
**HEALTHCARE UTILIZATION AND OUT-OF-POCKET
EXPENDITURE ASSOCIATED WITH DEPRESSION IN
ADULTS IN PHC SETTINGS OF URBAN BHOPAL.
A CROSS-SECTIONAL STUDY**

**A THESIS SUBMITTED TO
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TECHNOLOGY**



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DEGREE OF M.Sc. LIFE SCIENCES (AYURVEDA BIOLOGY)**

BY

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**THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND
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Private University Established in Karnataka by ACT 35 of 2013

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DECLARATION BY THE CANDIDATE

I declare that this thesis "**Healthcare Utilization and Out-of-Pocket Expenditure associated with Depression in Adults in PHC settings of Urban Bhopal. A cross-Sectional Study**" submitted for the award of Master of Science to THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND TECHNOLOGY, Bengaluru, is my original work, conducted under the supervision of Dr. Anuja Lahiri and co-supervision of, Dr. Prakash B.N. I confirm that no part of the work reported herein has been submitted for a degree or examination at any other university. References, funding and material obtained from other sources have been duly acknowledged, and no part of this dissertation has been plagiarised.

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CERTIFICATE FROM THESIS SUPERVISORS

This is to certify that the work incorporated in this thesis “**Healthcare Utilization and Out-of-Pocket Expenditure associated with Depression in Adults in PHC settings of Urban Bhopal. A cross-Sectional Study.**” submitted by Sruthi G was carried out under my supervision. No part of this thesis has been submitted for a degree or examination at any other university. References, help and material obtained from other sources have been duly acknowledged. I confirm the originality of the work and that there is no plagiarism in any part of the thesis.

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DEDICATION

To my dearest self,

*For developing the strength, you thought you never had. For
learning to tend and twist yourself amidst unknown.*

This is for you.

SUMMARY

The study titled “Healthcare Utilization and Out-of-Pocket Expenditure associated with Depression in Adults in PHC settings of Urban Bhopal. A cross-Sectional Study” addresses the significant research gap in understanding depression-related healthcare costs in urban Bhopal, India. It highlights the absence of localized data on the economic impact of depression, especially in low and middle-income countries (LMICs). The study focuses on healthcare utilization and out-of-pocket expenditures (OOPE) among adults aged 18 years and above with depression, using data collected from households near primary healthcare centers.

The objectives included analyzing demographic and socioeconomic profiles of healthcare utilization and quantifying direct and indirect costs associated with depression. A cross-sectional design was used, surveying 301 adults screened for depression using the PHQ-9. Those with probable depression provided detailed data on healthcare visits and related expenses through the Client Socio-demographic and Service Receipt Inventory (CSRI).

Key findings revealed a 14.9% prevalence of probable depression, with most affected individuals undiagnosed. Significant OOPE were reported, particularly for medications and diagnostics. Indirect costs, such as income loss, averaged Rs 3833.5 among respondents, highlighting substantial economic impacts. The study emphasizes the financial burden and productivity loss associated with depression.

The study highlights the significant prevalence of undiagnosed and untreated depression in Bhopal, coupled with considerable financial and time burdens on affected individuals. Recommendations include enhancing mental health awareness, implementing financial assistance programs, and involving government and NGOs to reduce OOPE. These findings emphasize the need to address economic disparities and reduce out-of-pocket expenses to ensure equitable healthcare access for vulnerable populations, ultimately aiming to minimize healthcare inequities.

PERSONAL REFLECTION

Working on this project provided me with invaluable experience that significantly enhanced my skills and understanding of developing research projects. Key learning included meticulous planning and creating a thorough research plan, which gave structure and clarity to navigating research methods.

Engaging directly with the community for data collection was a highlight of this journey. It honed my interpersonal skills and taught me to obtain informed consent respectfully and emphasized the importance of ethical considerations and attention to detail.

On the analytical side, learning to use STATA and R for data analysis was challenging but also rewarding. It sharpened my technical skills and improved my ability to think critically. Becoming proficient in REDCap for data management further strengthened my technical capabilities.

Conducting a thorough review of existing literature and writing a thesis helped me understand the nuanced complexities within health equity domain. Managing and organizing different aspects of the project also improved my project and time management skills. These practical skills are invaluable as I continue my academic and professional journey.

Looking back, this project has been a transformative journey that equipped me with the skills, knowledge, and confidence to make significant contributions in my field. It deepened my passion for research, broadened my understanding of ethical and methodological considerations, and strengthened my commitment to producing rigorous and impactful research outcomes. Having the opportunity to plan and execute the project with the supportive guidance of Sangath was both empowering and exhilarating. This experience fueled my enthusiasm to explore new challenges, push boundaries and continuously evolve as a researcher.

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1. INTRODUCTION

1.1. Depression and its Prevalence

Depression, also known as depressive disorder, is a prevalent mental illness. It is characterized by an extended time of sadness, loss of pleasure, or lack of interest in activities (World Health Organization (WHO), 2023).

According to the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2019, depressive and anxiety disorders were the two most disabling mental disorders, ranking among the top 25 leading causes of burden globally in 2019. This burden was high throughout the lifespan, for both sexes and in various locations (Vos et al., 2020).

The emergence of the COVID-19 pandemic in 2020 against this backdrop has raised many concerns about the resulting effects on mental health, including both direct psychological effects and long-term economic and social implications (Kola et al., 2021).

Social constraints, lockdowns, educational and business closures, loss of source of income, declines in economic activity, and shifting government priorities to control COVID-19 outbreaks all have the potential to impact the population's mental health. The need for current information on the global prevalence and burden of mental disorders, including economic impacts, to inform healthcare system responses has never been greater (Santomauro et al., 2021).

Depression contributes to 40.5% of disability-adjusted life years (DALYs) due to mental and substance use disorders, as well as a major contributor to the burden of suicide and ischemic heart disease, making it an important public health issue (Whiteford et al., 2013). This problem is exacerbated by the fact that the majority of patients with depression do not receive evidence-based interventions, resulting in a significant treatment gap (Ferrari et al., 2013).

According to the National Mental Health Survey, India had a lifetime prevalence of 5.2% and a point prevalence of 2.7% for MDD. In comparison, Madhya Pradesh had a treatment gap of 80% and a point prevalence of major depressive disorder (MDD) of 1.4% (Kokane AM et al., 2017).

Other population-based studies for the treatment gap for depression showed that in Uttarakhand it was found to be 96.7% (6%-point prevalence and 9.9% 12-month prevalence),(Mathias et al., 2015) while the figure in the Vidarbha region of Central India was 95.7% (14.6%-point prevalence) (Shidhaye et al., 2016).

Kohn et al discovered that there is a significant global treatment gap for mental disorders. The median treatment gap for depression was 56.3%, still the authors of this study stated that the reported gap is likely to be underestimated due to the lack of community-based data from low- and middle-income countries where services are scarce (R Kohn et al., 2004).

1.2. Burden Of Depression

According to recent estimates on global health released by the World Health Organization in 2015, in the world, mental disorders account for 10% of all disease burden, including death and disability, and 30% of nonfatal disease burden. Severe mental illness is associated with an increased risk of various physical disorders, including hypertension, heart disease, diabetes, respiratory diseases, and nutritional disorders (De Hert et al., 2011).

1.3. Direct Costs of Depression

Direct costs include consultation, medication, hospitalization, diagnostics, residential care, community services, and rehabilitation. Regarding financial burden, mental health expenses are the highest; they comprise over half of the anticipated total cost of non-communicable diseases and account for 35% of lost productivity worldwide (Bloom et al., 2012).

1.4. Indirect Costs of Depression

Indirect costs are those incurred as a result of illness, such as the decreased supply of labor, lower educational attainment, costs for social support, and costs associated with consequences like chronic disability, homelessness, crime, suicide, caregiver burden, early mortality, substance abuse, and so forth (Bloom et al., 2012).

Indirect costs include time lost during travelling to healthcare facility, waiting to see the physicians, lost productivity and, reduced work performance leading to absenteeism, and even unemployment (Greenberg et al., 2003). These workplace challenges can impact social dysfunction and decrease income for their partners and families.

Unemployment is consistently associated with higher rates of depression among adults. (McGee & Thompson, 2015; Stankunas et al., 2006). This association may be due to several factors, including losses in social connections and status, as well as stress related to income loss (Mossakowski, 2009). Additionally, Depression diminishes the quality of life for patients and their family members (Sewitch et al., 2004) and also contributes to functional impairment (Hammer-Helmich et al., 2018). Depression often disrupts family stability, leading to separation or divorce when patients require the most social support (Bulloch et al., 2009).

The burden of depression extends far beyond morbidity, mortality, and economic costs. As highlighted, the financial burden of depression is profound, encompassing both direct and indirect costs that strain healthcare infrastructure and hinder economic development.

1.5. Strain on Health System

Furthermore, many individuals with depression are unaware of their condition. They initially present with somatic symptoms such as headaches, gastrointestinal distress, and fatigue which are common manifestations of depression (Trivedi, 2004).

Around the world, this appears to be more the norm than the exception (Kirmayer et al., 2004). According to a European Study Society study (DEPRES II), two of the three most common symptoms reported during a current depressive episode were somatic (tired/no energy/listless: 73%, broken sleep/decreased sleep: 63%) (Lépine et al.,

1997). Multiple somatic symptoms that are persistent or unexplained are often indicative of an underlying anxiety or depressive disorder(Kroenke, 2003).

These symptoms overshadow(Tylee & Gandhi, 2005) the depressive ones which can hinder accurate diagnosis by healthcare providers, resulting in under recognition and subsequent reliance on non-specialized care (Rost et al., 2000). This underutilization of specialized mental health services among individuals with depression poses a significant challenge (Meghrajani et al., 2023). As, the reliance on non-specific healthcare services not only fails to address the underlying mental health needs of individuals with depression but also places a strain on healthcare systems (Bock et al., 2014). These systems may struggle to meet the diverse needs of individuals with depression, leading to inefficient resource allocation and potentially exacerbating the overall burden on healthcare infrastructure.

1.6. Healthcare Utilization

Healthcare utilization is the usage of healthcare services. People seek health care for a variety of reasons, including preventing and treating medical issues, enhancing health and well-being, and learning about their health status and prognosis (Carrasquillo, 2013).

According to (Duggal, 1994), India is home to multiple medical and healthcare systems. Public health care is offered in hospitals and clinics by the government and local governments. To the detriment of curative services, public health care in rural areas is primarily focused on prevention and promotion services. Due to their inconvenient locations, lengthy wait times, and inability to give their patients the appropriate level of care and medication, rural primary health centers are dreadfully underutilized. 60% of hospital stays are provided by public hospitals, whereas 75% of routine care is provided by private hospitals. In the private sector, the proportion of qualified physicians to unqualified practitioners is equal, with less developed states having a higher unqualified -to- qualified ratio.

1.7. Access to mental health services in Madhya Pradesh

Madhya Pradesh, India, has a poor mental health system, with only 13.7% of districts covered under the District Mental Health Program (DMHP), serving 14.2% of the general population and 19.05% of the tribal population (Kokane et al., 2019). There are only 0.03 core government hospitals per 100,000 people that provide mental health services. Mental healthcare facilities are limited, with only two mental hospitals and 14 medical colleges providing mental health services. The state has a treatment gap, with 91% of people with mental illness not seeking proper treatment. Mental health financing is minimal, with only 0.2% of the total health budget allocated for mental health. The state scored poorly in budget, training, and health education (Kokane et al., 2021).

