2018) had a quality score of 88.89%, rater agreement of 77.78%, and low risk of bias; and Doherty et al., (2019) had a quality score of 83.33%, rater agreement of 88.98%, and low risk of bias.

See Appendix B for a full list of study characteristics.

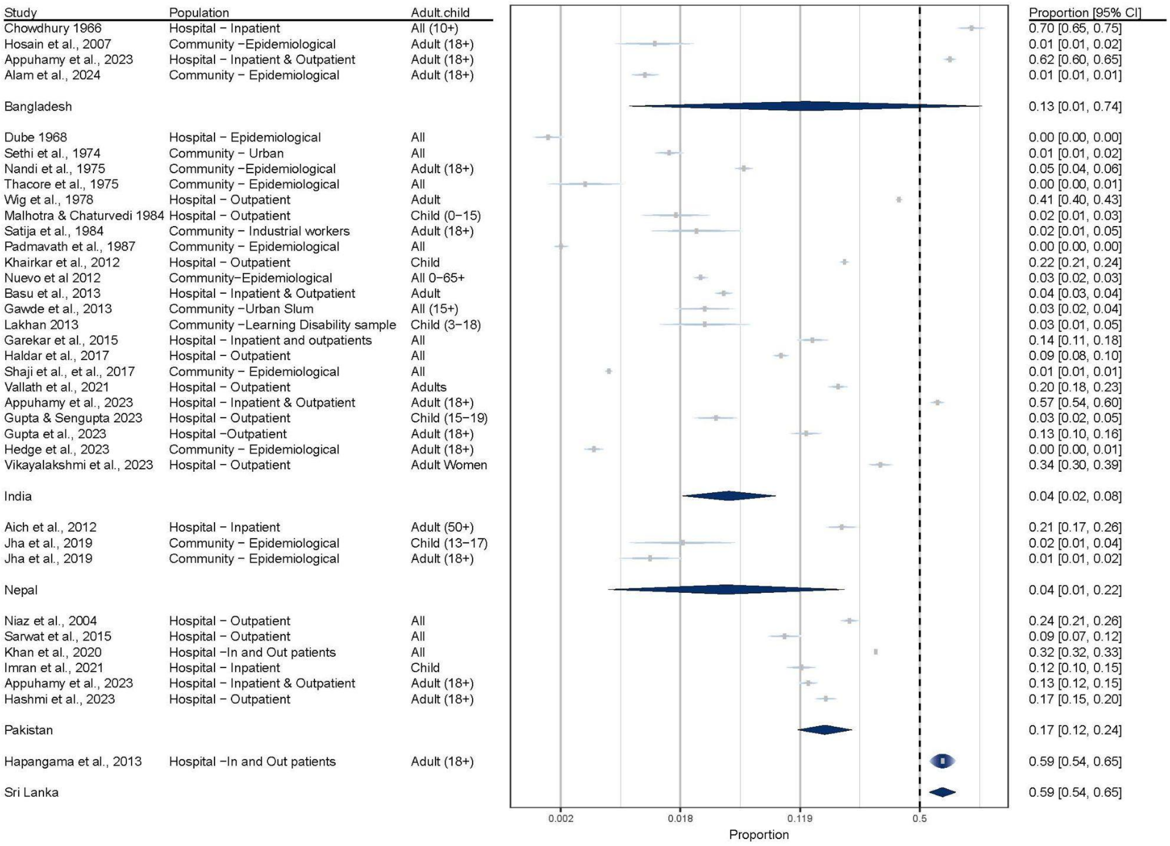
Meta-analyses

Point Prevalence

A random-effects meta-analysis was conducted using 36 studies. The heterogeneity of the effect sizes was estimated using the Restricted Maximum Likelihood (REML) method. Pooling data from 4 studies (Clinical sample N=2; Community sample N=2; 9856 participants) the pooled proportion for Bangladesh was 0.13 (95%CI=0.01;0.74) for point prevalence. Pooling data from 22 studies (Clinical sample N=12; Community sample N=10; 403,029 participants) the pooled proportion for India was 0.04 (95%CI=0.02;0.08). Pooling data from three studies (Clinical sample N=1; Community sample N= 2; 1970 participants) the pooled proportion for Nepal was 0.04 (95%CI=0.01;0.22). Pooling data from six studies (Clinical sample N=6; Community sample N=0; 61,958 participants) the pooled proportion for Pakistan was 0.17 (95%CI=0.12;0.24). Data from one study (Clinical sample N=1, 325 participants) the proportion for Sri Lanka was 0.59 (95% CI=0.54;0.65). (See Figure 2)

The heterogeneity in the model was high and statistically significant (Q =38314.0901, df=35, p<.0001, I^2=99.91%).

Figure 2 Forest Plot of the Pooled Point Prevalence according to Country

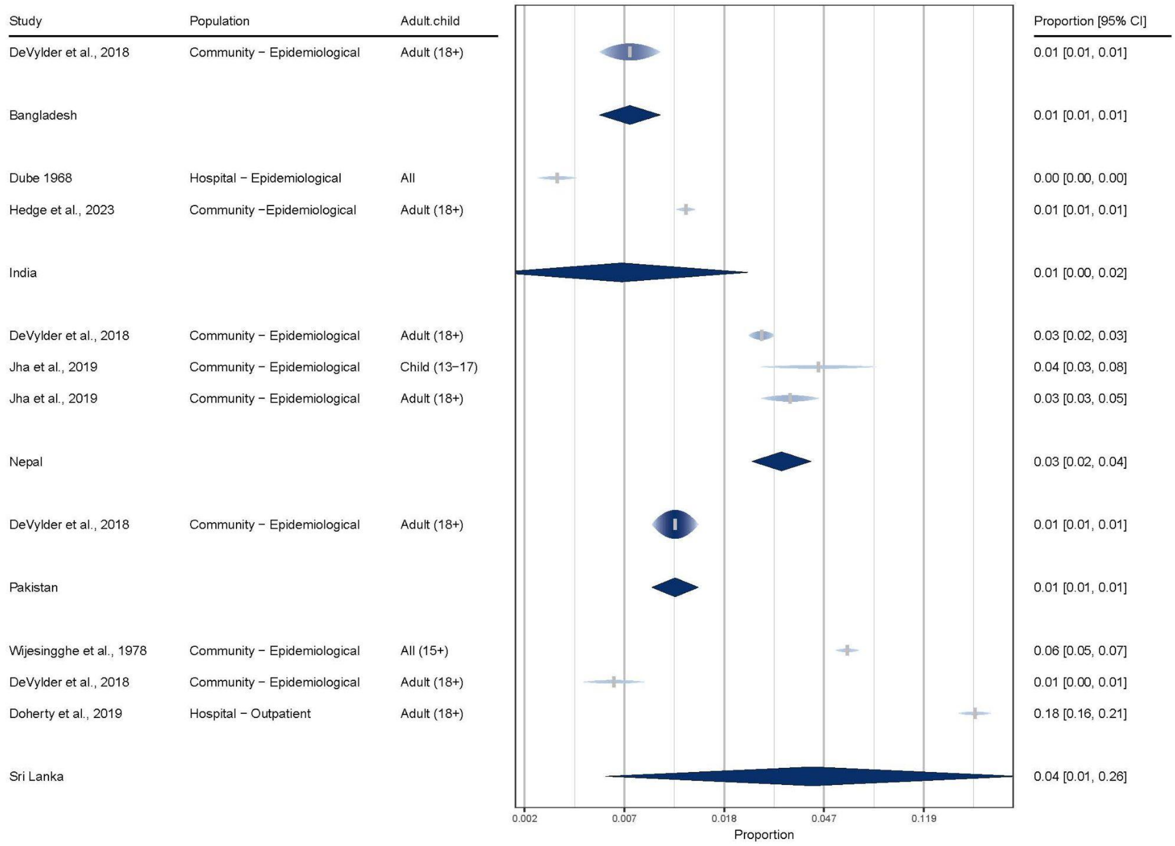


Lifetime Prevalence

Data from one study (Community sample N=1; 5942 participants) the pooled proportion for Bangladesh was 0.01 (95%CI=0.01;0.01) for lifetime prevalence. Pooling data from two studies (Clinical sample N=1; Community sample N=1; 64,270 participants) the pooled proportion for India was 0.01 (95%CI=0.00;0.02). Pooling data from 3 studies (Community sample N= 3; 10,458 participants) the pooled proportion for Nepal was 0.03 (95%CI=0.02;0.04). Data from 1 study (Community sample N=1; 6501 participants) the pooled proportion for Pakistan was 0.01 (95% CI=0.01;0.01). Data from 3 studies (Clinical sample N=1; Community sample N=2; 12,961 participants) the proportion for Sri Lanka was

0.04 (95% CI=0.01;0.26) (See Figure 3). There was high heterogeneity in the model (Q =1786.7793, df=9, *p*<.0001, I^2=99.51%).

Figure 3 Forest Plot of the Pooled Lifetime Prevalence according to Country



Meta-Regression

Meta-regressions for the primary outcome (point prevalence) using moderators: 1) Country, 2) publication year, and 3) population group (i.e. hospital/community/adult/child) and 4) quality assessment (e.g. low, moderate, high risk of bias) were conducted.

Point Prevalence

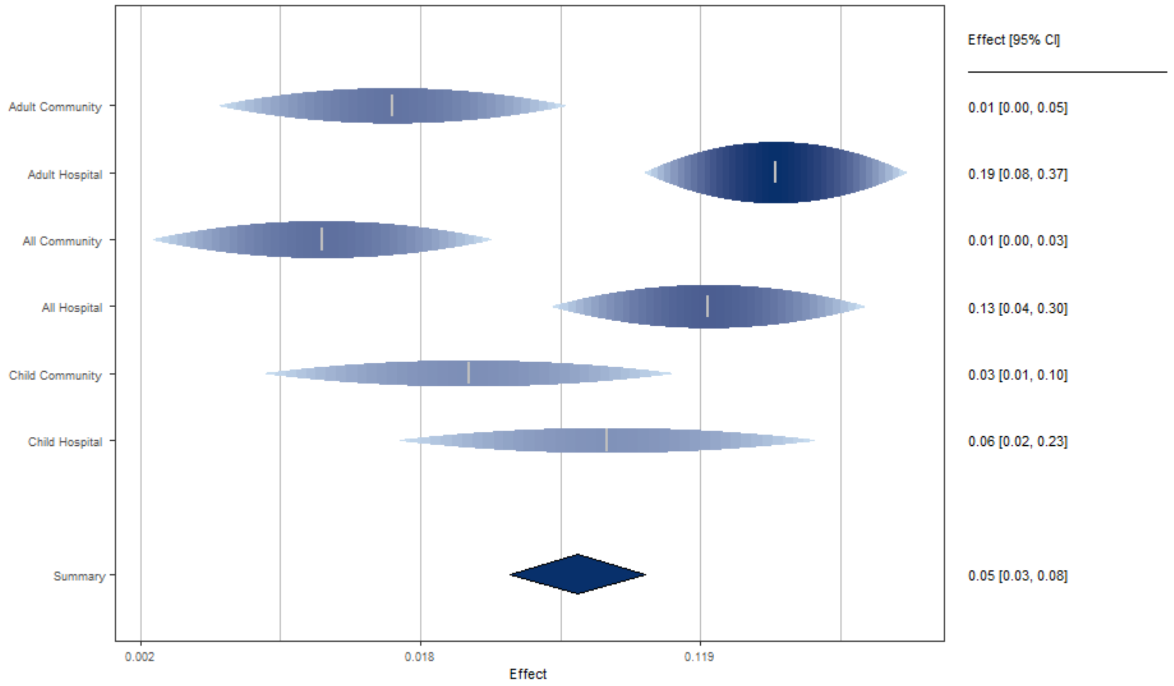
1) Country. We examined the potential moderating effects of the country on the proportion estimates, which showed statistically significant differences between countries (QM(df = 7) = 77.9634, p-val = 0.0001). Specifically, the proportion for Bangladesh was 0.13 (95% CI =0.01, 0.74), for Nepal was 0.04 (95% CI=0.01;0.22), for Pakistan was 0.17

(95% CI=0.12;0.24), and for Sri Lanka was 0.59 (95% CI=0.54;0.65) and India at 0.04 (95% CI=0.02;0.08). The high level of residual heterogeneity (I^2 = 99.85%) indicates that a significant proportion of variability remains unexplained by the country-level differences.

2) Publication Year. The overall test of moderators was not significant (QM(df=1)=1.9233, p-val=0.1655), the model showed no notable differences across publication years. The high level of residual heterogeneity (I^2 = 99.89%) indicates that a significant proportion of variability remains unexplained by the publication year-level differences.

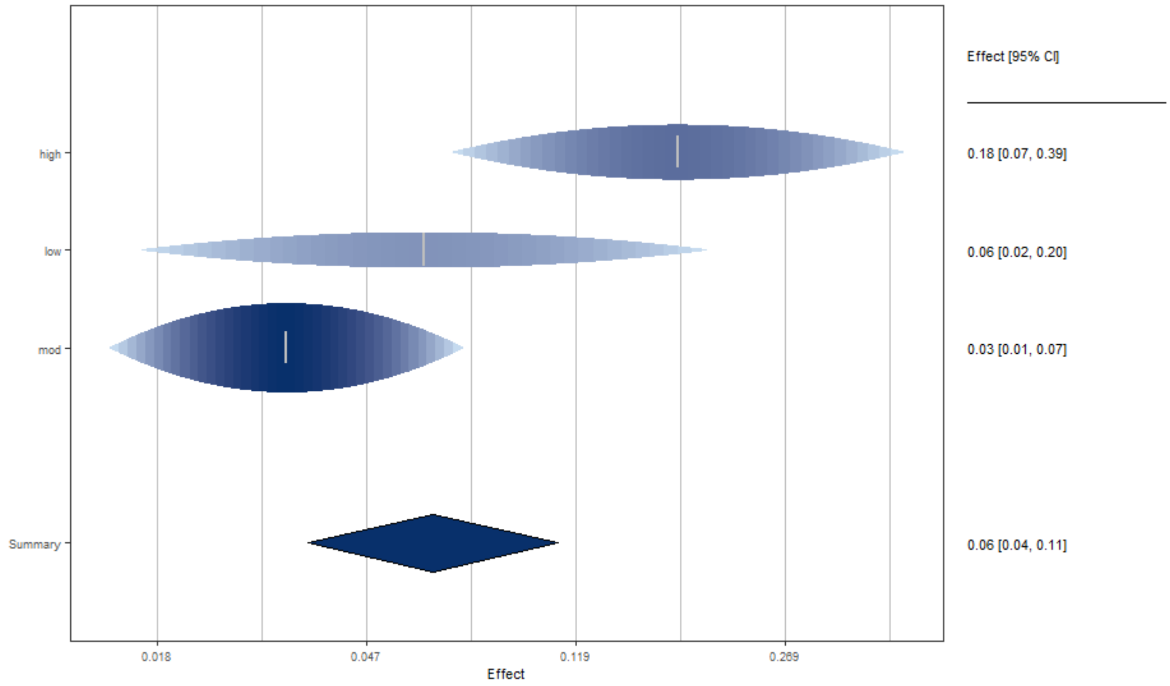
3) Population Group. The proportions derived from the model showed statistically significant differences among population groups (QM(df=7)=139.9663, p val<0.0001). Specifically, the proportion estimate for 'adult community' was 0.01 (95% CI: 0.00; 0.05), lower than the 'adult hospital' which was 0.19 (95% CI: 0.08; 0.37). Similarly, 'all community' proportions were 0.01 (95% CI: 0.00; 0.03), which was lower than the 'all hospital' proportion estimate which was 0.13 (95% CI: 0.04; 0.30). Following a similar pattern, the 'child community' proportion estimate was 0.03 (95% CI: 0.01; 0.10), which is lower than the 'child hospital' estimate which was 0.06 (95% CI: 0.02; 0.23). The high level of residual heterogeneity (I^2 = 99.71%) indicates that a significant proportion of variability remains unexplained by the group-level differences.

Figure 4 Forest Plot Moderator Group Point Prevalence



4) Quality Assessment. The proportions derived from the model showed statistically significant differences between proportion estimates for studies rated low, moderate and high risk of bias (QM(df=3)=85.2012, p-val= 0.0001). The proportion estimate was highest for high risk of bias studies at 0.18 (95% CI: 0.07; 0.39), while for moderate risk of bias the proportion was lowest at 0.03 (95% CI: 0.01; 0.07), and for low risk of bias it was 0.06 (95% CI: 0.02; 0.20). The high level of residual heterogeneity (I^2 = 99.86%) indicates that a significant proportion of variability remains unexplained by the country-level differences.

Figure 5 Forest Plot Moderator Quality Assessment Point Prevalence



Lifetime Prevalence

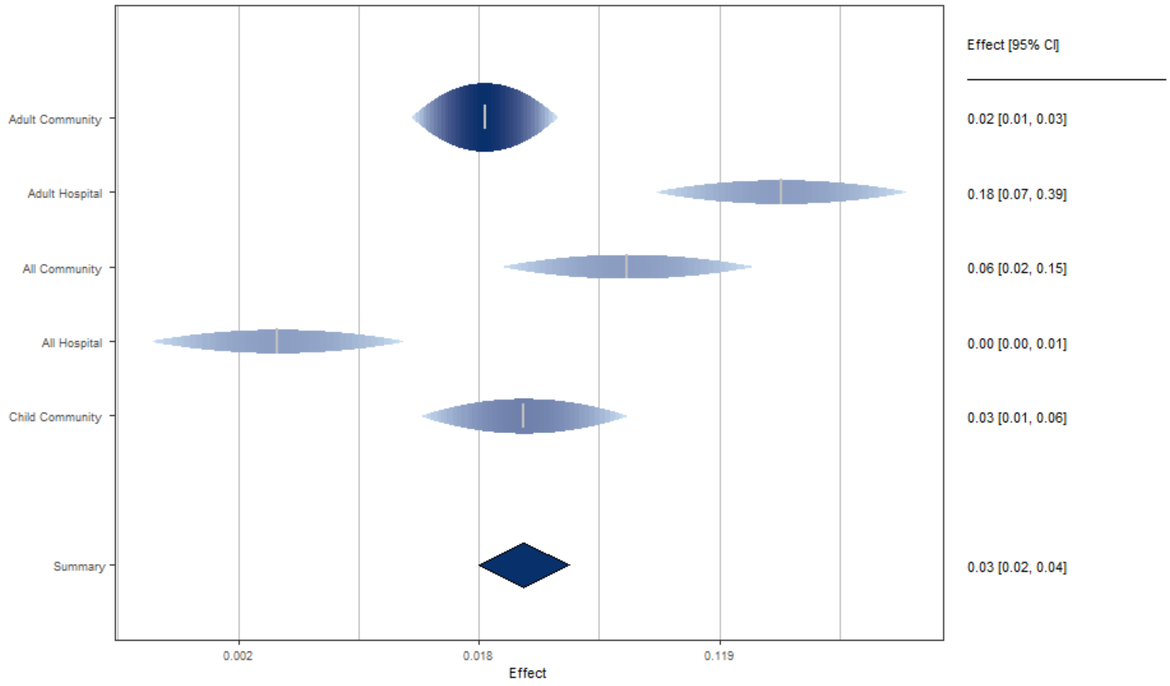
For the secondary outcome of lifetime prevalence, moderators for 1) country, 2) population group (i.e. hospital/community/adult/child) and 3) quality appraisal (e.g. low, moderate, high risk of bias) were analysed.

1) Country. We examined the potential moderating effects of the country on the proportion estimates, which showed statistically significant differences between countries (QM(df=6)=82.8231, p-val = 0.0001), the proportions derived from the model showed notable differences among countries. Specifically, the proportion for Bangladesh was 0.01 (95%CI=0.01;0.01), for Nepal was 0.03 (95%CI=0.02;0.04), for Pakistan was 0.01 (95% CI=0.01;0.01), and for Sri Lanka was 0.04 (95% CI=0.01;0.26) and India at 0.01 (95%CI=0.00;0.02). The high level of residual heterogeneity ((I^2 = 99.52%)) indicates that a significant proportion of variability remains unexplained by the country-level differences.

2) Population Group. The proportions derived from the model showed statistically significant differences among population groups (QM(df=5)=331.6316, p val<0.0001).

Specifically, the lifetime proportion estimate for 'adult community' was 0.02 (95% CI: 0.01; 0.03), lower than the 'adult hospital' which was 0.18 (95% CI: 0.07; 0.39). Conversely, the 'all community' proportion was 0.06 (95% CI: 0.02; 0.15), which was higher than the 'all hospital' proportion estimate which was 0.00 (95% CI: 0.00; 0.01). There was no data available to provide a proportion estimate for 'child hospital', however the 'child community' proportion estimate was 0.03 (95% CI: 0.01; 0.06). The high level of residual heterogeneity (I^2 = 98.16%) indicates that a significant proportion of variability remains unexplained by the population group-level differences.

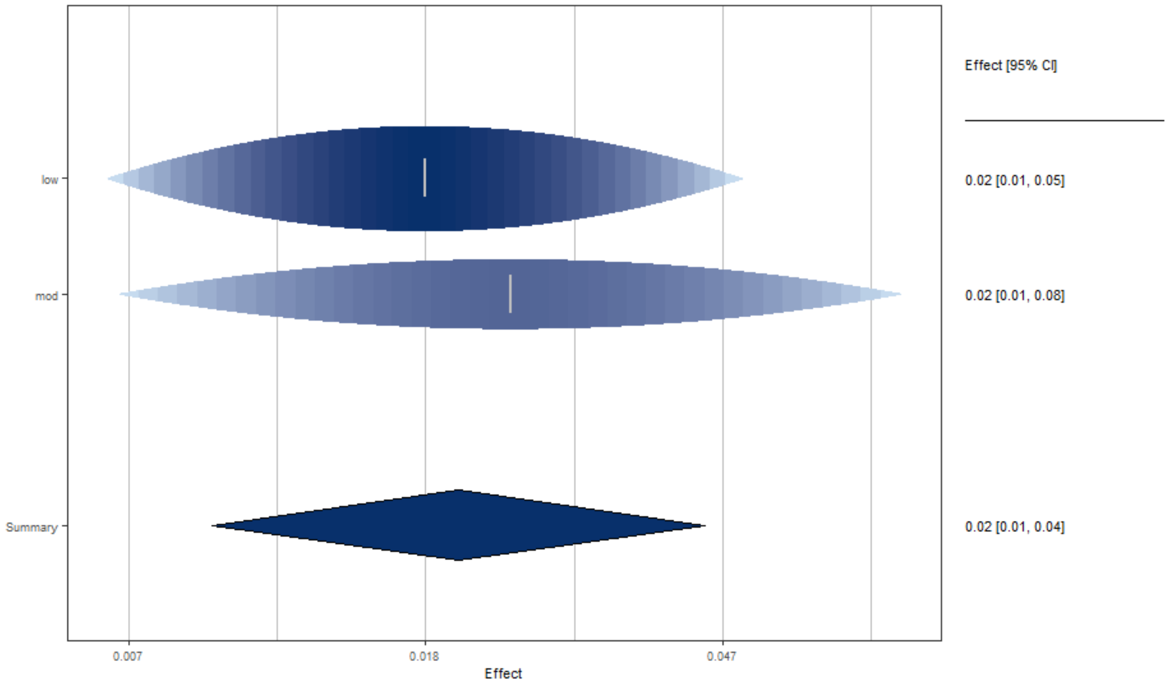
Figure 6 Forest Plot Moderator Group Lifetime Prevalence



3) Quality Appraisal. The proportions derived from the model showed statistically significant differences between proportion estimates for studies rated low, moderate and high risk of bias (QM(df=1)=84.2617, p-val= 0.0001). Specifically, differences between the proportion estimate for studies rated low risk of bias, which was 0.02 (95% CI: 0.01; 0.05), and moderate risk of bias 0.02 (95% CI: 0.01; 0.08). The high level of residual heterogeneity

((I^2 = 99.51%)) indicates that a significant proportion of variability remains unexplained by the quality appraisal-level differences.

Figure 7 Forest Plot Moderator Quality Appraisal Lifetime Prevalence



Discussion

To our knowledge, this is the first comprehensive systematic review and meta-analysis of the prevalence of psychosis in South Asia. Overall, the review included 45 studies, with 36 included in the analysis. Prevalence estimates were reported according to country in line with reporting convention in the epidemiological literature, however serious limitations were identified as variability in setting (hospital vs community) and non-random sampling practices likely inflated the pooled estimates. While moderator analyses attempted to address such limitations, all prevalence estimates should be considered with caution. The meta-analyses provided pooled estimates for the point prevalence of psychosis in Pakistan; 17.0% (95% CI: 15.0; 20), Sri Lanka; 59.0% (95% CI: 54.0; 65.0), Bangladesh; 13% (95% CI: 1.0; 74.0), India; 4.0% (95% CI: 2.0; 4.0), and Nepal; 4.0% (95% CI: 1.0; 22.0). These estimates were substantially higher than those cited in previous reviews, which ranged from 0.28% -

0.39% (Saha, Chant, Welham & McGrath, 2005; Charleson et al.,2018). In addition, pooled lifetime prevalence estimates were reported for Bangladesh; 1.0% (95% CI: 1.0, 1.0); India 1.0% (95% CI: 0.0, 2.0); Nepal: 3.0% (95% CI: 2.0, 4.0); Pakistan: 1.0% (95% CI: 1.0, 1.0); Sri Lanka: 4.0% (95% CI: 1.0, 26.0). These estimates are higher than those cited in the Charleson et al., (2018) review which was 0.47%, yet within range when taking into account the lifetime prevalence estimate reported by Perälä et al., (2007) which was 3.48%, the latter study using a comprehensive definition, inclusive of DSM-IV schizophrenia spectrum disorders.

Our findings show higher prevalence estimates of psychosis compared to previous systematic reviews which, if accurate, would suggest there is an urgent need for further resource investment and epidemiological research in SA contexts. Many prevalence reviews are conducted globally, including both high income countries (HIC) and LMIC countries within the analysis, however a meta-analysis of 160 studies conducted in SA alone, revealed a pattern of higher prevalence of common mental disorders (CMDs) when compared to global reviews (Naveed et al., 2020). For example, rates of depression were estimated to be 26.4% (23.6% to 29.4%) in SA, compared to 12.0% (11.1 to 15.1%,) in the multi-region review (Lim et al., 2018). Significant geographical differences in the prevalence of CMDs was also identified, with Pakistan demonstrating the highest burden of disease, followed by Sri Lanka, mirroring the meta-regression findings of the current review (Naveed et al., 2020). This offers partial support that the current study aligns with the literature, demonstrating a similar pattern of higher prevalence rates in SA and LMIC contexts when compared to global reviews that pool data from countries across income-levels, often noting lack of representation of LMIC data in their limitations (Charleson et al., 2018).

Psychosocial, Economic and Political Stressors

South Asia comprises a quarter of the world's population and reports the highest prevalence of CMDs combined with the largest treatment gaps (76%-85%) worldwide (Naveed et al., 2020). Mental health and substance-use disorders in the region are attributed to rapid demographic, economic, psychosocial, cultural, and political stressors specific to SA (Vidyasagaran et al., 2023). Alcohol use was relatively lower, but drug use disorders, particularly cannabis dependence (Griswold et al., 2018) (3%) being the most common. Cannabis use is well-documented to have an association with an elevated risk of psychosis (Moore et al., 2007). Additionally, intravenous (IV) drug use (2.5%) is notably prevalent among individuals under 25 years of age and those recently made homeless or living in unstable housing (Degenhardt et al., 2017). Such factors may contribute to an increased risk of psychosis in the region, exacerbated by the lack of adequate mental health treatment and support.

Findings from Doherty et al., (2019), found high rates of anxiety, depression, psychosis and PTSD among 'internally displaced persons' in Sri Lanka, emphasising the need for integrated mental health services in post-conflict regions and exploring migrant status as an important risk factor, as noted in previous research (Selten & Cantor-Graae, 2005). Such findings highlight the importance of culturally specific factors such as regional political instability, war hysteria in countries like India and Pakistan, and forced migration from civil war and the Tamil genocide (Vidyasagaran et al., 2023). These factors may contribute to the increased prevalence of psychosis in South Asia, particularly among populations potentially exposed to severe stress and displacement.

The impact of natural disasters such as the 2004 tsunami, and the disastrous flooding in Pakistan as recent as June-August 2022, significantly influenced the population's mental health and health planning priorities that will have varying implications depending on specific countries and their pre-existing infrastructure (Bahu, 2019; Rosenblum & Hipsman, 2016; Theisen-Womersley, 2021). For example, in Pakistan's recent floods, approximately 8 million people were displaced and forced around 600,000 people to live in relief camps, disproportionately affecting women and children (Ashraf, Shahzad, Sequeria, Bashir, & Azmat, 2024). In addition to widespread psychological trauma and disrupted healthcare services, these events will have impacted migration from rural to urban areas (e.g. due to severe floods in rural areas) which may have further strained urban healthcare infrastructure, requiring improved planning and resource allocation (Ashraf, Shahzad, Sequeria, Bashir, & Azmat, 2024). The extent of this impact likely varies across countries, depending on their pre-existing healthcare infrastructure, making it difficult to establish a direct causal relationship. However, these events have likely exacerbated psychological trauma and placed additional strain on healthcare systems, particularly among displaced populations, potentially contributing to an increase in psychosis rates. Such factors may also be contributing to some of the variability observed in the prevalence estimates and the inflated prevalence rates when compared with other studies.

Explaining Heterogeneity

Assessing the differences between studies is a crucial part of meta-analysis. Inconsistencies can arise due to real differences in how the studies were designed and conducted (methodological differences) or in the participants, treatments, exposures, or outcomes studied (clinical differences). These inconsistencies might also be due to errors, biases, or random chance. Errors and biases can impact individual studies (e.g. quality issues) or affect entire research fields, such as biases in what gets published or selectively reported (Patsopoulos, Evangelou, & Ioannidis, 2008).

In line with previous findings, higher prevalence was significantly associated with poorer quality studies, the point prevalence estimate was 18% (95% CI: 0.07; 0.39) for studies rated high risk of bias, compared to 6% (95% CI: 0.02; 0.20) for studies rated low risk (Moreno-Küstner, Martín, & Pastor, 2018). This finding supports the theory that study quality issues contribute to high heterogeneity as cited in the literature and suggests that the actual prevalence rate of psychosis is lower than that reported in low quality studies (Patsopoulos, Evangelou, & Ioannidis, 2008; Moreno-Küstner, Martín, & Pastor, 2018). However, an earlier review by Saha, Chant, Welham, and McGrath (2005) challenges this assumption. Their findings indicated that studies with higher overall quality scores tended to identify more cases and, as a result, produced higher prevalence estimates compared to studies of lower quality.

The diagnostic criteria and tools used in this study vary considerably from diagnostic interviews, door to door surveys, and different versions of the DSM and ICD criteria over time and have often been cited as impacting on study quality (Patsopoulos, Evangelou, & Ioannidis, 2008). This study used a pragmatic approach to capturing the existing data in SA by including the full cluster of schizophrenia spectrum disorders in our definition, however this comprehensive approach has been associated with up to 70% increase in prevalence estimates compared to a strict criterion for schizophrenia alone (Simeone, Ward, Rotella, Collins, & Windisch, 2015). While some research has shown no association between the diagnostic criteria used nor the tool used to complete the diagnosis on prevalence estimates (Moreno-Küstner, Martín, & Pastor, 2018; Simeone, Ward, Rotella, Collins, & Windisch, 2015). Naveed et al., (2020) found significantly lower prevalence estimates when diagnoses were completed via gold standard clinical interviews as opposed to door-to-door surveys. Future reviews could further explore this relationship to better understand the specific aspects of study quality that may impact prevalence estimates.

The link between diagnostic tool and population setting could explain why many reviews have reported higher prevalence of psychosis in the community as opposed to clinical settings (Saha, Chant, Welham, & McGrath, 2005; Simeone, Ward, Rotella, Collins, & Windisch, 2015; Moreno-Küstner, Martín, & Pastor, 2018). One explanation offered is that door to door surveys, often a methodology deployed for community studies, is an extensive and exhaustive process that increases case finding and may overestimate prevalence due to increased reliance on self-reported measures and lay-administered interviews (Kessler et al., 2005). The current study contradicts these findings which show lower point and lifetime prevalence in community populations (point prevalence, adult: 1%, child; 3%; lifetime prevalence adult: 2%; child: 3%) compared to hospital populations (point prevalence adult: 19%; child; 6%, lifetime prevalence adult: 18%), across all age groups. Clinical prevalence is understandably higher than in the general population, reflecting hospital admission criteria and mental health provisions for psychosis rather than true population prevalence. This echoes Naveed et al.'s (2020) findings on CMDs in SA, with significantly higher prevalence rates of psychiatric disorders found in clinical and healthcare settings compared to community or refugee settings.