1.8. Depression In Primary Care

Only 57% of depressed patients seek help for their depression, with the majority consulting their primary care physician (Lépine et al., 1997). This finding highlights the crucial role of primary care physicians (PCPs) in diagnosing and treating depression (Menchetti et al., 2009). Despite the high prevalence of depression in healthcare settings, it is often overlooked. Research suggests that up to 50% of depression cases may go undiagnosed (Mitchell et al., 2009). Providing clinicians, particularly primary care physicians, with information on depression risk factors is crucial for both the general population and healthcare settings. Patients with physically incapacitating and long-term conditions are more than 20% likely to develop depressive disorders (Cassano & Fava, 2002).

1.9. Treatment gap

Unfortunately, despite the impact of depression on overall morbidity, functional impairment, and mortality, 50% of sufferers do not seek treatment for their depressive symptoms (Cuijpers, 2011). The bulk of mentally ill individuals living in low- and middle-income countries (LMICs) do not receive treatment, which increases their risk of chronic illness, suffering, and medical expenses (Patel, 2007). Because of the pervasive stigma, many people with mental illnesses are not seen as "suitable" or

responsible enough for a task, job, or relationship, even after receiving treatment (Kaur et al., 2023). Globally treatment gap for people with mental disorders exceeded 50% and was nearly 90% in the least-resourced countries (PATEL et al., 2010). In NMHS, 2016 the treatment gap was 83% (Gautham et al., 2020) down from 95% reported in a 2007 large scale study (Sagar et al., 2017).

The treatment gap is an outcome of a complex interplay of several factors like availability of mental health resources, cost of care, mental health literacy, stigma, community participation, gender issues, and traditional healing practices as well as illness-related factors. (Singh, 2018).

1.10. Healthcare Expenditure

Investing in mental health makes economic sense. On average, only 3% of government health budgets are allocated to mental health, ranging from less than 1% in low-income countries to 5% in high-income countries ("Depression: Let's Talk" Says WHO, as Depression Tops List of Causes of Ill Health, 2017).

India is ranked 179th out of 189 countries in terms of priority given to health in government budgets (consolidated union & state government) (NHA, 2023) Government health expenditure accounted for just 1.35% of the GDP and 41.4% of the total health expenditure.

Since the post-independence era, private healthcare spending has accounted for the majority of health spending in India. Over the past twenty years, public health spending has remained stagnant at approximately 1% of GDP, which translates to 28% of current health spending, while private healthcare spending has accounted for roughly 72% of current health spending. (*The World Bank, 2024*)

Madhya Pradesh spends 5.4% of its total budget on healthcare, which is aligning to the average state budget of 5.5% for healthcare (Shruti Gupta, 2021). However, there is disparities in funding for different health programs. For, the District Mental Health Program (DMHP) which serves 14% of the state's population, receives a 0.2% of the state health department's overall budget for mental health services (Kokane et al., 2021).

1.11. Out of Pocket Expenditure (OOPE)

Any direct payment made by households, including gratuities and in-kind payments, to medical professionals and suppliers of medications, medical equipment, and other products and services whose main goal is to improve or restore a person's or a population's health status is considered an out-of-pocket expense. It is included in the cost of private health care (*Glossary | DataBank*).

In addition to demographic and clinical factors, the cost of seeking treatment for depression can also influence healthcare utilization patterns. Out-of-pocket expenses, including consultation fees, medication costs, and transportation costs, can pose significant financial barriers to accessing mental health services, particularly in LMICs like India, where healthcare financing relies primarily on patient payments (Charu C Garg, Anup K Karan, 2008). The National Health Accounts of India, which show that 47.1% of OOP expenditures are for healthcare, further corroborate this fact (NHA,2023).

Global healthcare systems strive to make sure that people can get essential services at reasonable costs (WHO, 2010). The majority of high-income nations have health insurance programs that handle problems fairly and give most people access to reasonably priced medical care (Thomson et al., 2009). While healthcare affordability is a problem in every nation, it is particularly acute in low- and middle-income nations (Niëns, 2014).

Out-of-pocket (OOP) payments for medical services at the point of service are considered an unfair way to fund a health system by the World Health Organization (WHO) (World Health Organization, 2000). However, OOP payments account for a sizeable and growing portion of current health spending worldwide. OOP payments pose a major obstacle to accessing and using health services and, on average, account for 40% of health spending for individuals living in low- and middle-income countries (LMICs) (World Health Organization & World Bank, 2017).

Individuals who struggle with mental illness frequently experience financial hardships that discourage them from getting the help they need (DE HERT et al., 2011). According to (Bloom et al., 2012), low- and middle-income countries bore 54% of the

global cost of mental illness in 2010, which was estimated to be US\$ 2.5 trillion. They predicted that by 2030, this amount would have increased by roughly 240% to \$6 trillion, with low- and middle-income countries bearing up to 58% of the burden. Before 2030, mental health issues alone could cost India \$1.03 trillion in lost revenue ((Bloom, D.E., Cafiero-Fonseca E.T., Candeias V, Adashi E., et al., 2014).

The goal of achieving universal health coverage (UHC) by 2030 has led to a growing recognition of mental health services as critical components of care. The economic burden of mental disorders, LMIC, highlights the importance of including basic mental health care in UHC.(Rathod et al., 2017) Understanding patterns of healthcare utilization and out-of-pocket payments (OOP) is critical to informing national policies and prioritizing interventions in resource-poor settings. While evidence from North America,(König et al., 2020;Bock et al., 2014) the United Kingdom,(Brilleman et al., 2013), Australia, Nepal (Rajan et al., 2020) Europe(Bosmans et al., 2010;Tusa et al., 2019) indicate higher healthcare expenditure among individuals with depression. In LMIC, where healthcare is primarily financed through OOP payments, increased utilization can lead to impoverishment and hinder access to necessary care.(Brinda et al., 2012)

(Math & Srinivasaraju, 2010) made an effort to calculate the price of mental health treatment in India. Based on a population of 1000 people and a monthly individual cost of Rs. 500, they calculated the approximate monthly total required cost, which came out to be Rs. 10,000 crores (US\$ 100 billion). Hospital stays and indirect expenses, however, were not taken into consideration. The National Mental Health Survey of India, which was conducted recently (Gururaj et al., 2016), revealed a greater financial burden associated with providing care for individuals with mental illness, primarily in the form of out-of-pocket expenses. The families had to pay almost three times as much per month as previously reported by the researchers, primarily for treatment and transportation to receive care, the researchers discovered. They did not, however, account for intangible and hidden costs, which increase the burden and frequently push families into financial crisis because they are hard to quantify. Since the indirect costs of mental illnesses are higher than the direct costs, it is difficult to determine the precise economic cost of mental illness (Bloom et al., 2012).

1.12. Literature Review

(Yadav et al., 2023) conducted a study in India using data from the National Sample Survey, revealed that 18.1% of households affected by mental illness spent a significant portion of their monthly consumption expenditure on healthcare, with a substantial percentage facing catastrophic health expenditure (CHE) and falling into poverty due to treatment costs.

Similarly, studies conducted in rural Ethiopian districts (Hailemichael et al., 2019) and rural communities in Nepal (Rajan et al., 2020) demonstrated the impact of depression on catastrophic OOP payments and impoverishment among affected households. The COVID-19 pandemic has further exacerbated the prevalence and economic burden of depression and anxiety, as highlighted by (Chodavadia et al., 2023) This signifies the urgent need for targeted mental health interventions to address the growing crisis.

Furthermore, studies conducted in various regions, including Goa (Patel et al., 2006) and rural Madhya Pradesh, (Shidhaye et al., 2017) provided insight into the healthcare utilization patterns of persons who suffer from depression. These studies showed that although a sizable fraction of people sought treatment for symptoms of depression, most did so for other reasons, suggesting a treatment gap in mental health services.

Preference for private healthcare facilities over government services is another recurrent theme in the literature. (Roberts et al., 2020a; Laveena et al., 2021) reported that private providers were most frequently consulted by individuals with depression symptoms in rural India, despite the higher costs involved. This preference reflects perceptions of better-quality care but contributes to the overall economic burden on households.

Additionally, studies have examined the socioeconomic determinants of depression and their association with healthcare-seeking behavior and OOP expenditure. In a population in North India, (Mathias et al., 2015) discovered definite correlations between depression and social, educational, and economic disadvantage. Similar findings were made by studies carried out in rural West Bengal (Ghosh et al., 2023) and Kerala (Vijayan et al., 2020) regarding the socioeconomic factors influencing healthcare utilization and out-of-pocket spending among depressed people.

These studies also highlighted other themes, such as those by (Patel et al., 2006) (Rajan et al., 2020; Hailemichael et al., 2019) consistently underscore the significant treatment gap for depression in low- and middle-income countries (LMICs). Despite the availability of healthcare services, individuals with depression often do not seek appropriate treatment, leading to underutilization of mental health services.

Despite these valuable contributions, there remain notable gaps in the literature. Localized data, systematic small-area studies on healthcare utilization and OOPe for depression are lacking, particularly in specific geographic areas as highlighted by (Mathias et al., 2015; Patel & Kleinman, 2003).

In summary, existing research underscores the importance of addressing challenges related to healthcare utilization and the economic burden associated with depression. However, there is a pressing need for localized data and comprehensive assessments to inform policy and practice aimed at reducing financial barriers to mental healthcare access and improving the economic well-being of affected individuals and households. Given the intricate interplay of factors influencing healthcare utilization among individuals with depression, there is a pressing need for localized data and comprehensive assessments. Understanding the demographic and socioeconomic factors that shape patterns of healthcare utilization and out-of-pocket expenditure among individuals with depression is crucial to informing policy and practice. This information can help in reducing financial barriers to mental healthcare access, narrowing the treatment gap, and alleviating the burden of depression. Ultimately, it can contribute to improving the economic well-being of affected individuals and households.

1.13. Context of the Study

This study is nested under a broader study OptimizeD - which aims to improve outcomes in depression in primary care in India. This study is implemented in the Bhopal district, the capital city of Madhya Pradesh, India, across 8 to 10 primary healthcare centers (PHCs) selected from a larger pool of 21 facilities. The study's design incorporated behavioral activation programs, pharmacological treatments, and

genomic insights to create a comprehensive and personalized treatment plan for individuals suffering from moderate to severe depression.

Objectives:

- To develop a Precision Treatment Rule using baseline patient data to predict what works best for whom (and which patients are unlikely to respond to either treatment and should be referred to specialist care).
- Conduct a cost-effectiveness analysis by comparing the relative costs and effectiveness of those randomly assigned to their optimal treatment versus those randomly assigned to a non-optimal treatment using the precision treatment rule.

A total of 1,500 patients with moderate to severe depression are randomized to one of two treatments: psychotherapy based on behavioral activation (the Health Activity Program, HAP) or antidepressant medication (fluoxetine).

1.14. Research Gap

Firstly, there is a notable absence of localized data on the impact of depression-related healthcare costs, particularly in low and middle-income countries (LMICs) like India. Existing studies often provide generalized insights but fail to capture the nuanced socio-economic factors that influence healthcare expenditure patterns in specific regions.

Another critical gap is the limited quantification of depression-related healthcare costs, particularly with out-of-pocket expenditures, across different demographic and socio-economic groups. Despite recognition of the financial burden of mental health-related costs, empirical evidence on the specific impact of these costs is limited, especially in LMICs.

To the best of our knowledge there are no population-based trials conducted in Bhopal that have addressed these issues. The study area provides micro-level information comprising healthcare utilization and Out-of-pocket expenditure (OOPE) estimates

among depressive adults residing in urban Bhopal as the data was collected from households located in close proximity to primary healthcare centers (PHCs). This community-level approach allowed us to more fully understand depression-related healthcare utilization and out-of-pocket costs associated with depression in adults in real-world settings.

1.15. Objectives

- i. To understand the demographic and socioeconomic profiles of healthcare utilization among adults associated with symptoms of Depression in Urban Bhopal.

Healthcare utilization refers to the frequency of visits made to any healthcare provider, including public, private, or traditional healers, within the past three months.

- ii. To determine the direct and indirect costs associated with the symptoms of Depression in adults in primary healthcare settings of Urban Bhopal.

Expenditure is measured in Indian Rupees (INR) by asking about expenses incurred in the last 3 months separately for outpatient consultation fees, medicines (for somatic and other symptoms of Depression separately), traveling to those healthcare facilities, and diagnostic tests (for Depression and other symptoms separately). Total out-of-pocket expenditure is defined as the sum of these costs and rounded to the nearest absolute number.

1.16. Significance of the study

The significance of the study lies in its exploration of the economic implications of depression-related healthcare costs in urban Bhopal, Madhya Pradesh, India. By focusing on this specific geographic area and conducting household surveys near primary healthcare centers, the study aims to provide localized data that sheds light on the financial barriers to accessing mental health services in low and middle-income country (LMIC) settings.

Similar to education and other traditional inputs, health plays a crucial role in economic development. It influences our ability to grow and develop by enhancing labor productivity through longer life expectancies and thus helps in creation of human capital. Research indicates that spending on healthcare positively impacts economic growth (Raghupathi & Raghupathi, 2020). Therefore, understanding the economic burden of depression is paramount for informed policy-making and resource allocation.

Economic inequality significantly impacts healthcare delivery (Albanese et al., 2011). Addressing economic disparities is crucial for equitable healthcare access, particularly for vulnerable populations. Reducing out-of-pocket expenses is essential for providing fair healthcare delivery, ensuring equitable access to essential services and minimizing healthcare inequities.

Universal health coverage envisages that “All people should have unrestricted access to high-quality healthcare services at all times and locations, without facing financial hardship” (*Universal Health Coverage.*, 2023). The majority of people are deprived of even basic services, knowingly or unknowingly. So, in this regard the present study was in an attempt to explore more about the utilization pattern of health services and health expenditure among adults with depression of Bhopal district in primary healthcare settings.

The study adopted a distinctive methodological approach by directly engaging with households through surveys. This allowed for the collection of firsthand insights into the economic impact of depression-related healthcare costs. We employed a community-level approach, that aimed to gather granular data reflecting the real-world experiences of individuals seeking treatment for depression.

The household survey method offered several advantages, including the ability to capture nuanced perspectives and experiences within the local context. It facilitated the gathering of comprehensive data through validated questionnaires on healthcare utilization patterns, out-of-pocket expenditure, and socio-economic determinants of mental health service access. By fostering trust and rapport, this approach encouraged open and honest responses, enhancing the validity and reliability of the findings.

Furthermore, the research holds broader significance beyond academia. By identifying barriers to healthcare access and highlighting the economic challenges faced by individuals seeking treatment for depression, the study advocates for targeted interventions to reduce disparities and improve mental health outcomes. In a country like India, where mental health resources are limited and stigma surrounding mental illness persists, this study serves as a catalyst for change, advocating for increased investment in mental health services and innovative approaches to care delivery.

In conclusion, this study not only addresses a pressing research gap but also has tangible implications for public health policy, clinical practice, and community well-being. By amplifying the voices of those affected by depression and advocating for their rights to equitable and accessible care, the research strives to build a healthier and more resilient society for all.

1.17. Implications for Policy, Practice, and Research

The findings of this study have significant implications for policy, practice, and future research endeavors. Policymakers can utilize the evidence generated to design targeted interventions aimed at reducing financial barriers to mental health services, particularly for vulnerable populations. Healthcare practitioners can also leverage these insights to advocate for improved access to affordable care and support mechanisms for individuals with mental health needs.

Moreover, this study contributes to advancing knowledge in the field of mental health, particularly within LMICs like India. By providing empirical evidence and by capturing the socio-economic realities of affected populations on the economic burden of depression-related healthcare costs, the study underscores the urgency of implementing evidence-based interventions that address both clinical and socio-economic aspects of mental health.

In order to emphasize the importance of developing and bolstering financial risk impacted by adults with Depression in urban India, the current study intends to draw attention to Bhopal, the capital state of Madhya Pradesh.

2. METHODS

2.1. Study Setting: Urban Bhopal

Bhopal, the capital city of Madhya Pradesh, provides a unique and diverse setting for this study on healthcare utilization and depression.

Administratively, Bhopal district is divided into two Tehsils: Berasia and Huzur, and includes two blocks and three towns: Bhopal Municipal Corporation, Berasia, and Kolar, along with 519 villages. This administrative setup highlights the mixture of urban and rural areas within the district, which is crucial for understanding the varying healthcare needs and utilization patterns among different population segments.

According to the (*Census of India, 2011*), the population of Bhopal city, which falls under the jurisdiction of the Bhopal Municipal Corporation, stands at 1,798,218, with 936,168 males and 862,050 females. The broader Bhopal metropolitan area, which extends beyond the city limits, had a population of 1,886,100 in 2011. Overall, the total population of Bhopal district was recorded at 2,371,061, with males constituting 52% of the population.

Bhopal's demographic profile is marked by a significant urban population, comprising 80.8% of the district's total population, a stark contrast to the state's overall urban population percentage of 27.6%. This urban dominance is essential for the study, as it may influence healthcare accessibility and utilization patterns. The district has experienced a decadal growth rate decrease from 36.4% to 28.5% between 2001 and 2011, indicating a shift in population dynamics.

The population density of Bhopal district stands at 855 people per square kilometer, as per the (*Census of India, 2011*). The district also has notable socio-economic diversity, with 15.07% of the population belonging to Scheduled Castes and 2.93% to Scheduled Tribes. This socio-economic composition is critical for understanding the disparities in healthcare access and utilization.

A significant portion of Bhopal's urban population, approximately 49%, resides in slum areas. This high percentage of slum dwellers highlights the socio-economic challenges and potential barriers to healthcare access within the urban poor. Moreover, more than 42% of the urban population in Madhya Pradesh lives below the poverty line (BPL), compared to 37% in rural areas, according to the National Sample Survey (NSS;Batra et al., 2004; Bhopal Municipal Corporation and UN-Habitat India, 2023)This economic disadvantage further underscores the importance of examining healthcare utilization patterns and the financial burdens associated with healthcare, particularly in the context of mental health.

The main language is Hindi. The study population was adults aged 18 years and above residing in the catchment area of eight urban primary healthcare facilities of Bhopal. This setting was chosen to ensure a representative sample of urban residents who have access to primary healthcare services.

We selected the following eight Primary Health Centers (PHCs) based on their high footfall of patients aged above 18 years, the cooperative nature of their staff and the availability of OptimizedD services within these facilities. These PHCs are strategically located in diverse areas to cater to various healthcare needs across different communities. Here is an elaborate overview of each PHC and its catchment area:

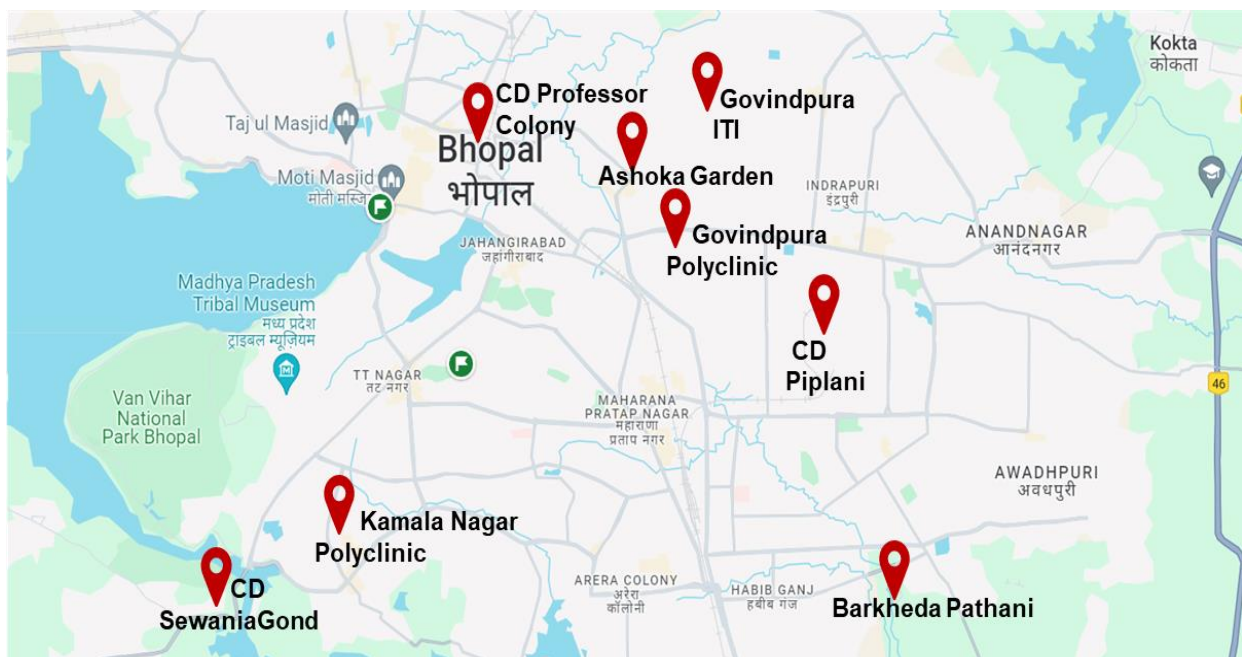


Figure 1: Location of eight PHC's in Bhopal

1. CD Sewania Gond:

- Location: 1km from the main road, in outskirts of Bhopal.
- Population Served: Artisans, craft workers, and nearby slum residents.
- Nearby Areas: Banjara Basti and Suraj Nagar, which are densely populated with limited access to amenities. The presence of skilled workers in these areas highlights the need for healthcare services tailored to occupational health and general well-being.

2. Govindpura Polyclinic:

- Location: Within fire station industrial area.
- Population Served: Industrial workers.
- Nearby Areas: Adarsh Nagar and Gayatri Nagar slums. These areas lack residential zones but have a transient population of factory and industrial workers who require health services for work-related injuries and illnesses.

3. Govindpura ITI:

- Location: On a main road (Raisen road).
- Population Served: A mix of residential and slum populations.
- Nearby Areas: Labour Colony, Roop Nagar, and the Economically Weaker



Figure 2: Govindpura ITI PHC, Bhopal

Section (EWS). This PHC serves both permanent residents and temporary workers, providing essential healthcare services to a diverse group.

4. Ashoka Garden PHC:

- Location: 1 km from the main road, in between a residential area.
- Population Served: High footfall from a predominantly Muslim community.
- Nearby Areas: Azad Nagar, Durga Dham Nagar, Punjabi Bagh, and Shenshah



Figure 3: Punjabi Bagh, near Ashoka Garden PHC

Garden. The mix of slums and residential neighborhoods means the PHC deals with a broad spectrum of health issues from chronic diseases to acute illnesses.

5. Barkheda Pathani:

- Location: Away from the main road, near a graveyard.
- Population Served: Slum residents.
- Nearby Areas: Shanti Nagar and Shankar Nagar.



Figure 4: An area near Barkheda Pathani PHC, Bhopal

- These areas face significant challenges such as poor sanitation and high population density, which necessitates robust healthcare services to manage infectious diseases and improve overall health conditions.

6. Kamla Nagar Polyclinic:

- Location: Inside a residential area, away from the main area.
- Population Served: Geriatric population and nearby slum residents.
- Nearby Areas: Naya Basera, Rajeev Nagar, and Akash Nagar. The PHC focuses on geriatric care due to the aging population while also addressing the healthcare needs of large slum populations.