Culturally specific factors, such as family structures and social expectations, play a crucial role in shaping the care dynamic in SA. In India and Pakistan, a significant number of individuals with psychosis live with their families, largely due to the limited availability of alternative care options and welfare support. Care for people with psychosis is predominantly hospital-based, meaning people often stay in hospital for extended periods, isolated from their social and cultural environments and without access to comprehensive psychosocial interventions (Bird et al., 2023). Furthermore, people with drug-induced psychosis are more likely to require hospital admission and may also play a role in this finding (Moore et al., 2007). Aside from hospital care, people with psychosis are often cared for by family members, therefore it's possible that the observed pattern of low help-seeking and high levels of public stigma may lead to underreporting in community surveys (Murthy, 2016). This trend towards inflated prevalence rates in clinical settings may account for variability in the study's prevalence estimates, however further research is required. Despite efforts to account for known moderators in the analysis, heterogeneity remained high. Factors beyond the scope of this review, such as the exclusion of articles published in local languages or regional journals due to language restrictions, may also play a role. Additionally, cultural and temporal factors may heighten bias and influence both clinical and methodological aspects of the studies, offering insight into potential missed moderators.

Cultural and Temporal Factors

Gender differences were not explored in this study due to insufficient data, and no statistically significant difference in psychosis prevalence was found based on publication year. However, gender emerged as a key theme in several studies reviewed. For instance, Sethi et al. (1974) linked higher psychiatric morbidity among housewives in urban India to gender inequality and domestic stress. Nandi et al. (1979) highlighted potential bias, as data collection typically began with the male head of the family. Chowdhury's (1966) study on psychiatric admissions in Bangladesh noted higher male admissions for schizophrenia, suggesting that social stigma and the cultural practice of ‘purdah’, a complex social system which encourages domestication and restricts the spaces women occupy to maintain modesty and moral purity, may have contributed to fewer female hospital admissions. Chowdhury (1966) also hypothesised that families might show greater "tolerance" for female mental distress, leading to more women being cared for at home rather than in hospitals. While purdah continues to influence women’s decision-making, increased workforce participation due to economic growth and urbanisation may be shifting women's health-seeking behaviours and access to mental health services (Jennings, Kirkwood & Cree, 2022).

Although this review did not find evidence of a temporal relationship between gender and psychosis prevalence, the cultural practice of ‘purdah’ raises important questions about the intersection of gender, culture, and access to mental health services, as well as the accuracy of psychosis prevalence data (Jennings, Kirkwood & Cree, 2022; Bird et al., 2023). Future research should further explore how cultural factors, such as purdah and evolving gender roles, influence both access to care and the reported prevalence of psychosis, while addressing potential biases in data collection.

Some included studies highlight recent trends in psychiatric service usage, for example, a study based in New Delhi, identified aggression, associated more with male presentations, as one of the most common reasons for referring people with psychosis to emergency psychiatric care (Garekar et al., 2015). In Pakistan, a hospital study found that schizophrenia was the most prevalent disorder, in both males (30.4%) and females (25.2%) highlighting a growing demand for the development of standardised treatment guidance for managing psychosis in tertiary care (Khan et al., 2020).

Urbanicity

Several studies explored the relationship between psychosis prevalence and urbanicity. Aich, Dhungana and Muthuswamy (2012) found a lack of association between urban living and psychotic experiences in Nepal. This contrasts with findings from high-income countries, suggesting industrialisation-specific factors influence psychosis risk, particularly when born into urban environments (Vassos, Pedersen, Murray, Collier & Lewis, 2012; Krabbendam & van Os, 2005). Findings from the DeVylder et al., (2018) study examining prevalence in Nepal, Bangladesh, India and Sri Lanka further corroborates the lack of a significant link between urban living and psychosis in LMICs. However, one study (Basu, 2013) found higher psychosis morbidity in urban settings (56.5%), compared to rural settings (43.5%) in a sample exploring substance use and dual diagnosis in India. This may be specific to the specialist population studied.

Clinical Implications and Recommendations

Psychosis in Children and Young People

The literature investigating the prevalence of psychosis in children in South Asia is sparse, yet this study has highlighted a critical need for further research. When pooling the estimates from Nepal, India and Pakistan, this review found point prevalence for psychosis in children and young people estimated to be 3% in the community compared to 6% in hospital settings and lifetime prevalence in the community to be 3%. Many of the included studies reviewing data for children and young people also showed high levels of ASD and other neurodevelopmental conditions (Malhotra & Chaturvedi, 1984; Khairkar et al., 2012; Gupta & Sengupta 2022). The literature has suggested children and young people with an ASD diagnosis are more likely to develop psychosis and prevalence has been estimated to be 6% in some settings (Lugo Marin et al., 2018). It has also been suggested that diagnostic overlap can lead to misdiagnosis of psychosis which could begin to explain some of the notably high prevalence estimates for children in SA clinical settings (Sunwoo et al., 2020).

Whilst diagnosis of psychosis in children should be interpreted with caution, this finding highlights a possible diagnostic trend that ought to be further explored. Psychotic symptoms can be relatively common in childhood compared to adulthood, however schizophrenia in children is rare, with less than 4% of cases starting before age 15 years (Dinamarca et al., 2016). These early diagnoses are often unstable, with only 50% remaining consistent over time, challenging the utility of giving this diagnosis to children and young people (Dinamarca et al., 2016). Longitudinal studies indicate that while these symptoms may diminish during adolescence, the negative outcomes and health trajectories associated with untreated psychosis underscore the urgency of better understanding and addressing children's mental health in developing countries (Kelleher et al., 2008; Hackett, Hackett, & Bhakta, 1998). Untreated psychosis in children can lead to significant impairments in social, educational, and occupational functioning, making early identification and intervention crucial (Shakya, 2010). Additionally, lack of parental awareness, cultural factors and the stigma surrounding mental health conditions in South Asia further complicate the identification and treatment of psychosis in children (Thara & Srinivasan, 2000).

Clinical and Community Approaches to Treating Psychosis

The high concentration of psychosis prevalence in hospitals underscores the need for a shift in healthcare planning, particularly moving towards more comprehensive, community-based mental health provision. Despite challenges, mental health infrastructure in SA has been allocated less than 1% of the national budget in (Trivedi et al., 2007; Naveed et al., 2020). Resource scarcity in LMICs necessitates stringent priority setting and efficient allocation. Only India, Pakistan, Nepal, and Bhutan have national mental health policies, mostly developed in the late 1990s, but these lack comprehensiveness (Trivedi et al., 2007). Mental health legislation is outdated, and mental health programs vary, with inadequate workforce, limited psychiatric bed availability and lack of appropriate psychosocial interventions (Bird et al., 2023). Improving mental health delivery requires regional cooperation in research, community care, health education, public awareness, training programs, utilisation of lay-health workers, and partnerships with the private sector and NGOs (Trivedi et al., 2007; Lyles, Khan, Qureshi, & Shaikh, 2023). Investment in expanding low-cost community-based interventions for psychosis, such as the DIALOG+ could reach individuals who may not typically seek help or access services, this may facilitate early detection and intervention to improve outcomes (Bird et al., 2023). This enhancement could improve public health knowledge and reduce the burden on hospital services (Thara & Patel, 2010).

To effectively implement such changes, a culturally sensitive approach acknowledging the importance of spiritual understanding of mental health experiences and community trust in faith healers may address the socio-cultural nuances of these regions

(Raguram, Venkateswaran, Ramakrishna, & Weiss, 2002; Khan et al., 2023). Future interventions could consider collaborating with traditional faith healers to help to reduce stigma and encourage early help-seeking by bridging the gap between psychiatric services and the community (Saxena, Thornicroft, Knapp & Whiteford, 2007). Moreover, cultural, environmental, and socioeconomic factors significantly influence the prevalence and management of psychosis in South Asia. High levels of poverty and social stressors can exacerbate mental health issues, highlighting the need for tailored public health strategies that consider these determinants (Patel et al., 2016). Enhancing public awareness and reducing stigma around mental health are crucial components of these strategies, as stigma remains a significant barrier to seeking and receiving appropriate care (Kermode, Bowen, Arole, Pathare, & Jorm, 2009; Khan et al., 2023).

Limitations and Research Implications

As previously highlighted, a key limitation of this study is the reliance on non-random, hospital-based samples, particularly in settings like Sri Lanka, where a single study with non-representative sampling was used. This approach limits the generalisability of prevalence estimates and may inflate psychosis prevalence rates in countries with more, or larger, hospital-based studies. This concern applies to all hospital-based samples included in the analysis, potentially skewing the findings and underrepresenting broader community prevalence. Corroborating this limitation, many of the proportion estimates in the current study have wide confidence intervals, indicating considerable variability and uncertainty in the prevalence estimates, impacting reliability (Hespanhol, Vallio, Costa & Saragiotto, 2019). For example, according to the CI range, the ‘true’ point prevalence in Bangladesh could lie anywhere between 1-74%, similarly the CI range for lifetime prevalence in Nepal could indicate a ‘true’ estimate between 1-22% indicating a high degree of uncertainty. Other estimates included in this review have narrower CI’s, such as for the point prevalence of

India (2-8%), which had a significantly larger sample size than other meta-analyses. This is likely due to the variability in sample sizes across studies, ranging from N=262 to N=192,980 and extremely high levels of heterogeneity throughout all analyses. Meta-analyses including studies with small sample sizes or with fewer than ten studies can further introduce bias, therefore many of the pooled estimates detailed in the current review can be considered as exploratory (von Hippel, 2015; Higgins et al., 2020). This means it is difficult to determine if the variability is resulting from genuine differences in the underlying populations or due to methodological differences.

The high heterogeneity observed across pooled estimates is consistent with existing literature, which frequently notes significant variability in prevalence rates of psychiatric disorders across different regions and populations (Higgins, Thompson, Deeks & Altman, 2003; Patsopoulos, Evangelou, & Ioannidis, 2008). Therefore, whilst expected it complicates meaningful comparisons of results and may point toward reduced accuracy and may undermine the reliability of the estimates (Higgins, Thompson, Deeks & Altman, 2003). Some factors that can influence heterogeneity include differences in the demographics and baseline health status of participants across studies, variations in measurement tools, small sample sizes leading to lower precision, and cultural differences in health behaviours and access to care (Higgins et al., 2020).

Although the study aimed to minimise diagnostic uncertainty by applying specific inclusion criteria, there remained variability in diagnostic methods and reporting practices, reflecting the diversity of studies spanning 58 years from 1966 to 2024. The inclusion of studies from such a wide temporal range, including Dube (1968) alongside more recent research like Alam et al. (2024), may limit direct comparability with contemporary research due to changes in psychiatric diagnostic frameworks and reporting conventions. A variety of pre-diagnostic screening methods were employed prior to confirmatory diagnostic interviews across many studies. Temporal differences in diagnostic criteria are evident, with some studies using DSM-II (Sethi, Gupta, Mahendru & Kumari, 1974; Thacore, Gupta & Suraiya, 1975), ICD-8 (Wig, Varma & Khanna, 1978), and ICD-9 (Satija, Patni & Nathawat, 1985; Padmavathi, Rajkumar, Kumar, Manoharan & Kamath, 1987), while more recent studies applied modern criteria such as ICD-10 and DSM-5. Several older studies only noted that a psychiatric diagnosis or interview schedule was conducted, without specifying the criteria used, likely due to the reporting conventions of that time (Chowdhury, 1966; Dube, 1968; Nandi et al., 1975).

Studies from low- and middle-income countries (LMICs), including South Asia, often suffer from lower quality and high heterogeneity in meta-analyses due to limited funding, smaller sample sizes, less rigorous designs, and inadequate follow-up (Patel & Sumathipala, 2001). The lack of research infrastructure, technology gaps, and a shortage of trained researchers exacerbate these issues, leading to low international representation and underappreciation of research from LMICs (Patel & Sumathipala, 2001; Saxena, Sharan, & Saraceno, 2004). Ethical and regulatory barriers, along with publication, indexing, and English language biases, further complicate the situation and may be contributing to low submission rates from researchers in LMICs (Patel & Sumathipala, 2001). To address the research visibility gap, simpler methodologies that are less resource heavy should be valued equally to more complex approaches and investment in global partnerships to support capacity building and research training to increase output in LMICs (Patel & Sumathipala, 2001; Saxena, Sharan, & Saraceno, 2004; Bird et al., 2023).

Though care was taken to use recommended criterion from the Joanna Briggs Institute (JBI) checklist, the methodological quality and inter-rater reliability of the included studies was variable. While it is common for there to be variability in ratings, particularly for items that require subjective judgement or are more difficult to assess, reviewer experience could impact on the results of ROB appraisals (Gates et al., 2020). As such, it is unclear what effect this may have had on the current study and the meta regression findings indicating significant differences in proportion estimates based on quality appraisal should be interpreted with caution. In addition, considerable inconsistencies in areas such as sample frame appropriateness and response rate management can introduce selection or nonresponse biases potentially skewing findings due to unrepresentative samples (Smith, 2019; Johnson & Wislar, 2012). These biases highlight the importance of appropriate sample frame construction to ensure reliable and valid study outcomes (JBI, 2020).

Finally, this study did not fulfil its aim of offering comprehensive geographical coverage across SA countries, impeding the generalisability of the findings. Future research should aim to include data from Afghanistan, Maldives, and Bhutan to build the evidence base that could support future health planning initiatives that address psychosis in these regions.

Conclusion

This systematic review and meta-analysis found a high prevalence of psychosis in South Asian countries. These were higher prevalence rates than previously reported, accompanied by significant heterogeneity likely stemming from methodological and diagnostic variations across studies. This study is the first systematic review focused specifically on South Asia and provides cumulative baseline evidence on the prevalence of psychosis and informs an urgent need for effective policy making and multipronged interventions that are culturally appropriate in the context of South Asia and to prioritise early detection and community-based interventions to alleviate pressure on hospital services. It underscores the importance of investing in resources to comprehend the unique factors influencing psychosis and schizophrenia in diverse regional contexts. Future research should prioritise more diverse and representative sampling, standardised diagnostic criteria, and culturally sensitive approaches to improve mental health planning in the region. By improving data collection methods and integrating local cultural contexts, mental health strategies can be better tailored to support individuals with psychosis effectively in South Asia. Addressing study quality issues contributing to heterogeneity in prevalence estimates should be a key focus of future research efforts.

References

Abd-Allah, F., Abdulle, A. M., Abera, S. F., Abu-Raddad, L. J., Adetokunboh, O., Afshin, A., Aggarwal, R., Agrawal, A., Aichour, I., Akseer, N., Alizadeh-Navaei, R., Bacha, U., Bärnighausen, T., Beghi, E., Bensenor, I. M., Benson, J., Berhane, A., Bhala, N., Bisanzio, D., & Murray, C. J. L. (2017). Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet (British Edition)*, *390*(10100), 1211–1259. https://doi.org/10.1016/S0140-6736(17)32154-2

Aich, T. K., Dhungana, M., & Muthuswamy, R. (2012). Pattern of neuropsychiatric illnesses in older age group population: an inpatient study report from Nepal. Indian J Psychiatry, 54(1), 23-31. https://doi.org/10.4103/0019-5545.94641

Alam, M. F., Ahmed, H. U., Alam, M. T., Sarkar, M., Khan, N. M., Uddin, M. J., & Sarkar, A. A. (2024). Community prevalence of psychiatric disorders: Findings from a nationwide survey in Bangladesh. Asian J Psychiatr, 92, 103897. https://doi.org/10.1016/j.ajp.2023.103897

American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th ed.).* Washington, DC: Author.

Appuhamy, K. K., Podmore, D., Mitchell, A., Ahmed, H. U., Ashworth, M., Boehnke, J. R., Chongtham, V., Chowdhury, A. H., Garcia, O. P., Holt, R. I. G., Huque, R., Muliyala, K. P., Onstenk, E. K., Rajan, S., Shiers, D., Siddiqi, N., Manjunatha, S., & Zavala, G. A. (2023). Risk factors associated with overweight and obesity in people with severe mental illness in South Asia: cross-sectional study in Bangladesh, India, and Pakistan. J Nutr Sci, 12, e116. https://doi.org/10.1017/jns.2023.100

Arciniegas, D. B. (2015). Psychosis. *Continuum (Minneap Minn*), *21(*3), 715-736.

Ashraf, M., Shahzad, S., Sequeria, P., Bashir, A., & Azmat, S. K. (2024). Understanding Challenges Women Face in Flood-Affected Areas to Access Sexual and Reproductive Health Services: A Rapid Assessment from a Disaster-Torn Pakistan. *BioMed Research International*, 1113634, 1-13. https://doi.org/10.1155/2024/1113634

Bahu, M. (2019). War, trauma and culture: working with Tamil refugees and asylum seekers using culturally adapted CBT. *The Cognitive Behaviour Therapist*, *12*, e46. doi:10.1017/S1754470X1900031X

Basu, D., Sarkar, S., & Mattoo, S. K. (2013). Psychiatric Comorbidity in Patients with Substance Use Disorders Attending an Addiction Treatment Centre in India Over 11 Years: Case for a Specialized "Dual Diagnosis Clinic". Journal of Dual Diagnosis, 9(1), 23-29. https://doi.org/10.1080/15504263.2012.749557

Bird, V. J., Sajun, S. Z., Peppl, R., Evans-Lacko, S., Priebe, S., Singh, S., Venkatraman, L., Ramachandran, P., Pasha, A., Malik, A., & Qureshi, O. (2023). Assessing the effectiveness and cost-effectiveness of a solution-focused resource-orientated approach (DIALOG+) to improving the quality of life for people with psychosis in India and Pakistan-a cluster RCT. *Current Controlled Trials in Cardiovascular Medicine*, *24*(1), 59–59. https://doi.org/10.1186/s13063-022-07032-y

Charlson, F. J., Ferrari, A. J., Santomauro, D. F., Diminic, S., Stockings, E., Scott, J. G., McGrath, J. J., & Whiteford, H. A. (2018). Global Epidemiology and Burden of

Schizophrenia: Findings From the Global Burden of Disease Study 2016. *Schizophrenia Bulletin*, *44*(6), 1195–1203. https://doi.org/10.1093/schbul/sby058

Chowdhury, A. K. M. N. (1966). Admissions to an East Pakistan Mental Hospital. *British Journal of Psychiatry*, *112*(482), 65–68. https://doi.org/10.1192/bjp.112.482.65

Correll, C.U., Solmi, M., Croatto, G., Schneider, L.K., Rohani-Montez, S., Fairley, L., Smith, N., Bitter, I., Gorwood, P., Taipale, H., & Tiihonen, J. (2022). Mortality in people with schizophrenia: a systematic review and meta-analysis of relative risk and aggravating or attenuating factors. *World Psychiatry, 21.*

Degenhardt, L., Peacock, A., Colledge, S., Leung, J., Grebely, J., Vickerman, P., Stone, J., Cunningham, E. B., Trickey, A., Dumchev, K., Lynskey, M., Griffiths, P., Mattick, R. P., Hickman, M., & Larney, S. (2017). Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review. *The Lancet Global Health*, *5*(12), e1192–e1207. https://doi.org/10.1016/S2214-109X(17)30375-3

DeVylder, J. E., Kelleher, I., Lalane, M., Oh, H., Link, B. G., & Koyanagi, A. (2018). Association of Urbanicity With Psychosis in Low- and Middle-Income Countries. JAMA Psychiatry, 75(7), 678-686. https://doi.org/10.1001/jamapsychiatry.2018.0577

Dinamarca, F., Palma, A., Grifell, M., Galindo, L., Gonzalez, L., Campillo, M. T., & Perez, V. (2016). When Ockham razor's principle is not applicable: Differential diagnosis of a rare case of child and adolescent psychosis. *European Psychiatry*, *33*(S1), S350–S350. https://doi.org/10.1016/j.eurpsy.2016.01.1238

Doherty, S., Hulland, E., Lopes-Cardozo, B., Kirupakaran, S., Surenthirakumaran, R., Cookson, S., & Siriwardhana, C. (2019). Prevalence of mental disorders and epidemiological associations in post-conflict primary care attendees: a cross-sectional study in the Northern Province of Sri Lanka. BMC Psychiatry, 19(1), 83. https://doi.org/10.1186/s12888-019-2064-0

Dube, K. C. (1968). Mental disorder in Agra. *Social Psychiatry*, *3*(4), 139–143. https://doi.org/10.1007/BF00577944

Friedman, C. P., & Kao, C. (2014). A framework for teaching and learning in the health professions. *Journal of Continuing Education in the Health Professions, 34*(S1), S55-S59.

Ganguli, H. C. (2000). Epidemiological findings on prevalence of mental disorders in India. Indian Journal of Psychiatry, 42(1), 14-20. Lund, C., Breen, A., Flisher, A. J., Kakuma, R., Corrigall, J., Joska, J. A., ... & Patel, V. (2010). Poverty and common mental disorders in low- and middle-income countries: A systematic review. *Social Science & Medicine, 71*(3), 517-528.

Gates, M., Hartling, L., Shulhan-Kilroy, J., MacGregor, T., Guitard, S., Wingert, A., Featherstone, R., Vandermeer, B., Poonai, N., Kircher, J., Perry, S., Graham, T. A. D., Scott, S. D., & Ali, S. (2020). Digital Technology Distraction for Acute Pain in Children: A Meta-analysis. *Pediatrics (Evanston)*, *145*(2), 1-. https://doi.org/10.1542/peds.2019-1139

Gawde, N., Nasirabadi, M., Shah, N., & Nagaonkar, S. (2013). Psychiatric morbidity in an urban slum of Mumbai: cross sectional study. Asian J Psychiatr, 6(6), 478-482. https://doi.org/10.1016/j.ajp.2013.05.005

Griswold, M., Fullman, N., Hawley, C., Arian, N., Zimsen, S., Tymeson, H., Venkateswaran, V., Tapp, A., Forouzanfar, M., Salama, J., Abate, K., Abate, D., Abay, S., Abbafati, C., Abdulkader, R., Abebe, Z., Aboyans, V., Abrar, M., Acharya, P., … Gakidou, E. (2018). Alcohol use and burden for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet ,* *392* (10152) pp. 1015-1035.

Gupta, D., & Sengupta, N. (2023). Clinical Profile of Patients Visiting a Private Child and Adolescent Psychiatric Clinic in Delhi. Journal of Indian Association for Child and Adolescent Mental Health, 18(4), 322-326. https://doi.org/10.1177/09731342231162201

Gupta, G., Sachdeva, A., Kumar, M., & Singh, M. (2023). Spectrum of intimate partner violence in patients with psychiatric illness-From victimization to perpetration. Int J Psychiatry Med, 58(1), 20-36. https://doi.org/10.1177/00912174211053726

Hackett, R., Hackett, L., & Bhakta, P. (1998). Psychiatric disorder and cognitive function in children with epilepsy in Kerala, South India. *Seizure (London, England)*, *7*(4), 321–324. https://doi.org/10.1016/S1059-1311(98)80026-5

Haldar, P., Sagar, R., Malhotra, S., & Kant, S. (2017). Burden of psychiatric morbidity among attendees of a secondary level hospital in Northern India: Implications for integration of mental health care at subdistrict level. Indian J Psychiatry, 59(2), 176-182. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_324_16

Hapangama, A., Kuruppuarachchi, K. A., & Pathmeswaran, A. (2013). Substance use disorders among mentally ill patients in a General Hospital in Sri Lanka: prevalence and correlates. *The Ceylon medical journal*, *58*(3), 111–115. https://doi.org/10.4038/cmj.v58i3.6103

Hashmi, A. N., Qamar, R., Taj, R., Zubair, U. B., Agha, Z., Abbasi, S. A., & Azam, M. (2023). Contributing risk factors of common psychiatric disorders in the Pakistani population. Eur Arch Psychiatry Clin Neurosci, 273(4), 963-981. https://doi.org/10.1007/s00406-022-01545-y

Hegde, P. R., Nirisha, L. P., Basavarajappa, C., Suhas, S., Kumar, C. N., Benegal, V., Rao, G. N., Varghese, M., Gururaj, G., & Group, N. N. C. (2023). Schizophrenia spectrum disorders in India: A population-based study. Indian J Psychiatry, 65(12), 1223-1229. https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_836_23

Hespanhol, L., Vallio, C. S., Costa, L. M., & Saragiotto, B. T. (2019). Understanding and interpreting confidence and credible intervals around effect estimates. *Revista Brasileira de Fisioterapia (São Carlos (São Paulo, Brazil)), 23*(4), 290–301. https://doi.org/10.1016/j.bjpt.2018.12.006

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2020). Cochrane handbook for systematic reviews of interventions / edited by Julian P.T. Higgins, James Thomas, Jacqueline Chandler, Miranda Cumpston, Tianjing Li, Matthew J. Page, Vivian A. Welch (Second edition. ed.). Wiley-Blackwell.

Higgins, J. P., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. Bmj, 327(7414), 557-560. https://doi.org/10.1136/bmj.327.7414.557

Hosain, G. M., Chatterjee, N., Ara, N., & Islam, T. (2007). Prevalence, pattern and determinants of mental disorders in rural Bangladesh. Public Health, 121(1), 18-24. https://doi.org/10.1016/j.puhe.2006.06.018

Imran, N., Bodla, Z. H., Asif, A., Shoukat, R., & Azeem, M. W. (2021). Pakistan's First Child & Adolescent Psychiatry Inpatient Unit: Characteristics of admitted patients and response to treatment over a 7-year period. Pak J Med Sci, 37(2), 305-311. https://doi.org/10.12669/pjms.37.2.2611

International Labour Organisation. (2018). *World employment and social outlook: Trends 2018*. International Labour Organisation.

Jablensky, A. (2000). Epidemiology of schizophrenia: the global burden of disease and disability. *European Archives of Psychiatry and Clinical Neuroscience, 250*, 274-285.

JBI (2020). *Joanna Briggs Institute Reviewer's Manual*. The Joanna Briggs Institute.

Jennings, B., Kirkwood, S., & Cree, V. E. (2022). Purdah in the 21st century: Women’s experiences of work and space in Dhaka. *Women’s Studies International Forum, 90*, 102560-. https://doi.org/10.1016/j.wsif.2022.102560

Jha, A. K., Ojha, S. P., Dahal, S., Sharma, P., Pant, S. B., Labh, S., Marahatta, K., Shakya, S., Adhikari, R. P., Joshi, D., Luitel, N. P., & Dhimal, M. (2019). Prevalence of Mental Disorders in Nepal: Findings from the Pilot Study. J Nepal Health Res Counc, 17(2), 141-147. https://doi.org/10.33314/jnhrc.v0i0.1960

Jimenez, M. A. (1997). Gender and Psychiatry: Psychiatric Conceptions of Mental Disorders in Women, 1960-1994. *Affilia, 12*(2), 154 175. https://doi.org/10.1177/088610999701200202

Johnson, T. P., & Wislar, J. S. (2012). Response rates and nonresponse errors in surveys. *JAMA, 307*(17), 1805-1806.

Kar, N. (2018). Indian concepts on psychosis. *Indian Journal of Psychiatry, 60*(4), 421-428.

Karim, S., Saeed, K., Rana, M. H., Mubbashar, M. H., & Jenkins, R. (2004). Pakistan mental health country profile. *International Review of Psychiatry (Abingdon, England)*, *16*(1–2), 83–92. https://doi.org/10.1080/09540260310001635131

Keepers, G. A., Fochtmann, L. J., & Anzia, J. M. (2020). The American Psychiatric Association practice guideline for the treatment of patients with schizophrenia. *American Journal of Psychiatry, 177*(9), 868-872.

Kelleher, I., Harley, M., Lynch, F., Arseneault, L., Fitzpatrick, C., & Cannon, M. (2008). Associations between childhood trauma, bullying and psychotic symptoms among a school-based adolescent sample. *British Journal of Psychiatry*, *193*(5), 378–382. https://doi.org/10.1192/bjp.bp.108.049536

Kermode, M., Bowen, K., Arole, S., Pathare, S., & Jorm, A. F. (2009). Attitudes to people with mental disorders: a mental health literacy survey in a rural area of Maharashtra, India. *Social Psychiatry and Psychiatric Epidemiology*, 44(12), 1087-1096.

Kessler, R. C., Birnbaum, H., Demler, O., Falloon, I. R. H., Gagnon, E., Guyer, M., Howes, M. J., Kendler, K. S., Shi, L., Walters, E., & Wu, E. Q. (2005). The Prevalence and Correlates of Nonaffective Psychosis in the National Comorbidity Survey Replication (NCS-R). *Biological Psychiatry (1969)*, *58*(8), 668-676. https://doi.org/10.1016/j.biopsych.2005.04.034

Khairkar, P., Pathak, C., Lakhkar, B., Sarode, R., Vagha, J., Jagzape, T., Damke, S., & Saoji, N. (2013). A 5-year hospital prevalence of child and adolescent psychiatric disorders from central India. Indian J Pediatr, 80(10), 826-831. https://doi.org/10.1007/s12098-013-1120-x

Khan, M. M., Iqbal, A., & Waheed, W. (2020). Schizophrenia: Prevalence, treatment and policies in Pakistan. *International Journal of Mental Health Systems*, 14(1), 56. doi:10.1186/s13033-020-00384-7

Khan, T. A., Hussain, S., Ikram, A., Mahmood, S., Riaz, H., Jamil, A., Amin, A., Haider, Y. G., Sandhu, M., Mushtaq, A., Barbui, C., Johnson, C. F., & Godman, B. (2020). Prevalence and treatment of neurological and psychiatric disorders among tertiary hospitals in Pakistan; findings and implications. Hosp Pract (1995), 48(3), 145-160. https://doi.org/10.1080/21548331.2020.1762366

Khan, Z., Qureshi, O., Pasha, A., Majid, O., Saleem, S., Fearon, P., & Shaikh, M. (2023). Exploring biomedical and traditional care pathways for people with psychosis in Karachi, Pakistan. *Frontiers in Psychiatry, 14*, 1086910. https://doi.org/10.3389/fpsyt.2023.1086910

Kirakosyan, G.V., & Frolova, A. (2022). Understanding psychosis: diagnosis and clinical presentation (updates for clinicians). *World Journal of Advanced Research and Reviews*.

Kirkbride, J. B., Barker, D., Cowden, F., Stamps, R., Yang, M., Jones, P. B., & Coid, J. W. (2008). Psychoses, ethnicity and socio-economic status. *British Journal of Psychiatry, 193*(1), 18–24. https://doi.org/10.1192/bjp.bp.107.041566

Krabbendam, L., & van Os, J. (2005). Schizophrenia and urbanicity: A major environmental influence–conditional on genetic risk. *Schizophrenia Bulletin*, 31(4), 795-799. doi:10.1093/schbul/sbi060

Lakhan, R. (2013). The coexistence of psychiatric disorders and intellectual disability in children aged 3-18 years in the barwani district, India. ISRN Psychiatry, 2013, 875873. https://doi.org/10.1155/2013/875873

Lim, G. Y., Tam, W. W., Lu, Y., Ho, C. S., Zhang, M. W., & Ho, R. C. (2018). Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. *Scientific Reports, 8(1),* 2861–10. https://doi.org/10.1038/s41598-018-21243-x

Lugo Marín, J., Alviani Rodríguez-Franco, M., Mahtani Chugani, V., Magán Maganto, M., Díez Villoria, E., & Canal Bedia, R. (2018). Prevalence of Schizophrenia Spectrum Disorders in Average-IQ Adults with Autism Spectrum Disorders: A Meta-analysis. *Journal of Autism and Developmental Disorders, 48*(1), 239–250. https://doi.org/10.1007/s10803-017-3328-5

Lund, C., Breen, A., Flisher, A. J., Kakuma, R., Corrigall, J., Joska, J. A., Swartz, L., & Patel, V. (2010). Poverty and common mental disorders in low and middle income countries: A systematic review. *Social Science & Medicine (1982)*, *71*(3), 517–528. https://doi.org/10.1016/j.socscimed.2010.04.027

Lyles, S., Khan, Z., Qureshi, O., & Shaikh, M. (2023). A systematic review of the effectiveness and implementation readiness of psychosocial interventions for psychosis in South Asia. *PloS One*, *18*(11), e0283411 e0283411. https://doi.org/10.1371/journal.pone.0283411

Malhotra, S., & Chaturvedi, S. K. (1984). Patterns of childhood psychiatric disorders in India. *Indian Journal of Pediatrics*, *51*(2), 235–240. https://doi.org/10.1007/BF02825933

McGrath, J., Saha, S., Chant, D., & Welham, J. (2008). Schizophrenia: A Concise Overview of Incidence, Prevalence, and Mortality. *Epidemiologic Reviews, 30*(1), 67–76. https://doi.org/10.1093/epirev/mxn001

McGrath, J., Saha, S., Welham, J., El Saadi, O., MacCauley, C., & Chant, D. (2004). A systematic review of the incidence of schizophrenia: the distribution of rates and the influence of sex, urbanicity, migrant status and methodology. *BMC medicine*, *2*,13. https://doi.org/10.1186/1741-7015-2-13

Garekar, H, Bhargava, M, & Verma, R. (2015). Aggression and Psychosis in Patients Seeking Emergency Psychiatric Care in New Delhi, India. International Journal of Emergency Mental Health and Human Resilience, 17(3). https://doi.org/10.4172/1522-4821.1000251

Mirza, I., & Jenkins, R. (2004). Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: Systematic review. BMJ, 328(7443), 794. https://doi.org/10.1136/bmj.328.7443.794

Moore, T. H., Zammit, S., Lingford-Hughes, A., Barnes, T. R., Jones, P. B., Burke, M., & Lewis, G. (2007). Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review. *The Lancet (British Edition), 370*(9584), 319–328. https://doi.org/10.1016/S0140-6736(07)61162-3

Moreno-Küstner, B., Martín, C., & Pastor, L. (2018). Prevalence of psychotic disorders and its association with methodological issues. A systematic review and meta-analyses. *PloS One, 13*(4), e0195687–e0195687. https://doi.org/10.1371/journal.pone.0195687

Munn, Moola, Lisy, Riitano & Tufanaru, 2014: Munn, Z., Moola, S., Lisy, K., Riitano, D., & Tufanaru, C. (2014). Methodological guidance for systematic reviews of observational epidemiological studies reporting prevalence and cumulative incidence data. *International Journal of Evidence-Based Healthcare*, *12*(3), 147-153. doi:10.1097/XEB.0000000000000059

Murthy, R. S. (2016). Caregiving and caregivers: Challenges and opportunities in India. *Indian Journal of Social Psychiatry: Official Publication of Indian Association for Social Psychiatry*, *32*(1), 10–18. https://doi.org/10.4103/0971-9962.176761

Murthy, R. S. (2017). National mental health survey of India 2015-2016. *Indian Journal of Psychiatry, 59*(1), 21-26.