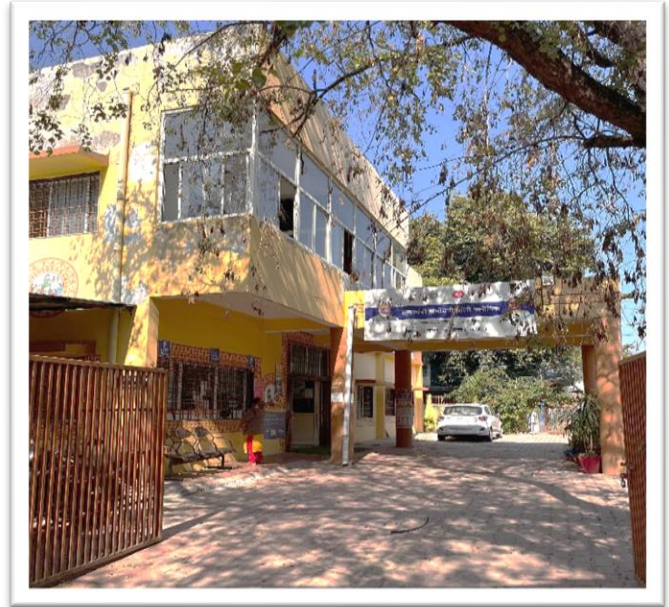


Figure 5: Kamla Nagar Polyclinic, Bhopal

7. CD Piplani:

- Location: Near BHEL quarters.
- Population Served: BHEL employees and a nearby Muslim slum population.
- Nearby Areas: Muslim slum around a mosque. This PHC caters to both a stable working-class population and a transient slum population, necessitating a wide range of healthcare services from occupational health to primary care.



Figure 6: Piplani PHC, Bhopal

8. CD Professor's Colony:

- Location: Among residences of ministers and government officials.

- Population Served: High-ranking officials and slum residents.



Figure 7: Professor's Colony PHC, Bhopal

- Nearby Areas: Pratap Nagar, Masjid Hasnat Nagar, and Shyamala Nagar slums. This PHC serves a socio-economically diverse population.

2.2. Sample

We calculated a sample size estimating depression prevalence based on National Mental Health Survey, 2016 (Gautham et al., 2020) to evaluate healthcare utilization and out-of-pocket expenditure among individuals with depression.

Sample size was calculated using the formula,

$$n = Z^2 P(1-P) / E^2$$

Where n is the sample size, Z is the statistic corresponding to the degree of confidence, P is expected prevalence (which can be found in the same studies or a pilot study), and E is precision (which corresponds to effect size).

P = 0.321 (As per National Mental Health Survey Madhya Pradesh, 2016)

Z = 1.96

Desired Margin of Error, E = 0.02%

As per this formula, n= 299.

2.3. Eligibility Criteria

Inclusion Criteria:

1. Adults above 18 years living in the catchment areas of primary health care;
2. Respondents willing to provide consent to participate; this criterion reinforces the voluntary nature of participation, emphasizing participants' autonomy in deciding to engage in the study.

Exclusion Criteria:

1. Those suffering from severe mental illnesses other than depression (to maintain homogeneity within the sample and to avoid confounding factors that may arise from different psychiatric conditions);
2. Those with primary sensory deficits or severe cognitive impairment (to safeguard the integrity of the informed consent procedure).

2.4. Study design

This study adopted a quantitative cross-sectional design(Wang & Cheng, 2020) aimed at elucidating healthcare utilization patterns and out-of-pocket expenditure among adults exhibiting symptoms of depression in urban Bhopal. A cross-sectional study design was chosen as it is faster and inexpensive to conduct.(Setia, 2016)

The investigation involved administering a structured survey to a sample of 301 adults residing in proximity to eight urban primary healthcare facilities within the city. Participants were initially screened for depressive symptoms using the validated Patient Health Questionnaire-9 (PHQ-9), with a score of 10 or higher indicating probable depression. Following this initial screening, data were collected regarding both inpatient and outpatient healthcare utilization and the associated direct and indirect costs. This was achieved using a modified version of the Client Socio-demographic and Service Receipt Inventory (CSRI).

To ensure representative coverage of the population, the Probability Proportional to Size (PPS) sampling method was employed. This method began from a central point

at each primary healthcare facility and involved selecting households in a left-hand rule. This approach enabled a systematic selection process that accounted for varying population densities across different areas. The study's design facilitates a thorough analysis of the demographic, socioeconomic, and clinical factors influencing healthcare utilization and the financial burden associated with depression in a rapidly urbanizing context.

2.5. Sampling Design:

The sampling technique employed for the selection of participants utilized a Probability Proportional to Size (PPS) approach to ensure optimal area coverage. This strategy offers some advantages. This method produces a self-weighting sample with equal selection probability for each subunit, eliminating the need for reweighting during estimation. This method ensures a fixed sample size making it suitable for budget constraints.(Chris J. Skinner, 2016)

This two-stage sampling method involved selecting households by PPS sampling, based on population data from the 2011 Bhopal Census while ensuring that the sampling error is kept to a minimum. Each urban primary healthcare facility was identified as a central point, and households within their vicinity were systematically sampled. The following steps outline the sampling process:

1. Identification of Starting Point: From the central point of each primary healthcare facility, the left direction was consistently chosen for the sampling path.
2. Household Selection: Households were selected at a fixed interval by skipping every fourth house along the chosen direction until reaching the city boundary. The process was then repeated until the target sample size was reached.
3. Participant Selection: At each selected household, an adult resident was asked to provide the names and ages of all household members. Based on the availability of willing participants and prioritizing older individuals with more time, one adult participant was then chosen. If no suitable participant was

available, or if the household refused to participate, the next nearest household was approached.

2.6. Data collection Tool

Study data were collected and managed using REDCap (Harris et al., 2019) electronic data capture tools hosted at Sangath, Bhopal. REDCap (Research Electronic Data Capture) is a secure web-based software platform that facilitates data collection for research projects, providing an intuitive interface for validated data capture; audit trails for tracking data manipulation and export procedures; automated export procedures for seamless data downloads to common statistical packages; and procedures for data integration and interoperability with external sources.

A structured questionnaire in Hindi was designed for the household survey to obtain information on the demographic, socio-economic characteristics of the participants, and their healthcare utilization pattern and associated costs. The orally administered survey was conducted using face-to-face interviews after a week-long led training by an experienced researcher. The survey in REDCap was divided into four parts: (Refer to Annexure):

1. Socio-demographic information: Information on age, gender, education, religion, occupation, and monthly income was collected.
2. Depression screening: Patient Health Questionnaire-9 (PHQ-9), a set of nine items commonly used in primary care settings was used to screen depression.
3. Assessing Somatic symptoms: The Patient Health Questionnaire-15 (PHQ-15), a tool with fifteen items that assess somatic symptoms, was used to evaluate the severity of these symptoms.
4. Healthcare Utilization and OOPE: Using Client Service Receipt Inventory (CSRI), data was collected on frequency of healthcare visits, types of providers, associated costs (travel, consultation fees, medication costs),

time taken for travel and waiting and impact on workdays and carer costs.



Figure 8: Administering Questionnaire to a respondent*

*Consent was obtained from participant to include her picture.

2.7. Data Collection Procedure

The data collection procedure commenced with scheduled visits to households by the established sampling framework. Upon arrival, I introduced myself and inquired about the resident's past visits to the primary care center.

Subsequently, I provided a succinct overview of the study, read out the patient information sheet, answered potential participants questions and requested their consent, once they were willing to participate in the study. Informed consent was obtained as a signature from the participant or from the witness in case the participant couldn't give a signature. After obtaining consent, I gathered the sociodemographic information for the study.

Subsequently, the PHQ-9 was administered to all participants. In instances where participants displayed hesitancy in responding, I offered reassurance, emphasizing

the importance of providing honest and uninhibited responses. Utilizing REDCap, the PHQ-9 scores were automatically calculated, facilitating the immediate identification of individuals potentially experiencing depression. For those who screened positive, additional assessments, including the PHQ-15 and the CSRI, were conducted. This comprehensive evaluation process approximately required 20 minutes per household to complete. Each interaction was conducted with utmost sensitivity and respect, aiming to gather precise and insightful data to support the study's objectives.

All screen-positive participants who were not receiving treatment were referred to the nearest primary healthcare center where Optimized study facility for depression treatment was available.

2.8. Data Collection Duration

The data collection spanned a period of two months from March 2024-May 2024, ensuring extensive coverage and meticulous adherence to the predetermined sampling framework.

2.7. Measures

2.7.1. PHQ 9

The **Patient Health Questionnaire-9 (PHQ-9)**(Kroenke et al., 2001, p. 8) is a multipurpose tool used for the screening, diagnosis, monitoring, and measurement of depression severity. A validated Hindi version suitable for Indian settings was used for this purpose.(Kochhar et al., 2007) It integrates the DSM-IV diagnostic criteria for depression with other major depressive symptoms into a succinct self-report format.

The PHQ-9 assesses the frequency of depressive symptoms, which contributes to the severity scoring index. Notably, Question 9 specifically screens for the presence and duration of suicidal ideation. Additionally, a follow-up question, which is not scored, evaluates the impact of depressive symptoms on the patient's level of functioning by assigning weight to how these problems affect their daily activities and interactions.

Clinical Utility

The PHQ-9 is brief and highly practical for clinical use. It can be completed by patients within minutes and is quickly scored by clinicians. The tool's design allows for repeated administration, making it useful for tracking changes in depression severity over time and evaluating the effectiveness of treatments.

PHQ-9 is a tool frequently used in trials in Goa (Patel et al., 2017), Maharashtra (Shidhaye et al., 2016), India, to evaluate primary outcomes. The PREMIUM trial (Patel et al., 2017) employed the verified Hindi version of PHQ-9. The same Hindi version was used for this study.

Psychometric Properties

The diagnostic validity of the PHQ-9 has been well-established through studies conducted in 8 primary care and 7 obstetrical clinics. A PHQ-9 score of 10 or higher demonstrates a sensitivity and specificity of 88% for diagnosing major depression in an Indian validation study. (Kroenke et al., 2001, p. 9).

The severity of depression is categorized based on PHQ-9 scores as follows:

- Scores of 5, 10, 15, and 20 indicate mild, moderate, moderately severe, and severe depression, respectively.

The PHQ-9's total score can range from 0 to 27, with each of the 9 items rated on a scale from 0 (not at all) to 3 (nearly every day). Additionally, the questionnaire includes an item at the end of the diagnostic portion that asks patients how difficult their problems have made it to perform work, manage household responsibilities, or interact with others, providing further insight into the functional impact of their symptoms.

2.7.2. PHQ 15

To assess the presence of somatic symptoms, **Patient Health Questionnaire-15 (PHQ-15)** (Kroenke et al., 2002) a brief questionnaire comprising 15 items to evaluate somatic symptom severity in primary care settings.

PHQ-15 a brief questionnaire comprising 15 items to evaluate somatic symptom severity in primary care settings. It includes 15 symptoms that encompass over 90% of the somatic complaints typically seen in primary care, excluding upper respiratory symptoms such as cough, nasal symptoms, sore throat, and earache.

Clinical Utility

Several factors underscore the PHQ-15 as an exceptional measure for assessing somatic symptom burden and potential somatization. First, about 10% of primary care and obstetrics-gynecology patients score 15 or higher, aligning with other studies on clinically significant somatization. Second, higher PHQ-15 scores are strongly correlated with functional impairment, disability, and increased healthcare utilization. Third, the items on the PHQ-15 show better overlap with other validated somatization screeners than any two other screeners do with each other.

Moreover, the PHQ-15 is highly effective in identifying high-utilizing somatizing patients within healthcare systems. For instance, patients identified as somatizers by the PHQ-15 had approximately double the outpatient and inpatient medical care usage and twice the annual medical care costs compared to non-somatizing patients. Notably, these findings were minimally affected when adjusted for psychiatric and medical comorbidities.

Finally, total self-reported PHQ-15 somatic symptom counts have been shown to be highly correlated with clinician-rated somatoform disorder symptom counts, further establishing its reliability and validity as a somatic symptom severity measure.

Psychometric Properties

Patients are asked to rate how much they have been bothered by each symptom over the past month on a scale from 0 ("not at all") to 2 ("bothered a lot"). The total score ranges from 0 to 30, with scores of 5, 10, and 15 serving as thresholds for mild, moderate, and severe somatic symptom severity, respectively. In the initial study, a significant majority (88%) of patients who reported being "bothered a lot" by three or more medically unexplained symptoms and had a lengthy history of poorly explained symptoms were diagnosed with a somatoform disorder.

2.7.3. Client Socio-demographic and Service Receipt Inventory (CSRI)

The inpatient and outpatient healthcare utilization and direct and indirect cost of illness was assessed using a modified version of the **Client Socio-demographic and Service Receipt Inventory (CSRI)**, (Chisholm et al., 2000) tailored for use in the OptimizedD study which has been adapted for use in Indian settings. (Patel et al., 2006)

The CSRI is a brief self-report measure in which participants are asked about recent visits to various formal and informal healthcare providers. In the outpatient healthcare section, respondents are asked about the date, cause, duration, and cost of each outpatient visit in the past three months to a range of healthcare providers, including biomedical, traditional, and complementary healthcare providers. We used a three-month time period for outpatient healthcare use to accommodate service user recall; there is evidence respondents underreport outpatient healthcare use beyond this period (Jobe et al., 1990) (Bhandari & Wagner, 2006).

Healthcare utilization and Expenditure:

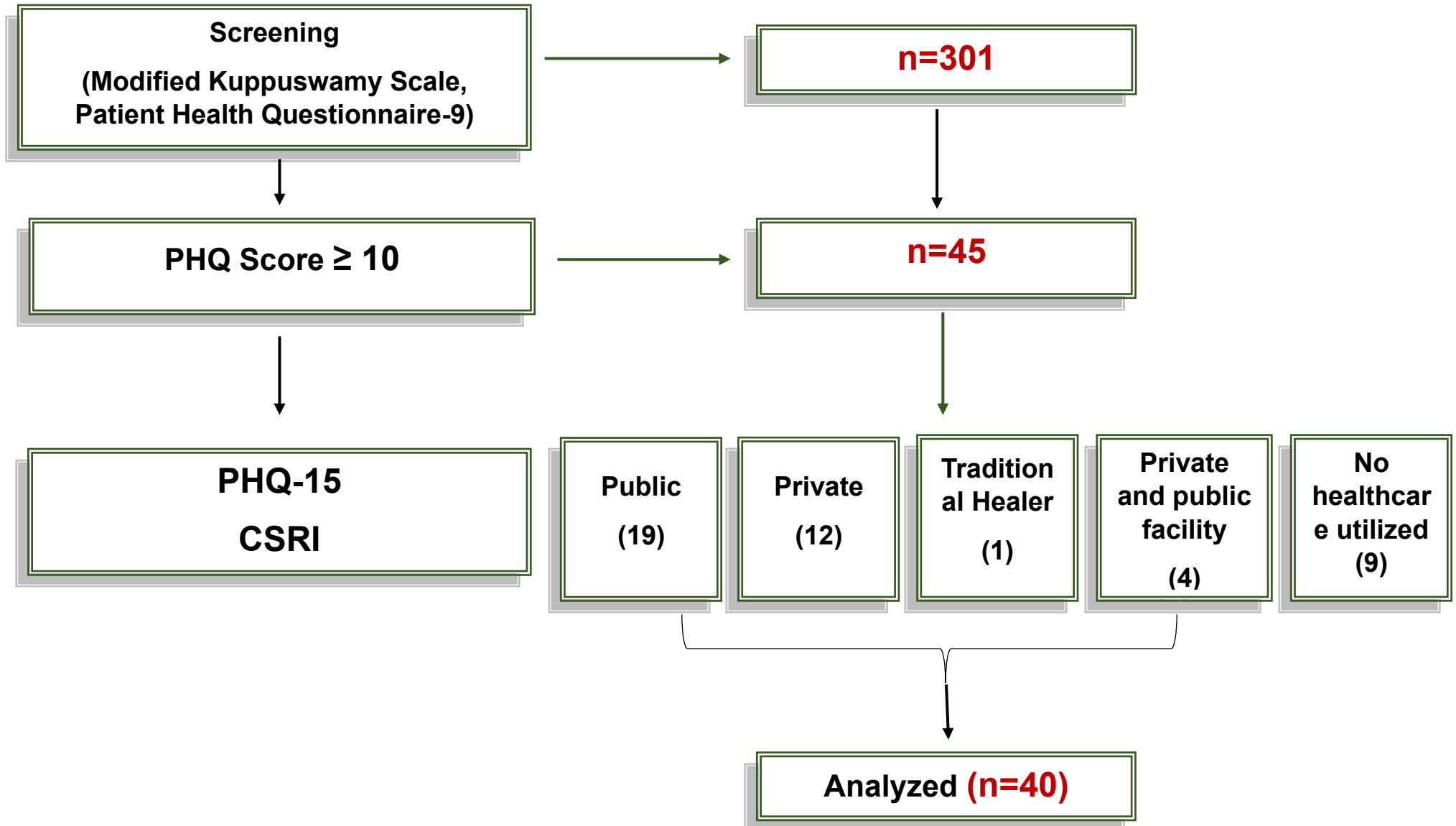
- *Outpatient consultations* encompassed visits to private doctors, public doctors, and traditional healers over the past three months. For each provider type, data on the number of consultations within the preceding three months, average time taken to travel and its cost, average waiting time, consultation duration, and any incurred out-of-pocket expenditure were collected.
- *Hospital admissions* in the prior three months were documented, including details on admissions to both private and public hospitals, such as the number of nights stayed and any associated out-of-pocket expenditure
- *Biomedical investigations* such as radiological or hematological tests, conducted within the past three months, were recorded, along with any charges incurred out-of-pocket for these tests.
- *Medications* in the past 3 months: any out-of-pocket expenditure incurred on these medications.

- *Carer Impact* to determine if a family member or friend had to reduce or cease usual work or activities due to the patient's ill health in the preceding three months. The number of days disabled from typical work or household activities in the previous month was also noted.

The direct economic implications of ill health were evaluated using three outcome measures calculated for each individual, based on average monthly costs (INR) incurred over the past three months:

- Aggregated healthcare costs encompassing expenses from outpatient visits, treatments, medications, and investigations, consultation fees, expense in food and travel to healthcare providers.
- Aggregated direct payments for healthcare made by the family for inpatient expenses, including hospitalization, expenses for travel and to healthcare facilities.
- Indirect costs were quantified by aggregating income loss due to absenteeism. Income loss was calculated by categorizing individuals into skilled, highly skilled, and unskilled workers. Using the daily wage rates for Madhya Pradesh, the total income loss was determined by multiplying the daily wage by the total days lost due to illness, and this amount was reduced from their total income.
- For time lost waiting and traveling, we aggregated all individuals' waiting times to calculate the mean time.

2.8. Study Profile



2.9. Objective wise methodology table

| S.No. | Objective | Indicator | Tool | Sampling Technique | Sample Size |
|-------|--|---|--|--|-------------|
| 1. | To understand the demographic and socioeconomic profiles of healthcare utilization among adults with symptoms of depression in Urban Bhopal | Frequency of visits to healthcare providers (public, private, traditional healers) for depression-related symptoms within the past three months | Modified Client Socio-demographic and Service Receipt Inventory (CSRI) | Probability Proportional to Size (PPS) | 301 adults |
| 2. | To determine the direct and indirect costs associated with the symptoms of depression in adults in primary healthcare settings of Urban Bhopal | Out-of-pocket expenses: outpatient consultation fees, medication costs, transportation expenses, diagnostic test charges | Modified Client Socio-demographic and Service Receipt Inventory (CSRI) | Probability Proportional to Size (PPS) | 301 adults |

3. RESULTS

3.1. Analysis

Data analyses were performed using R Studio and STATA software (R Core Team, 2021; Stata Corp LLC., 2017). Descriptive analyses were conducted to explore the distributions and categorize sociodemographic characteristics with general healthcare utilization and to estimate direct and indirect out of pocket payments associated with depression.

To understand the proportion of adults with probable depression who consult different types of treatment providers for depression and for general healthcare, we present the number and frequency of self-reported treatment-seeking and general health care use, using percentages and unweighted counts. We also present how frequently adults with depression use general health services.

3.2. Ethical Declarations

Ethics approval and consent to participants IRB approval (AB_2021_69) was obtained from the Sangath Institutional Review Board in February 2024. A participant information sheet that included important details about the study and the implications of taking part were given to all participants. An informed consent was obtained from all subjects or from a witness after reading the consent form to them. All methods were carried out in accordance with this IRB Approval.

3.3 Findings on Socio-demographic determinants of adults with probable depression

We screened 301 individuals, aged 18 years and above for depression using PHQ-9 in adults living in catchment areas of primary care settings of Bhopal through a door-to-door survey. A PHQ-9 score greater than nine is considered positive for depression. Out of these, 45 respondents screened positive for depression and thus were eligible to administer the healthcare utilization survey using CSRI. Prevalence estimates were calculated based on the responses from these 301 adults, revealing 14.9% had probable depression, yet, approximately all reported never being formally diagnosed.

| Table 1: Comparison of Sociodemographic characteristics of General population (n=301) with Depressed Population (n=45) | | | | |
|---|--|----------|--|----------|
| Characteristics | General Population [N = 301] | | Depressed Population [n= 45] | |
| | N | % | n | % |
| Age group | | | | |
| 18-28 | 78 | 25.9 | 6 | 13.3 |
| 29-39 | 103 | 34.2 | 9 | 20 |
| 40-50 | 68 | 22.6 | 15 | 33.3 |
| 51-61 | 31 | 10.3 | 9 | 20 |
| 62-72 | 18 | 6 | 3 | 6.7 |
| 73-83 | 3 | 1 | 3 | 6.7 |
| Sex | | | | |
| Female | 244 | 81.1 | 42 | 93.3 |
| Male | 57 | 18.9 | 3 | 6.7 |
| Marital Status | | | | |
| Single | 30 | 10 | 2 | 4.4 |
| Married | 262 | 87 | 39 | 86.7 |

| | | | | |
|---|-----|------|----|------|
| Divorced | 2 | 0.7 | 0 | 0 |
| Widowed | 7 | 2.3 | 4 | 8.9 |
| Education | | | | |
| Illiterate | 65 | 21.6 | 16 | 35.6 |
| Primary School | 18 | 6 | 5 | 11.1 |
| Middle School | 33 | 11 | 8 | 17.8 |
| High School | 69 | 22.9 | 6 | 13.3 |
| Intermediate/Diploma | 71 | 23.6 | 8 | 17.8 |
| Graduate | 42 | 14 | 2 | 4.4 |
| Professional | 3 | 1 | 0 | 0 |
| Occupation | | | | |
| Unemployed | 172 | 57.1 | 27 | 60 |
| Elementary Occupation | 72 | 23.9 | 14 | 31.1 |
| Plant and machine operators and assemblers | 4 | 1.3 | 0 | 0 |
| Craft and related trade workers | 2 | 0.7 | 0 | 0 |
| Skilled workers and shop market sales | 30 | 10 | 0 | 0 |
| Clerks | 2 | 0.7 | 0 | 0 |
| Technician or Associate Professionals | 8 | 2.7 | 1 | 2.2 |
| Professional | 9 | 3 | 3 | 6.7 |
| Legislators, Senior officers, managers | 2 | 0.7 | 0 | 0 |
| Religion | | | | |
| Hinduism | 228 | 75.7 | 26 | 57.8 |
| Islam | 69 | 22.9 | 18 | 40 |
| Christian | 2 | 0.7 | 1 | 2.2 |
| Buddhist | 2 | 0.7 | 0 | 0 |
| Caste | | | | |
| Other Backward Class (OBC) | 145 | 48.2 | 26 | 57.8 |

| | | | | |
|------------------------------|-----|------|----|------|
| Scheduled Caste (SC) | 61 | 20.3 | 6 | 13.3 |
| Scheduled Tribes (ST) | 15 | 5 | 2 | 4.4 |
| General | 80 | 26.6 | 11 | 24.4 |
| Socio Economic Status | | | | |
| Upper Class (I) | 9 | 3 | 0 | 0 |
| Upper Middle Class (II) | 106 | 35.2 | 14 | 31.1 |
| Lower Middle class (III) | 100 | 33.2 | 12 | 26.7 |
| Upper Lower class (IV) | 82 | 27.2 | 16 | 35.6 |
| Lower (V) | 4 | 1.3 | 3 | 6.7 |

Although 45 adults were screened positive for depression, only 36 individuals utilized healthcare facilities. Among these, 19 went to public healthcare providers, 12 to private providers, 1 went to traditional healer and 4 individuals utilized both public and private services, as illustrated in Figure 9.