Nandi, D. N., Banerjee, G., Boral, G. C., Ganguli, H., (Sachdev), S. A., Ghosh, A., & Sarkar, S. (1979). Socio-economic status and prevalence of mental disorders in certain rural communities in India. *Acta Psychiatrica Scandinavica*, *59*(3), 276–293. https://doi.org/10.1111/j.1600-0447.1979.tb06967.x

Natekar, A., Charnangikar, S., & Deshmukh, A. (2021). Cultural perceptions and stigma of mental illness in India. *International Journal of Social Psychiatry, 67*(4), 364-371.

Naveed, S., Waqas, A., Chaudhary, A. M., Naveed, S., & Waqas, A. (2020). The impact of diagnostic interviews versus lay-administered instruments on prevalence estimates of common mental disorders: a systematic review. *International Journal of Epidemiology, 49(*2), 500-517.

Niaz, U., Hassan, H., Husain., S., & Siddiqui, S. (2004). A cross-sectional study of the frequency of psychiatric morbidity in affluent urban population of Karachi. P*akistan Journal of Medical Sciences, 20* (4), 337-344.

Nuevo, R., Chatterji, S., Verdes, E., Naidoo, N., Arango, C., & Ayuso-Mateos, J. L. (2012). The Continuum of Psychotic Symptoms in the General Population: A Cross-national Study. *Schizophrenia Bulletin*, *38*(3), 475–485. https://doi.org/10.1093/schbul/sbq099

Padmavathi, R., Rajkumar, S., Kumar, N., Manoharan, A., & Kamath, S. (1988). Prevalence of schizophrenia in an urban community in madras. *Indian Journal of Psychiatry*, *30*(3), 233–239.

Patel, V., & Sumathipala, A. (2001). International representation in psychiatric literature: Survey of six leading journals. *British Journal of Psychiatry*, *178*(5), 406–409. https://doi.org/10.1192/bjp.178.5.406

Patel, V., Araya, R., Chatterjee, S., Chisholm, D., Cohen, A., De Silva, M., & van Ommeren, M. (2007). Treatment and prevention of mental disorders in low-income and middle-income countries. *The Lancet, 370*(9591), 991-1005.

Patel, V., Chisholm, D., Parikh, R., Charlson, F. J., Degenhardt, L., Dua, T., ... & Whiteford, H. (2016). Addressing the burden of mental, neurological, and substance use disorders: key messages from Disease Control Priorities, 3rd edition. *The Lancet*, 387(10028), 1672-1685.

Patel, V., Minas, H., Cohen, A., & Prince, M. J. (2013). *Global Mental Health: Principles and Practice* (1st ed.). Oxford University Press, Incorporated.

Patsopoulos, N. A., Evangelou, E., & Ioannidis, J. P. (2008). Sensitivity of between-study heterogeneity in meta-analysis: proposed metrics and empirical evaluation. *International Journal of Epidemiology, 37*(5), 1148-1157.

Pedersen, C. B., & Mortensen, P. B. (2001). Evidence of a dose-response relationship between urbanicity during upbringing and schizophrenia risk. *Archives of General Psychiatry*, *58*(11), 1039-1046. doi:10.1001/archpsyc.58.11.1039

Perälä, J., Suvisaari, J., Saarni, S. I., Kuoppasalmi, K., Isometsä, E., Pirkola, S., Partonen, T., Tuulio-Henriksson, A., Hintikka, J., Kieseppä, T., Härkänen, T., Koskinen, S., & Lönnqvist, J. (2007). Lifetime Prevalence of Psychotic and Bipolar I Disorders in a General Population. *Archives of General Psychiatry, 64*(1), 19–28. https://doi.org/10.1001/archpsyc.64.1.19

Raguram, R., Venkateswaran, A., Ramakrishna, J., & Weiss, M. G. (2002). Traditional community resources for mental health: a report of temple healing from India. *BMJ*, *325*(7354), 38-40.

Raguram, R., Weiss, M. G., & Channabasavanna, S. M. (1996). Stigma, culture, and psychopathology: A South Indian study. *Social Science & Medicine, 43*(7), 1059-1071.

Rao, S. (2021). Gender Biases in Medicine. *Economic and Political Weekly; Mumbai,* retrieved from: https://www.proquest.com/magazines/gender-biases-medicine/docview/2611906487/se-2?accountid=14511

Rosenblum, M. S., and Hipsman, F. (2016). *Border Metrics: How to Effectively Measure Border Security and Immigration Control*. Washington, DC: Migration Policy Institute: www.migrationpolicy.org/research/border-metrics-how-effectively-measure-border-security-and-immigration-control.

Saha, S., Chant, D., & McGrath, J. (2008). Meta-analyses of the incidence and prevalence of schizophrenia: Conceptual and methodological issues. International Journal of Methods in *Psychiatric Research, 17*(1), 55-61. https://doi.org/10.1002/mpr.240

Saha, S., Chant, D., Welham, J., & McGrath, J. (2005). A systematic review of the prevalence of schizophrenia. *PLoS Medicine*, *2*(5), e141- . https://doi.org/10.1371/journal.pmed.0020141

Saraceno, B., Barbui, C., & Kastrup, M. (2007). Poverty and mental health. *Psychoanalytic Psychotherapy, 21*(3), 196-198.

Sarwat, A., Nawab, F., & Nisar, N. (2015). Profile of Psychiatric Patients Attending Outpatient Clinic of a Tertiary Care Hospital, Karachi. Med Forum, 26 (7), 31-34.

Satija, D. C., Patni, S. K., & Nathawat, S. S. (1984). Mental morbidity in industrial workers of khetri copper complex. *Indian Journal of Psychiatry*, *26*(2), 147–155.

Saxena, S., Sharan, P., & Saraceno, B. (2004). Research for Change: the role of scientific journals publishing mental health research. *World Psychiatry*, *3*(2), 66–72.

Saxena, S., Thornicroft, G., Knapp, M., & Whiteford, H. (2007). Resources for mental health: scarcity, inequity, and inefficiency. *The Lancet*, 370(9590), 878-889.

Selten, J. P., & Cantor-Graae, E. (2005). Social defeat: Risk factor for schizophrenia? *British Journal of Psychiatry*, 187(2), 101-102. doi:10.1192/bjp.187.2.101

Sethi, B. B., Gupta, S. C., Mahendru, R. K., & Kumari, P. (1974). Mental Health and Urban Life: A Study of 850 Families. *British Journal of Psychiatry*, *124*(580), 243–246. https://doi.org/10.1192/bjp.124.3.243

Shaji, K. S., Raju, D., Sathesh, V., Krishnakumar, P., Punnoose, V. P., Kiran, P. S., Mini, B. S., Kumar, S., Anish, P. K., Kaimal, G. G., Gupthan, L., Sumesh, T. P., Nikhil, U. G., Cyriac, N., Vinod, M. D., Kumar, R. P., Chandran, R., Rejani, P. P., Amrutha, R., . . . Anand, T. N. (2017). Psychiatric morbidity in the community: A population based-study from Kerala. Indian J Psychiatry, 59(2), 149-156. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_162_17

Shakya, D. R. (2010). Psychiatric Morbidity Profiles of Child and Adolescent Psychiatry Out-Patients in a Tertiary-Care Hospital. *Journal of Nepal Paediatric Society*, *30*(2), 79–84. https://doi.org/10.3126/jnps.v30i2.2604

Simeone, J. C., Ward, A. J., Rotella, P., Collins, J., & Windisch, R. (2015). An evaluation of variation in published estimates of schizophrenia prevalence from 1990─2013: A systematic literature review. *BMC Psychiatry, 15*(1), 193.

Smith, A. (2019). Sample frame issues in population studies. *Journal of Research Methodology*, 45(2), 112-128.

Smith, J. G. (2019). Survey response rate reporting in the literature. *Journal of Clinical Epidemiology, 113*, 138-150.

Soubbotina, T.P. (2004) Beyond Economic Growth: An Introduction to Sustainable Development. 2nd Edition, World Bank, Washington DC. https://doi.org/10.1596/0-8213-5933-9

Streiner, D.L., Patten, S.B., Anthony, J.C., & Cairney, J. (2009). Has 'lifetime prevalence' reached the end of its life? An examination of the concept. *International Journal of Methods in Psychiatric Research, 18*.

Sunwoo, M., O'Connell, J., Brown, E., Lin, A., Wood, S. J., McGorry, P., & O'Donoghue, B. (2020). Prevalence and outcomes of young people with concurrent autism spectrum disorder and first episode of psychosis. *Schizophrenia Research, 216*, 310–315. https://doi.org/10.1016/j.schres.2019.11.037

Thacore, V. R., Gupta, S. C., & Suraiya, M. (1975). Psychiatric morbidity in a north Indian community. *The British journal of psychiatry : the journal of mental science*, *126*, 365–369. https://doi.org/10.1192/bjp.126.4.364

Thara, R., & Srinivasan, T. N. (2000). How Stigmatising Is Schizophrenia in India? *International Journal of Social Psychiatry*, *46*(2), 135–141. https://doi.org/10.1177/002076400004600206

Thara, R., & Patel, V. (2010). Role of non-governmental organisations in mental health in India. *Indian Journal of Psychiatry, 5*(2), 389-395.

The World Bank Group (2024) *The world by income and region*, *WDI - The World by Income and Region*. Available at: https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html (Accessed: 15 July 2024).

Theisen-Womersley, G. (2021). Trauma and Migration. In: Trauma and Resilience Among Displaced Populations. *Springer*, Cham. https://doi.org/10.1007/978-3-030-67712-1_2

Trivedi, J. K., Goel, D., Kallivayalil, R. A., Isaac, M., Shrestha, D. M., & Gambheera, H. C. (2007). Regional cooperation in South Asia in the field of mental health. *World Psychiatry*, *6*(1), 57–59.

Vallath, S., Narasimhan, L., Priyanka, M., Varadarajan, V., & Ravikanth, L. (2023). Prevalence, service use and clinical correlates of hallucinations and delusions in an out-patient population from India. J Ment Health, 32(1), 87-95. https://doi.org/10.1080/09638237.2021.1922627

Vassos, E., Pedersen, C. B., Murray, R. M., Collier, D. A., & Lewis, C. M. (2012). Meta-analysis of the association of urbanicity with schizophrenia. *Schizophrenia Bulletin*, 38(6), 1118-1123. doi:10.1093/schbul/sbs096

Vidyasagaran, A. L., McDaid, D., Faisal, M. R., Nasir, M., Muliyala, K. P., Thekkumkara, S., Wright, J., Huque, R., Benkalkar, S., & Siddiqi, N. (2023). Prevalence of mental disorders in South Asia: A systematic review of reviews. *Global Mental Health*, *10*, e78–e78. https://doi.org/10.1017/gmh.2023.72

Vijayalakshmi, S., Rajagopal, K., Govindan, R., Ganjekar, S., Prathyusha, P. V., & Chacko, L. K. (2023). Sexual and reproductive health problems among women with mental illness attending tertiary care psychiatric outpatient clinic in India: A cross-sectional study. J Neurosci Rural Pract, 14(4), 644-649. https://doi.org/10.25259/JNRP_62_2023 von Hippel, P. T. (2015). The heterogeneity statistic I(2) can be biased in small meta-analyses. *BMC Med Res Methodol, 15*, 35. https://doi.org/10.1186/s12874-015-0024-z

Wig, N., Varma, V. K., & Khanna, B. C. (1978). Diagnostic characteristics of a general hospital psychiatric adult outpatients' clinic. *Indian Journal of Psychiatry, 20* (3), 262-266.

Wijesinghe, C. P., Dissanayake, S. A. W., & Dassanayake, P. V. L. N. (1978). Survey of psychiatric morbidity in a semi-urban population in Sri Lanka. *Acta Psychiatrica Scandinavica*, *58*(5), 413–441. https://doi.org/10.1111/j.1600-0447.1978.tb03573.x

Part 2: Empirical Paper

‘Someone to Support Me’: Tackling Psychosis Stigma in Pakistan through Forum Theatre - A Community-Based Implementation Pilot

Abstract

Introduction: This study employs a novel approach to reducing stigma in Pakistan through interactive forum theatre, rooted in the Theatre of the Oppressed (TO) participatory arts-based initiative. TO, originating from human rights activism and social justice, is effective in low-literacy communities. The participatory arts approach involved individuals with lived experience of psychosis, their caregivers, performers, and TO experts, aiming to raise awareness and foster community dialogue to reduce stigma.

Methods: A mixed-methods evaluation using the Standards for Reporting Implementation Studies (StaRi) framework assessed the acceptability and feasibility of this approach. Workshops and performances were conducted, gathering qualitative data from semi-structured interviews and vox pops, and quantitative data from pre- and post-performance questionnaires.

Results: The intervention showed partial support for its acceptability and feasibility in a low- and middle-income country (LMIC) context. Participants reported positive experiences, increased awareness, and reduced stigmatising attitudes towards psychosis. Quantitative analysis revealed significant increases in knowledge about psychosis post-performance, although changes in stigma were not statistically significant. High retention rates (75% for the implementation phase and 70.5% for the intervention phase) supported feasibility, despite logistical challenges.

Discussion: Findings highlight the potential of forum theatre to reduce psychosis stigma in LMICs and underscores the need for more rigorous measures and further research to refine and validate this approach across diverse settings.

Introduction

Psychosis describes a constellation of symptoms, including delusions (false beliefs), hallucinations (seeing or hearing things others do not), cognitive difficulties, and reduced motivation and pleasure in activities (negative symptoms). When symptoms persist in a particular pattern over time, this can lead to a diagnosis of schizophrenia. With around 21 million people globally living with the condition, schizophrenia is one of the top 20 causes of disability worldwide (Keepers, et al., 2020), a large proportion of which come from low- and middle-income countries (LMICs) (Charlson et al., 2018).

Schizophrenia and psychosis are highly stigmatised mental health conditions, significantly impacting individuals' quality of life (Degnan, Berry, Humphrey, & Bucci, 2021). People with psychosis face societal devaluation due to stereotypes, such as being perceived as violent and unpredictable, leading to hostility and discrimination (Angermeyer, Beck, Dietrich & Holzinger, 2005; Degnan, Berry, Humphrey, & Bucci, 2021). This increases social threats, self-stigma, and avoidance (Fazel et al., 2009; Witt, van Dorn & Fazel, 2013). Despite many achieving favourable outcomes (Harrison et al., 2001), lifelong treatment is often necessary, and psychosis is associated with a reduced life expectancy by about 15 years (Peritogiannis, Ninou, & Samakouri, 2022; Simon et al., 2018). The financial burden of treatment affects individuals, families, and healthcare systems (Nawaz, Gul, Amin, Huma, & Al Mughairbi, 2020).

Stigma against psychosis is prevalent in Western societies (Barry, McGinty, Pescosolido, & Goldman, 2014; Huggett et al., 2018; Phelan, Link, Stueve & Pescosolido, 2000) and globally (Seeman, Tang, Brown & Ing, 2015; Gudyanga et al., 2021). Most people with schizophrenia live in low- and middle-income countries (LMICs), which have a 90% treatment gap due to population growth and aging (Charlson et al., 2018). In South Asia, including Pakistan, stigma mirrors Western attitudes (Lauber & Rössler, 2007). However, Ahmed Birtel, Pyle and Morrison (2020) found cultural differences when comparing three dimensions of stigma (prejudice, stereotypes, and discrimination). South Asian students attributed higher 'dangerousness' (stereotypes) and 'anger' (prejudice) towards individuals with psychosis compared to White British students, leading to greater discrimination, avoidance, endorsement of segregation, and lower willingness to help.

Cultural Context; Mental Health Provision in Pakistan

Pakistan, a South Asian country, has a large, growing population with 70% living in rural areas (Karim, Saeed, Rana, Mubbashar & Jenkins, 2004). As an LMIC, it consists of four provinces (Baluchistan, Khyber Pakhtunkhwa, Punjab, Sindh), two autonomous territories (Azad Jammu Kashmir, Gilgit-Baltistan), and one federal territory (Islamabad Capital Territory) (Hashmi et al., 2020). About 45% of the population lives below the poverty line, with agriculture as the main economic activity (Jamal, 2017). The predominant religion is Islam, and societal stigma often leads to mental health problems being attributed to supernatural causes, making traditional and faith healers the first point of contact.

Despite the presence of psychiatric service providers, there is a severe shortage of trained mental health professionals, with approximately one psychiatrist per million people (Javed, Khan, Nasar, & Rasheed, 2020). Given the global prevalence of schizophrenia at 0.28% (Charlson et al., 2018), this translates to one psychiatrist for every 2800 people with schizophrenia in Pakistan. Financial constraints and lack of data on mental illness prevalence hinder improvements in mental health services (Karim, Saeed, Rana, Mubbashar & Jenkins, 2004).

Efforts to address these gaps include the 'National Mental Health Policy' and the 'Mental Health Ordinance' of 2001, replacing the outdated 'Lunacy Act' of 1912 (Javed, Khan

& Nasar, 2020). Programs like the 'Community Mental Health Programme' and 'Schools' Mental Health Programme' have been effective in rural areas, promoting mental health literacy, increasing access to care, and reducing stigma (Khalily et al., 2021).

Major barriers to treatment include societal stigma, misinformation from traditional healers, lack of awareness among families, and fear of medical treatment (Haddad, Waqas, Qayyum, Shams & Malik, 2016; Javed, Khan, Nasar & Rasheed, 2020; Naeem & Ayyub, 2004; Khan et al., 2023). Marginalised, often illiterate populations typically seek support from faith healers first, making traditional psychoeducation ineffective (Khan et al., 2023). Thus, interventions targeting stigmatised attitudes, knowledge, and behaviours are crucial. Community-based participatory research is recommended to understand the impact of anti-stigma interventions, involving stakeholders throughout the process (Corrigan & Shapiro, 2010).

Interventions Aimed at Reducing Stigma Towards Mental Illness

As there are many elements to mental health stigma, including internalised stigma at the individual level and public stigma at a population/societal level, a collaborative and multifaceted approach to interventions is required (Ahmedani, 2011; Corrigan, Roe, & Tsang, 2011; Henderson & Gronholm, 2018; Pescosolido, 2013; Corrigan & Wassel, 2008). Various interventions have been implemented to reduce mental health stigma. In the UK, public awareness campaigns have been notable (Henderson et al., 2014; Palpant, Steimnitz, Bornemann, & Hawkins, 2006). Psychosocial interventions in workplaces, schools, and universities, primarily focus on mental health education (Maranzan, 2016; Perry et al., 2014). Contact-based interventions, which increase interaction with people experiencing mental health difficulties, have shown promising results, especially when individuals with lived experiences serve as 'peers' or 'educators' with a recovery-focused message (Fokuo, et al., 2017; Koike, et al., 2018; Yap, Reavley & Jorm, 2012; Knaak, Modgill, & Patten, 2014). Strategies to tackle mental health stigma, include protest, increased contact with individuals with mental health difficulties, and psychoeducation to raise awareness (Corrigan & Wassel, 2008; London & Evans-Lacko, 2010). Effective implementation of stigma-reducing interventions requires overcoming practical and resource limitations to reach large and hidden populations (Ungar, Knaak, & Szeto, 2016).

Participatory Action Research

Participatory action research (PAR) can be characterised as a process of education, research, and action that provides a framework for researchers to achieve positive social change. Central to PAR is the commitment to conduct research collaboratively and equitably with members of communities that have traditionally been exploited and oppressed (Brydon-Miller, 1997). The term was first used in the 1970s to describe projects that drew upon the knowledge and expertise of community members about key issues affecting their community to implement efforts to foster positive social development (Brydon-Miller, 1997).

PAR can draw on traditional methods of scientific inquiry regarding data gathering from qualitative to quantitative such as questionnaire and interview data. However, PAR is distinct from traditional research approaches due to the extent to which community members are involved in the process of research in addition to the explicit acknowledgement of the role of the researchers in pursuing social justice and the political nature of the work. Crucially, PAR places members of the community as key stakeholders who influence the issues, methods, and dissemination of the research findings (Dorant, 2020). As such, PAR also utilises several approaches in the interest of social change, such as community seminars, storytelling groups, education camps, video productions, political action, and participatory theatre (Kindon, Pain, & Kesby, 2007). Implicit in the PAR approach to conducting research is the need for flexibility and reflection to integrate personal, professional, and political values into the interpretation of the findings. Hall (1981) outlines various requirements for research to be considered PAR which are listed below based on Brydon-Miller's (1997) summary:

1. The research is based in communities that include populations that have traditionally been exploited and/or oppressed.

2. PAR addresses specific concerns of the community and targets the fundamental causes of oppression with the goal of positive social change.

3. PAR is a process of education, research, and action with the potential to educate and transform participants, in which all said participants are enabled to contribute their unique skills and knowledge.

Kagan (2012) acknowledges that ideally, PAR enables full participation and control for the community members to be involved in all aspects of the research process. However, in practice, the degree of involvement may vary for a few reasons. Not all community members want full involvement and empowerment may involve relieving some of that burden. Working flexibly and viewing PAR as a continuum ranging from providing a voice/platform through to full involvement in the research process can be a useful approach, so long as the decision about the level of participation is a shared one. Indeed, researchers using the PAR approach have asked the question 'participation with whom?', highlighting the complex nature of oppression and inequality and how often more than one marginalised community is involved in the issues being researched. To reduce the likelihood of those most marginalised and vulnerable being disadvantaged by the process, it has been suggested that researchers ought to be clear about the purpose of the research and engage in critical reflection around the quality of participatory relationships and how power may be operating in this context (Kagan, 2012).

‘Forum Theatre’ and Participatory Arts Methodology

Interactive Forum Theatre is an approach from the Theatre of the Oppressed participatory arts-based initiative that has its roots in human rights activism and social justice, first established by Augusto Boal (1979). Boal’s approach was to use theatre to foster change and challenge systems of power by transforming the audience from passive ‘spectators’ into subjects of the performance and actors in the play; therefore becoming ‘spect-actors’. The ‘spect-actors’ are invited to step into the role of the protagonist, i.e. those with lived experience, and change the script and/or problem solve providing a powerful empathic experience. Participatory theatre aims to create new knowledge generated from the audience and does not seek to provide answers but instead ask questions, fostering meaningful change through community problem-solving (Quinlan, 2009). A distinctive feature of interactive forum theatre is that it goes beyond empathy toward cultivating a sense of agency in the audience to foster change and action in the real world. This relates to aspects of stigma such as challenging prejudicial views, harmful stereotypes, and behaviours that discriminate. Participatory theatre has previously been used in LMICs as an intervention to combat stigma for HIV and the LGBTQ+ community (Stangl et al., 2010; Logie et al., 2019).

The forum theatre methodology has been used in a wide variety of programmes for social change across the world, from preventing gender-based violence (Brigell, 2010), to transitional justice in Afghanistan (Siddiqui, Marifat, & Kouvo, 2013). Oral storytelling and poetry have long served to voice societal concerns, especially around issues of justice and inequality, and to call for change, particularly in communities where there are low levels of literacy (Saeed, 2015). This would be relevant to the current study as a vehicle to share ideas and engage families and local members of the community in areas of Pakistan that are likely to have high rates of illiteracy.

Aims

The study piloted a project that involved co-producing a forum theatre production in collaboration with people with lived experience of psychosis, their caregivers, performers, and Theatre of the Oppressed experts. Using a mixed-methods approach, the study explored the acceptability and feasibility of this initiative from development and implementation strategy phase through to intervention and community response to the production. The hypothesis was that the co-produced forum theatre performance would increase awareness and reduce stigmatising attitudes and behaviours towards people with psychosis within the local community.

Methods

Study context and design

This research was part of a global mental health initiative involving collaboration between researchers at University College London (UCL) and Interactive Research and Development (IRD) Global, based in Pakistan. The initiative was funded by UCL's Global Engagement Fund which provides UCL staff seed funding to support and catalyse research, education, capacity-building, and policy engagement, in partnership with overseas groups with the potential for global impact. IRD Global is an international not-for-profit organisation based primarily in Singapore with registered affiliates based in Bangladesh, Indonesia, Nigeria, Pakistan, Philippines, South Africa, Vietnam, and Zimbabwe. IRD aims to develop, implement, and scale cost-effective, evidence-based, and high-impact solutions to health challenges and inequities. Researchers from both UCL and IRD designed and coordinated this project, and the implementation took place in Karachi, Pakistan. The author attended workshops virtually but did not play an active role in the activities due to language differences.

The study employed a mixed methods design to evaluate the acceptability and feasibility of utilising forum theatre to destigmatise psychosis in urban community settings in Karachi. Following the 27-item Standards for Reporting Implementation Studies (StaRi) checklist (Pinnock et al., 2017), the study utilised the dual strands concept to describe both the 'implementation strategy' and 'intervention' (see appendix C for checklist).

Intervention

The forum theatre intervention involved workshops featuring simple theatre exercises from Boal's book 'Games for Actors and Non-actors' (Boal, 1992). The goal was to foster collaboration between performers and individuals with lived experience of oppression, culminating in theatrical representations of the injustices they have faced. Boal emphasised creating a good debate over finding a perfect solution, inviting the audience to become "spect-actors" who generate different perspectives and ideas for solutions (Ferrand, 1995). The aim was to engage in the struggle against oppressive stigma rather than pinpoint a correct solution. A key element was the role of the "joker," who maintained a neutral, Socratic stance, prompting the spect-actors to reflect on their thoughts and feelings about the scenarios presented.

The Role of Researchers and Professionals

The project involved a range of researchers and professionals working together on different aspects of the process, from research design and training, facilitation and different levels of support. Below describes these groups and their involvement.

The Research Team

All professionals involved in the research design, interpretation and analysis based both at UCL and IRD.

- **Group Composition-** The author (UCL), the principal investigator (UCL), 2 x research assistants (IRD), research manager (IRD)
- **Range of Activities-**research design decisions, theoretical and epidemiological stance, ethical responsibilities, development of interview schedule, selection of measures, recruitment, data analysis and interpretation, funding, training responsibilities, project oversight.

The Field Team

All professionals involved in the implementation of the workshops and performances including data collection based on-site in Karachi.

- **Group Composition-**The author (UCL), 2 x research assistants, volunteers (IRD) the research manager, Community Mental Health Workers, on-site psychologist and the trained theatre performers (IRD).
- **Range of Activities**- Attending, running and facilitating the theatre workshops and performances, recruitment, record keeping, on-site data collection and logistics such as dealing with tech, setting up the space, organising transportation.

Participants

The Study Participants

As the study utilised a dual model approach, with a separate implementation workshop phase followed by the intervention performance phase, there were two groups of participants which have been described below.

The Production Team. The production team were considered *participants* of 'forum theatre' in the 'implementation phase' of the study, engaging in a process theoretically underpinned by the theatre of the oppressed methodology (Boal, 1979). Specifically, they formed the group experiencing the workshops together and co-producing the script for theatre.

- **Group Composition:** The trained theatre performers, people with lived experience of psychosis and their carers.
- **Range of Activities**: Attending workshops, engaging in theatre activities/games, engaging in shared discussions, co-producing ideas for the storyline of the play, shared decision making, use of body and language to express and tell stories, engaged in qualitative interviews to share about their experience of the process.

The Audience. The audience were considered *participants* of 'forum theatre' in the 'intervention phase' of the study, engaging in a process theoretically underpinned by the theatre of the oppressed methodology (Boal, 1979). As such the audience had no prior experience of the production team and were invited to experience a standalone performance and complete questionnaires and/or offer short video-recording intercept interviews.

- **Group Composition-** Staff who worked at the selected venues and members of the local community who came across the advertisement for the research.
- **Range of Activities**- Engage with the interactive forum theatre performance (i.e. watch, reflect, consider questions posed by the joker), complete questionnaires, engage in intercept interviews.

Inclusion and Exclusion Criteria

English or Urdu speaking participants aged 18 years old or above and able to provide informed consent were considered eligible to participate in the study. Participants were not required to be literate as surveys had the option to be administered verbally. See Table 1 for inclusion and exclusion criteria according to group allocation.

Table 1. Inclusion and Exclusion Criteria

	Inclusion Criteria	**Exclusion Criteria**
'The Production Team'- implementation phase	**Performers:** Aged 18 years or over. Ability to speak and understand Urdu or English. Previous or current experience in providing support for individuals with psychosis in a non-clinical setting.	**Performers:** Unable to speak either Urdu or English
	People with lived experience of psychosis: Aged 18-65 years old. Prior clinical diagnosis (at least 9 months) of psychosis including schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders and/or bipolar disorder with psychotic features.	**People with lived experience of psychosis:** Dementia and/or significant cognitive impairment cognitive impairment and/or severe learning disability. Organic psychosis or drug-induced psychosis if given as the primary diagnosis.

	Currently not receiving inpatient treatment. Receiving clinical treatment for psychosis for more than 1 year. Capacity to provide informed consent. Ability to speak and understand Urdu or English.	Unable to provide informed consent. Unable to speak Urdu or English.
	Caregivers: Aged 18 years or over. Family member(s) living with and providing supportive care for a relative with psychosis. Hired carer providing supportive care for an individual with psychosis for at least 2 months. Ability to speak and understand Urdu or English.	**Caregivers:** Does not have regular contact with individual(s) with psychosis. Unable to speak either Urdu or English.
‘The Audience’- Forum Theatre Intervention Phase	Aged 18 years or over. Ability to speak and understand Urdu or English.	Unable to speak either Urdu or English.

Procedure

Recruitment

Participants for the production team were recruited using purposive sampling from the through the National Institute for Health and Care Research (NIHR)-funded and Queen Mary University of London administered ‘Improving outcomes for people with psychosis in Pakistan and India – enhancing the Effectiveness of Community-based care (PIECEs) project (NIHR200824). The trained performers were already familiar with forum theatre and had a pre-established relationship with the IRD from previous unrelated projects. Similarly, participants living with psychosis and their carers had been involved in previous projects and had existing relationship with the IRD. Recruitment was therefore from a small participant pool in the first instance posing a challenge. Potential participants were contacted directly, provided with an information sheet and consent form, and given the opportunity to ask questions and contact researchers for further information. Despite best efforts to recruit through providing information and inviting engagement, general uptake was low and two participants with lived experience dropped out after the first day of workshops.

Audience recruitment utilised purposive, self-selecting, and snowball sampling approaches. To find audience participants and recruit suitable venues to perform at, local stakeholders were identified through community mobilisation and outreach by the field team, who contacted potential organisations directly and provided study descriptions and information sheets with researcher contact details. This process secured three performance venues: a local community centre, a school, and a healthcare setting, which approved and advertised the play. The initial recruitment process was successful due to positive engagement from the host venues, challenges arose when tracking participants after the performances, especially at 3- month follow up as this relied upon telephone contact alone. Steps to overcome this included keeping accurate confidential records of contact information and a detailed log of the multiple attempts made to reach participants and the outcome of the calls.

The Workshops-Implementation Phase

The next stage of the procedure involved an implementation strategy utilising workshops, guided by a Participatory Action Research (PAR) approach to address stigma identified by individuals with lived experience of psychosis (Khan et al., 2023). Once the consent forms were completed, performers in the production team attended a one-day training session to familiarise themselves with forum theatre methodology. Following this, the entire production team participated in three half-day workshops, involving interactive exercises to develop trust building and produce a forum theatre script for the community performance (see Fig 2).