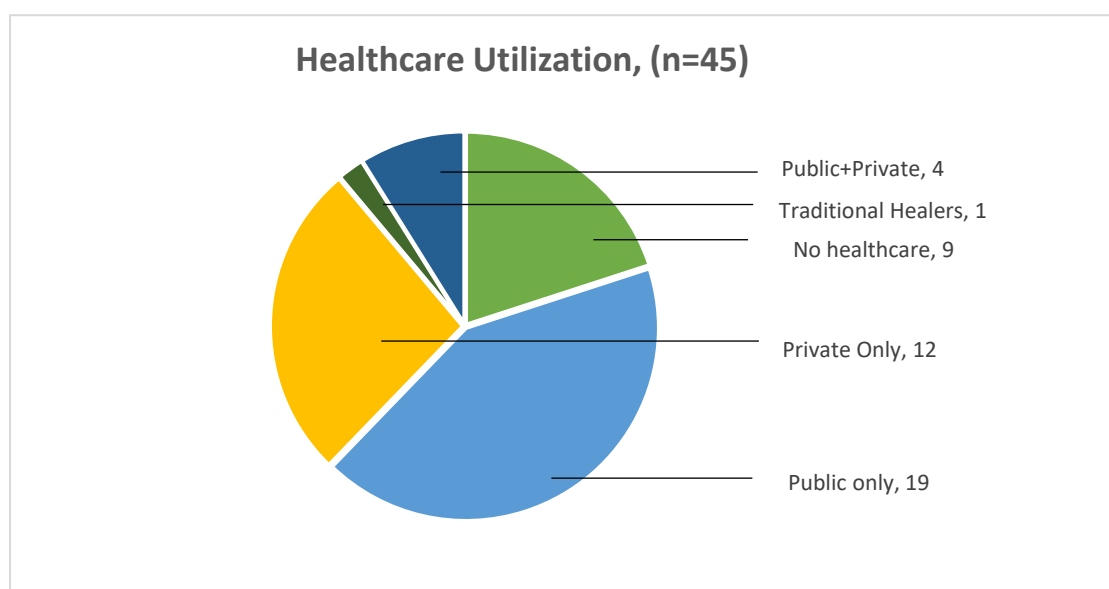


Figure 9: Outpatient Provider-Specific Healthcare utilization by adults with probable depression in Bhopal.

3.4 Findings on socio-demographic determinants and healthcare utilization visits

The socio demographic characteristics of these 36 respondents with respect to healthcare utilization in Bhopal are presented in Table 2. It indicates that healthcare utilization is highest among individuals aged 40-50, with 12 people accessing various providers. Females predominantly utilize healthcare services with 35 out of 36 users being female. Married individuals show significant utilization, with 32 out of 36 users. Those with middle school education lead the educational categories with 7 users. The unemployed represent the highest occupation group utilizing healthcare with 24 out of 36 users. Among religious groups, Hindus have the highest utilization with 22 users, and within caste categories, Other Backward Class (OBC) individuals lead with 19 users. Socioeconomically, the upper middle class (II) and lower middle class (III) each have the highest utilization rates, with 13 users in each category.

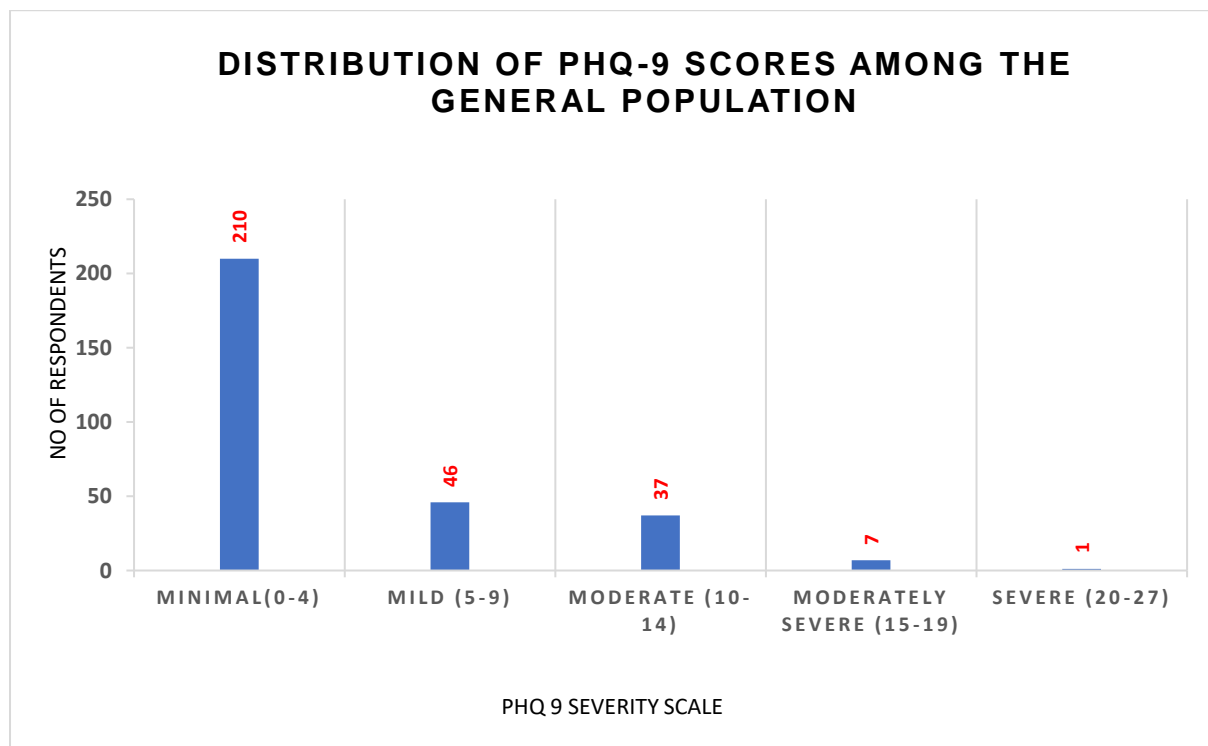


Figure 10: Distribution of PHQ-9 severity categories among 301 individuals.

| Table 2: Demographic and Socioeconomic factors associated with healthcare utilization | | | | | | | | | | |
|---|---|-------|--|------|--|-----|--|-----|--------|------|
| Characteristics | No. of respondents utilizing Public providers | | No. of respondents utilizing Private providers | | No. of respondents utilizing Traditional Healers | | No. of respondents utilizing both Private and Public providers | | Total | |
| | [n=19] | | [n=12] | | [n=1] | | [N=4] | | [N=36] | |
| | n | % | n | % | n | % | n | % | n | % |
| Age group | | | | | | | | | | |
| 18-28 | 1 | 5.3 | 2 | 16.7 | 1 | 100 | 0 | 0 | 4 | 11.1 |
| 29-39 | 6 | 31.6 | 2 | 16.7 | 0 | 0 | 0 | 0 | 8 | 22.2 |
| 40-50 | 8 | 42.1 | 4 | 33.3 | 0 | 0 | 0 | 0 | 12 | 33.3 |
| 51-61 | 4 | 21.1 | 2 | 16.7 | 0 | 0 | 2 | 50 | 8 | 22.2 |
| 62-72 | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 2 | 50 | 3 | 8.3 |
| 73-83 | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 0 | 0 | 1 | 2.8 |
| Sex | | | | | | | | | | |
| Male | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 0 | 0 | 1 | 2.8 |
| Female | 19 | 100.0 | 11 | 91.7 | 1 | 100 | 4 | 100 | 35 | 97.2 |
| Marital Status | | | | | | | | | | |
| Single | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 0 | 0 | 1 | 2.8 |
| Married | 19 | 100.0 | 9 | 75.0 | 1 | 100 | 3 | 75 | 32 | 88.9 |
| Widowed | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 1 | 25 | 2 | 5.6 |
| Education | | | | | | | | | | |
| Illiterate | 5 | 26.3 | 6 | 50.0 | 0 | 0 | 1 | 25 | 12 | 33.3 |
| Primary School | 4 | 21.1 | 1 | 8.3 | 0 | 0 | 0 | 0 | 5 | 13.9 |
| Middle School | 5 | 26.3 | 2 | 16.7 | 0 | 0 | 0 | 0 | 7 | 19.4 |
| High School | 2 | 10.5 | 0 | 0.0 | 0 | 0 | 1 | 25 | 3 | 8.3 |
| Intermediate/Diploma | 3 | 15.8 | 2 | 16.7 | 1 | 100 | 2 | 50 | 8 | 22.2 |
| Graduate | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 0 | 0 | 1 | 2.8 |
| Occupation | | | | | | | | | | |
| Unemployed | 11 | 57.9 | 8 | 66.7 | 1 | 100 | 4 | 100 | 24 | 66.7 |
| Elementary Occupation | 7 | 36.8 | 1 | 8.3 | 0 | 0 | 0 | 0 | 8 | 22.2 |
| Technician/Associate | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 0 | 0 | 1 | 2.8 |
| Professional | 1 | 5.3 | 2 | 16.7 | 0 | 0 | 0 | 0 | 3 | 8.3 |
| Religion | | | | | | | | | | |
| Hinduism | 14 | 73.7 | 7 | 58.3 | 1 | 100 | 0 | 0 | 22 | 61.1 |
| Islam | 5 | 26.3 | 5 | 41.7 | 0 | 0 | 3 | 75 | 13 | 36.1 |
| Christian | 0 | 0.0 | 0 | 0.0 | 0 | 0 | 1 | 25 | 1 | 2.8 |
| Caste | | | | | | | | | | |
| Other Backward Class (OBC) | 7 | 36.8 | 9 | 75.0 | 1 | 100 | 2 | 50 | 19 | 52.8 |
| Scheduled Caste (SC) | 5 | 26.3 | 0 | 0.0 | 0 | 0 | 0 | 0 | 5 | 13.9 |
| Scheduled Tribes (ST) | 2 | 10.5 | 0 | 0.0 | 0 | 0 | 0 | 0 | 2 | 5.6 |
| General | 5 | 26.3 | 3 | 25.0 | 0 | 0 | 2 | 50 | 10 | 27.8 |
| Socio Economic Status | | | | | | | | | | |
| Upper Middle Class (II) | 6 | 31.6 | 5 | 41.7 | 1 | 100 | 1 | 25 | 13 | 36.1 |
| Lower Middle class (III) | 5 | 26.3 | 2 | 16.7 | 0 | 0 | 1 | 25 | 8 | 22.2 |
| Upper Lower class (IV) | 8 | 42.1 | 4 | 33.3 | 0 | 0 | 1 | 25 | 13 | 36.1 |
| Lower (V) | 0 | 0.0 | 1 | 8.3 | 0 | 0 | 1 | 25 | 2 | 5.6 |