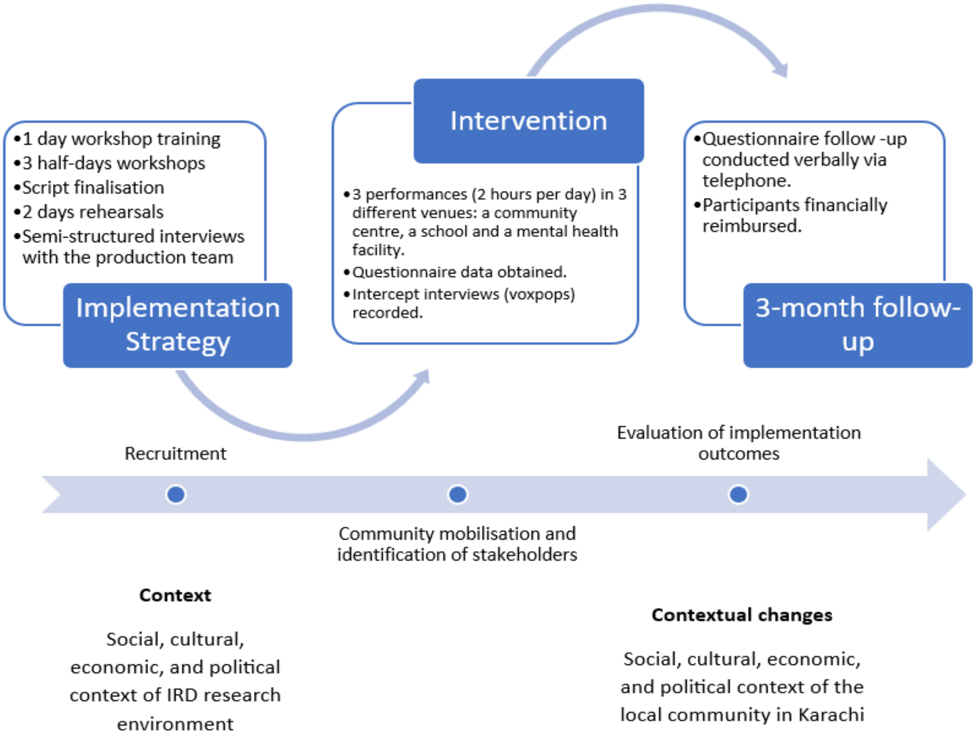
Transportation was provided for team members with lived experience, and a psychologist was available on site for emotional support. A research assistant managed recruitment and supervised mobilisation and training sessions, while two performers trained in the Boal approach, facilitated the workshops of which the author virtually attended two sessions via Zoom. The final workshop involved individuals with lived experience of psychosis and their carers sharing experiences to generate script ideas. The storyline was agreed upon within the production team and finalised in a separate rehearsal session with the performers.

Demographic information was collected, and semi-structured interviews in Urdu were conducted with each production team member by members of the field team. Interviews were recorded, transcribed, anonymised with unique codes, and professionally translated from Urdu into English.

Forum Theatre -Intervention Phase

Performers attended two rehearsal sessions before delivering three performances in the three individual settings (see Fig 3). The field team approached audience members at each show to provide study information and invite participation at the start. Audience members who consented completed demographic information and two short questionnaires measuring stigma (Community Attitudes Against the Mentally Ill (CAMI-12) and Knowledge Attitudes and Prejudice (KAP)) before and after the play (see Fig 4), and again via telephone three months later. Questionnaires were administered verbally for those who preferred this method or were illiterate. Voxpops, or short videos capturing audience members' impressions of the play, were recorded with consenting participants. Quantitative data was scored, qualitative data was transcribed, and both were anonymised for analysis.

Figure 1 Summary of implementation strategy and intervention process



Remuneration for Participants

The production team members were remunerated for their participation in the workshops and for completing the interviews and the audience members were remunerated for their participation in completing questionnaires at the three data collection points. All participants received 1000 PKR (approximately 2.82 GBP).

Figures 2-4: Photographic documentation of the workshops and performances

[redacted]

Fig. 2. IRD Production Team. (2023). *The Workshops: Implementation phase*. [photograph of participation in theatre activities]. Karachi, Pakistan

[redacted]

Fig. 3. IRD Production Team. (2023). *The Performances: Intervention phase*. [photograph of performers performing ‘someone to support me’ in community settings]. Karachi, Pakistan

[redacted]

Fig. 4. IRD Field Team. (2023). *Data Collection: Intervention phase*. [photograph of data collection at community settings]. Karachi, Pakistan

[IMAGES REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]

Data Collection and Analysis

Implementation Outcomes: Semi-Structured Interviews

A semi-structured interview schedule was designed in consultation with the principal investigator and the IRD research team. The questions aimed to capture participants' perspectives on co-producing the theatre script and identify barriers or facilitators for future projects (see appendix D). Open-ended questions focused on personal experiences, highlights and challenges, support received, and desired outcomes to assess the project's acceptability and feasibility. Additionally, the schedule explored shifts in perspectives on psychosis and advice for others with similar experiences to gauge changes in perceptions post-participation. Transcripts were anonymised to safeguard confidentiality.

Thematic Analysis.

Qualitative data were analysed using thematic analysis with a phenomenological approach as outlined by Braun and Clarke (2006). The researcher immersed themselves in the data by familiarising themselves with the English translated transcripts and watching recordings of the workshops and interviews. This extra step of engaging with recorded material was important to gain an in-depth understanding. Open coding was applied organically and iteratively by making notes, headings, and mind maps in the text to describe the content. Therefore, no pre-existing coding books were used in this study.

Transcripts were analysed primarily semantically to develop descriptive meanings of participants' experiences and latent meanings were also interpreted bringing the researcher’s frameworks (i.e. if latent constructs related to implementation outcomes occurred) to bear on the data. Inductive coding was completed via NVivo qualitative analysis software and similar codes were then grouped under themes and subthemes. A second researcher with cultural knowledge of Pakistan reviewed the identified themes and subthemes and finalised collaboratively.

Intervention Outcomes: Questionnaire data

For audience members, changes in perceptions, attitudes and beliefs around mental health and psychosis were measured with verbally administered questionnaires across three time points: prior to watching the performance (Time one: T1), immediately after the performance (Time two: T2) and via telephone at 3 months follow up (Time three: T3).

Measures.

The 12-item short version of the Community Attitudes Against the Mentally Ill (CAMI) measures attitudes towards people living with mental illness in the context of living in the same local community (Morris et al., 2012). Attitudes are assessed using a 5-point Likert scale (1=strongly agree, 2=slightly agree, 3=neither agree nor disagree 4=slightly disagree 5=strongly disagree). The measure has been validated across different cultural contexts (Reta, Tesfaye, Girma, Dehning & Adorjan, 2016; Tong, Wang, Sun & Li, 2020; Yeshanew, Yohannis, Belete, Abebaw & Shumet, 2022; Kafami et al., 2023). While the original 40-item CAMI scale was found to possess good levels of internal consistency (Taylor & Dear, 1981), there are no validation studies for the adapted 12-item version.

The 10-item Knowledge Attitudes and Prejudice (KAP) questionnaire was developed specifically for the current study to measure psychosis-specific stigma. Items were selected from the Stigma in Global Context–Mental Health Study and their findings of public response on mental health knowledge, beliefs, and treatment endorsements for schizophrenia in Bangladesh (Pescosolido, 2013). The items were adapted to relate to psychosis for example, instead of ‘Mental Illness can be treated’ this was amended to ‘Psychosis can be treated’. The KAP consists of two subscales; 1) Knowledge which has four questions around causes and treatment of psychosis and 2) Stigma/Prejudice including six questions reviewing different attitudes about people with psychosis and their capabilities. Questions are measured on a 5-point Likert scale (1=strongly agree, 2=slightly agree, 3=neither agree nor disagree 4=slightly disagree 5=strongly disagree) except for one multiple choice question about causes of psychosis. See appendix E for questionnaires and scoring information.

Quantitative analysis.

A repeated measures statistical analysis was conducted and post-hoc descriptive statistics on demographic data were reported. Bonferroni corrections for multiple comparisons were applied. An a priori power analysis was conducted for a repeated measures design using Cohen's (1988) general guidelines for detecting ‘small’ (0.20), ‘medium’ (0.50), or ‘large’ effects (0.80). The effect size was set to .80, the alpha was set as $\alpha = .05$, and the power was set to .95 which yielded a minimum sample size of 27 participants for the present study.

Intervention Outcomes: Intercept Interview data (Voxpops)

The phrase ‘vox pop’ stems from the Latin meaning ‘voice of the people’ and has more recently been popularised by modern journalism and market research. Vox pops refer to short intercept interviews that are video recorded, usually on location to capture immediate or ‘off the cuff’ reactions from willing participants. This approach has also been used in research as recruitment, production, duration and costs are all kept to a minimum making it a cost-effective way to obtain participant feedback. A member of the IRD research field team conducted 8 intercept videos with consenting members of the audience at T2 to ascertain the key messages they had taken away from the play.

Qualitative analysis of Voxpops.

Voxpop videos were translated into English using Google Translate software and this process was repeated using open AI software. Data was then thematically analysed from the transcripts, the second rater reviewed a selection of the voxpop interviews as a credibility measure.

Defining Implementation Outcomes

Acceptability, Appropriateness and Adoption

For the purposes of this study ‘acceptability’ is defined as the degree to which the implementation strategy and intervention is considered reasonable and satisfactory to the production team, given the current context (Packel et al, 2021). While appropriateness is characterised as the perceived fit (i.e. face validity) of the implementation strategy and intervention within the existing context. For the purposes of this study ‘adoption’ is defined as the application of psychoeducation and psychosis awareness from participants involved in both strands of the project (Packel et al, 2021). Operationally this involves qualitative evaluation of the knowledge and attitudes of participants in both the implementation strategy and intervention, obtained from the production team interviews and the audience intercept interviews.

Fidelity

For the purposes of this study ‘fidelity’ is defined as the degree to which the intervention was implemented as intended. Caroll et al., (2007) highlight ‘participant responsiveness’ as both a moderator and key component of fidelity in many fidelity models. Key fidelity components include the *delivery* (i.e. delivered consistently and in line with the protocol), *receipt* (comprehension by the target population) and *enactment* of intervention activities. Data was obtained from the procedural logs recorded, in addition to the audience questionnaires and intercept interviews.

Feasibility and Sustainability

For the purposes of this study ‘feasibility’ is defined as the degree to which training, environmental, financial, and logistical processes functioned as intended (Packel et al, 2021).

While ‘sustainability’ is defined as the degree to which the implementation strategy and intervention might be scalable and sustainable.

Retention rates.

Retention rates were based on the number of participants who reached study completion. In the implementation strategy phase this was the number of participants who completed all the workshops, whereas in the intervention phase this was the participants who completed measures at 3-month follow-up. Within cohort research, it has been suggested that retention rates of 50% are adequate, 60% are good and 70% are very good (Babbie, 1973).

Cost effectiveness.

This project was nested within a previous project forming one part of a wider collaboration between UCL and the IRD, therefore estimated costs did not include the funding for the entirety of the project. Expenses were recorded in an online database retrospectively and the costs covered a 10-month period. Costs were included for personnel such as research associates, theatre performers and mental health counsellors, travel and training costs such as participant imbursement, venue hire and theatre training in addition to operational costs including internet connectivity, travel, translation services, stationery and printing.

Table 2: Description of implementation outcomes based on the taxonomy developed by Proctor et el., (2011).

Proctor outcome	Adapted definition	Data source
Acceptability	The degree to which the implementation strategy and intervention is considered reasonable and satisfactory given current context.	Semi-structured interviews with the production team. Intercept interviews with audience members. Recruitment and retention data.
Appropriateness	The perceived fit (i.e. face validity) of the implementation strategy and intervention within the existing context.	Semi-structured interviews with the production team. Intercept interviews with audience members.
Adoption	The level of uptake of psychoeducation and psychosis	Semi-structured interviews.

	awareness including perceived benefits and barriers.	Intercept interviews with audience members.
Fidelity	The degree to which the intervention was implemented as intended.	Guidelines for forum theatre practice. Workshop logs. Questionnaire data.
Feasibility	The degree to which training, environmental, financial and logistical processes functioned as intended.	Financial logs of monetary costs. Semi-structured interviews with the production team.
Sustainability	The degree to which the implementation strategy and intervention might be scalable and sustainable.	semi-structured interviews with the production team.

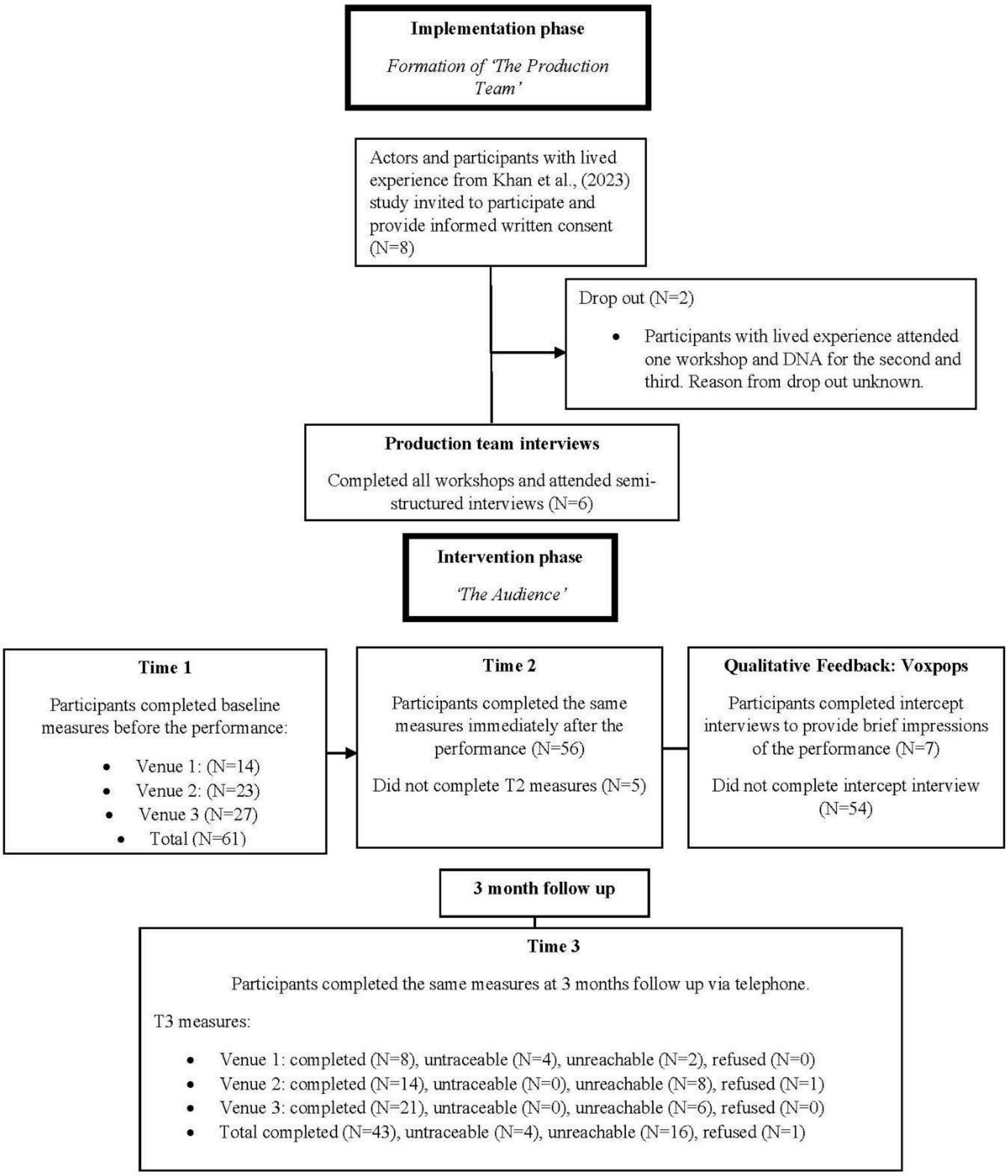
Ethical considerations

Ethical considerations, including confidentiality and potential participant distress, were addressed in the project. This study was reviewed and approved by the UCL Research Ethics Committee (reference number 23291/001) and by Interactive Research and Development (Ref: IRD_IRB_2022_07_001). All participants provided written informed consent prior to their participation. Participants were informed that they could withdraw at any time and that their data would be anonymised, and any identifiable information removed. Although distress was not anticipated, researchers were trained in safeguarding and distress management and any safety concerns were reported to the local Co-PI for appropriate referrals. The UCL principal investigator provided training on psychological first aid and distress management to the field team.

Results

Figure 5 demonstrates flow of participants from the implementation phase through to the intervention phase and follow-up.

Figure 5: Flow of participants



Implementation phase

Formation of 'The Production Team'

Actors and participants with lived experience from Khan et al., (2023) study invited to participate and provide informed written consent (N=8)

Drop out (N=2)

- Participants with lived experience attended one workshop and DNA for the second and third. Reason from drop out unknown.

Production team interviews

Completed all workshops and attended semi-structured interviews (N=6)

Intervention phase

'The Audience'

Time 1

Participants completed baseline measures before the performance:

- Venue 1: (N=14)
- Venue 2: (N=23)
- Venue 3 (N=27)
- Total (N=61)

Time 2

Participants completed the same measures immediately after the performance (N=56)

Did not complete T2 measures (N=5)

Qualitative Feedback: Voxpops

Participants completed intercept interviews to provide brief impressions of the performance (N=7)

Did not complete intercept interview (N=54)

3 month follow up

Time 3

Participants completed the same measures at 3 months follow up via telephone.

T3 measures:

- Venue 1: completed (N=8), untraceable (N=4), unreachable (N=2), refused (N=0)
- Venue 2: completed (N=14), untraceable (N=0), unreachable (N=8), refused (N=1)
- Venue 3: completed (N=21), untraceable (N=0), unreachable (N=6), refused (N=0)
- Total completed (N=43), untraceable (N=4), unreachable (N=16), refused (N=1)

Note: N=number of participants, DNA= did not attend

1. Implementation phase results

The production team sample

Participant demographics for the theatre production team are detailed in appendix F. There were N=6 participants in total, the average age was 31.83 years, 50% of which were married and predominantly male (66.7%). Most participants received 'Peshawarana' (vocational) training (50%), with 33.3% educated to O Level, and 16.7% to A Level equivalent.

Production Team Interviews: Thematic Analysis

The thematic analysis and data obtained from the implementation phase of the study address several key implementation science outcomes according to the taxonomy by Proctor et el., (2011). These are discussed throughout as they pertain to specific themes and summarised in Table 6 (see figure 6 for overall summary of themes and appendix G for full list with quotations).

Positive impact of the Workshop Activities. Participants with lived experience of psychosis expressed that the workshop activities provided a temporary escape from their worries and suffering, offering respite and opportunities to share their stories. For those without lived experience, the workshops served as a valuable source of information, raising awareness about psychosis and mental health, and equipping them with knowledge on how to signpost further support. Participants noted increased empathy towards mental health issues and reflected on their own lives and family members. The positive reception and personal transformation among the production team underscore the 'adoption' of the intervention, indicating a willingness to embrace and integrate the psychoeducation and psychosis awareness activities into their practices.

> *'The activities and plays we have done so far in the workshop were all good and were related to our lives. The plays are from our own life. When we do all this here, then we feel good. Then we do it at home as well.'*-P1004

> *'It was good as when we engage in these activities, we forget all our pains and sufferings for some time. We come out of that and become relaxed'*-P1004

> *'They were so engaged with us and had so much trust that they had firm belief that we will not share with anyone, whatever they were telling us and they will not be mocked at and we are writing their personal experiences just to educate other people from their stories, because we think (that after listening to their stories) others will not repeat these mistakes or whatever happened to these people*'-P1014

Co-constructing the Narrative: considering the role of trust and power in script writing. The implementation strategy received positive feedback overall, indicating it was largely effective and appropriate. Participants with lived experience found the workshop process acceptable, though some performers felt it was rushed. Most participants expressed trust and openness when contributing stories for the script, but some struggled due to limited source material from the small sample size. Concerns arose about discussing traumatic experiences without psychologist support, despite one being available on-site for this purpose, which some performers may not have been aware of or knew how to access. Participants with lived experience generally felt heard and validated during the storytelling process.

> *'It was a very satisfactory thing for us that they have so much trust in us, and they didn't hide anything and shared everything with us.'*-P1014

> *'When I was working as a facilitator then I thought that there should be a person with us like your psychologist, who could have talked to them at a separate place, that they can share anything with us, in group or in confidentiality'*- P1010

Some participants highlighted the importance of men's roles in providing support and care to family members living with psychosis. This issue was especially noted in Pakistan, where the necessity for a woman to have a chaperone made it challenging for her to attend medical appointments alone. This issue was integrated into the script as it was felt to be an important part of the message for families to understand, however there were some differing opinions about how the message should be conveyed. Some participants felt the play should demonstrate the 'ideal' scenario showing a supportive man, while others felt the reality of how men may be stigmatising and unsupportive should be shown to tap into the emotional resonance of the audience. The most experienced performer made the final decision on the script, prompting some participants to reflect on how power dynamics influenced the production process. The integration of differing opinions about how to convey the message within the script illustrate the complexities of ensuring the intervention is appropriate and culturally relevant. This showed the nuance involved in balancing ideal scenarios with realistic portrayals, to ensure the message was both impactful and contextually valid.

> *'In fact, you had a power which we couldn't change. Research etc. was restricted to you only…. that power made me realise that we are only here till workshop, we cannot go beyond that. So, I had that limit which I was not supposed to cross'*-P1012

> *'All the things were okay, but the only change I would suggest was in brother's role. It shouldn't be so strict…. It is obvious that mother and daughter need the support of a man, a son or a brother in society. So, when the mother and daughter are in need, the brother and son should support them.'*-P1000

To improve the acceptability and appropriateness of this intervention, suggestions were made to have a professional psychologist more directly involved to scaffold personal storytelling and employ a professional script writer and more participants with lived experience to enrich the script.

> *'We should have developed those things with actual professional script writers. The script should be perfect, if you want a good play'*-P1010

Community Engagement. Participants emphasised the importance of community engagement and audience participation. They discussed how audience members identified with the stories presented in the play and shared their own experiences. This interaction demonstrated the potential for theatre to bridge gaps and foster understanding. Participants expressed a desire to change their approach, particularly in how they speak and think about people with psychosis and mental illness. This demonstrated a willingness to adopt new attitudes based on their heightened awareness.

> *'The family shouldn't be confused, and they should implement what they have seen in the play'*-P-1002

> *'They can learn that they should give good hope to people. I think in our team such feelings have developed about how we should behave with people having these psychological issues'*-P1004

Changing Stigmatising Attitudes towards Mental Illness. Participants acknowledged their limited knowledge and understanding of mental health issues before joining the project. They expressed how their experience in this project had expanded their awareness and transformed their perspective on mental health, reducing stigma and stereotypes. Participants shared in their hope that the play would reduce stigma in those that watched it and that they could learn to be compassionate towards those with mental health difficulties further evidencing the high level of adoption in this study.

> *'They told us that through today's play they learned that this is a disease, and this can be treated. Thus, for the first time, they got the message that it is a disease; and the second message that it can be treated; and thirdly, they asked us where its treatment is possible? We referred them straight to the solution. This goes as a message to them that what they are perceiving as a supernatural or spiritual matter (that is also sometimes the case), is actually a medical problem.'*-P1014

> *'The most important thing was the information about the psychosis…after learning this information, now I can talk to people in my family about this issue.'* -P1004

‘Good Doctors, Bad Doctors’ the importance of Empathy and Sensitivity when supporting people with psychosis. Participants with lived experience and their carer’s emphasised the importance of empathy and sensitivity towards individuals with psychosis in healthcare settings. Participants recounted past mistreatment by doctors and noted that finding doctors who communicated with kindness, offered warmth, and prescribed medications with fewer side effects significantly improved their well-being and sense of support. They highlighted the critical need for early intervention and treatment for psychosis and stressed that more doctors should learn to communicate gently with their patients.

> *‘We are afraid to go to a doctor in this situation and feel uncomfortable because when we go to them, they do not deal with us normally and do not talk and behave with us in a gentle manner’*-P1000

> *‘I was thinking that I don't know if they will give me an injection or something else like what is done in a mental house. I was very scared because of this. That's why I didn't go to the doctor that he would hurt me’*-P1000

Practical challenges faced. The production team named several challenges faced during the process, including limited participant numbers, gaps in the schedule, environmental issues, travel and weather conditions. The participants suggested that an optimal workshop space for individuals with mental health conditions should be more therapeutic and include elements like flowers, dim lighting, and colourful elements to create a calming environment. Participants indicated that these challenges impacted the quality and scope of the project with the small number of participants being cited as the biggest issue. Some participants were dependent on the organisation for transportation which proved to be inconvenient and caused significant disruption to personal plans for one participant.

‘This was my concern that you should have done it at such a central place, because there were problems due to travelling, as well as gathering here, due to which production was stopped. ’-P1010

‘Besides the limited number of people, the other issue was the environmental problem because there was some work going on…Then the weather condition was another difficulty. It was raining heavily, and roads were blocked during those days’-P1014

‘When a person with mental pressure or mental tension comes in a room, then there shouldn’t be empty room, it should have some flowers, dim light, and there should be some colourful elements as well’-P1012

Theatre as a Medium for meaningful change. Participants recognised theatre as a powerful medium for conveying the experiences of individuals with mental health conditions and building connections with the audience. They highlighted the cultural history and relevance of storytelling in the Quran to convey messages effectively. Theatre was seen as a medium that engaged and educated the community about psychosis. The participants highlighted the potential for positive change and support for individuals with mental health issues. The emphasis was on the notion that theatre is intended to pose questions to the community rather than provide solutions, and that changes in attitudes take time.

‘People will find it positive that it is a true (story) and will make them learn many things.’ -P1002

‘We humans get inspired by stories. In history, you see the same thing. Even in the holy Quran we are told things through stories. So, we understand things through stories in a better manner’ P-1010

‘We have been doing theatre for a long time, but we never expect any immediate result. You just put a thought in people's minds, send them a message and a question. They go home with this question in mind. Then the change that takes place takes some time’-P1014

‘Why do we want people to understand quickly? It’s not something like a magic wand through which people understand. They also need time. They are coming all the way, and

> *we want them to understand our project's things quickly. They cannot understand in one day. You should give them time.'*-P1010

Call for Expansion. Participants advocated for expanding similar projects with NGOs to reach a broader audience and collaborate with more mental health institutions. They expressed a desire for long-term commitment to these initiatives, emphasising the need for sustained efforts to achieve meaningful change and warned against the expectation of quick results.

> *'My takeaway message is that we need to expand our approach and vision as we seem to be working too narrowly…We should approach all of them [other institutions] and work together because no one else has been using our Theatre approach except IRD.'*-P1014

> *'I think we need to expand our work and expand it from Karachi to Khyber (KPK). In Karachi also we are limited to only 2 institutions. We are currently sitting and are not able to enhance our work; we have to work further in this regard because if the number of patients or mental illness is increasing day by day while the number of facilities, supporters, practitioners is very less, then the society is moving towards mental illness.'*-P1014

Production team recruitment and attrition

On the first day of the workshop there were 8 members of the production team including 3 performers and five members with lived experience of psychosis or their carers. Two individuals with lived experience dropped out after the first day. Therefore, phase one had a retention rate of 75% (25% attrition).

2. Intervention Phase

The Audience Sample

For the quantitative analysis missing data points were retained, and imputation was not used therefore the final sample analysed was N=61. Baseline data for the 61 participants are detailed in Table 4. The average participant age was 31 years, ranging from 18 to 57 years. All participants identified as women, and most participants (97%) were Urdu-speaking. Most participants (44%) classified themselves as housewives, while 20% were students and 16% in full-time employment. The majority of participants had the UK equivalent education to O Levels (38%) or A Levels (31%), and 13% were University educated.

Table 3: Demographic data for audience sample

Demographics		**Total Sample N=61** **N (%)**	**Completer analysis N=43** **N (%)**
Gender	Women	59 (97%)	42 (98%)
	Men	0 (0.0%)	0 (0.0%)
	Missing data	2 (3.3%)	1 (2%)
Age	18-25	18 (29.5%)	Mean: 26.58yrs
	26-30	10 (16.4%)	Median: 30yrs
	31-40	17 (27.9%)	Range (54yrs-18yrs): 36
	41-50	3 (4.9%)	
	51-60	3 (4.9%)	
	Missing data	10 (16.4%)	
Marital Status	Married	26 (42.6%)	21 (49%)
	Unmarried	31 (50.8%)	20 (47%)
	Divorced	1 (1.6%)	1 (2%)
	Widowed	2 (3.3%)	1 (2%)
	Missing data	1 (1.6%)	0 (0.0%)

Mother Tongue	Urdu	58 (95.1%)	41 (95%)
	Pashto	1 (1.6%)	1 (2.5%)
	Hazara Wale	1 (1.6%)	0 (0.0%)
	Missing data	1 (1.6%)	1 (2.5%)
Education Level	No education	2 (3.3%)	1 (2%)
	5th Grade	7 (11.5%)	6 (14%)
	Matriculation/ O levels	23 (37.7%)	16 (37%)
	Intermediate/ A levels	19 (31.1%)	14 (33%)
	University Education	8 (13.1%)	5 (12%)
	Religious/ Muslim School	1 (1.6%)	1 (2%)
	Missing data	1 (1.6%)	0 (0.0%)
Occupation	Full time employment	10 (16.4%)	8 (19%)
	Part-time employment	2 (3.3%)	1 (1%)
	Unpaid Work	1 (1.6%)	1 (1%)
	Unemployed	5 (8.2%)	5 (12%)
	Student	12 (19.7%)	8 (19%)
	Housewife	27 (44.3%)	20 (47%)
	Other	2 (3.3%)	1 (1%)
	Missing data	2 (3.3%)	0 (0.0%)
Ethnicity	Sindhi	5 (8.2%)	3 (7%)
	Pakhtun	1 (1.6%)	1 (2%)
	Urdu Speaking	52 (85.2%)	37 (86%)
	Other*Karachi	1 (1.6%)	1 (2%)
	Hazara	0 (0.0%)	1 (2%)
	Missing data	2 (3.3%)	0 (0.0%)

Statistical Analysis

A repeated measures ANOVA was performed to compare the mean scores on stigma measures across three-time points; before the theatre production (T1), immediately after the production (T2) and again 3 months after the production (T3). The means and standard deviations for mean scores are presented in Table 5. Partial eta squared was used as an estimation of effect size (0.01 = small, 0.06 = medium, and 0.14 or higher = large). Data were analysed using SPSS version 29.

There was no statistically significant difference in mean scores on the CAMI 12, ($F(2 , 58) = 2.013$, $p = .143$, partial $\eta^2 = .07$, observed power = .399) or the KAP Stigma subscale, ($F(2 , 66) = 1.460$, $p = .240$, partial $\eta^2 = .04$, observed power = .301) across the three time points. There was a statistically significant difference in mean scores on the KAP knowledge subscale over time ($F(2 , 68) = 3.783$, $p = .028$, partial $\eta^2 = .10$, observed power = .671). Post-hoc pairwise comparisons with a Bonferroni adjustment indicated that there was a statistical difference between scores at T1 compared with T3 ($p = .027$) with the direction of mean scores increasing at T3, suggesting an increase in knowledge about psychosis at 3 month follow up (see Table 5 for mean scores). There was no significant difference between the mean scores at T1 and T2 ($p = 1.000$) or T2 and T3 ($p = .147$)

Table 4: Mean scores for CAMI 12, KAP knowledge and KAP stigma/prejudice questionnaires

	Time 1			Time 2			Time 3			
Measure	**Mean (SD)**	**95% Confidence interval for mean**		**Mean (SD)**	**95% Confidence interval for mean**		**Mean (SD)**	**95% Confidence interval for mean**		**P value**
		lower	**upper**		**lower**	**upper**		**lower**	**Upper**	
CAMI-12 (N=30)	**30.367 (5.720)**	**28.231**	**32.503**	**30.367 (7.876)**	**27.426**	**33.308**	**28.333 (5.529)**	**26.269**	**30.398**	**.143**
KAP Knowledge (N=35)	**5.029 (1.706)**	**4.442**	**5.615**	**5.171 (1.948)**	**4.502**	**5.840**	**6.086 (1.991)**	**5.402**	**6.770**	**.028***
KAP Stigma (N=34)	**15.059 (4.671)**	**13.429**	**16.688**	**14.00 (5.499)**	**12.081**	**15.919**	**15.35 (3.463)**	**14.145**	**16.561**	**.240**

***statistically significant at p<.05 after Bonferroni corrections have been applied.**

Descriptive statistics were completed to capture responses to the multiple-choice question of the KAP measure. The descriptive statistics for KAP multiple choice questions reveal variations in beliefs about the causes of a condition over time. Initially, stress or tension was the most cited cause (40.9%), followed by a brain disease and God's will (both 13%), and the way a person was raised (4.9%). Post-intervention, stress or tension remained the most common response (31.1%), but the belief in brain disease and God's will as causes of psychosis decreased. Three months later, stress or tension was still predominant (39.3%), with minor changes in other responses. Combination responses were infrequent, while the percentage of missing responses remained high throughout (34.4% pre, 36.0% post, 29.5% follow-up). See appendix H for descriptive statistics table.

Intervention Delivery

According to procedural logs and video recordings, the intervention (performance) was delivered consistently at three time points and in line with forum theatre principles. Applying Boal's Forum Theatre approach, a play called "Someone to support me" was co-produced comprising six scenes following the story of a mother who has a daughter with psychosis experiencing mental health stigma and lack of social support from important community members. The joker narrates the beginning and end of the play, inviting thoughts and curiosity from the audience about what they are viewing. See appendix J for the translated script.

Receipt and Enactment

Receipt and enactment were assessed by evaluating the questionnaire data. Intercept interviews suggested the audience (target population) had understood the intention of the intervention to increase awareness of psychosis and encourage a compassionate response to such individuals.

Cost Effectiveness

The total cost for personnel and operational overheads in GBP was £1401 for three forum theatre performances (£467 per play), see below for the cost per audience participant.

Cost effectiveness=(Total sum of expenses)/(N audience participants)

£1401/61=£22.96

The IRD conducted a comprehensive costing analysis for theatre-based engagement in a similar project, which totalled approximately 30,000 PKR, inclusive of indirect costs, making it relatively expensive. The current project relied on several indirect and cost-shared resources, therefore the proposed budget-based costing amount does not account for the salaries of senior researchers supervising the project, the community health workers participating in the performances, or the community theatre lead, as these would significantly increase the total cost.

See appendix I for a breakdown of specific project costs.

Recruitment and Attrition

A total of 61 participants completed measures at baseline, 56 (91.8%) completed measures at T2 and 43 completed 3-month follow-up questionnaires by telephone (70.5%). Therefore, of those who completed phase two, there was a retention rate of 70.5% (29.5% attrition).

Audience Intercept Interviews (Voxpops) Thematic Analysis

The thematic analysis and data obtained from the intervention phase of the study was analysed and themes mapped on to existing themes from the implementation phase which also addressed a number of key implementation science outcomes according to the taxonomy by Proctor et el., (2011). These are discussed throughout as they pertain to specific themes identified in the text and summarised in Table 6.

Co-constructing the Narrative: considering the role of trust and power in script writing. One participant's reaction to the play's narrative on the role of men in supporting families living with psychosis suggests a proactive approach to parenting and self-reliance when husbands do not provide support. This response illustrates the role of the co-construction of meaning from the material presented in the play and demonstrates positive adoption and acceptability of the intervention. This individual appears to take a sense of empowerment and self-sufficiency when faced with stigma and challenges related to living with psychosis, suggesting that the play effectively conveyed its message about addressing social roles and support systems. This aligns with the themes of co-constructing the narrative, trust, and power by demonstrating how the script's portrayal of realistic and ideal scenarios can influence and validate participants' personal experiences and perspectives.

> *"We learned how to raise our children and not leave it to others. If our husbands are not supporting us, we should give our children enough power and raise them in a way that they can stand on their own." VP3*

Community Engagement. One participant emphasised the Islamic value of caring for each other, including neighbours, which reinforces a sense of community responsibility and collective well-being. Another participant expressed a strong emotional response to the play, stating their intention to influence parents to change their attitudes towards children, indicating a desire to extend the impact of the intervention beyond personal experience to the broader community. These responses illustrate how the intervention resonated with cultural and religious values, promoting community involvement and fostering supportive attitudes towards mental health. This alignment with cultural and religious values indicated that the intervention was well-received within the cultural context and perceived as relevant and appropriate with a high level of uptake. This provides support for the acceptability, appropriateness and adoption of the messages delivered in the intervention.

"..as we are Muslims, we should care for each other, even for our neighbours." VP1

"We said to the people, 'Don't do it for yourself, but for your children.' Masha Allah, I have seen all this and have a lot of feelings inside me. I will take the parents to this side and change their attitude towards children." VP5

Changing Stigmatising Attitudes towards Mental Illness. Participants demonstrate a shift in attitudes towards mental health and psychosis. Participants advocated for treating individuals with psychosis with love and compassion and for standing up against stigma. These quotations demonstrate personal growth and courage gained from the experience, and align with the aims of intervention, providing further support for the acceptability, appropriateness and fidelity of the intervention.

"We learned a lot. The first thing is that we learned some people have behaviours that shouldn't be tolerated, and we should stand up for ourselves." VP3

"Something I learned today and want to take with me is that if there is any patient of this type, we should treat them with love and compassion. We should understand people's roles. This has given me the courage to move forward in life, and you will help me until further. It means that in the afterlife, you will forget this pain here." VP4

'Good Doctors, Bad Doctors' the importance of Empathy and Sensitivity when supporting people with psychosis. Participants discuss the importance of seeking professional and compassionate healthcare for individuals with psychosis in Pakistan. The critical role of compassionate care and empathetic consulting doctors in effective treatment is emphasised. Additionally, one participant mentions the notion of "proper treatment" from qualified doctors, a key message this study aimed to deliver. This perspective could be evidence of an attitude shift moving away from non-medical or traditional methods of treatment that may not be effective.

> *"I want to advise everyone around me, whether guests or others, to seek advice from a doctor with compassion." VP6*

> *"First, I say to them that they should seek proper treatment, and wise sages (doctors) cure them, not anyone else." VP6*

Theatre as a Medium for meaningful change. One participant gave a positive review of the play and emphasised it as a learning experience, this underscored the power of theatre to convey critical messages and stimulate personal reflection attitude change.

> *"The [play] was very good. We learned a lot. I learned that one should treat mentally ill people well, as torturing them makes them worse and they cannot recover. It was very great. We learned a lot from it." VP1*

Call for Expansion. One participant expressed the desire to extend the impact of the intervention beyond the initial experience. This highlighted a commitment to applying the knowledge and skills gained to support others in the community, indicating a call to expand the initiative's reach and influence. Such willingness to help others demonstrated the possibility that the effects of the intervention can be maintained over time and potentially amplified through continued application.

> *"For those who are mentally ill, I want to take these things with me and continue to work on them, so that if I see someone in need, I can help them as much as possible." VP1*

Figure 6 Theme distribution of production team and audience intercept interviews

For full table of quotes from both the production team and audience intercept interviews please see appendix H.

Table 5: Summary of Proctor Outcomes for Implementation and Intervention Phases

Proctor (2011) Outcome	Adapted Definition	Implementation Phase	Intervention Phase
Acceptability	The degree to which the implementation strategy and intervention is considered reasonable and satisfactory given current context.	Workshops were supportive and beneficial, but some felt rushed. Positive impact and trust-building noted. **Themes:** o *Positive impact of the workshop activities,* o *Co-constructing the Narrative: considering the role of trust and power in script writing* **Data Source**: Semi-structured interviews with the production team.	Intervention was well-received and culturally relevant. Increased knowledge about psychosis indicates engagement and acceptability. **Themes:** o *Co-constructing the Narrative: Trust and Power,* o *Community Engagement,* o *Changing Stigmatising Attitudes towards Mental Illness,* o *Theatre as a Medium for Meaningful Change* **Data Source**: Intercept interviews with audience members, statistically significant increase in knowledge about psychosis over time.
Appropriateness	The perceived fit (i.e. face validity) of the implementation strategy and intervention within the existing context.	Intervention fit well within cultural context, aligning with local values and needs. **Themes:** o *Co-constructing the Narrative: considering the role of trust and power in script writing* **Data Source**: Semi-structured interviews with the production team.	Addressed relevant cultural and social issues sensitively. Participants related content to their cultural beliefs and social context. **Themes:** o *Co-constructing the Narrative: Trust and Power,* o *Community Engagement,* o *Changing Stigmatising Attitudes towards Mental Illness,* o *Theatre as a Medium for Meaningful Change* **Data Source**: Intercept interviews with audience members, Descriptive statistics showing alignment with cultural beliefs about causes of psychosis.
Adoption	The level of uptake of psychoeducation and psychosis awareness including perceived benefits and barriers.	High uptake and willingness to adopt new attitudes and practices. **Themes:** o Positive impact of the Workshop Activities, o Community Engagement, o Changing Stigmatising Attitudes towards Mental Illness **Data Source**: Semi-structured interviews with the production team.	Participants sought to disseminate messages within communities. Consistent delivery indicated strong initial adoption. **Themes:** o *Co-constructing the Narrative: Trust and Power,* o *Community Engagement, 'Good Doctors, Bad Doctors': Empathy and Sensitivity,* o *Call for Expansion* **Data Source**: Intercept interviews with audience members.

Fidelity	The degree to which the intervention was implemented as intended.	Adherence to intended plan, though some deviations noted. **Themes:** o *Co-constructing the Narrative: considering the role of trust and power in script writing* **Data Source**: Semi-structured interviews with the production team, workshop logs.	Consistent delivery in line with forum theatre principles. Core messages led to positive attitude changes, indicating high fidelity. **Themes:** o *Changing Stigmatising Attitudes towards Mental Illness,* o *'Good Doctors, Bad Doctors': Empathy and Sensitivity* **Data Source**: Procedural logs and video recordings confirming consistent delivery, intercept interviews with audience members.
Feasibility	The degree to which training, environmental, financial and logistical processes functioned as intended.	Effective functioning despite challenges. High retention rates indicate feasibility. **Themes:** o *Practical challenges faced* **Data Source**: Semi-structured interviews with the production team, recruitment and retention data.	High completion rate and cost-effectiveness suggest manageability and financial feasibility. **Themes:** o *Call for Expansion* **Data Source**: Financial logs of monetary costs, recruitment and retention data, intercept interviews with audience members.
Sustainability	The degree to which the implementation strategy and intervention might be scalable and sustainable.	Potential for scalability and sustainability indicated by participants' advocacy for expansion. **Themes:** o *Theatre as a Medium for Meaningful Change,* o *Call for Expansion,* o *'Good Doctors, Bad Doctors' the importance of Empathy and Sensitivity when supporting people with psychosis* **Data Source**: Semi-structured interviews with the production team.	Commitment to ongoing application and low-cost implementation suggest sustainability, though stigma reduction needs improvement. **Themes:** o *Call for Expansion* **Data Source**: Financial logs of monetary costs, recruitment and retention data, intercept interviews with audience members.

Reflexivity Statement

This reflexivity statement aims to provide the reader with insight into the context and perspectives of the researcher that may have influenced interpretations and actions taken throughout the process of analysis. It is not assumed that bias or influence can be reduced, rather that reflecting on these factors may increase awareness of how researcher subjectivity may be impacting the analysis (Clarke & Braun, 2013).

The primary researcher is a white monolingual female in their mid-thirties who lives and works in the UK, a high-income country. The researcher contributed to the design and support of the project virtually via meetings and engagement with co-researchers at the IRD in Karachi. The researcher has travelled to other LMIC's however has not been to Pakistan specifically and despite best attempts was not physically present for the implementation strategy process and intervention delivery due to international visa restrictions acting as a barrier to travel. Therefore, the primary researcher's knowledge of this specific cultural context is limited to interactions with colleagues at the IRD, the clinical experience of working with UK based clients in an NHS setting who have South Asian heritage and through reading related academic literature.

The researcher has both personal and professional experience and knowledge of psychosis and the challenges people face living with this condition as well as their caregivers. These experiences have shaped the researcher's perspectives, values and desire to tackle stigma at both the individual and population level. These factors inevitably influence the researcher's position and lens through which the data is perceived. It therefore felt important that a second researcher (OQ) from the IRD with direct experience and specific cultural knowledge was meaningfully involved in the process of analysis. OQ is multi/bilingual Pakistani woman working in Karachi, Pakistan for a global academic research organisation.

Discussion

This study aimed to explore the acceptability and feasibility of a co-produced forum theatre initiative from the implementation strategy phase through to the 'intervention' itself. It was hypothesised that the forum theatre approach would increase awareness and reduce stigmatising attitudes and behaviours towards people with psychosis within small communities in Karachi, Pakistan. In summary, findings offer partial support that the Forum

Theatre intervention may be acceptable and feasible in a LMIC context. However, study limitations mean that any conclusions remain tentative and further piloting of this approach is required in future research.

Acceptability, Appropriateness and Adoption

Evidence for the study's acceptability, appropriateness, and adoption was gathered from interviews with the production team, which were aimed at exploring these aspects, as well as from recruitment and retention data. Findings suggest that the production team found the study acceptable and enjoyed the workshop activities. Participants with lived experience felt cared for, welcomed, and trusted the space enough to share their stories openly. Performers described the experience as emotional and reported significant shifts in their understanding of mental health difficulties, along with increased knowledge about psychosis. This indicates the intervention's appropriateness and the adoption of the study's intended message. All members of the production team had a shared hope for the purpose of this play in addressing stigmatising attitudes towards psychosis and mental illness.

Participants with lived experience emphasised the crucial role of family members, particularly men, in providing care and compassion, highlighting its importance within Pakistan's cultural context. Women often require a male chaperone to attend appointments, especially if the healthcare provider is male, and some participants described attending appointments alone due to lack of support, leading to stigma and social isolation. This is supported by Mumtaz (2012) and Garwood (2006), who discuss the impact of gender norms on women's mobility and the role of extended family in creating socially acceptable spaces. In rural Pakistan, religious customs and patriarchal norms intertwine with gendered surveillance, significantly limiting women's agency and mobility (Ahmed Birtel, Pyle &

Morrison, 2020). These findings underscore a substantial barrier for women in accessing adequate healthcare across Pakistan.

Members with lived experience also highlighted their mixed experiences with doctors. They described encountering harmful practices from insensitive doctors who prescribed medications with unpleasant side effects, as well as compassionate doctors who provided more acceptable treatments. This underscores the importance of compassionate care and high-quality medications, raising the question of where individuals should be directed to receive the best care. These concerns have been raised in previous studies (Khan et al., 2023; Naqvi, Sabzwari, Hussain, Islam & Zaman, 2012; Naeem & Ayub, 2004) suggesting inconsistent management of mental health conditions in Pakistan (including Karachi specifically) are compounded by a lack of knowledge and emphasis on psychiatric training in medical education. Despite high prevalence of mental illness in Pakistan, there is a severe shortage of trained psychiatrists while many general practitioners lack confidence in this area and are more likely to be influenced by supernatural explanations (Haddad, Waqas, Qayyum, Shams & Malik, 2016; Javed, Khan, Nasar & Rasheed, 2020).

The production team raised issues regarding power, trust, and collaboration during the scriptwriting process. Some performers felt uncomfortable witnessing the retelling of traumatic events without a psychologist present in the session, even though one was available onsite. It is unclear if the performers felt they could request this support from the IRD team members. While many participant themes were included in the script, there was some disagreement among the production team about the portrayal of the story. Most participants believed the brother's character should have been a positive role model. However, the lead performer decided to depict the brother as unhelpful and stigmatising to reflect the real experiences shared. This decision aligns with the theoretical foundations of the theatre of the oppressed, which aims to portray scenes where power is exerted over an oppressed individual (Garcia, Crifasi & Dessel, 2019), suggesting that theoretical fidelity may have influenced this choice.

This experience may have been invalidating for individuals with lived experience of psychosis and should be considered in the future to prevent marginalisation and ensure their equal participation, empowering them to express their perspectives freely in the true spirit of co-production. PAR principles emphasise that all participants have an equal part in the decision-making process throughout yet acknowledges this is not always achieved for a variety of reasons, including power imbalances (Kagan, 2012). Some practical strategies to address this issue include ensuring participants with lived experience are positioned as ‘peers’ or ‘educators’ rather than ‘patients’ to minimise hierarchal dynamics (Knaak, Modgill, & Patten, 2014). Researcher reflexivity is also an essential element of the work to understand how their own biases, perspectives, and behaviours might influence interactions and the process of deliberation (Kagan, 2012).

The performers in the production team noted that the workshops sometimes felt rushed, suggesting that allowing more time for participants to reflect on the script's meaning, possibly through an additional workshop, could promote more equitable and collaborative decision-making. Additionally, while a psychologist was on-site and available, they did not play an active role in the project. In future endeavours, it may be advantageous to more deliberately engage a mental health professional or psychologist to enhance psychological safety, address emotional needs, facilitate open dialogue, create safe spaces for sharing, and maintain regular communication with the research team (Mertens, 2019; Dickson-Swift, James, Kippen, & Liamputtong, 2008; Cornwall, 2008; Freire, 1970). Such an approach could improve participant well-being and ensure a supportive environment throughout the research process, potentially reducing disadvantages experienced by individuals with lived experience (Kagan, 2012).

Performers in the production team expressed how their interactions with individuals living with psychosis and hearing their stories had a profound emotional impact on them and altered their perception of mental illness. One participant shared how this experience changed their approach towards individuals they suspect may have a mental health condition, shifting from judgment to offering compassion and understanding. Another participant reflected on their past treatment of a family member experiencing mental health difficulties, acknowledging feelings of guilt while also expressing a commitment to handle similar situations differently in the future. This aligns with existing evidence demonstrating that stigma interventions involving increased contact with individuals with lived experience of mental health difficulties are highly effective (Fokuo, et al., 2017; Koike et al., 2018; Yap, Reavley, & Jorm, 2012).

Participants also expressed the belief that more effective recruitment methods would have been beneficial, allowing them to gain deeper insights into people's experiences, potentially enriching the play. In future pilots, possible approaches could include maintaining regular contact with the target population through community outreach and establishing a strong project identity through advertisements to strengthen participants' connection to the research. Researchers partnering with trusted community organisations have been shown to enhance the recognition of research projects and alleviate concerns regarding credibility and trust among potential participants. (Nicholson, Schwirian & Groner, 2015).

Despite facing challenges with recruitment, retention rates during both the implementation phase (75%) and the intervention phase (70.5%) fell within the 'very good' range, as per Babie's (1973) guidelines. However, this still resulted in attrition rates of 25%

and 29.5% respectively, which, according to the literature, can potentially introduce bias and jeopardise validity since they exceed 20% (Schulz & Grimes, 2002). In summary, the themes align with common issues related to stigma toward psychosis and mental illness, indicating good face validity and appropriateness for the intended intervention. The production team found the sharing of stories acceptable, with suggestions for process improvements in future projects. The themes' significance led to their inclusion in the theatrical script to convey them to a broader audience, demonstrating effective adoption of the anti-stigma message. However, concerns arose regarding power dynamics, trust, and equitable participation, necessitating critical reflection. Additionally, insufficient audience feedback was obtained to comprehend their perspective, highlighting the need for further research.

Fidelity

The quantitative data provided mixed findings regarding the fidelity of the intervention. Caroll et al., (2007) highlight ‘participant responsiveness’ as a key component of fidelity and this study explored this concept under key areas of delivery, receipt and enactment. The Forum Theatre adhered to the intended protocol, yet quantitative findings revealed an increase in the audience's knowledge about psychosis post-performance. However, the data did not indicate a decrease in stigmatising attitudes, despite intercept interviews indicating clear communication of the anti-stigma message in the play, as exemplified by one audience member's quote ‘*The first thing is that we know that some of us have attitudes that shouldn't be tolerated*’-VOXPOP.

While not statistically significant, mean scores on the CAMI-12 and KAP stigma subscale remained unchanged between T1 and T2, yet stigma increased at T3. This could be attributed to the use of non-validated measures, resulting in an unreliable metric for attitude change. Additionally, lacking psychometric robustness renders any theoretical hypotheses inconclusive (Gremigni, 2020).

Some questions within the KAP stigma scale address societal changes beyond individual control, such as the care provided by hospitals and doctors to people with psychosis (e.g., "Do hospitals/doctors treat people with psychosis the same as others?"). These perceptions are unlikely to change over time, raising concerns about the validity of these questions in assessing stigma-related attitudes. Additionally, the question about families keeping a relative's psychosis a secret ("Are people with psychosis kept secret by their families?") does not reflect personal feelings or attitudes towards individuals with psychosis and is also unlikely to change.

While research often highlights the positive social change catalysed by Theatre of the Oppressed methods, some studies, like Hamel (2013), have noted potential harms. For example, in Hamel's research, forum theatre aimed to amplify the voices of a homeless population in Canada but ended up reinforcing oppression, with the audience becoming the dominant voice and silencing the homeless. There is no evidence from the current study to suggest a similar outcome. However, it is conceivable that the intended message was not fully grasped or that difficulties arose in integrating this awareness within the framework of prevailing societal stigma (Ahmedani, 2011). Previous studies have noted the challenges in reducing stigma, even in large, well-funded anti-stigma campaigns, due to the complexity of relational and societal processes that shape belief systems (Smith, 2013). This underscores the importance of equity and empowerment for those with lived experience, especially in participatory research, to ensure ethical use of this methodology (Kagan, 2012).

Feasibility and Sustainability

The implementation cost of Forum Theatre fluctuates depending on the context and setting. However, due to the lack of specific cost information in many studies, there is no definitive benchmark figure available. Fernandez-Blanco, Rodríguez-Álvarez and Wiśniewska (2019) estimated the marginal cost of a new theatre performance to be 7149PLN/£1404.06, however this figure may not be specifically relevant to Forum Theatre. Because Forum Theatre can be adapted and presented in diverse settings beyond traditional theatres, such as community venues, its production costs are likely to be lower than those of a standard theatrical performance. Props and costumes may also be less significant compared to those required for a traditional play. The findings from this study align with this hypothesis, as the estimated cost per performance is £467, which is one-third of the figure proposed by Fernandez-Blanco, Rodríguez-Álvarez, and Wiśniewska (2019). This highlights that it may be possible to limit costs when implementing Forum Theatre methods in community-based settings. A strength of this study is providing specific budgeting details which is a critical component in evaluating the true cost-effectiveness and sustainability of such interventions (Liu et al., 2022).

The participants described practical challenges faced during the implementation phase including the length of travel to the venue, small group size, interruption caused by heavy rains and the ambience of the environment as building work was taking place. The production team suggested a warmer, more therapeutic environment could have helped participants feel more welcome and comfortable. Suggestions were made for a more central location to reduce travel burden. This issue is raised in the literature highlighting the costs and benefits of reducing travel burden to increase the diversity and willingness of participants to engage with research (Karlawish, Cary, Rubright & Tenhave, 2008).

Themes pertinent to the project's sustainability include the production team's insights into the potency of oral storytelling, particularly its significance in fostering a connection to the narratives of the holy Quran within the community. Participants viewed this as an effective means of conveying messages in a comprehensible manner, although they emphasised that researchers should not anticipate immediate results. The production team regarded the project as valuable and advocated for its expansion, suggesting the involvement of additional stakeholders for investment and broader outreach. Participants perceived the theatrical approach as currently underutilised and recommended sustained efforts for further enhancement. These findings suggest that participants regarded the project as just the initial phase of a longer-term endeavour to combat the stigma associated with psychosis and mental illness more broadly. This aligns with research indicating the importance of long-term initiatives in addressing societal stigma (Smith, 2013).

Methodological Limitations

It is imperative to contextualise the reported findings of this study within several methodological considerations that may impact validity, reliability and generalisability. While the early integration of an implementation science (IS) framework enables researchers to consider scalability and identify potential challenges related to healthcare infrastructure, provider attitudes, and patient engagement, applying IS during the early stages of a non-evidence-based treatment's development can divert attention from refining the treatment itself. In this study, the IS lens was applied to incorporate stakeholder perspectives early, fostering a collaborative and adaptable approach aligned with practical implementation needs to accelerate research translation into practice. However, despite this ambition, the intervention did not show a reliable reduction in stigma, suggesting that the emphasis on identifying barriers and facilitators for implementation may have been premature given that the intervention had not yet demonstrated efficacy.

A key methodological issue lies in the measures utilised. The CAMI-12 and KAP were chosen for brevity and specificity to allow for quick administration at performance venues, but they lacked validation, rendering the quantitative data unreliable for addressing the intended constructs. Although the use of unvalidated measures is common in psychological research, particularly in low- and middle-income countries (LMICs), caution must be exercised when drawing theoretical conclusions (Gremigni, 2020; Kemp et al., 2019). Future studies should prioritise the use of slightly longer measures with stronger psychometric properties over multiple shorter, less validated tools.

Additionally, the absence of specific acceptability or feasibility questionnaires limits the study's ability to provide more psychometrically sound and objective assessments, which would enhance replicability in future research (Kemp et al., 2019). To improve the generalisability and utility of future implementation studies, rigorous methods employing validated measures and robust theoretical frameworks should be prioritised (Martinez, Lewis & Weiner, 2014).

Furthermore, recruitment challenges during the implementation phase were underscored by the production team and warrant careful consideration in future iterations of this methodology. Low participant numbers may compromise the generalisability of findings. Potential avenues for exploration could include widening the spectrum of organisations involved in the recruitment process to encompass institutions across various locations in Pakistan. However, the adoption of such processes must be weighed against the financial and logistical constraints inherent in delivering interventions in LMIC settings (Khan, Bawani & Aziz, 2013).

Lastly, the sample included mostly women (98%) which poses challenges in generalising the findings to a broader population. Nonetheless, women's voices are often underrepresented across sectors, with men typically engaging in a wider array of activities with greater visibility, as evidenced by research in Pakistan academia (Khan & Naeem, 2023; Akram & Sajjad, 2021). While this representation may be considered a strength of the study, a key emerging theme calls for increased involvement of men within the family system to provide compassion and support to individuals living with psychosis and mental illness. Although the demographic questionnaire included the option, no participants self-reported to be transgender or any other gender. Future research in this context could benefit from a recruitment strategy that appeals to and encourages participation from all genders to address stigma at various levels within the family system.

Research and Clinical Implications

A key strength of this study is that it applied a conceptual framework for implementation research in a LMIC context which has been lacking in much of the literature according to a review by Kemp et al., (2019). Another notable strength of the study is its inclusivity, as participants were not required to be literate. By offering the option of verbal administration for surveys (Voxpops), the acknowledged diverse levels of literacy within the participant population, fostering inclusivity and enabling broader participation in the research process.

Furthermore, the study provided information on adoption, appropriateness, cost, fidelity, and sustainability, another significant gap in existing LMIC-based implementation studies. This information is essential in supporting the evidence base to justify the scale-up and investment of resources into stigma reducing interventions that are effective. Robust psychometric measures of acceptability, appropriateness, feasibility and sustainability are becoming increasingly available which could strengthen the comparability and replicability for future implementation studies in LMIC contexts. Further development and validation of such measures ought to be carried out to establish whether they are appropriate and reliable in assessing stigma within LMIC settings. LMIC-based stigma researchers could start to evaluate how characteristics at different levels (individual/community/clinician etc.) may predict implementation outcomes (Kemp et al., 2019).

This study was informed by the principles of PAR and involved co-production in the implementation phase and community mobilisation as part of the intervention delivery. Involving community members in the design and implementation of research has been shown to improve the appropriateness of stigma-reducing interventions in LMIC settings (Kemp et al., 2019). Participatory approaches can provide a bridge to address barriers in knowledge among communities and can lead to transformative and collective action for social change at relatively low cost (Khan, Bawani & Aziz, 2013). Future implementation designs would therefore benefit from considering participatory action to improve intervention adoption within resource poor communities.

The qualitative findings identified important clinical implications that went beyond the scope of this study relating to mental health provision in Pakistan. Participants with lived experience underscored the necessity for enhancements in various domains, including receiving compassionate communication from healthcare professionals, accessing medications with reduced side effects, and being able to partake in physical activity and social interaction. These insights align with existing literature, highlighting the pressing need for enhanced mental health interventions and broader clinician training to address these deficiencies (Karim, Saeed, Rana, Mubbashar & Jenkins, 2004; Naeem & Ayub, 2004).

Conclusion

In summary, this preliminary mixed-methods pilot offers partial evidence supporting the acceptability and feasibility of employing a forum theatre approach to mitigate psychosis stigma in Pakistan. The study received positive participant feedback, exhibited good retention rates, and demonstrated increased knowledge and awareness of psychosis among both production members and audience participants. Moreover, it underscored the potential for cost-effective theatre performances, particularly pertinent in LMIC contexts were logistical and financial obstacles often hinder implementation efforts. However, to ensure a sustainable path forward, the findings suggest a need for greater institutional endorsement, collaboration, and expanded recruitment initiatives. Lastly, while the StaRi checklist and framework were utilised in this pilot, notable methodological limitations have been identified, indicating a necessity for future research to adopt a more rigorous implementation science methodology

References

Ahmed, S., Birtel, M. D., Pyle, M., & Morrison, A. P. (2020). Stigma towards psychosis: Cross-cultural differences in prejudice, stereotypes, and discrimination in White British and South Asians. *Journal of Community & Applied Social Psychology*, *30*(2), 199–213. https://doi.org/10.1002/casp.2437

Ahmedani, B. K. (2011). Mental health stigma: Society, individuals, and the profession. *Journal of Social Work Values and Ethics, 8*(2), 4-12.

Akram, R., & Sajjad, F. (2021). Representation of the Feminist Perspectives In Pakistan’s Political Science Academia. *Pakistan Journal of Gender Studies, 21*(1), 111–127. https://doi.org/10.46568/pjgs.v21i1.536

Angermeyer, M. C., Beck, M., Dietrich, S., & Holzinger, A. (2005). The stigma of mental illness: Patients' anticipations and experiences. *International Journal of Social Psychiatry, 51*(4), 324-332.

Babbie, E. R. (1973). *Survey research methods*. Wadsworth Publishing Company.

Barry, C. L., McGinty, E. E., Pescosolido, B. A., & Goldman, H. H. (2014). Stigma, discrimination, treatment effectiveness, and policy: Public views about drug addiction and mental illness. *Psychiatric Services, 65*, 1269–1272. https://doi.org/10.1176/appi.ps.201400140

Boal, A. (1979). *Theatre of the Oppressed*. Pluto Press.

Boal, A. (1992). *Games for Actors and Non-Actors*. Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Brigell, M. 2010. *Participatory Theatre and the Prevention of Gender-Based Violence.* Advocates' Forum. University of Chicago School of Social Service Administration.

Brydon-Miller, M. (1997). Participatory action research: Psychology and social change. *Journal of Social Issues, 53*(4), 657-666.

Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science : IS*, *2*(1), 40–40. https://doi.org/10.1186/1748-5908-2-40

Charlson, F. J., Ferrari, A. J., Santomauro, D. F., Diminic, S., Stockings, E., Scott, J. G., McGrath, J. J., & Whiteford, H. A. (2018). Global epidemiology and burden of schizophrenia: Findings from the global burden of disease study 2016. *Schizophrenia Bulletin, 44*(6), 1195–1203. https://doi.org/10.1093/schbul/sby058

Clarke, V., & Braun, V. (2013). Successful qualitative research: A practical guide for beginners. *SAGE Publications*.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (Rev. ed.). Lawrence Erlbaum Associates. https://doi.org/10.4324/9780203771587

Cornwall, A. (2008). Unpacking 'Participation': models, meanings and practices. *Community Development Journal, 43*(3), 269-283.

Corrigan, P. W., & Shapiro, J. R. (2010). Measuring the impact of programs that challenge the public stigma of mental illness. *Clinical Psychology Review, 30*(8), 907-922.

Corrigan, P. W., & Wassel, A. (2008). Understanding and influencing the stigma of mental illness. *Journal of Psychosocial Nursing and Mental Health Services, 46*(1), 42-48.

Degnan, A., Berry, K., Humphrey, C., & Bucci, S. (2021). The relationship between stigma, social support, and symptoms in those with psychosis: A systematic review and meta-analysis. *Clinical Psychology Review*, *85*, 102003–102003. https://doi.org/10.1016/j.cpr.2021.102003

Dickson-Swift, V., James, E. L., Kippen, S., & Liamputtong, P. (2008). Risk to researchers in qualitative research on sensitive topics: Issues and strategies. *Qualitative Health Research, 18*(1), 133-144.

Dorant, E. (2020). Participatory action research: why sharing power is needed to improve public health research. *European Journal of Public Health*, *30*(Supplement_5). https://doi.org/10.1093/eurpub/ckaa165.138

Fazel, S., Wolf, A., Larsson, H., Mallett, S., Fanshawe, T. R., Lichtenstein, P., & Geddes, J. R. (2009). The association between psychosis and violence: A systematic review and meta-analysis. *JAMA, 301*(19), 2016-2023.

Fernandez-Blanco, V., Rodríguez-Álvarez, J., & Wiśniewska, A. (2019). The importance of using valid and reliable measures in psychology and psychiatry. *EC Psychology and Psychiatry, 9*(4), 24-25.

Ferrand, L. (1995). Forum theatre with carers: The use of forum theatre in specific community settings. *Contemporary Theatre Review, 3*(1), 23–37. https://doi.org/10.1080/10486809508568324

Fokuo, J. K., Goldrick, V., Rossetti, J., Wahlstrom, C., Kocurek, C., Larson, J., & Corrigan, P. (2017). Decreasing the Stigma of Mental Illness Through a Student-Nurse Mentoring Program: A Qualitative Study. *Community Mental Health Journal, 53*(3), 257–265. https://doi.org/10.1007/s10597-016-0016-4

Freire, P. (1970). *Pedagogy of the oppressed*. New York: Continuum.

Garcia, B., Crifasi, E., & Dessel, A. B. (2019). Oppression pedagogy: Intergroup dialogue and theatre of the oppressed in creating a safe enough classroom. *Journal of Social Work Education, 55*(4), 669–683. https://doi.org/10.1080/10437797.2019.1567414

Garwood, P. (2006). Pakistan, Afghanistan look to women to improve health care. *Bulletin of the World Health Organization, 84*(11), 845–847.

Gremigni, P. (2020). The importance of using valid and reliable measures in psychology and psychiatry. *EC Psychology and Psychiatry, 9*(4), 24-25.

Gudyanga, P., Palmer, T., Wright, N., O'Regan, E., Shonai, C., Mlambo, N., Maremera, M., & Mangezi, W. (2021). Z Factor: Drama as a tool to tackle mental health stigma: Study design and protocol for community and public engagement in rural Zimbabwe. *Wellcome Open Research, 6*, 26. https://doi.org/10.12688/wellcomeopenres.16262.1

Haddad, M., Waqas, A., Qayyum, W., Shams, M., & Malik, S. (2016). The attitudes and beliefs of Pakistani medical practitioners about depression: A cross-sectional study in Lahore using the revised depression attitude questionnaire (R-DAQ). **BMC Psychiatry, 16**(1), 349. https://doi.org/10.1186/s12888-016-1069-1

Hall, B. L. (1981). Participatory research, popular knowledge, and power: A personal reflection. *Convergence, 14*(3), 6-19.