3.5. Frequency of visits

Only 36 participants made at least one healthcare visit (private, public or traditional healer) in the three months period preceding the survey and made a total of 265 visits to health services. The majority utilized public healthcare providers (19 respondents), with 91 visits in total. Private healthcare providers were used by 12 respondents, resulting in 154 visits. A small number of respondents sought care from both public and private providers (4 respondents, 19 visits) and only 1 respondent visited a traditional healer once.

| Healthcare Providers | No of respondents utilizing Healthcare | Frequency of visits to Healthcare Providers |
|-----------------------------|---|--|
| Public | 19 | 91 |
| Private | 12 | 154 |
| Traditional Healer | 1 | 1 |
| Private and Public | 4 | 19 (9 to Public & 10 to Private) |
| Total | 36 | 265 |

3.6. Direct expenses

Direct costs for Outpatient and Inpatient care are categorized into three sections:

Travel and food, consultation for Outpatient care (Table 4)

Medicine and Diagnostic costs for Outpatient care (Table 5)

Inpatient costs include Hospitalization, Travel and lodging (Table 6)

| Table 4: Amount of OOPE spent for utilizing outpatient care (INR), n=36 | | |
|--|---------------------|------------------|
| Cost category | Median (INR) | IQR (INR) |
| Travel and Food | 60 | 185 |
| Consultation | 0 | 60 |

The direct out-of-pocket expense for utilizing healthcare among 40 individuals are shown in Table 4. The median cost for travel and food is Rs 60, with an Interquartile range (IQR) of 185, indicating a significant variation in spending. The median cost of consultation is 0 and IQR is 60, suggesting that many individuals did not incur consultation fees while others faced moderate costs.

| Table 5: Amount of OOPE spent on Medicine and Diagnostics (INR), n=20 | | |
|--|---------------------|------------------|
| Cost category | Median (INR) | IQR (INR) |
| Medicine | 1000 | 2085 |
| Diagnostic Test | 425 | 1500 |

Among the 36 individuals with depression, only 20 respondents paid out of their pocket for medicines and diagnostic tests. Table 5 highlights the OOPE for medicines and diagnostic tests for 20 individuals with depression. The median cost for medicine is Rs 1000 which indicates that half of the participants spend this amount or less. However, there is a notable spread in spending, as shown by the interquartile range (IQR) of Rs 2085, suggesting that the spending distribution is skewed with some individuals spending considerably more.

For diagnostic tests, the median OOPE is lower at Rs 425, indicating that half of the sample spent this amount or less. The IQR of Rs 1500 highlights variability in spending patterns, indicating that while the median expenditure is lower for diagnostics compared to medicine, there are still significant differences in individual spending habits.

| Table 6: Amount of OOPE spent on utilizing inpatient services (INR), n=4 | | |
|---|---------------------|------------------|
| Cost Category | Median (INR) | IQR (INR) |
| Hospitalization | 2350 | 4650 |
| Travel and Lodging | 275 | 725 |

About 4 (8.9%) participants were hospitalized at least once within the past three months. The findings in Table 6 illustrates the median expenditure and IQR among four respondents for utilizing inpatient services which includes hospitalization, travel and lodging. The median expenditure for hospitalization stands at Rs 2350. However, there is considerable variability in spending, as evidenced by the interquartile range (IQR) of Rs 4650, suggesting that while some individuals may have spent close to the median amount, others have incurred significantly higher costs. In contrast, the median OOPE for travel and lodging associated with inpatient services is notably lower at Rs 275, indicating that half of the sample spent this amount or less for travel and lodging expenses. The IQR of Rs 725 implies some variability in these costs as well, though comparatively less than hospitalization expenses.

3.7. Indirect expenses

Indirect cost includes the days took off from work and income loss incurred as its result.

| Table 7: Time Loss (n=36) | | |
|----------------------------------|---------------------|------------------|
| Time loss (Min) | Median (min) | IQR (min) |
| Travel time | 31 | 39 |
| Waiting time | 30 | 75 |

Table 7 provides the time loss occurred due to travel and waiting time while accessing outpatient services. The median travel and waiting times are 31 and 30 minutes, respectively.

The data reflects the time burden individuals faced in accessing healthcare services, with waiting times particularly demonstrating significant variability, potentially impacting overall patient experience and healthcare access.

| Table 8: Indirect healthcare expenditure (INR) n=8 | | |
|---|---------------------|------------------|
| Indirect expense category (Rs) | Median (INR) | IQR (INR) |
| Income loss | 2383.26 | 4374.54 |

The median value and IQR related to income loss of eight participants who missed work due to their illness are displayed in Table 8. The median income loss is Rs 2383.26, suggesting that half of the participants experienced an income loss below this value. The IQR of 4374.54 INR suggests a substantial degree of variability in income loss among these individuals, with some experiencing significantly higher or lower losses.

3.8. Carer Impact

Out of the 36 respondents who utilized healthcare, 28 respondents had at least one or two family members accompanying them to healthcare centers.

Due to respondent illness, 16 family members with full time jobs had taken off from their employment, spanning a range of 2-30 days to provide care to the respondent. Apart from this, two people with part time jobs also took off from work to support the respondent.

Meanwhile, the median number of days for which the respondent was not able to go for work in the past three months was eleven days, whereas the median number of days where family could not attend work to take care of respondent was five and half

days, and the median monthly expense on the care of the patient was 2323 rupees INR. This highlights the loss of productivity and the indirect burden placed on families associated with time spent providing care.

| Table 9: Breakdown of Direct and Indirect Expense incurred by adults with probable depression in Bhopal | | | | |
|--|----------|-------------------|-----------------|-------------------|
| Direct Outpatient Expense category | N | Mean (INR) | SD (INR) | 95% CI |
| Consultation Fee | 36 | 433 | 1329.8 | [2.3, 863.7] |
| Travel and food | 36 | 173.25 | 330.4 | [66.2, 280.3] |
| Biomedical Investigations | 20 | 1017.5 | 1413.8 | [355.8, 1679.2] |
| Medicine | 20 | 1539 | 2286.5 | [483.7, 2594.3] |
| Direct Inpatient Expense Category | | | | |
| Hospitalization | 4 | 4280 | 2820.61 | [-1110.5, 9670.5] |
| Travel, Lodging and Food | 4 | 620 | 466.15 | [-197.3, 1437.3] |
| Indirect Expense | | | | |
| Income loss | 8 | 3833.5 | 4275.06 | [281.8, 7385.3] |
| Loss of Time | | | | |
| | n | Mean (min) | SD (min) | 95% CI |
| Travel time | 36 | 54.9 | 53 | [37.5,72.2] |
| Waiting time | 36 | 60.5 | 1:01 | [40.1,81.0] |

The data in Table 9 presents various cost categories related to medical expenses, divided into direct outpatient costs, inpatient costs, indirect expenses, and time losses. Outpatient costs include biomedical investigations, medicine, consultation

fees, and travel/food, with means ranging from 173.25 to 1539. Inpatient costs, including hospitalization and travel/lodging/food, show high variability with wide confidence intervals. Indirect expenses and time losses highlight income loss and the time spent on travel and waiting, with significant means and relatively narrow confidence intervals.

3.9. Somatization

| Table 10: Frequency and Severity of Somatic symptoms Based on PHQ-15 Scale | | | | | | |
|---|----------------------------|-------|--------------------------|-------|-----------------------|-------|
| PHQ-15 Items | Not bothered at all | | Bothered a little | | Bothered a lot | |
| | n | % | n | % | n | % |
| Stomach Ache | 21 | 46.67 | 16 | 35.56 | 8 | 17.78 |
| Back pain | 7 | 15.56 | 20 | 44.44 | 18 | 40 |
| Pain in arms, legs or joints | 10 | 22.22 | 17 | 37.78 | 18 | 40 |
| Menstrual cramps | 20 | 60.61 | 6 | 18.18 | 7 | 21.21 |
| Headaches | 15 | 33.33 | 19 | 42.22 | 11 | 24.44 |
| Chest pain | 25 | 55.56 | 16 | 35.56 | 4 | 8.89 |
| Dizziness | 21 | 46.67 | 20 | 44.44 | 4 | 8.89 |
| Fainting spells | 40 | 88.89 | 5 | 11.11 | 0 | 0 |
| Feeling your heart pound or race | 23 | 51.11 | 18 | 40 | 4 | 8.89 |

| | | | | | | |
|------------------------------------|----|-------|----|-------|---|-------|
| Shortness of breath | 32 | 71.11 | 11 | 24.44 | 2 | 4.44 |
| Pain during sexual intercourse | 43 | 95.56 | 1 | 2.22 | 1 | 2.22 |
| Constipation/ loose bowels | 25 | 55.56 | 14 | 31.11 | 6 | 13.33 |
| Nausea, gas or indigestion | 23 | 51.11 | 18 | 40 | 4 | 8.89 |
| Feeling tired or having low energy | 37 | 82.22 | 8 | 17.78 | 0 | 0 |
| Trouble sleeping | 5 | 11.11 | 33 | 73.33 | 7 | 15.56 |

PHQ-15 showed varied degrees of bother among individuals of depression(n=45). Trouble sleeping was the most bothered (88.89%) followed by back ache (84.44) % in depressive population. Pain during sexual intercourse (4.44%), fainting spells (11.11%) and feeling tired or having low energy (17.78%) were less commonly reported as bothersome (Table 9).

4. DISCUSSION

This study describes the sociodemographic determinants of general healthcare utilization and attempts to estimate the direct and indirect costs associated with depression among adults in primary healthcare settings of urban India. The proportion of individuals facing out-of-pocket expenses varied widely among different socioeconomic groups, and a clear association could not be definitively established from this study.

Use of Public Sector

This study illustrated that a 15% of participants tend to utilize government outpatient services than private outpatient services, leading to higher dependence on public than private providers. However, the 75th National Sample Survey conducted across India (Ranjan & Crasta, 2022), showed a major preference for private sector. The study by (Roberts et al., 2020b) in rural Madhya Pradesh found that private healthcare providers were consulted by 32.0% of individuals, while public healthcare providers were consulted by 19.6%. Similarly, (Laveena et al., 2021), A study on healthcare utilization patterns and expenditure in 569 persons out of 160 households of Karnataka, found that most people utilized private facilities (53.4%) over government facilities (38.3%). The preference for certain providers can be influenced by factors such as cost, accessibility, cultural beliefs, and previous healthcare experiences.

Socio-demographic determinants and Healthcare Utilization

Since females are the maximum respondents, associations on genders in utilization of any health facilities cannot be made as such. This study has similar findings regarding the strong association between poverty and depression, as reported in several population-based studies in developing countries (Patel & Kleinman, 2003). Similarly, those with lower incomes and lower levels of education have a significantly lower likelihood of utilizing health services, particularly preventative services (Albanese et al., 2011). This results in lower health standards and a higher chance of uncontrollably high out-of-pocket costs.

Direct Expenses

We found that outpatient service use accounted for the majority of the excess spending by depressed individuals, which is in line with other studies from India.(Brinda et al., 2012;Soni et al., 2016). In our study, the highest expenditure among all was for medicine followed by diagnosis and consultation. The mean costs for healthcare services were as follows: Medicine Rs. 1620, Diagnostic Test Rs. 1017.5, Travel and Food Rs. 173.25, and Consultation Rs. 433. In contrast, the study conducted by (Laveena et al., 2021) in Kumta Taluk, Karnataka reported lower mean costs: Consultation Rs. 226, Diagnosis Rs. 207, Medicine Rs. 317, and Transport Rs. 150. These differences highlight the variability in healthcare costs across different regions and studies.