Hamel, S. (2013). When Theatre of the Oppressed becomes Theatre of the Oppressor. *Research in Drama Education, 18*(4), 403–416. https://doi.org/10.1080/13569783.2013.836918

Harrison, G., Hopper, K., Craig, T., Laska, E., Siegel, C., Wanderling, J., Dube, K. C., Ganev, K., Giel, R., Der Heiden, W. A., Holmberg, S. K., Janca, A., Lee, P. W. H., León, C. A., Malhotra, S., Marsella, A. J., Nakane, Y., Sartorius, N., Shen, Y., …

Wiersma, D. (2001). Recovery from psychotic illness: A 15- and 25-year international follow-up study. *British Journal of Psychiatry*, *178*(6), 506–517. https://doi.org/10.1192/bjp.178.6.506

Hashmi, M., Taqi, A., Memon, M. I., Ali, S. M., Khaskheli, S., Sheharyar, M., Hayat, M., Shiekh, M., Kodippily, C., Gamage, D., Dondorp, A. M., Haniffa, R., & Beane, A. (2020). A national survey of critical care services in hospitals accredited for training in a lower-middle income country: Pakistan. *Journal of Critical Care*, *60*, 273–278. https://doi.org/10.1016/j.jcrc.2020.08.017

Henderson, C., & Gronholm, P. C. (2018). Mental health-related stigma as a ‘wicked problem’: The need to address stigma and consider the consequences. *International Journal of Environmental Research and Public Health, 15*(6), 1158.

Henderson, C., Noblett, J., Parke, H., Clement, S., Caffrey, A., Gale-Grant, O., Schulze, B., Druss, B., & Thornicroft, G. (2014). Mental health-related stigma in health care and mental health-care settings. *The Lancet. Psychiatry*, *1*(6), 467–482. https://doi.org/10.1016/S2215-0366(14)00023-6

Huggett, C., Birtel, M. D., Awenat, Y. F., Fleming, P., Wilkes, S., Williams, S., & Haddock, G. (2018). A qualitative study: Experiences of stigma by people with mental health problems. *Psychology and Psychotherapy: Theory, Research and Practice, 91*, 380–397. https://doi.org/10.1111/papt.12167

Jamal, H. (2017). Poverty and vulnerability in Pakistan. *Pakistan Journal of Social Sciences, 37*(2), 315-329.

Javed, A., Khan, M. M., Nasar, S., & Rasheed, A. (2020). Mental healthcare in Pakistan. *Taiwanese Journal of Psychiatry, 34*(1), 6-12. https://doi.org/10.4103/TPSY.TPSY_8_20

Kafami, Z., Farhoudi, F., Alimoradi, M., Sangsefidi, Z., Delshad, N., & Khadem-Rezaiyan, M. (2023). Persian translation and validation of community attitudes toward the mentally ill scale: A tool for assessing social stigma about mental illness. *International Clinical Psychopharmacology*, *38*(1), 40–44. https://doi.org/10.1097/YIC.0000000000000419

Kagan, C. (2012). Participatory action research and community psychology. In B. Zani (Ed.), *Psicologia di comunità: Prospettive, idee, metodi*. Carocci Editore.

Karim, S., Saeed, K., Rana, M. H., Mubbashar, M. H., & Jenkins, R. (2004). Pakistan mental health country profile. *International Review of Psychiatry (Abingdon, England)*, *16*(1–2), 83–92. https://doi.org/10.1080/09540260310001635131

Karlawish, J., Cary, M. S., Rubright, J., & Tenhave, T. (2008). How redesigning AD clinical trials might increase study partners willingness to participate. *Neurology, 71*(23), 1883–1888. https://doi.org/10.1212/01.wnl.0000336652.05779.ea

Keepers, G. A., Fochtmann, L. J., Anzia, J. M., Benjamin, S., Lyness, J. M., Mojtabai, R., Servis, M., Walaszek, A., Buckley, P., Lenzenweger, M. F., Young, A. S., Degenhardt, A., & Hong, S.-H. (2020). The American Psychiatric Association Practice Guideline for the Treatment of Patients with Schizophrenia. *The American Journal of Psychiatry, 177*(9), 868–872. https://doi.org/10.1176/appi.ajp.2020.177901

Kemp, C. G., Jarrett, B. A., Kwon, C. S., Song, L., Jetté, N., Sapag, J. C., Bass, J., Murray, L., Rao, D., & Baral, S. (2019). Implementation science and stigma reduction interventions in low- and middle-income countries: A systematic review. *BMC Medicine, 17*(1), 6. https://doi.org/10.1186/s12916-018-1237-x

Khalily, M. T., Rehman, A. U., Bhatti, M. M., Ekhlaque, U., Waqas, A., & Usman, A. (2021). Stakeholders' perspective on mental health laws in Pakistan: a mixed method study. *International Journal of Law and Psychiatry, 74*, 101647.

Khan, K. S., Bawani, S. A. A., & Aziz, A. (2013). Bridging the gap of knowledge and action: A case for participatory action research (PAR). *Action Research, 11*(2), 157–175. https://doi.org/10.1177/1476750313477158

Khan, M. A., & Naeem, N.-K. (2023). Unveiling the Factors Behind Under-Representation of Women in Leadership Positions within Dental Academia. *Annals of King Edward Medical University, 29*(Spl3), 254–261. https://doi.org/10.21649/akemu.v29iSpl3.5580

Khan, Z., Qureshi, O., Pasha, A., Majid, O., Saleem, S., Fearon, P., & Shaikh, M. (2023). Exploring biomedical and traditional care pathways for people with psychosis in Karachi, Pakistan. *Frontiers in Psychiatry, 14*, 1086910. https://doi.org/10.3389/fpsyt.2023.1086910

Kindon, S. L., Pain, R., & Kesby, M. (2007). *Participatory action research approaches and methods : connecting people, participation and place / edited by Sara Kindon, Rachel Pain and Mike Kesby.* Routledge.

Knaak, S., Modgill, G., & Patten, S. B. (2014). Key Ingredients of Anti-Stigma Programs for Health Care Providers: A Data Synthesis of Evaluative Studies. *Canadian Journal of Psychiatry, 59(*1_suppl), 19–26. https://doi.org/10.1177/070674371405901S06

Koike, S., Yamaguchi, S., Ojio, Y., Ohta, K., Shimada, T., Watanabe, K., Thornicroft, G., & Ando, S. (2018). A randomised controlled trial of repeated filmed social contact on reducing mental illness-related stigma in young adults. *Epidemiology and Psychiatric Sciences*, *27*(2), 199–208. https://doi.org/10.1017/S2045796016001050

Lauber, C., & Rössler, W. (2007). Stigma towards people with mental illness in developing countries in Asia. *International Review of Psychiatry, 19*, 157–178. https://doi.org/10.1080/09540260701278903

Liu, C., Lee, J. H., Gupta, A. J., Tucker, A., Larkin, C., Turimumahoro, P., Katamba, A., Davis, J. L., & Dowdy, D. (2022). Cost-effectiveness analysis of human-centred design for global health interventions: A quantitative framework. *BMJ Global Health, 7*(3), e007912. https://doi.org/10.1136/bmjgh-2021-007912

Logie, C. H., Dias, L. V., Jenkinson, J., Newman, P. A., MacKenzie, R. K., Mothopeng, T., Madau, V., Ranotsi, A., Nhlengethwa, W., & Baral, S. D. (2019). Exploring the potential of participatory theatre to reduce stigma and promote health equity for Lesbian, Gay, Bisexual, and Transgender (LGBT) people in Swaziland and Lesotho. *Health Education & Behavior, 46*(1), 146–156. https://doi.org/10.1177/1090198118760682

London, J., & Evans-Lacko, S. (2010). Challenging mental health-related stigma through social contact. *Mental Health Today, 22*(3), 20-22.

Maranzan, K. A. (2016). Reducing mental illness stigma in the classroom: An expanded methodology. *Journal of Applied Social Psychology, 46*(9), 577-585.

Martinez, R. G., Lewis, C. C., & Weiner, B. J. (2014). Instrumentation issues in implementation science. *Implementation Science, 9*(1), 118. https://doi.org/10.1186/s13012-014-0118-8

Mertens, D. M. (2019). *Research and evaluation in education and psychology : integrating diversity with quantitative, qualitative, and mixed methods / Donna M. Mertens*. (5 edition.). SAGE Publications, Inc.

Morris, R., Scott, P. A., Cocoman, A., Chambers, M., Guise, V., Välimäki, M., & Clinton, G. (2012). Is the Community Attitudes towards the Mentally Ill scale valid for use in the investigation of European nurses' attitudes towards the mentally ill? A confirmatory factor analytic approach. *Journal of Advanced Nursing, 68*(2), 460-470. https://doi.org/10.1111/j.1365-2648.2011.05739

Mumtaz, Z. (2012). Gender and social geography: Impact on Lady Health Workers mobility in Pakistan. *BMC Health Services Research, 12*(1), 360. https://doi.org/10.1186/1472-6963-12-360

Naeem, F., & Ayub, M. (2004). Psychiatric training in Pakistan. *Medical Education Online, 9*(1), 4369. https://doi.org/10.3402/meo.v9i.4369

Naqvi, H. A., Sabzwari, S., Hussain, S., Islam, M., & Zaman, M. (2012). General practitioners' awareness and management of common psychiatric disorders: A community-based survey from Karachi, Pakistan. *Eastern Mediterranean Health Journal, 18*(5), 446-452.

Nawaz, R., Gul, S., Amin, R., Huma, T., & Al Mughairbi, F. (2020). Overview of schizophrenia research and treatment in Pakistan. *Heliyon, 6*(11), e05545–e05545. https://doi.org/10.1016/j.heliyon.2020.e05545

Nicholson, L. M., Schwirian, P. M., & Groner, J. A. (2015). Recruitment and retention strategies in clinical studies with low-income and minority populations: Progress from 2004–2014. *Contemporary Clinical Trials, 45*(Pt A), 34–40. https://doi.org/10.1016/j.cct.2015.07.008

Packel, L., Fahey, C., Kalinjila, A., Mnyippembe, A., Njau, P., & McCoy, S. I. (2021). Preparing a financial incentive program to improve retention in HIV care and viral suppression for scale: Using an implementation science framework to evaluate an mHealth system in Tanzania. *Implementation Science Communications, 2(*1), 109. https://doi.org/10.1186/s43058-021-00214-w

Palpant, R., Steimnitz, R., Bornemann, T., & Hawkins, R. (2006). The Carter Centre Mental Health Program: Addressing the public health crisis in the field of mental health through policy change and stigma reduction. *Preventing Chronic Disease, 3*(2), A62. https://www.cdc.gov/pcd/issues/2006/apr/05_0216.htm

Perry, Y., Petrie, K., Buckley, H., Cavanagh, L., Clarke, D., Winslade, M., Hadzi-Pavlovic, D., Manicavasagar, V., & Christensen, H. (2014). Effects of a classroom-based educational resource on adolescent mental health literacy: A cluster randomised controlled trial. *Journal of Adolescence, 37*(7), 1143–1151. https://doi.org/10.1016/j.adolescence.2014.08.001

Pescosolido, B. A. (2013). The public stigma of mental illness: What do we think; what do we know; what can we prove? *Journal of Health and Social Behavior, 54*(1), 1-21.

Phelan, J. C., Link, B. G., Stueve, A., & Pescosolido, B. A. (2000). Public conceptions of mental illness in 1950 and 1996: What is mental illness and is it to be feared? *Journal of Health and Social Behavior, 41,* 188–207. https://doi.org/10.2307/2676305

Pinnock, H., Barwick, M., Carpenter, C., Eldridge, S., Grandes, G., Griffiths, C. J., Rycroft-Malone, J., Meissner, P., Murray, E., Patel, A., Sheikh, A., & Taylor, S. J. C. for the StaRI Group. (2017). Standards for Reporting Implementation Studies (StaRI) statement. *BMJ, 356*, i6795.

Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., Griffey, R., & Hensley, M. (2011). Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental*

Health and Mental Health Services Research, 38(2), 65-76. https://doi.org/10.1007/s10488-010-0319-7

Quinlan, E. (2009). New action research techniques: Using participatory theatre with health care workers. *Action Research, 8,* 117-133.

Reta, Y., Tesfaye, M., Girma, E., Dehning, S., & Adorjan, K. (2016). Public stigma against people with mental illness in Jimma Town, Southwest Ethiopia. *PLoS ONE, 11*(11), e0163103. https://doi.org/10.1371/journal.pone.0163103

Saeed. (2015). Empowering unheard voices through "Theatre of the Oppressed": Reflections on the legislative theatre project for women in Afghanistan--Notes from the field. *Journal of Human Rights Practice, 7(*2), 299–326. https://doi.org/10.1093/jhuman/huu028

Schulz, K. F., & Grimes, D. A. (2002). Sample size calculations in randomised trials: Mandatory and mystical. *The Lancet, 365*(9468), 1348-1353. https://doi.org/10.1016/S0140-6736(05)61034-3

Seeman, N., Tang, S., Brown, A. D., & Ing, A. (2015). World survey of mental illness stigma. *Journal of Affective Disorders, 190,* 115–121. https://doi.org/10.1016/j.jad.2015.10.011

Siddiqui, N., Marifat, H., & Kouvo, S. (2013). Culture, Theatre and Justice: Examples from Afghanistan. In *The Arts of Transitional Justice (Vol. 6,* pp. 113–134). Springer. https://doi.org/10.1007/978-1-4614-8385-4_7

Simon, G. E., Stewart, C., Yarborough, B. J., Lynch, F., Coleman, K. J., & Beck, A. (2018). Mortality rates after the first diagnosis of psychotic disorder in adolescents and young adults. *JAMA Psychiatry, 75*(3), 254-260. https://doi.org/10.1001/jamapsychiatry.2017.4437

Smith, M. (2013). Anti-stigma campaigns: Time to change. *British Journal of Psychiatry, 202*(s55), s49–s50. https://doi.org/10.1192/bjp.bp.113.126813

Stangl, A. L., Carr, D., Brady, L. M., Eckhaus, T., & Claeson, M., & Nyblade, L. (2010). *Tackling HIV-related stigma and discrimination in South Asia*. Washington, DC: World Bank.

Taylor, S. M., & Dear, M. J. (1981). Scaling community attitudes toward the mentally ill. *Schizophrenia Bulletin*, *7*(2), 225–240. https://doi.org/10.1093/schbul/7.2.225

Tong, Y., Wang, Z., Sun, Y., & Li, S. (2020). Psychometric Properties of the Chinese Version of Short-Form Community Attitudes Toward Mentally Illness Scale in Medical Students and Primary Healthcare Workers. *Frontiers in Psychiatry*, *11*, 337–337. https://doi.org/10.3389/fpsyt.2020.00337

Ungar, T., Knaak, S., & Szeto, A. (2016). Theoretical and practical considerations for combating mental illness stigma in health care. *BMC Medicine, 14*(1), 52.

Witt, K., van Dorn, R., & Fazel, S. (2013). Risk factors for violence in psychosis: Systematic review and meta-regression analysis of 110 studies. *PLoS One, 8*(2), e55942.

Yap, M. B. H., Reavley, N. J., & Jorm, A. F. (2012). Young people’s beliefs about preventive strategies for mental disorders: Findings from two Australian national surveys of youth. *Journal of Affective Disorders, 147*(1-3), 269-278.

Yeshanew, B., Yohannis, Z., Abebaw, D., Belete, A., & Shumet, S. (2022). Determinant factors of community attitude towards mental illness in Northern Ethiopia: Mixed method. *Journal of Education and Psychology Research, 4*(3), 458-465.

Part 3 (Critical Appraisal)

"Navigating Research from a Distance": Cultural Collaboration and Reflexivity in Global Mental Health Research

“Without hope, we are lost”

-Mahmoud Darwish

Overview

This critical appraisal offers a reflexive account that explores and examines my experiences conducting the empirical project, a global mental health collaboration with the (Interactive Research and Development) IRD team in Pakistan. This account acknowledges the importance of researcher reflexivity and includes self-reflection focusing on my role as a researcher facing and navigating the challenges of researcher positionality. I explore the themes ‘research from a distance’ and ‘hope in the face of oppression’, critically examining the challenges and key insights gained from this process. Throughout the account I highlight the ways in which this thesis has enhanced my knowledge and understanding of research praxis. Finally, I reflect on the personal impact of this research, specifically in shaping my research interests and aspirations as a practitioner and informing my professional development.

Research Interests and Orientation

As a former photographer I was immediately drawn to the creative aspect of this project and was delighted to be involved in a methodology that is not often utilised in psychological research, more often associated with the realm of sociology and human rights literature. I have always believed in the power of storytelling for connecting with others in a myriad of ways that transcends culture, finding expression in various forms of art including visual arts, theatre, and spoken word. Each medium offers unique tools and techniques to convey narratives, emotions, and ideas. Fundamental to this exchange of meaning in theatre are the polyadic interactions among multiple characters, the audience as a single entity and as individuals simultaneously, each member bringing their own reactions and interpretations to the performance, adding complex layers to the interaction (Boal, 1979). Theatre can generate a rich tapestry of interactions that surpass simple dyadic exchanges, involving verbal, non-verbal, visual, and auditory modes of communication. In this way, interactions are not just between actors and audiences, but also between the performers and the set, props, lighting, and sound (Schechner, 1985).

Personal Reflexivity

Throughout the research process, I took the opportunity to reflect on the potential impact of my involvement in this project considering my own intersectional identities and the educational, political, personal and professional journeys running parallel to this project. I engaged in ongoing reflective practice that utilised the Social GGRRAAACCEEESSS framework (Burnham, Social GGRRAAACCEEESSS: A Tool for Reflecting on Diversity and Social Justice in Therapeutic Practice and Education, 2012), which has informed my theoretical approach to interrogate bias. This framework is a valuable tool for exploring and reflecting on the diverse aspects of identity, encouraging inclusivity and self-reflexivity, aiming to address implicit biases and promote social justice praxis (Burnham, Systemic Supervision: A Portable Guide for Supervision Training and Continuing Education, 1993; Totsuka, 2014).

My own intersecting identities include growing up in an under-resourced area within a high-income country, combining experiences of relative privileges of this socio-economic environment yet awareness of resource disparities and how they can manifest themselves. I am a white, monolingual female in my mid-thirties completing a professional doctorate which places me in a position of both privilege and responsibility within an academic and clinical research landscape. There are also less visible aspects of my identity that have attracted discrimination and marginalisation in different contexts within my life that have afforded me ‘lived experience’ of my own that inevitably shape my thinking and ultimately fosters compassion and empathy for people who experience oppression and marginalisation. And then there are the people I have worked with or cared for in different capacities who's experiences and lives have also shaped my values and enhanced my intersectional reasoning. Throughout the project I aimed to bring awareness to my internal processes and engage in dialogue with others to minimise bias during the data analysis and interpretation phase, thereby maintaining the credibility of the research. Engaging in reflexivity, as described by Finlay (Finlay, 2002) involves a continuous process of critical self-reflection about one's biases, theoretical predispositions, and assumptions. This practice is essential for maintaining the integrity and credibility of qualitative research (Ortlipp, 2015; Olmos-Vega, Stalmeijer, Varpio, & Kahlke, 2022).

Sociopolitical context in the UK

The subject of stigma and oppression permeates society in many forms and in the two and a half years that I have been involved in this research there have been many live examples playing out on the global stage. Indeed, my involvement in this project has seen a backdrop of profound socio-political and human rights discourse on both national and global scales in relation to Transgender rights and the situation in Israel and Palestine to name two currently spotlighted in the media. In the UK alone there has been a significant impact on legislation, public opinion, inter-community, faith and religious relations, sometimes leading to tensions and hate crimes which has sparked protest, activism and advocacy. Media coverage presenting global geopolitical tensions have highlighted increasing evidence of polarising viewpoints affecting public opinion and policy worldwide.

The current project has a very specific focus anchored in the epidemiology of psychosis, yet many of the processes seem pertinent to deepening our understanding of how public perspectives on stigmatised and oppressed experiences are influenced. As a clinician and researcher, learning in this landscape has presented many challenges as well as avenues for hope, embedding within me a desire for supporting sustainable social change and a commitment to participatory approaches to conducting research.

Theatre of the Oppressed and PAR

The empirical study adopted a mixed methods Participatory Action Research (PAR) approach, which is a collaborative research endeavour that emphasises active participation and co-creation of knowledge by researchers and participants. Although I did not have experience in mixed methodology, I had previously published quantitative research and I was keen to further develop my qualitative skills on clinical training. Grounded in the principles of social justice, empowerment, and democratic participation, PAR seeks to address issues of inequality and power dynamics in the research process, and this was aligned to my personal and professional values as a scientist-practitioner. There is an emphasis in PAR on empowerment by equitably involving participants with lived experience in the research process, enhancing their capacity to effect change in their own lives and communities (Fals-Borda & Rahman, 1991). While mixed methods offer both advantages and disadvantages, it felt like the best fit to be able to address the studies' aims in evaluating acceptability and feasibility while also achieving the key insights into participants' experiences of the process.

Reflecting on the project, I acknowledge the gap between expectations and reality and how the practical application of Theatre of the Oppressed (TO)/forum theatre can diverge from theoretical expectations. While extensive research highlights the positive social change catalysed by Theatre of the Oppressed methods (Boal, 1979), some studies have also pointed out the potential for harm (Hamel, 2013). For instance, Hamel (2013) found that in a forum theatre project aimed at restoring the voice of a homeless population in Canada, the audience became the dominant voice, thereby silencing the homeless participants. This phenomenon, where the audience's response leads to a reinforcement of existing power dynamics, underscores the need for careful facilitation to ensure the intended message is conveyed effectively (Ahmedani, 2011). The production team highlighted differing opinions on the story being told in the play and emphasised the need for more careful development of a script for theatre, drawing on a wider range of people's lived experiences to platform more voices. All members of the production team were invited to attend the productions and offered transportation to support this by the field team, however no participants with lived experience attended the community performances, the reasons for which are unclear. I wondered how the presence of people with lived experience at the performances, involved as equals in line with PAR principles might have influenced the dynamics and outcome of the intervention. Particularly considering that many successful anti-stigma interventions are based on increasing contact with people with mental health difficulties (Fokuo, et al., 2017; Koike et al., 2018; Yap, Reavley, & Jorm, 2012).

Perhaps connected to this, the forum theatre performers also highlighted concerns about the low number of participants with lived experience engaging in the project, limiting the scope of the production and accentuating the sense of vulnerability in the room. Despite PARs emphasis on equality, the reality of managing power dynamics between researchers, TO performers and participants with lived experience was challenging, as has been found in previous research (Cornwall & Jewkes, 1995). In the current study, performers shared that they felt unable to influence the process in the ways they felt drawn to, for example by improving the sensory aspects of the environment and taking more time to play games and hearing participants stories in a relaxed manner. Furthermore, despite a trained psychologist being available for the duration of the workshop to offer support, the performers did not communicate that they would like to make use of this input when participants shared their traumatic experiences.

Contrastingly, the participants with lived experience generally did not raise these concerns of power imbalances or offer any criticisms related to their involvement in the project. The participants with lived experience highlighted their enjoyment of spending time outside the home and engaging in physical activities and games, some indicated they continued to do the exercises at home. This made me question whether we had created enough space to capture some of the more optimistic messages aligned to the promotion of wellbeing about the importance of movement, sense of purpose and community contact.

Overall, the logistics of balancing the demands of a research department, in terms of resource allocation can be complex, and this project received a relatively small financial budget making it challenging to flexibly accommodate unplanned adaptations. The interviews seemed to suggest this constraint was felt by the performers facilitating the forum theatre activities, leading to an unequal power differential and the impact of this on the participants with lived experience is unclear. I consider it a strength that these challenges were discussed in depth at the interview stage, and it is my hope this process made some progress toward ameliorating the possible sense of powerlessness. However, it is unfortunate this learning took place at the end of the workshops and in future I would put structures in place to facilitate conversations about addressing power imbalances earlier on in the implementation. Such frustrations and questions are a natural part of the cyclical process of PAR involving repeated phases of planning, action, observation, and reflection allowing for continuous learning and adaptation (Kemmis & McTaggart, 2000).

Navigating Positionality and Cross-Cultural Research Challenges

My involvement in the project design and support was primarily virtual, facilitated through meetings and engagements with researchers at the IRD in Karachi. Guilaine Kinouani’s (2020) work on whiteness highlights the importance of recognising and reflecting on one's positionality, especially in cross-cultural research. Whiteness often carries unexamined privileges and biases that can impact research interpretations and interactions. This awareness is crucial in ensuring that the research does not perpetuate existing power imbalances and remains culturally sensitive and relevant. My positionality as a white female researcher influences my perspectives and interactions, necessitating a conscious effort to engage in reflexivity and dialogue with local collaborators to mitigate bias and maintain the integrity of the research. The collaborating researchers from both UCL and the IRD had direct cultural knowledge and experience, and working together supported me in integrating a more nuanced understanding of the cultural context through dialogue and exposure throughout the project itself.

Despite support and funding from the department at UCL, my physical presence in Pakistan was not possible due to international visa restrictions and the time constraints of the project. I felt a sense of missed opportunity in experiencing the performances of the play, integrating with the field team, and participating more actively in the data collection. This limitation restricted my understanding of the specific cultural context to interactions with IRD colleagues, clinical experience with UK-based clients of South Asian heritage, and related academic literature. I attempted to immerse myself in the work in other ways to form a sense of connection to aid me in my interpretation of the findings. For instance, I attended one of the workshops remotely, introduced to the group by the field team, and observed some of the theatre activities to get a sense of what was involved and the energy in the room. Although the workshops were in Urdu and I could not understand the language, I was able to interpret the emotional atmosphere non-verbally. In addition to reading the translated interview transcripts, I listened to the recordings of the interviews. Again, while they were in Urdu, I was able to sense the emotional resonance, particularly struck by the expression of emotion in participants' voices, a nuance I would not necessarily have identified if I had used the transcripts alone, providing deeper insights into the participant's emotions through non-verbal cues (Borg & Gallois, 2001). My reasoning for this approach was to foster a deeper understanding aiming to connect with the emotional landscape of the participant's narrative and was generally helpful to hold in mind during coding and theme generation.

However, as I made concerted efforts to be more attuned to the participants and field researchers, I became increasingly aware of my own desire to feel 'involved' and to exert a sense of 'ownership' over decisions related to data collection and participant support. This realisation was pivotal in understanding the interplay between my personal and professional background and my research approach. I recognised an eagerness to prove a sense of authorship due to my position as a trainee clinical psychologist, and perhaps due to my own intersecting identities around gender, social class and my own anxieties around academic expectations. Recognising these dynamics allowed me to engage more authentically with the cultural and contextual nuances and helped me reconnect with the importance of collaboration, decentring myself as a ‘researcher’ and aiming to align more closely with the lived realities and experiences of the participants and the cultural context of the systems within which this project took place. This collaborative model aligns with the principles of participatory research, which emphasise shared decision-making and mutual respect among all research partners (Kagan, 2012).

Viewing Research through a Western Lens: An Interrogation of Bias

Reflecting on my research journey, I recognise how Westernisation significantly influences how research is conducted and evaluated, while contributions from LMICs or areas with limited funding are often critiqued for quality or methodological weaknesses. Across both the empirical project and the systematic review, I was aware of the financial and logistical limitations placed on researchers in LMIC contexts. In South Asia specifically, there is a well-documented sparsity of published research about psychosis epidemiology reaching the peer reviewed journals and therefore global audiences (Mirza & Jenkins, 2004; Patel & Prince, 2010; Saha, Chant & McGrath, 2005).

Whilst these challenges are rooted in political and economic reality, I started to notice the dominance of this narrative in my thinking, reinforced by reading many peer-reviewed articles citing the same difficulties. My direct experience working with academic colleagues at the IRD in Karachi was overwhelmingly positive and teemed with shared learning opportunities. In fact, a current professional goal of mine is to train in the ‘photo-voice’ research methodology, an approach I only became aware of through this collaboration.

I became more curious about the examples that showed exception to this narrative in the research. For example, when I was conducting the systematic review, I was struck by the sheer scale and investment of the government supported National Mental Health Survey (NMHS) 2015-2016 (Hedge et al, 2023) in India, with an estimated 150 million individuals recognised as having a mental health difficulty. The survey involved intensive researcher training, use of robust diagnostic measurement tools, and detailed statistical analysis that covered 12 states. The NMHS- 2 is in preparation and aims to expand the geographical coverage across more states and to continue to estimate prevalence, assess disability and examine the socioeconomic impact on care pathways (Gururaj et al., 2016; Ministry of Health and Family Welfare, 2024).

Furthermore, although no studies for the prevalence review were identified from certain regions such as Bhutan, a brief scope of the literature in the area drew me towards the ‘Gross National Happiness-GNH’ framework utilised by the government as a national level made me curious about language and framing of experiences in different contexts. My initial response was of concern that focussing narrowly on the subjective concept of ‘happiness’ as a wellbeing outcome risks neglecting more serious mental health conditions such as psychosis and major depression and may ignore broader structural factors such as poverty, education, and community support that significantly impact mental health (Marmot, 2010; Karp, 2016).

However, there was also something hopeful about the tone of the framework in aspiring to happiness and I recognised my automatic thoughts about evidence-based practice and decided to interrogate my assumptions in line with recommendations for participatory action research (Bailey et al., 2019). A dialectic appraisal of this internal process formed, holding space for the importance of 'academic rigour' yet appreciating that this is context dependent, and the absence of literature does not equate to absence of investment in public health. In taking this pause I further explored Bhutan's GNH initiative and discovered the ways in which it promotes inclusive development that considers the needs and aspirations of different segments of society, including marginalised groups. How it prioritises reducing inequalities and promoting social justice (Verma, 2017). How it is committed to environmental sustainability and cultural preservation (Zurick, 2006; Brooks, 2013). And crucially, how the explicit focus on happiness as a policy goal has led to innovative social policies aimed at improving life satisfaction and well-being, such as promoting meditation and mindfulness practices in schools and workplaces (McDonald, 2016). This ethos is in line with the principles of PAR and TO methodology and highlights how researcher bias can intersect with systemic power imbalances that favour Western research paradigms.

Considering my position as a researcher interpreting, analysing, and disseminating this research, it is incumbent upon me to incorporate an intersectional lens, to examine the unique interplay of my internal responses to cues from the research findings and literature that are shaped my own social identities and unique experiences of oppression and privilege (Crenshaw, 1989). This example follows the thought processes stemming from the briefest appraisal of an aspect of the literature identified in a literature search, forming a drop in the ocean in relation to the thesis as a whole, yet it highlights the way researcher assumptions can take place at every step of the process of interpretation.

Hope in the Face of Oppression

In drawing these reflections to a close, I wanted to end on a message of hope. In part, this is due to personal resonance with my stage of training, completing the thesis and embracing avenues for change through collective action with colleagues who share similar values. And in part, the theme of hope feels relevant to the theatre of the oppressed methodology and the place in which I am leaving the project, to be hopefully continued by researchers interested in this approach. As part of my ongoing reflexivity, I have been reading Paulo Freire's seminal work, "Pedagogy of the Oppressed" (Freire, 1970) as it relates to the historical influences of the TO approach. Only recently have I become aware of the "Pedagogy of Hope" , a reflection on his earlier work, serving as a call to action for educators to remain hopeful and committed to social justice, inspired by the reception of his educational theories around the world (Freire, 1994). This project has presented a hopeful message that public perceptions, stigma and social change is possible, and perhaps what stands out to me the most is the healthy reminder from the production team participants that 'change takes time', and I aim to take that sense of commitment and patience with me into future research and clinical endeavours.

And finally, drawing upon a concept championed in Friere's work is the dialogical method, and as such, in the spirit of shared conscience raising, I invite the reader to consider the ways the ideas and themes in this thesis might relate to your own personal, professional and political contexts (Freire, 2000).

Looking to the future

Engaging with the Theatre of the Oppressed (TO) methodology has deeply influenced my approach to research, highlighting the critical role of participant engagement in fostering empowerment and social change. Reflecting on my research journey, I recognise the impact of cultural distance and Westernisation on the conduct and evaluation of research. Despite challenges such as international travel restrictions and language barriers, these research experiences underscored the value of sharing resources, exchanging diverse perspectives and the enrichment that can be had through global partnership. In the future, this work has inspired me to continue fostering collaborative and participatory research practices that address social justice and equality, ensuring that all voices are heard and represented in the scientific discourse (Adams & Thompson, 2016; Kinouani, 2020; Burnham, 2012). I also feel empowered to explore creative, participatory arts approaches to psychological research and hope to train in the ‘photo-voice’ methodology. As I embark on my first qualified post in early intervention in psychosis in the UK, I hope to take with me the empowerment of the Theatre of the Oppressed approach, the collaboration of participatory action research, and the cultural humility and anti-oppressive ethos essential for transformative mental health care.

References

Adams, T. E., & Thompson, T. L. (2016). Researching Lives, Stories, and Desires: An Introduction to Narrative Research. Sage Publications.

Ahmedani, B. K. (2011). Mental health stigma: Society, individuals, and the profession. *Journal of Social Work Values and Ethics, 8*(2), 41–416.

Akram, S., & Sajjad, S. (2021). Gender roles and mental health: Implications for psychosocial support in South Asia. Asian Journal of Psychiatry, 56, 102534.

Ali, T., & Hussain, S. (2019). Gender disparity in mental health support in South Asia. Journal of South Asian Studies, 34(2), 45-56.

Bailey, J., Steeves, V., Burkell, J., Shade, L. R., Ruparelia, R., & Regan, P. (2019). Getting at Equality: Research Methods Informed by the Lessons of Intersectionality. International Journal of Qualitative Methods, 18, 160940691984675-. https://doi.org/10.1177/1609406919846753

Bhabha, H. K. (1994). The Location of Culture. Routledge.

Boal, A. (1979). The Theatre of the Oppressed. Pluto Press.

Borg, M. E., & Gallois, C. (2001). Nonverbal communication and the perception of social distance. Journal of Nonverbal Behavior, 25(2), 87-108.

Brook, P. (1968). The Empty Space. Penguin Books.

Brooks, J. S. (2013). Bhutan's commitment to conservation and sustainable development. Ecological Economics, 87, 20-25.

Bryman, A. (2016). Social Research Methods (5th ed.). Oxford University Press.

Burnham, J. (1993). Systemic Supervision: A Portable Guide for Supervision Training and Continuing Education. Karnac Books.

Burnham, J. (2012). Social GGRRAAACCEEESSS: A Tool for Reflecting on Diversity and Social Justice in Therapeutic Practice and Education. The Tavistock Centre.

Chambers, R. (1997). Whose Reality Counts? Putting the First Last. Intermediate Technology Publications.

Cornwall, A., & Jewkes, R. (1995). What is participatory research? Social Science & Medicine, 41(12), 1667-1676.

Esslin, M. (1961). The Theatre of the Absurd. Doubleday.

Fals-Borda, O., & Rahman, M. A. (1991). Action and Knowledge: Breaking the Monopoly with Participatory Action Research. Apex Press.

Finlay, L. (2002). "Outing" the researcher: The provenance, process, and practice of reflexivity. Qualitative Health Research, 12(4), 531-545. https://doi.org/10.1177/104973202129120052

Freire, P. (1970). Pedagogy of the Oppressed. Continuum.

Freire, P. (1994). Pedagogy of Hope: Reliving Pedagogy of the Oppressed. Continuum.

Freire, P. (2000). Pedagogy of the Oppressed (M. B. Ramos, Trans.). Continuum. (Original work published 1970)

Gururaj, G., Varghese, M., Benegal, V., Rao, G. N., Pathak, K., Singh, L. K., Mehta, R. Y., Ram, D., Misra, R., & Desai, N. G. (2016). National Mental Health Survey of India, 2015-16: Summary. Ministry of Health and Family Welfare, Government of India.

Hamel, S. (2013). When Theatre of the Oppressed becomes Theatre of the Oppressor. Research in Drama Education, 18(4), 403–416. https://doi.org/10.1080/13569783.2013.836918

Karp, D. A. (2016). Speaking of Sadness: Depression, Disconnection, and the Meanings of Illness. Oxford University Press.

Kemmis, S., & McTaggart, R. (2000). Participatory Action Research. In N. Denzin & Y. Lincoln (Eds.), Handbook of Qualitative Research (pp. 567-605). SAGE Publications.

Khan, A., & Aziz, S. (2013). Recruitment strategies for mental health studies in Pakistan. Pakistan Journal of Psychology, 44(1), 12-19.

Kinouani, G. (2020). Living While Black: The Essential Guide to Overcoming Racial Trauma. Penguin Life.

Marmot, M. (2010). Fair society, healthy lives: The Marmot Review. Strategic review of health inequalities in England post-2010.

McDonald, R. (2016). Mindfulness and the challenge of improving mental well-being in Bhutan. Journal of Bhutan Studies, 35, 67-85.

Ministry of Health and Family Welfare. (2024). National Mental Health Survey of India – 2 (NMHS-2). National Institute of Mental Health and Neuro-Sciences (NIMHANS). Retrieved from https://indianmhs.nimhans.ac.in/

Mirza, I., & Jenkins, R. (2004). Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: systematic review. BMJ, 328(7443), 794. https://doi.org/10.1136/bmj.328.7443.794

Nida, E. A. (1964). Toward a Science of Translating: With Special Reference to Principles and Procedures Involved in Bible Translating. Brill.

Olmos-Vega, F., Stalmeijer, R. E., Varpio, L., & Kahlke, R. (2022). A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. Medical Teacher, 44(6), 636-649.

Ortlipp, M. (2015). Keeping and using reflective journals in the qualitative research process. The Qualitative Report, 13(4), 695-705.

Patel, V., & Prince, M. (2010). Global mental health: a new global health field comes of age. JAMA, 303(19), 1976-1977. https://doi.org/10.1001/jama.2010.616

Saha, S., Chant, D., & McGrath, J. (2008). Meta-analyses of the incidence and prevalence of schizophrenia: conceptual and methodological issues. International Journal of Methods in Psychiatric Research, 17(1), 55-61. https://doi.org/10.1002/mpr.240

Schechner, R. (1985). Between Theatre and Anthropology. University of Pennsylvania Press.

Totsuka, Y. (2014). 'Which aspects of social GGRRAAACCEEESSS grab you most?' The social GGRRAAACCEEESSS exercise for a supervision group to promote therapists' self-reflexivity. Journal of Family Therapy, 36(1), 86-106. https://doi.org/10.1111/1467-6427.12026

Verma, R. (2017). Gross National Happiness: Meaning, Measure and Degrowth in a Living Development Alternative. Journal of Political Ecology, 24(1), 476-490.

Zurick, D. (2006). Gross National Happiness and Environmental Status in Bhutan. Geographical Review, 96(4), 657-681.

Appendices

Part One: Literature Review

Appendix A: The Joanna Briggs Institute critical appraisal tool for assessing the quality of prevalence studies

JBI Checklist Item														
Study	**Rater**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Quality Raw Score**	**Weight (%)**	**Overall (+, -, X)***	**Agreement %**
Aich et al 2012	R1	No	Unclear	Unclear	Yes	Na	Yes	Yes	Unclear	Na	7	38.89%	**X**	77.78
	R2	No	Yes	Unclear	Yes	Na	Yes	Yes	No	Na				
Alam et al 2024	R1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	18	100.00%	+	100
	R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Appuhamy 2023	R1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	17	94.44%	+	88.98
	R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Basu et al 2013	R1	No	Yes	Unclear	Yes	Na	Yes	Yes	Yes	Na	10	55.56%	-	100
	R2	No	Yes	Unclear	Yes	Na	Yes	Yes	Yes	Na				
Chowdhry 1966	R1	No	Unclear	No	Yes	Unclear	Unclear	Unclear	Unclear	Unclear	2	11.11%	**X**	77.78
	R2	No	Unclear	No	Yes	Unclear	Unclear	Unclear	No	Na				
Devylder 2018	R1	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	16	88.89%	+	77.78
	R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear				

Doherty 2019	R1	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	15	83.33%	+	88.98
	R2	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes				
Dube 1968	R1	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	No	Yes	14	77.78%	-	77.78
	R2	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	No	Yes				
Garekar 2015	R1	Unclear	Yes	Unclear	No	Yes	Yes	Yes	Unclear	Na	7	38.89%	**X**	66.66
	R2	No	Yes	Unclear	No	Na	Yes	Yes	No	Na				
Gawde 2013	R1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	18	100.00%	+	100
	R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Gupta and Sengupta 2022	R1	No	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Na	13	72.22%	-	77.78
	R2	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes				
Gupta et al 2023	R1	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	12	66.67%	-	55.55
	R2	No	Yes	Unclear	Unclear	Yes	Yes	Unclear	No	Yes				
Haldar 2017	R1	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14	77.78%	-	66.66
	R2	No	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Na				
Hapangama 2013	R1	No	Yes	Unclear	Yes	Unclear	Yes	Yes	Yes	Unclear	11	61.11%	-	77.78

	R2	No	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Na				
Hashmi et al 2023	R1	No	No	Unclear	Yes	Unclear	Yes	Yes	Yes	Unclear	8	44.44%	**X**	88.98
	R2	No	Unclear	Unclear	Yes	Unclear	Yes	Yes	Yes	Unclear				
Hegde et al 2023	R1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	18	100.00%	+	100
	R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Hosain 2007	R1	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	16	88.89%	+	77.78
	R2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes				
Imran 2021	R1	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Na	9	50.00%	**-**	66.66
	R2	No	Yes	Yes	No	Yes	Unclear	Unclear	No	Na				
Jha 2019	R1	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	13	72.22%	**-**	66.66
	R2	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Unclear				
Khairkar 2013	R1	No	Yes	Unclear	Yes	Unclear	Yes	Yes	Yes	Na	10	55.56%	**-**	66.66
	R2	Unclear	Yes	Unclear	Yes	No	Yes	Yes	Yes	Unclear				
Khan 2020	R1	Yes	Unclear	Unclear	Yes	Unclear	Yes	Unclear	Unclear	Unclear	8	44.44%	**X**	66.66

	R2	Yes	Yes	Yes	Yes	Unclear	Yes	Unclear	No	Unclear				
Lakhan 2013	R1	Yes	Yes	No	Unclear	Yes	Yes	Yes	Yes	Unclear	13	72.22%	-	55.55
	R2	No	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes				
Malhotra and Chaturvedi	R1	No	Unclear	Unclear	No	No	Unclear	Unclear	No	Na	3	16.67%	**X**	66.66
	R2	No	Yes	Unclear	No	Yes	Unclear	Yes	No	Na				
Nandi 1979	R1	Yes	Unclear	Yes	Yes	Yes	Unclear	Yes	Yes	Unclear	12	66.67%	-	77.78
	R2	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Unclear				
Niaz 2004	R1	No	Unclear	Unclear	Yes	Unclear	Yes	Unclear	No	Na	5	27.78%	**X**	66.66
	R2	No	Yes	Unclear	Yes	Yes	Unclear	Unclear	No	Na				
Nuevo 2012	R1	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	Unclear	11	61.11%	-	77.78
	R2	Yes	Yes	Yes	No	Unclear	Yes	Unclear	Yes	Unclear				
Padmavathi 1988	R1	Yes	Yes	Unclear	Yes	Unclear	Yes	Yes	Yes	Unclear	13	72.22%	-	88.98
	R2	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear				
Sarwat 2015	R1	No	Yes	Unclear	Yes	Yes	Yes	Unclear	No	Na	7	38.89%	**X**	66.66

	R2	No	Yes	Unclear	No	Yes	Unclear	Unclear	No	Yes				
Satija 1984	R1	Yes	Unclear	Unclear	Yes	Unclear	Yes	Yes	No	Unclear	8	44.44%	**X**	77.78
	R2	No	Yes	Unclear	Yes	Unclear	Yes	Yes	No	Unclear				
Sethi 1974	R1	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear	14	77.78%	**-**	100
	R2	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear				
Shaji 2017	R1	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear	14	77.78%	**-**	100
	R2	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear				
Thacore 1975	R1	Yes	Yes	Yes	Yes	No	Unclear	Unclear	Yes	Yes	12	66.67%	**-**	77.78
	R2	Yes	No	Yes	Yes	No	Unclear	Yes	Yes	Yes				
Vallath et al 2023	R1	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	NA	13	72.22%	**-**	66.66
	R2	No	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Na				
Vijayalakshmi et al 2023	R1	No	No	Yes	Yes	Yes	Yes	Yes	No	Unclear	8	44.44%	**X**	55.55
	R2	No	Yes	Yes	Yes	No	Unclear	Unclear	No	Unclear				
Wig 1978	R1	Unclear	Yes	Yes	No	Na	Unclear	Yes	No	Na	6	33.33%	**X**	66.66

	R2	No	Yes	Unclear	No	Yes	Unclear	Yes	No	Na				
Wijesinghe 1978	R1	Yes	Yes	Unclear	Yes	Yes	Unclear	Yes	No	Yes	13	72.22%	-	88.98
	R2	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	No	Yes				

1) Was the sample frame appropriate to address the target population? 2) Were study participants recruited in an appropriate way? 3) Was the sample size adequate? 4) Were the study subjects and the setting described in detail? 5) Was the data analysis conducted with sufficient coverage of the identified sample? 6) Were valid methods used for the identification of the condition?7) Was the condition measured in a standard, reliable way for all participants? 8) Was there appropriate statistical analysis? 9) Was the response rate adequate, and if not, was the low response rate managed appropriately?

*Key

+ Low Risk

- Moderate Risk

x High risk

Appendix B Table of Study Characteristics

Authors	Year	Title	Design	Ethics	Country	Region	Geographical Scope	Population	Gender	Age	Diagnostic Criteria	Diagnostic Process	Type/S Of Prevalence
Aich, Dhungana And Muthuswamy	2012	Pattern Of Neuropsychiatric Illness In Older Age Group Population: An Inpatient Study Report From Nepal	Retrospective Chart Review	Not Stated	Nepal	Bhairahawa	Mixed Urban/Rural	Inpatient	Male/Female	50 - 59 (194) 60+ (138)	ICD 10 Diagnostic Criteria	ICD 10 Diagnostic Criteria	Point
Alam, M. F., Ahmed, H. U., Alam, M. T., Sarkar, M., Khan, N. M., Uddin, M. J., & Sarkar, A. A.	2024	Community Prevalence Of Psychiatric Disorders: Findings From A Nationwide Survey In Bangladesh	Cross Sectional Survey	Yes	Bangladesh	Nationwide	Mixed Urban/Rural	Community	Male/Female	18-99	DSM-5 Diagnostic Criteria	MINI	Lifetime SZ

Appuhamy, K. K., Podmore, D., Mitchell, A., Ahmed, H. U., Ashworth, M., Boehnke, J. R., Chongtham, V., Chowdhury, A. H., Garcia, O. P., Holt, R. I. G., Huque, R., Muliyala, K. P., Onstenk, E. K., Rajan, S., Shiers, D., Siddiqi, N., Manjunatha, S., & Zavala, G. A.	2023	Risk Factors Associated With Overweight And Obesity In People With Severe Mental Illness In South Asia: Cross-Sectional Study In Bangladesh, India, And Pakistan	Cross Sectional Survey	Not Stated	Bangladesh, India, And Pakistan	Nationwide	Not Stated	Inpatient/Outpatient	Male/Female	18-76yrs, Mean 31.5 (Median 30)	ICD 10 Diagnostic Criteria	Psychiatric Diagnosis	Point SZ
Basu, Sarkar And Mattoo	2013	Psychiatric Comorbidity In Patients With Substance Use Disorders Attending An Addiction Treatment Center In India Over 11 Years: Case For A Specialized Dual Diagnosis Clinic	Retrospective Chart Review	Yes	India	Chandigarh/North India	Mixed Urban/Rural	Inpatient/Outpatient - Attending Substance Misuse Clinic	Mostly Male	15-70 (Median 33)	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point

Chowdhury	1966	Admissions To An East Pakistan Hospital	Retrospective Chart Review	Not Stated	Pakistan	East Pakistan	Mixed Urban/Rural	Inpatient	Male/Female	10 - 50+	Unspecified	Psychiatrist Diagnosis	Point
Devylder, Kelleher, Lalane, Oh, Link, Koyanagi	2018	Association Of Urbanicity With Psychosis In Low- And Middle-Income Countries	Cross Sectional Survey	Yes	Bangladesh, Nepal, Pakistan And Sri Lanka	Not Stated	Mixed Urban/Rural	Community	Male/Female	>18 (Mean 37.7(SD 15.7))	DSM 5 Diagnostic Criteria	WHO Composite International Diagnostic Interview (CIDI), Version 3.0.22	Point
Dube	1968	Mental Disorder In Agra	Cross Sectional Survey	Yes	India	Agra, Uttar Pradesh	Mixed Urban/Rural	Community	Male/Female	Not Stated	Unspecified	Screened By Social Worker And Psychologist + Formal Psychaitric Diagnosis	Point And Lifetime
Garekar, Bhargava, And Verma	2015	Aggression And Psychosis In Patients Seeking Emergency Psychiatric Care In New Delhi, India	Retrospective Chart Review	Yes	India	New Delhi	Mixed Urban/Rural	Inpatient	Male/Female	0 - >60	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Gawde, Nasirabadi, Shah And Naganokar	2013	Psychiatric Morbidity In An Urban Slum Of Mumbai: Cross-	Cross Sectional Survey	Yes	India	Mumbai	Urban	Community	Male/Female	15+	DSM 5 Diagnostic Criteria	Screening (SCL-90-R Questionnaire) + Psychiatrist Diagnosis	Point And Lifetime

		Sectional Study											
Gupta, D., & Sengupta, N.	2022	Clinical Profile Of Patients Visiting A Private Child And Adolescent Psychiatric Clinic In Delhi	Retrospective Chart Review	Yes	India	New Delhi	Na	Children: Outpatient	Female Only	0-19	DSM-5 Diagnostic Criteria	Psychiatrist Diagnosis	Point Psychosis
Gupta, G., Sachdeva, A., Kumar, M., & Singh, M.	2023	Spectrum Of Intimate Partner Violence In Patients With Psychiatric Illness–From Victimization To Perpetration	Cross Sectional Survey	Yes	India	Haryana, Northern India	Mixed Urban/Rural	Hospital; Outpatient	Male/Female	18-50	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point Psychosis
Haldar, Sagar, Malhotra And Kant	2017	Burden Of Psychiatric Morbidity Among Attendees Of A Secondary Care Hospital In Northern India	Retrospective Chart Review	Yes	India	Haryana, Northern India	Mixed Urban/Rural	Tertiary Care Hospital	Male/Female	>18	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point

Hapangama, Kuruppuarachchi, Pathmsewaran	2013	Substance Use Disroders Among The Mentally Ill Patients In A General Hospital In Sri Lanka: Prevalence And Correlates	Nan	Yes	Sri Lanka	Western Province	Mixed Urban/Rural	Inpatient/Outpatient	Male/Female	Not Stated	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosed	Point
Hashmi, A. N., Qamar, R., Taj, R., Zubair, U. B., Agha, Z., Abbasi, S. A., & Azam, M.	2023	Contributing Risk Factors Of Common Psychiatric Disorders In The Pakistani Population	Cross Sectional Survey	Yes	Pakistan	Islamabad And Rawalpindi (Capital Territory)	Na	Na	Male/Female	Mean 29.85	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point SZ
Hegde, P. R., Nirisha, L. P., Basavarajappa, C., Suhas, S., Kumar, C. N., Benegal, V., Rao, G. N., Varghese, M., & Gururaj, G.	2023	Schizophrenia Spectrum Disorders In India: A Population-Based Study	Retrospective Chart Review	Yes	India	Assam, Chhattisgarh, Gujarat, Jharkand, Kerala, Manipur, Madhya Pradesh, Punjab, Rajasthan, Tamilnadu, Uttar Pradesh, West Bengal	Mixed Urban/Rural	Community	Male/Female	>18	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Lifetime SZ And Point SZ

Imran, Bodla, Asif, Shoukat, Waqar Azeem	2021	Pakistan's First Child And Adolescent Psychiatry Inpatient Unit: Characteristics Of Admitted Patients And Response To Treatment Over A 7-Year Period	Retrospective Chart Review	Yes	Pakistan	Lahore	Na	Children	Male/Female	Under 15	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Jha, Ojha, Dahal, Sharma, Pant, Labh, Marahatta, Shakya, Adhikari, Joshi, Luitel And Dhimal	2019	Prevalence Of Mental Disorders In Nepal: Findings From The Pilot Study	Cross Sectional Survey	Yes	Nepal	Dhanusha, Bhaktapur And Dolakha	Na	Community, Children And Adults	Male/Female	13+	DSM-Diagnostic Criteria	MINI DSM-5 Adults And MINI-Kid V. 7.0.2 DSM-5.	Point And Lifetime
Khairkar, Pathak, Lakhkar, Sarode, Vagha, Jagzape, Damke And Saoji	2012	A 5 Year Prevalence Of Child And Adolescent Psychiatri Disorders From Central India	Clinical Interviews	Yes	India	Central India	Mixed Urban/Rural	Tertiary Care Hosptail, Children	Male/Female	Aged Between 4 And 16	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point

Khan, Hussain, Ikram, Mahmood, Riaz, Jamil, Amin, Haider, Sandhu, Mushtaq, Barbui, Johnson And Godman	2020	Prevalence And Treatment Of Neuroligal And Psychiatric Disorders Among Tertiary Hospitals In Pakistan; Findings And Implications	Retrospective Chart Review	Not Stated	Pakistan	Countrywide	Mixed Urban/Rural	Tertiary Care Hospital	Na	5 To 91	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Lakhan	2013	Coexistence Of Psychiatric Disorders And Intellectual Disability In Children Aged 3 - 18 Years In The Barwani District, India	Retrospective Chart Review	Yes	India	Barwani	Mixed Urban/Rural	Community, Children And Adults	Na	2021-03-18 00:00:00	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Malhotra And Chaturverdi	1984	Patterns Of Psychiatric Disorders In India	Cross Sectional Survey	Not Stated	India	Chandigarh/North India	Not Stated	Clinic	Male/Female	0 - 15	ICD 9 Diagnostic Criteria	Psychiatrist Diagnosis	Point

Hosain, Chatterjee, Ara And Islam	2007	Prevalence., Pattern And Determinants Of Mental Disorders In Rural Bangladesh	Community Survey	Not Stated	Bangladesh	Savar-Nabinagar	Rural	Community	Male/Female	18 - 60	DSM 5 Diagnostic Criteria	Screening (GHQ 60) Psychiatrist Diagnosis	Point
Nandi, Banerjee, Boral, Ganguli, Ajmany, Ghosh And Sarkar	1975	Socio-Economic Status And Prevalence Of Mental Disorders In Certain Rural Communities In India	Psychiatric Field Survey	Yes	India	West Bengal	Rural Villages	Community	Male/Female	Not Specified	Unspecified	Psychiatrist And Psychologist Diagnosis	Point
Niaz, Hassan, Husain And Siddiqui	2004	Cross Sectionaal Study Of The Frequency Of Psychiatric Morbidity In Affluent Urban Population Of Karachi	Retrospective Chart Review	Yes	Pakistan	Karachi	Urban	Outpatient	Male/Female	Range Not Stated	DSM 5 Diagnostic Criteria	Diagnosis	Point
Padmavathi, Rajkumar, Kumar, Manoharan And Kamath	1987	Prevalence Of Schizophrenia In An Urban	Cross Sectional Survey	Yes	India	Madras	Urban	Community, Children And Adults	Male/Female	>15	ICD 9 Diagnostic Criteria	Psychiatrist Diagnosis	Point

		Community In Madras											
Sarwat, Nawab And Nisar	2015	Profile Of Psychiatric Patients Attending Outpatient Clinic Of A Tertiary Care Hospital, Karachi	Retrospective Chart Review	Yes	Pakistan	Karachi	Urban	Outpaitent	Male/Female	1->60	DSM 5 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Satija, Patni And Nathawat	1984	Mental Morbidity In Industrial Workers Of Khetri Copper Complex	Survey	Yes	India	Rajastan	Urban	Community, Industrial Workers	Not Stated	20 +	ICD 9 Diagnostic Criteria	GHQ Screening + Psychiatric Interview Schedule	Point
Sethi, Gupta, Mahendru And Kumari	1974	Mental Health And Urban Life	Cross Sectional Survey	Yes	India	Lucknow	Urban	Community	Male/Female	5 - >60	DSM 2 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Shaji, Sathesh, Krishnakumar, Varghese, Kiran, Mini, Kumar, Anish, Kaimal, Lekshmy, Sumesh, Nikhil, Nisha, Viond, Kumar, Ramesh, Rejani, Amrutha, Mahesh And Anand	2017	Psychiatric Morbidity In The Community: A Population-Based Study From Kerala	Cross Sectional Survey	Yes	Pakistan	Karala	Mixed Urban/Rural	Community	Male/Female	0 - 80+	ICD 10 Diagnostic Criteria	GHQ Screening + Psychiatric Interview Schedule	Lifetime

Thacore, Gupta And Suraiya	1975	Psychiatric Morbidity In A North Indian Community	Survey	Yes	India	Northern India	Mixed Urban/Rural	Community	Male/Female	0 - 65+	DSM 2 Diagnostic Criteria	Not Specified	Point
Vallath, S., Narasimhan, L., Priyanka, M., Varadarajan, V., & Ravikanth, L.	2023	Prevalence, Service Use And Clinical Correlates Of Hallucinations And Delusions In An Out-Patient Population From India	Retrospective Chart Review	Yes	India	Tamil Nadu	Mixed Urban/Rural	Outpatient Clinic	Male/Female	Mean 35	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosed	Point Psychosis
Vijayalakshmi, S., Rajagopal, K., Govindan, R., Ganjekar, S., Prathyusha, P. V., & Chacko, L. K.	2023	Sexual And Reproductive Health Problems Among Women With Mental Illness Attending Tertiary Care Psychiatric Outpatient Clinic In India: A Cross-Sectional Study	Cross Sectional Survey	Yes	India	Bangalore	Na	Outpatient Clinic	Female Only	18-49 Mean 36.47	ICD 10 Diagnostic Criteria	Psychiatrist Diagnosis	Point Psychosis

Wig, Varma And Khanna	1978	Diagnostic Characteristics Of A General Hospital Psychiatric Outpatients Clinic	Retrospective Chart Review	Yes	India	Chandigarh	Mixed Urban/Rural	Outpaitent Clinica	Male/Female	Not Specified	ICD 8 Diagnostic Criteria	Psychiatrist Diagnosis	Point
Wijesinghe, Dissanayake And Dassanayake	1978	Survey Of Psychiatric Morbidity In Semi-Urban Population In Sri Lanka	Cross Sectional Survey	Yes	Sri Lanka	Etul Kotte And Pita Kotte	Semi-Urban	Community	Male/Female	0 - 65+	Unspecified	Screened-Social Worker Interview + Psychiatric Diagnosis	Point

Appendices

Part 2: Empirical Paper

Appendix A: Audience Information Sheet and Consent Form

RESEARCH DEPARTMENT OF CLINICAL,
EDUCATIONAL AND HEALTH PSYCHOLOGY

IRD
Pakistan

UCL

Participant Information Sheet For Audience/Spectators of the Theatre of the Oppressed

UCL Research Ethics Committee Approval ID Number: _______

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study: Addressing the challenges and barriers in identifying and treating psychosis in Pakistan

Department: Interactive Research and Development, Pakistan and Research Department of Clinical, Educational and Health Psychology, University College London

Name and Contact Details of the Researcher(s):

[REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]

Name and Contact Details of the Principal Researcher:
Name and Contact Details of the Local Principal Researcher:

1. **Our invitation**
   You are being invited to take part in a global research project aimed to address the challenges and barriers of identifying and treating psychosis in Pakistan. Before you decide to take part it is important for you to understand why the research is being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

2. **Why are we doing this study?**
   This study is interested in learning more about the perception of psychosis in Pakistan. Psychosis is a severe mental illness in which 'people lose some contact with reality. This might involve seeing or hearing things that other people cannot see or hear (hallucinations) and believing things that are not actually true (delusions).[1]'For the purposes of the study, we aim to use theatre to raise awareness and knowledge around psychosis and reduce stigma. For this, we would like to conduct a brief survey with audience members, to gain

---

[1] Source: NHS

insight into their experience of the theatre performance and their perception of Psychosis and severe mental illnesses. We would like to understand more about their perception before and after seeing the performance.

3. **Why have I been chosen?**
   As you are one of the audience members of this theatre performance -we would like to understand your experiences and perception of the show.

4. **Do I have to take part?**
   It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time without giving a reason and without it affecting your role or any benefits or treatment that you are entitled to or any support you are receiving from services. If you decide to withdraw you will be asked what you wish to happen to the data you have provided up to that point.

5. **What will happen to me if I take part?**

   If you are interested in taking part in the study, we will invite you to fill out a paper-based survey -just before and after viewing the performance and we will contact you again three months after you have seen the performance to complete the measure again. Three month follow-up we can collect the data over the phone. Before taking part in the survey the researcher will ask you to fill in a short questionnaire about yourself that asks for some basic personal information such as age, gender and religious belief. This is to help provide some background information about the people who take part. This information will be made anonymous - it will be attached to a code so that nobody except the study researchers will be able to identify you from the data we keep. The survey will comprise of a total 22 brief questions that will be rated on a five point labelled scale and will take approximately 5-10 mins to complete. The questionnaire will be available in both English and Urdu.

   Before the survey is conducted, we will ask you to sign a consent form agreeing to participate in the study and the researcher will ask you to keep a copy of the signed consent form and this information sheet. The researcher will then provide you with the questionnaire.

   After three months, you will be contacted and asked to fill out the same questionnaire to gauge any change in your survey responses over this time period.

   The survey response will be collected once you have completed the questionnaire, and this information will be stored in the database for research purposes.

   There are no right or wrong answers to the question, the researchers are just interested in your opinions around the following topics: Your knowledge and attitudes around psychosis.

   After this, you will also have the choice about being contacted again via phone or email to arrange a time to share the study findings with you and ask for your views. Two weeks after the survey is the last point at which your data can be removed from the study.

6. **How will my information be used?**
   The information from the survey will be anonymized and the numerical data will be analysed for any significant findings. There will be no identifying information gathered from the questionnaire. No one else outside the study will be allowed access to the responses of the questionnaire. No other use will be made of the survey answers without your written permission.

7. **What are the possible disadvantages and risks of taking part**
   We do not anticipate any disadvantages or risks of taking part in the study.

8. **What are the possible benefits of taking part?**
   This is a pilot study and although we do not anticipate any immediate benefits for those people participating in the project, it is hoped that this work will provide insight into the feasibility and effectiveness of theatre as a means for creating greater acceptance within communities regarding psychosis. We hope that this work will contribute to the better understanding of the attitudes and beliefs surrounding mental illness, and identify potential ways for creating greater acceptance within communities regarding psychosis. There are no costs to you for this study.

   As a thank you for your time and effort, you will receive monetary reimbursement of PKR 500 for completing the survey after having watched the show and then another PKR500 after completing the survey at three months follow-up.

9. **What is the reimbursement for participation?**
   Participants will be reimbursed with a total of PKR 1000 for their time for completing three data points (pre show, post show and at 3 months follow up) .

10. **What if something goes wrong?**
    If you wish to raise a complaint, then please contact the Principal Researcher, [REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]
    If you feel that your complaint has not been handled to your satisfaction, you can contact the Chair of the UCL Research Ethics Committee at ethics@ucl.ac.uk. If something happens to you during or following your participation in the project that you think may be linked to taking part, please contact Madiha or the researcher you were in contact with (contact details can be found on the consent form at the top of this information sheet).

11. **Will my taking part in this project be kept confidential?**
    All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any ensuing reports or publications. The questionnaire used will be anonymous.

12. **Limits to confidentiality**
    Please note that confidentiality will be maintained as far as it is possible, unless during our conversation we hear anything which makes us worried that you or someone might be in danger of harm, then we might have to inform relevant agencies of this, in line with our professional duty of care.

13. **What will happen to the results of the research project?**
    The study results will be presented as scientific papers in peer reviewed journals and at conferences over the next 1-2 years. You will not be able to be identified in any reports, publications, talks or media. Data collected during the course of the project might be used for additional or subsequent research.

14. Data Protection Privacy Notice

Notice:
The data controller for this project will be University College London (UCL). The UCL Data Protection Office provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk. UCL's Data Protection Officer can also be contacted at data-protection@ucl.ac.uk.

Further information on how UCL uses participant information can be found here:

www.ucl.ac.uk/legal-services/privacy/participants-health-and-care-research-privacy-notice

Your personal data will be collected by IRD Pakistan and transferred to UCL in an anonymised form. Your personal data will be used for the purposes outlined in this notice. The categories of personal data used will be as follows:

Name, Age, Ethnicity, Gender, Marital Status, First language, Education and Employment Status

The legal basis that would be used to process your *personal data* will be performance of a task in the public interest.

The legal basis used to process *special category personal data* (such as racial or ethnic origin, religious belief) will be for scientific and historical research or statistical purposes/explicit consent.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonyms the personal data you provide we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.

You have certain rights under data protection legislation in relation to the personal information that we hold about you. These rights apply only in particular circumstances and are subject to certain exemptions such as public interest (for example the prevention of crime). They include:

- The right to access your personal information;
- The right to rectification of your personal information;
- The right to erasure of your personal data;
- The right to restrict or object to the processing of your personal data;
- The right to object to the use of your data for direct marketing purposes;
- The right to data portability;
- Where the justification for processing is based on your consent, the right to withdraw such consent at any time; and
- The right to complain to the Information Commissioner's Office (ICO) about the use of your personal data.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

15. **Who is organising and funding the research?**
University College London, Global Innovation Fund and Psychology and Language Sciences Departmental funds are funding this research project.

16. **Contact for further information**

If you have questions about this research, you may contact from Monday to Friday 9 am to 5 pm at (03182293379)

If you have questions about your rights in a research study as a volunteer, call or contact the Interactive Research & Development-IRB office between office hours on Monday to Friday 9am – 5pm at (03008272693)

Thank you for reading this information sheet and for considering to take part in this research study. You will be given a copy of the information sheet and, if appropriate, a signed consent form to keep.

RESEARCH DEPARTMENT OF CLINICAL,
EDUCATIONAL AND HEALTH PSYCHOLOGY

CONSENT FORM FOR THEATRE OF THE OPPRESSED PRODUCTION

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: Addressing the challenges and barriers in identifying and treating psychosis in Pakistan

Department: Interactive Research and Development, Pakistan and Research Department of Clinical, Educational and Health Psychology, University College London

Name and Contact Details of the Researcher(s):

[REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]

Name and Contact Details of the Principal Researcher:

Name and Contact Details of the UCL Data Protection Officer:

Contact Details of the IRD Institutional Review Board: 03008272693

This study has been approved by the UCL Research Ethics Committee: Project ID number: _23291/001 __________

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

I confirm that I understand that by ticking/initialling each box below I am consenting to this element of the study. I understand that it will be assumed that unticked/initialled boxes means that I DO NOT consent to that part of the study. I understand that by not giving consent for any one element that I may be deemed ineligible for the study.

		Tick Box
1.	*I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction *[and would like to take part in (please tick one or more of the following)* - *a survey* - *an individual interview*	
2.	*I understand that I will be able to withdraw my data up to 2 weeks after interview	
3.	*I consent to participate in the study. I understand that my personal information *(socio-demographic information such as age and gender, profession and educational background)* will be used for the purposes explained to me. I understand that according to data protection legislation, ‘public task’ will be the lawful basis for processing.	
4.	**Use of the information for this project only** *I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified. I understand that confidentiality will be maintained as far as possible, unless during our conversation the researcher hears anything which makes them worried that myself or someone might be in danger of harm, and then they might have to inform relevant agencies of this due to professional duty of care. I understand that my data gathered in this study will be stored anonymously and securely. It will not be possible to identify me in any publications.	

5.	*I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, without the care I receive, or my legal rights or role being affected. I understand that if I decide to withdraw, any personal data I have provided up to that point will be deleted unless I agree otherwise.	
6.	I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the research.	
7.	I understand the direct/indirect and societal benefits of participating.	
8.	I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researcher(s) undertaking this study.	
9.	I understand that I will be compensated for the portion of time spent in the study or fully compensated if I choose to withdraw.	
10.	I agree that my anonymised research data may be used by others for future research. [No one will be able to identify you when this data is shared.]	
11.	I understand that the information I have submitted will be published as a report and I wish to receive a copy of it. Yes/No	
12.	I consent to my interview being audio/video recorded and understand that the recordings will be: - destroyed immediately following transcription and quality checks of the data.	
13.	I hereby confirm that I understand the inclusion criteria as detailed in the Information Sheet and explained to me by the researcher.	
14.	I hereby confirm that: (a) I understand the exclusion criteria as detailed in the Information Sheet and explained to me by the researcher; and (b) I do not fall under the exclusion criteria.	
15.	I am aware of who I should contact if I wish to lodge a complaint.	
16.	I voluntarily agree to take part in this study.	
17.	Use of information for this project and beyond I would be happy for the data I provide to be archived on One Drive at UCL.	

	I understand that other authenticated researchers will have access to my anonymised data.	
18.	**Overseas Transfer of Data** *I understand that my personal data will be transferred from IRD, Pakistan to University College London and the following safeguards will be put in place:* *GDPR requirements will be met and data will be anonymised.*	

If you would like your contact details to be retained so that you can be contacted in the future by UCL researchers who would like to invite you to participate in follow up studies to this project, or in future studies of a similar nature, please tick the appropriate box below.

	Yes, I would be happy to be contacted in this way	
	No, I would not like to be contacted	

______________________ ______________ ________________

Name of participant Date Signature

______________________ ______________ ________________

Researcher Date Signature

Appendix B: Participant Information Sheet for Production Team Interviews

**RESEARCH DEPARTMENT OF CLINICAL,
EDUCATIONAL AND HEALTH PSYCHOLOGY**

IRD Pakistan

UCL

Participant Information Sheet For Theatre of the Oppressed production team

UCL Research Ethics Committee Approval ID Number: _______

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study: Addressing the challenges and barriers in identifying and treating psychosis in Pakistan

---

Department: Interactive Research and Development, Pakistan and Research Department of Clinical, Educational and Health Psychology, University College London

---

Name and Contact Details of the Researcher(s):

[REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]

Name and Contact Details of the Principal Researcher:

Email address:

Name and Contact Details of the Local Principal Researcher:

Email address:

1. **Our invitation**
   You are being invited to take part in a global research project aimed to address the challenges and barriers of identifying and treating psychosis in Pakistan. Before you decide to take part it is important for you to understand why the research is being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.
2. **Why are we doing this study?**
   This study is interested in learning more about the experience of using theatre as a tool for raising awareness and reducing the stigma surrounding psychosis. Psychosis is a severe mental illness in which 'people lose some contact with reality. This might involve seeing or hearing things that other people cannot see or hear (hallucinations) and believing things that are not actually true (delusions).[2] For the purposes of the study, we seek to explore the acceptability and feasibility of using theatre to raise awareness and knowledge around psychosis and reduce stigma. For this, we would like to conduct interviews post-production with members of the production team, to gain insight into the experience of production, community engagement, and theatre of the oppressed performances surrounding psychosis.
3. **Why have I been chosen?**
   We are inviting people who were directly involved in both the production and/or performance of theatre and we would like to understand their experiences in this regard.
4. **Do I have to take part?**

---

[2] Source: NHS

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time without giving a reason and without it affecting your role or any benefits or treatment that you are entitled to or any support you are receiving from services. If you decide to withdraw you will be asked what you wish to happen to the data you have provided up to that point.

5. **What will happen to me if I take part?**
If you choose to take part in the study we will invite you to have an interview with a researcher from the research team either face to face or virtually. Before the interview, we will ask you to sign a consent form agreeing to participate in the study and the researcher will ask you to keep a copy of the signed consent form and this information sheet. Before taking part in the interview the researcher will ask you to fill in a short questionnaire about yourself that asks some personal information such as gender, age and employment status. This is to help provide some background information about the people who take part. This information will be made anonymous - it will be attached to a code so that nobody except the study researchers will be able to identify you from the data we keep. The researcher will then arrange a time to conduct the interview with you either face-to-face or by a virtual meeting or over the phone. The interview will last about 30-60 minutes and the researcher will ask you a series of questions. There are no right or wrong answers to the question, the researchers are just interested in your opinions and experiences around the following topics:

- Your experience of being part of the production which might involve workshops and developing the script or performing.
- Your perception of the effectiveness of theatre performances in raising awareness and changing attitudes related to psychosis

This meeting will be recorded and the research assistant working for the team will transcribe the tape.

After the interview, you will also have the choice about being contacted again via phone or email to arrange a time to share the study findings with you and ask for your views. Two weeks after the interview, is the last point at which your data can be removed from the study.

6. **Will I be recorded and how will the recorded media be used?**
The interview will be audio-recorded to make sure we get a good sense of your experience and do not miss anything important. The conversation will be transcribed by the researchers and the recording will be deleted after 1 year. We will remove any personal information from the written conversation so that nobody reading it would be able to know it was you. No one else outside the study will be allowed access to the recordings. No other use will be made of the recordings without your written permission.

7. **What are the possible disadvantages and risks of taking part?**
We aim to minimize any risk of you becoming fatigued by making sure the interview lasts no longer than 60 minutes and you are free to pause or take a break, if and when you require.

There is a possibility that reflecting on your experience may cause you to feel distressed. The researcher will ensure to manage anything sensitive that might arise, and you will be advised that you can discuss things that you feel comfortable to at your own pace. If necessary, breaks can be taken, and you will be reminded that you can withdraw. We will offer an opportunity to debrief and reflect on the process at the end of the interview.

You will also be free to withdraw at any time during the study and this will not be held against you.

We can also provide you with information about local organizations that can provide support should you need it.

8. **What are the possible benefits of taking part?**
   This is a pilot study and although we do not anticipate any immediate benefits for those people participating in the project, it is hoped that this work will provide insight into the feasibility and effectiveness of theater as a means for creating greater acceptance within communities regarding psychosis. We also hope that the production team will feel empowered to address discrimination and stigma around Psychosis.

9. **What is the reimbursement for participation?**
   As a thank you for your participation, time and effort, you will receive monetary reimbursement for PKR 1000 after completing the interview.

10. **What if something goes wrong?**
    If you wish to raise a complaint, then please contact the Principal Researchers. If you feel that your complaint has not been handled to your satisfaction, you can contact the Chair of the UCL Research Ethics Committee at ethics@ucl.ac.uk. If something happens to you during or following your participation in the project that you think may be linked to taking part, please contact Madiha or the researcher you were in contact with (contact details can be found on the consent form at the top of this information sheet).

11. **Will my taking part in this project be kept confidential?**
    All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any ensuing reports or publications.

12. **Limits to confidentiality**
    Please note that confidentiality will be maintained as far as it is possible, unless during our conversation we hear anything which makes us worried that you or someone might be in danger of harm, then we might have to inform relevant agencies of this, in line with our professional duty of care.

13. **What will happen to the results of the research project?**
    The study results will be presented as scientific papers in peer reviewed journals and at conferences over the next 1-2 years. You will not be able to be identified in any reports, publications, talks or media. Data collected during the course of the project might be used for additional or subsequent research.

14. **Data Protection Privacy Notice**
    Notice:

    The data controller for this project will be University College London (UCL). The UCL Data Protection Office provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk. UCL's Data Protection Officer can also be contacted at data-protection@ucl.ac.uk**.**

    Further information on how UCL uses participant information can be found here:

    www.ucl.ac.uk/legal-services/privacy/participants-health-and-care-research-privacy-notice

    Your personal data will be collected by IRD, Pakistan and transferred to UCL in an anonymised form. Your personal data will be used for the purposes outlined in this notice. The categories of personal data used will be as follows:

    Name, Age, Ethnicity, Gender, Marital Status, First language, Education and Employment Status

    The legal basis that would be used to process your *personal data* will be performance of a task in the public interest.

The legal basis used to process *special category personal data* (such as racial or ethnic origin, religious belief) will be for scientific and historical research or statistical purposes/explicit consent.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonyms the personal data you provide we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.

You have certain rights under data protection legislation in relation to the personal information that we hold about you. These rights apply only in particular circumstances and are subject to certain exemptions such as public interest (for example the prevention of crime). They include:

- The right to access your personal information;
- The right to rectification of your personal information;
- The right to erasure of your personal data;
- The right to restrict or object to the processing of your personal data;
- The right to object to the use of your data for direct marketing purposes;
- The right to data portability;
- Where the justification for processing is based on your consent, the right to withdraw such consent at any time; and
- The right to complain to the Information Commissioner's Office (ICO) about the use of your personal data.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

15. **Who is organizing and funding the research?**
University College London, Global Innovation Fund and Psychology and Language Sciences Departmental funds are funding this research project.

16. **Contact for further information**

If you have questions about this research, you may contact Zahra Khan from Monday to Friday 9 am to 5 pm at (03182293379)

If you have questions about your rights in a research study as a volunteer, call or contact the Interactive Research & Development-IRB office between office hours on Monday to Friday 9am – 5pm at (03008272693)

Thank you for reading this information sheet and for considering to take part in this research study. You will be given a copy of the information sheet and, if appropriate, a signed consent form to keep.

--

Appendix C: Standards for Reporting Implementation Studies: the StaRI checklist for completion

The StaRI standard should be referenced as: Pinnock H, Barwick M, Carpenter C, Eldridge S, Grandes G, Griffiths CJ, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor SJC for the StaRI Group. Standards for Reporting Implementation Studies (StaRI) statement. *BMJ* 2017;356:i6795

The detailed Explanation and Elaboration document, which provides the rationale and exemplar text for all these items is: Pinnock H, Barwick M, Carpenter C, Eldridge S, Grandes G, Griffiths C, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor S, for the StaRI group. Standards for Reporting Implementation Studies (StaRI). Explanation and Elaboration document. *BMJ Open* 2017 2017;7:e013318

Notes: A key concept of the StaRI standards is the dual strands of describing, on the one hand, the implementation strategy and, on the other, the clinical, healthcare, or public health intervention that is being implemented. These strands are represented as two columns in the checklist.

The primary focus of implementation science is the implementation strategy (column 1) and the expectation is that this will always be completed.	The evidence about the impact of the intervention on the targeted population should always be considered (column 2) and either health outcomes reported or robust evidence cited to support a known beneficial effect of the intervention on the health of individuals or populations.

The StaRI standardsrefers to the broad range of study designs employed in implementation science. Authors should refer to other reporting standards for advice on reporting specific methodological features. Conversely, whilst all items are worthy of consideration, not all items will be applicable to, or feasible within every study.

Checklist item	Reported on	Implementation Strategy	Reported on ge #	Intervention
		"Implementation strategy" refers to how the intervention was implemented		"Intervention" refers to the healthcare or public health intervention that is being implemented.
Title and abstract				

Title	**1**	Reported on page 1	Identification as an implementation study, and description of the methodology in the title and/or keywords		
Abstract	**2**	Reported on page 2	Identification as an implementation study, including a description of the implementation strategy to be tested, the evidence-based intervention being implemented, and defining the key implementation and health outcomes.		
Introduction					
Introduction	**3**	Reported on page 3-9	Description of the problem, challenge or deficiency in healthcare or public health that the intervention being implemented aims to address.		
Rationale	**4**	Reported on page 3-10	The scientific background and rationale for the implementation strategy (including any underpinning theory/framework/model, how it is expected to achieve its effects and any pilot work).	Reported on page 3-10	The scientific background and rationale for the intervention being implemented (including evidence about its effectiveness and how it is expected to achieve its effects).
Aims and objectives	**5**	Reported on page 10	The aims of the study, differentiating between implementation objectives and any intervention objectives.		
Methods: description					
Design	**6**	Reported on page 11	The design and key features of the evaluation, (cross referencing to any appropriate methodology reporting standards) and any changes to study protocol, with reasons		
Context	**7**	Reported on page 11	The context in which the intervention was implemented. (Consider social, economic, policy, healthcare, organisational barriers and facilitators that might influence implementation elsewhere).		

Targeted 'sites'	**8**	Reported on page 11-18	The characteristics of the targeted 'site(s)' (e.g locations/personnel/resources etc.) for implementation and any eligibility criteria.	Reported on page 11-18	The population targeted by the intervention and any eligibility criteria.
Description	**9**	Reported on page 13-15	A description of the implementation strategy	Reported on page 13 & 15	A description of the intervention
Sub-groups	**10**	Reported on page 25	Any sub-groups recruited for additional research tasks, and/or nested studies are described		
Methods: evaluation					
Outcomes	**11**	Reported on page 18	Defined pre-specified primary and other outcome(s) of the implementation strategy, and how they were assessed. Document any pre-determined targets	Reported on page 19-21	Defined pre-specified primary and other outcome(s) of the intervention (if assessed), and how they were assessed. Document any pre-determined targets
Process evaluation	**12**	Reported on page 18-19	Process evaluation objectives and outcomes related to the mechanism by which the strategy is expected to work		
Economic evaluation	**13**	Reported on page 22-23	Methods for resource use, costs, economic outcomes and analysis for the implementation strategy	Reported on page 22-23	Methods for resource use, costs, economic outcomes and analysis for the intervention
Sample size	**14**	Reported on page 20	Rationale for sample sizes (including sample size calculations, budgetary constraints, practical considerations, data saturation, as appropriate)		
Analysis	**15**	Reported on page 18-23	Methods of analysis (with reasons for that choice)		

Sub-group analyses	**16**	NA	Any a priori sub-group analyses (e.g. between different sites in a multicentre study, different clinical or demographic populations), and sub-groups recruited to specific nested research tasks		

Results					
Characteristics	**17**	Reported on page 25-26	Proportion recruited and characteristics of the recipient population for the implementation strategy	Reported on page 25 & 33	Proportion recruited and characteristics (if appropriate) of the recipient population for the intervention
Outcomes	**18**	Reported on page 26-33	Primary and other outcome(s) of theimplementation strategy	Reported on page 33-45	Primary and other outcome(s) of the Intervention (if assessed)
Process outcomes	**19**	Reported on page 43-45	Process data related to the implementation strategy mapped to the mechanism by which the strategy is expected to work		
Economic evaluation	**20**	Reported on page 39	Resource use, costs, economic outcomes and analysis for the implementation strategy	Reported on page 39	Resource use, costs, economic outcomes and analysis for the intervention
Sub-group analyses	**21**	NA	Representativeness and outcomes of subgroups including those recruited to specific research tasks		
Fidelity/ adaptation	**22**	Reported on page 31	Fidelity to implementation strategy as planned and adaptation to suit context and preferences	Reported on page 44	Fidelity to delivering the core components of intervention (where measured)
Contextual changes	**23**	Reported on page 31	Contextual changes (if any) which may have affected outcomes		

Harms	**24**	Reported on page 47-51	All important harms or unintended effects in each group		
Discussion					
Structured discussion	**25**	Reported on page 46-57	Summary of findings, strengths and limitations, comparisons with other studies, conclusions and implications		
Implications	**26**	Reported on page 55	Discussion of policy, practice and/or research implications of the implementation strategy (specifically including scalability)	Reported on page 55	Discussion of policy, practice and/or research implications of the intervention (specifically including sustainability)
General					
Statements	**27**	Reported on page 23-24	Include statement(s) on regulatory approvals (including, as appropriate, ethical approval, confidential use of routine data, governance approval), trial/study registration (availability of protocol), funding and conflicts of interest		

Appendix D: Semi Structured Interview Schedule

1. What has your experience of being part of the production team been like?

2. What was the aspect of the production that you like the most? What was your favourite activity (or workshop)?

Prompt: How did you find script writing?

3. What did you like least about the production? What do you think could be improved?

4. Were there any difficulties to taking part?

5. Has the process brought up any particular surprises or challenges for you?

Prompts: what aspects did you enjoy? where there any aspects that were difficult? How did you overcome/manage those? How do you feel about those surprises/challenges now?

6. How supported have you felt during this process?

Prompt: Is there anything that was particularly helpful/unhelpful?

7. What outcome were/are you hoping for following this theatre production?

8. What aspects of your experience felt important to add to the script?

Follow up: Where there any aspects you wanted to keep hidden? Could you say more about that?

9. What do you hope the audience will learn after watching this production?

Prompts: what does that mean for you? How does that make you feel?

10. What do you hope the (*performers/people with psychosis/or their families) will learn from the production/ experience?

Follow up: is this different to the audience? In what way?

11. What ideas/stereotypes did you have about what it means to have psychosis before this process?

12. Are there any changes in your perspective around psychosis?

Prompt: if yes what are they? is this different to how you felt/thought before? If so-in what ways?

13. What would you say to others with lived experience of psychosis that were thinking of helping with a similar project?

Prompt: Would you recommend this production to someone else or involvement in this production to someone else?

14. What is the main/most important thing you will take away from this experience?

Appendix E: Questionnaires (CAMI-12 and KAP)

[REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]

Appendix F: Participant Demographics

		The Production Team **Frequency (%)**	**The Audience** **Frequency (%)**
Gender	Male	4 (66.66%)	0 (0.00%)
	Female	2 (33.33%)	59 (100%)
	Transgender	0 (0.00%)	0 (0.00%)
	Missing data	0 (0.00%)	2 (N/A)
Age	18-25	2 (33.33%)	16 (32.65%)
	26-30	1 (16.66%)	10 (20.40%)
	31-40	2 (33.33%)	17 (34.69%)
	41-50	1 (16.66%)	3 (6.12%)
	51-60	0 (0.00%)	3 (6.12%)
	Missing data	0 (0.00%)	10 (N/A)
	Omitted due to excl criteria	0 (0.00%)	2 (N/A)
Marital Status	Married	3 (50.00%)	26 (43.33%)
	Unmarried	1 (16.66%)	31 (51.66%)
	Divorced	1 (16.66%)	1 (1.66%)
	Widowed	1 (16.66%)	2 (3.33%)
	Missing data	0 (0.00%)	1 (1.66%)

Mother Tongue	Urdu	4 (66.66%)	58 (96.66%)
	English	0 (0.00%)	0 (0.00%)
	Punjabi	1 (16.66%)	0 (0.00%)
	Sindhi	0 (0.00%)	0 (0.00%)
	Pashto	1 (16.66%)	1 (1.66%)
	Balochi	0 (0.00%)	0 (0.00%)
	Saraiki	0 (0.00%)	0 (0.00%)
	Hazara Wale	0 (0.00%)	1 (1.66%)
	Other	0 (0.00%)	0 (0.00%)
	Missing data	0 (0.00%)	1 (N/A)
Education Level	No education	0 (0.00%)	2 (3.33%)
	5th Grade	0 (0.00%)	7 (11.66%)
	Matriculation/ O levels	2 (33.33%)	23 (38.33%)
	Intermediate/ A levels	1 (16.66%)	19 (31.66%)
	University Education	0 (0.00%)	8 (13.33%)
	Peshawarana training**	3 (50.00%)	0 (0.00%)
	Religious/ Muslim School	0 (0.00%)	1 (1.66%)
	Other	0 (0.00%)	0 (0.00%)
	Missing data	0 (0.00%)	1 (N/A)

Occupation	Full time employment	3 (50.00%)	10 (16.94%)
	Part-time employment	0 (0.00%)	2 (3.38%)
	Unpaid Work	0 (0.00%)	1 (1.69%)
	Pana gazeen rozgaar**	0 (0.00%)	0 (0.00%)
	Unemployed	1 (16.66%)	5 (8.47%)
	Student	0 (0.00%)	12 (20.33%)
	Housewife	2 (33.33%)	27 (45.76%)
	Retired	0 (0.00%)	0 (0.00%)
	Other	0 (0.00%)	2 (3.38%)
	Missing data	0 (0.00%)	2 (N/A)
Ethnicity	Punjabi	3 (50.00%)	0 (0.00%)
	Sindhi	1 (16.66%)	5 (8.47%)
	Balochi	0 (0.00%)	0 (0.00%)
	Pakhtun	1 (16.66%)	1 (1.69%)
	Urdu Speaking	1 (16.66%)	52 (88.13%)
	Other*Karachi	0 (0.00%)	1 (1.69%)
	Missing data	0 (0.00%)	1 (N/A)

Appendix G: Qualitative data: Themes and Quotations from the Production Team and Audience

Theme	Description	Production Team Interviews	Audience Intercept Interviews (voxpops)
Positive Impact of the Workshop Activities	Participants with lived experience of psychosis found the workshop activities provided respite and an opportunity to share their stories. Those without lived experience gained valuable information and increased empathy.	"The activities and plays we have done so far in the workshop were all good and were related to our lives. The plays are from our own life. When we do all this here, then we feel good. Then we do it at home as well." -P1004 "But when we came here and received a good start and love and care from you people, we felt comfortable with it [the workshop programme]." -P1000 "It was good as when we engage in these activities, we forget all our pains and sufferings for some time. We come out of that and become relaxed." -P1004 "In the workshop the most important thing was to listen to people. Their stories were very important. I think we should listen to a person as to what has happened to him. He has his own journey. Then we learn that if we talk to a person sitting in front of us, then we shouldn't do it the way we do it." -P1010 "They were so engaged with us and had so much trust that they had firm	N/A

		belief that we will not share with anyone, whatever they were telling us and they will not be mocked at and we are writing their personal experiences just to educate other people from their stories, because we think (that after listening to their stories) others will not repeat these mistakes or whatever happened to these people." -P1014	
Co-constructing the Narrative: Considering the Role of Trust and Power in Script Writing	The implementation strategy was well-received overall. Participants felt heard and validated, although some performers found the process rushed and challenging due to the small sample size and lack of psychological support. Some participants highlighted the importance of men's roles in providing support and care to family members living with psychosis.	"Here everyone was like us, so we didn't feel embarrassed. Then you people also boost our morale, and we don't feel embarrassed in front of you people." -P1004 "It was a very satisfactory thing for us that they have so much trust in us, and they didn't hide anything and shared everything with us." -P1014 "When you talk to people with such traumas, then you have to be careful as any time in your conversation this trauma can trigger…In my opinion, that exercise became very personal, and we did not have a psychologist with us as well…It was a very serious issue and I felt a little guilt." -P1012 "When I was working as a facilitator then I	"We learned how to raise our children and not leave it to others. If our husbands are not supporting us, we should give our children enough power and raise them in a way that they can stand on their own." VP3

		thought that there should be a person with us like your psychologist, who could have talked to them at a separate place, that they can share anything with us, in group or in confidentiality." -P1010 ‘In fact, you had a power which we couldn’t change. Research etc. was restricted to you only…. that power made me realize that we are only here till workshop, we cannot go beyond that. So, I had that limit which I was not supposed to cross’-P1012 ‘All the things were okay, but the only change I would suggest was in brother’s role. It shouldn’t be so strict…. It is obvious that mother and daughter need the support of a man, a son or a brother in society. So, when the mother and daughter are in need, the brother and son should support them.’-P1000 ‘The role of the brother should also be changed, so that people understand something out of it that brothers should have sympathy for such patients.’-P1004	

Community Engagement	Participants emphasised community engagement and audience participation. They noted how audience members identified with the stories and shared their experiences, fostering understanding and a desire to adopt new attitudes towards mental health.	"[Audience member] got so emotional and started crying after seeing the theatre and then she shared her personal experience." - P1014 "The family shouldn't be confused, and they should implement what they have seen in the play." -P-1002 "They can learn that they should give good hope to people. I think in our team such feelings have developed about how we should behave with people having these psychological issues." - P1004	"..as we are Muslims, we should care for each other, even for our neighbours." VP1 "We said to the people, 'Don't do it for yourself, but for your children.' Masha Allah, I have seen all this and have a lot of feelings inside me. I will take the parents to this side and change their attitude towards children." VP5
Changing Stigmatising Attitudes towards Mental Illness	Participants acknowledged their initial limited understanding of mental health issues and expressed how the project expanded their awareness and reduced stigma. They hoped the play would have a similar impact on the audience.	"They understand that psychosis is not a drama and if they all collectively support it, it can be cured early." - P1004 "They told us that through today's play they learned that this is a disease, and this can be treated. Thus, for the first time, they got the message that it is a disease; and the second message that it can be treated; and thirdly, they asked us where its treatment is possible? We referred them straight to the solution. This goes as a message to them that what they are perceiving as a supernatural or spiritual	"We learned a lot. The first thing is that we learned some people have behaviours that shouldn't be tolerated, and we should stand up for ourselves." VP3 "Something I learned today and want to take with me is that if there is any patient of this type, we should treat them with love and compassion. We should understand people's roles. This has given me the courage to move forward in life, and you will help me until further. It means that in the

		matter (that is also sometimes the case), is actually a medical problem." -P1014 "The most important thing was the information about the psychosis…after learning this information, now I can talk to people in my family about this issue." -P1004	afterlife, you will forget this pain here." VP4
'Good Doctors, Bad Doctors': The Importance of Empathy and Sensitivity when Supporting People with Psychosis	Participants emphasised the need for empathy and sensitivity in healthcare settings, recounting past mistreatment by doctors and highlighting the importance of gentle communication and early intervention.	"We are afraid to go to a doctor in this situation and feel uncomfortable because when we go to them, they do not deal with us normally and do not talk and behave with us in a gentle manner." -P1000 "I was thinking that I don't know if they will give me an injection or something else like what is done in a mental house. I was very scared because of this. That's why I didn't go to the doctor that he would hurt me." -P1000	"I want to advise everyone around me, whether guests or others, to seek advice from a doctor with compassion." VP6 "First, I say to them that they should seek proper treatment, and wise sages (doctors) cure them, not anyone else." VP6
Practical Challenges Faced	The production team faced challenges including limited participant numbers, scheduling gaps, environmental issues, and travel difficulties. Participants suggested creating a more therapeutic workshop space and a need for more practical support from men in the community.	"Basically, the biggest challenge was the number of people. We had thought that there would be 12 people and we could get 12 opinions but there were only 6 people and later on there were only 4 people…We tried our best to overcome this difficulty and challenge with those limited	N/A

		resources of knowledge." -P1014 "This was my concern that you should have done it at such a central place, because there were problems due to travelling, as well as gathering here, due to which production was stopped." -P1010 "Besides the limited number of people, the other issue was the environmental problem because there was some work going on…Then the weather condition was another difficulty. It was raining heavily and roads were blocked during those days." -P1014 "When a person with mental pressure or mental tension comes in a room, then there shouldn't be empty room, it should have some flowers, dim light, and there should be some colourful elements as well." -P1012	
Theatre as a Medium for Meaningful Change	Participants recognised theatre as a powerful medium for conveying experiences and fostering community understanding. They emphasised the cultural relevance of storytelling and the importance of posing questions rather than providing solutions.	"People will find it positive that it is a true (story) and will make them learn many things." -P1002 "We humans get inspired by stories. In history, you see the same thing. Even in the holy Quran we are told things through stories. So we understand things	"The [play] was very good. We learned a lot. I learned that one should treat mentally ill people well, as torturing them makes them worse and they cannot recover. It was very great. We learned a lot from it." VP1

		through stories in a better manner." -P-1010 "We have been doing theatre for a long time but we never expect any immediate result. You just put a thought in people's minds, send them a message and a question. They go home with this question in mind. Then the change that takes place takes some time." -P1014 "Why do we want people to understand quickly? It's not something like a magic wand through which people understand. They also need time. They are coming all the way and we want them to understand our project's things quickly. They cannot understand in one day. You should give them time." -P1010 "We only put a question mark in front of people; we don't tell them any solution." -P1014	
Call for Expansion	Participants advocated for expanding similar projects to reach a broader audience and collaborating with more mental health institutions. They emphasised the need for sustained efforts for meaningful change and cautioned against expecting quick results.	"We should keep working. Project can be sustained in that way. We should keep working, we shouldn't expect quick results. Quick results don't come. If we are doing research on any project then we at least need 4-5 years to get the outcomes." -P1010 "My take away message is that we need to	"For those who are mentally ill, I want to take these things with me and continue to work on them, so that if I see someone in need, I can help them as much as possible." VP1

		expand our approach and vision as we seem to be working too narrowly…We should approach all of them [other institutions] and work together because no one else has been using our Theatre approach except IRD." -P1014 "I think we need to expand our work, and expand it from Karachi to Khyber (KPK). In Karachi also we are limited to only 2 institutions. We are currently sitting and are not able to enhance our work; we have to work further in this regard because if the number of patients or mental illness is increasing day by day while the number of facilities, supporters, practitioners is very less, then the society is moving towards mental illness." -P1014	

Appendix H: Descriptive statistics table for KAP multiple choice question

KAP Question 1	**Pre** **N (%)**	**Post** **N (%)**	**3-month follow-up** **N (%)**
a) The way a person was raised	3 (4.9%)	9 (14.8%)	3 (4.9%)
b) Genetics	0 (0%)	0 (0%)	0 (0%)
c) God's will	4 (13%)	2 (3.3%)	4 (6.6%)
d) Magic, spirit possession, spells	1 (1.6%)	1 (1.6%)	1 (1.6%)
e) A brain disease	5 (13%)	2 (3.3%)	1 (1.6%)
f) Stress or tension	25 (40.9%)	19 (31.1%)	24 (39.3%)
Combination responses	**Pre** **N (%)**	**Post** **N (%)**	**3-month follow-up** **N (%)**
A brain disease and stress or tension	0 (0%)	1 (1.6%)	2 (3.3%)
Genetics and stress or tension	0 (0%)	0 (0%)	1 (1.6%)
God’s will and stress or tension	1 (1.6%)	1 (1.6%)	4 (6.6%)
God’s will, magic, spirit possession, spells and stress or tension	0 (0%)	1 (1.6%)	0 (0%)
How person raised and stress or tension	0 (0%)	0 (0%)	2 (3.3%)
How person raised, a brain disease and stress or tension	0 (0%)	1 (1.6%)	0 (0%)
How person raised, genetics, god’s will, magic, spirit possession or spells, a brain disease and stress	1 (1.6%)	1 (1.6%)	1 (1.6%)
How person raised, genetics, god’s will, a brain disease and stress or tension	0 (0%)	0 (0%)	1 (1.6%)
How person raised, genetics, a brain disease and stress or tension	1 (1.6%)	1 (1.6%)	3 (4.9%)
Missing response	21 (34.4%)	22 (36.0%)	18 (29.5%)

Appendix I: A breakdown of costs associated with personnel, training and other operational activities

Cost breakdown	PKR	GBP
Research Associate 1	107525	432
Research Associate 2	90653	257
Daily Car Hire	8910	38
IRB Fee	5507	21
Theatre Performer 1	18113	73
Theatre Performer 2	23288	93
Translation of interviews	60000	187
Reimbursement to the participants of UCL workshop	14000	54
Refreshment to the participants of UCL workshop	2660	10
To record adjustment against theatre performances in community	61830	220
Printing and stationary	4118	16

Appendix J: ‘Someone to Support Me’ translated script

“Koi toh saath de”

"Someone to support me"

[REDACTED DUE TO COPYRIGHT AND PERSONAL DATA RESTRICTIONS]

Appendix K: Defining The Implementation Strategy in Line with Implementation Science

Domain	**Strategy: a series of forum theatre workshops with service user involvement**
Actor(s)	**key stakeholder people with lived experience, IRD researchers/research assistants, psychologists, mental health clinicians, trained performers, people with lived experience of psychosis and their caregivers, community stakeholders, community health workers, venue gatekeepers and audience members.
Action(s)	Performers attended 1 day training, the production team (performers, people with lived experience of psychosis and their carers) attended 3 half-day workshops involving theatre activities and agreed on a script idea, the performers finalised the script and attended 2 days of rehearsals then performed the play in 3 community locations.
Target(s) of the action	Co-production of a play accessible to communities with potentially low levels of literacy. With the aim to reduce stigmatised knowledge, attitudes and beliefs about psychosis and to tell a powerful story that can improve awareness of mental illness and available treatment options.
Temporality	The implementation strategy and intervention were carried out across an 8-week period.
Dose	Performers: 9 days People with lived experience of psychosis and their caregivers: 3 half-days Audience x3: 1 performance
Implementation outcomes affected	See table - for detailed description of implementation outcomes (e.g. acceptability, feasibility etc).
Justification	Reference stigma research.