Indirect Expenses

The findings from this study shows time investments and productivity losses associated with accessing healthcare services in urban Bhopal. The average travel time of 54 minutes and waiting time of 60 minutes indicate substantial periods spent merely reaching and waiting for healthcare services. This suggests a need for improving the efficiency and accessibility of healthcare facilities to minimize these delays, which can be particularly burdensome for working individuals and those with limited time. The associated financial cost, particularly with a mean productivity loss valued at ₹3833.5 highlights the income loss on individuals. These findings stress the importance of implementing strategies to reduce hospitalization rates to mitigate time and productivity losses.

Somatization

Somatization is a common presentation of depression in primary care. However, this type of somatic presentation is thought to be a major contributing factor to the low rates of depression recognition within this area of the health care system (Kapfhammer, 2006). Numerous empirical studies have impressively established a close relationship between states of depressive mood and symptoms of pain, especially chronic pain.(Bair et al., 2003;Gureje et al., 2001).

(Gerber et al., 1992) examined the differential relationship between particular somatic complaints and underlying depressive symptoms in a cross-sectional study involving 1042 primary care patients. A high positive predictive value (PPV) for depression was observed in certain somatic symptoms: Back pain (PPV: 39%), sleep disturbances (PPV: 61%), fatigue (PPV: 60%), and nonspecific musculoskeletal complaints (PPV: 43%) which is consistent with our findings in this study.

Need for Equitable health services

The use of health services, which are paid for out of pocket, is contingent upon an individual's needs and resources. There are intricate relationships between the need for out-of-pocket medical expenses and economic inequality (Sirag & Nor, 2021). The necessity for out-of-pocket health expenditure is a critical factor connecting economic inequality with disparities in healthcare delivery, which is relevant to our study examining healthcare costs and utilization for individuals with depression in urban India. Our findings highlight the significant financial burden placed on individuals, emphasizing the need to address economic disparities to ensure equitable healthcare access. Reducing out-of-pocket expenses is essential to provide fair healthcare delivery, especially to vulnerable populations, aligning with the broader goal of minimizing healthcare inequities.

4.1. Limitations

The cross-sectional design of the study makes it challenging to establish causality or the true temporal relationship between depression and healthcare utilization. The PHQ-9 measures symptoms of depression in the previous two weeks, while the CSRI records healthcare utilization and expenditure for the previous three months. The reliance on self-reported data introduces the possibility of recall bias or underreporting. Moreover, it does not account for the specific costs associated with seeking depression-related services, focusing instead on general healthcare use and was constrained by limited funding and time. Consequently, our results are indicative of the financial burden that out-of-pocket payments place on individuals considering the small sample size and methodological difficulties. Because of this, *our results are more*

exploratory than confirmatory, and further research with sufficient power will be necessary to validate these correlations, determine the cause-and-effect relationship, and identify the underlying mechanisms.

Despite, these limitations, the study represents one of the first attempts to evaluate OOPE in individuals with depression in urban settings and provides an overview into people’s preferences on healthcare utilization and OOPE.

4.2. Recommendations

| S.no. | OBJECTIVE | RECOMMENDATION |
|--------------|---|---|
| 1. | To understand the demographic and socioeconomic profiles of healthcare utilization among adults associated with symptoms of Depression in Urban Bhopal. | <p>i)NGO: Conduct targeted outreach and education programs in communities with low socioeconomic status to raise awareness about depression and the availability of mental health services. This can be done to disseminate information and reduce stigma, ensuring that individuals from all sociodemographic backgrounds are informed and encouraged to utilize healthcare services for depression.</p> <p>ii) State Government: Facilitate easier access to healthcare services for these groups by setting up community-based mental health clinics and offering mobile health services in underserved areas.</p> |

| | | |
|-----------|--|--|
| <p>2.</p> | <p>To determine the direct and indirect costs associated with the symptoms of Depression in adults in primary healthcare settings of Urban Bhopal.</p> | <p>i)The <u>state government</u>, in collaboration with the central government and local non-governmental organizations (NGOs), should implement financial assistance programs. This could include setting up a dedicated fund for mental health support, providing subsidies for healthcare costs, and offering compensation for indirect expenses such as transportation and lost wages.</p> <p>ii) Develop and integrate telemedicine services for mental health care in primary healthcare settings. It can reduce indirect costs by minimizing travel time and associated expenses, as well as offering more flexible scheduling options that can help individuals avoid loss of income due to missed work. This approach can make mental health care more accessible and cost-effective for individuals suffering from depression.</p> |
|-----------|--|--|

5. CONCLUSION

- 14.9% of individuals with probable depression do not receive treatment, indicating a treatment gap in awareness and access to healthcare.
- Illiterate and unemployed persons utilize government outpatient services more than private outpatient services, leading to higher dependence on public than private providers.
- All of the participants who utilized healthcare incurred some OOP expenditure.
- Highest OOPE among direct expenses was for medicine followed by diagnosis. The median travel time of 31 minutes and waiting time of 30 minutes indicate substantial periods spent merely reaching and waiting for healthcare services.
- The prevalence and economic burden of depression are significant in Bhopal, showcasing the substantial financial impact on individuals.
- Increasing funding for mental health services, implementing community outreach programs, and enhancing the availability of affordable healthcare options, and greater efforts to reduce the stigma of depression may be effective strategies to address this challenge.

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APPENDIX

Progress Report 1

State the objectives of your project:

1. To evaluate the prevalence of Depression among adults in primary health care settings.
2. To Assess the help-seeking attitude of individuals with moderate to severe depression.
3. To Identify barriers and facilitators for distressed individuals who refrain from seeking help.

Elaborate on the progress made in the objectives:

Discussed with internal and external supervisors to initiate a study and develop its objectives. Currently awaiting a response from the ethics committee regarding data privacy. I have started drafting the protocol. The initial phase involves validating tools for data collection tailored to Indian settings.

Skills learned:

- How to brief patients about the ongoing project here.
- How to ethically conduct a study such as taking informed consent, recording the process and documenting it.
- How to effectively do a literature review and search in PubMed.
- Learning to make a protocol for the research topic.
- Familiarizing with Scales and Tests for Data Collection: 3 scales with respect to Depression, Suicidal risk severity and General help seeking attitude.
- Familiarizing with the REDCap app used for data collection for the ongoing project going on here.

Challenges that you have faced while doing your work:

- To decide a topic that is feasible and yet relevant to work on.
- Difficulty in crafting a structure and clarity of the objectives to be achieved.

- Ensuring that the objectives meet the interests and perspectives of various coordinators while drafting it.
- Framing measurable outcomes so it can be properly assessed quantitatively or qualitatively.

Progress Report 2

Elaborate on the progress made in the objectives.

I have finalized the data collection tools, determined the sample size, decided sampling methods, and prepared a comprehensive protocol for submission to the ethics committee. The protocol has been formally submitted, and I have presented it before the Institutional Review Board (IRB) members. Currently, I am awaiting their response to proceed with the proposed research project.

Skills learned

- **Sample Size Calculation:** Acquired knowledge in determining appropriate sample sizes for cross-sectional studies.
- **Data Collection Tool Validation:** Learned the process of validating data collection tools specifically tailored to Indian settings.
- **Protocol Preparation:** Developed skills in crafting detailed research protocols.
- **Ethical Knowledge:** Gained insights into the ethical considerations and processes involved, including Institutional Review Board (IRB) submissions.
- **Learnt to make Gantt Charts.**
- **Presentation and Communication:** Honed skills in effectively presenting and communicating research plans and protocols.
- **Grant Writing:** Acquired proficiency in writing grant proposals.

Challenges that you have faced while doing your work

- The scarcity of studies and difficulty in finding relevant prevalence data for Depression in Madhya Pradesh raised concerns about the generalizability of prevalence rates which created a challenge to confidently apply the data in calculation of sample size.

- Difficulty in meeting with my External Supervisor due to their busy schedule posed challenges in obtaining timely guidance, feedback, and approvals, potentially causing delays in project progression.
- Faced administrative hurdles in the protocol submission process, such as receiving email id and registering to IEC portal as they took a long time for approving these which created obstacles in adhering to submission deadlines.

Progress Report 3

State the objectives of your project:

- To understand the demographic and socioeconomic profiles of healthcare utilization among adults associated with symptoms of Depression in Urban Bhopal.

Healthcare utilization refers to the frequency of visits made to any healthcare provider, including public, private, or traditional healers, within the past three months specifically for symptoms related to depression.

- To determine the direct and indirect costs associated with the symptoms of Depression in adults in primary healthcare settings of Urban Bhopal.

Expenditure is assessed in Indian Rupees by inquiring about costs incurred over the past three months, categorized into outpatient consultation fees, expenses for medicines (separately for somatic symptoms and other symptoms of Depression), travel expenses to healthcare facilities, and diagnostic test costs (separately for Depression and other symptoms). Total out-of-pocket expenditure is calculated as the aggregate of these expenses and rounded to the nearest whole number.

Elaborate on the progress made in the objectives:

I have obtained approval from Sangath IRB for this topic and I am currently half way through my data collection. My sample size is 300 and it is to be done from 8 primary

health centers in Bhopal. I have completed gathering data from around 4 Primary health care centers.

Skills learned:

Learning to effectively manage time and resources to meet sample size. Building connections with Anganwadi and ASHA workers to facilitate smooth cooperation from the community. Being able to work effectively in diverse settings, whether it be different communities or cultures. Developing rapport and trust with participants to encourage cooperation and openness during data collection. Gained proficiency in crafting research protocols and navigating IRB reviews, ensuring ethical conduct and regulatory compliance for this project.

Challenges that you have faced while doing your work:

During data collection: There is low response rate, Respondents are not cooperative. Too many people crowd together when asking a single person which loses privacy which in turn leads to the person not opening up properly regarding their issues. Some respondents exhibit a tendency to respond negatively or dismissively without fully engaging with the questions poses a challenge

ANNEXURE

Annexure 1: Healthcare Use and Out-of-Pocket Costs in Depression Questionnaire

EVENT 1: Screening

1.1. Socio-demographic Information

1. Record ID:
2. Select PHC Name:
3. What is your full name? / आपका पूरा नाम क्या है?
4. Address:
5. Mobile Number:
6. How old are you? / आपकी आयु कितनी है?
7. What is your current gender identity? आपकी वर्तमान लिंग पहचान क्या है?:
 - a. Male / पुरुष
 - b. Female / महिला
 - c. Does not identify as male or female /पुरुष या महिला के रूप में अपनी पहचान नहीं करना
8. What is your current marital status? /आपकी वर्तमान वैवाहिक स्थिति क्या है?:
 - a. Single/अविवाहित
 - b. Married or living together/विवाहित या साथ रहने वाले
 - c. Engaged/सगाई हो गयी है
 - d. In a relationship/रिश्ते में
 - e. Divorced, Separated/परित्यक्ता
 - f. Widowed/विधवा/ विधुर
 - g. Prefer not to say/बताना नहीं चाहते
9. How many live children do you have? / जीवित अवस्था में आपके कितने बच्चे हैं?
10. What is the maximum level of education you have completed? / आपने अधिकतम किस स्तर तक शिक्षा पूरी की है ?
 - a. Illiterate/अशिक्षित

- b. Primary School/प्राइमरी स्कूल
- c. Middle School/मिडिल स्कूल
- d. High School/हाई स्कूल
- e. Intermediate or Diploma/माध्यमिक और डिप्लोमा
- f. Graduate/स्नातक
- g. Professional/स्नातकोत्तर, व्यवसायिक शिक्षा

11. What is your occupation?

- a. Unemployed/बेरोजगार
- b. Elementary occupation/प्रारंभिक (Elementary Occupation) व्यवसाय
- c. Plant and machine operators and assemblers/ प्लांट और मशीन ऑपरेटर और असेंबलर
- d. Craft and related trade workers/शिल्प और संबंधित व्यापार श्रमिक
- e. Skilled agricultural and fishery workers/कुशल कृषि और मत्स्य पालन श्रमिक
- f. Skilled workers and shop and market sales workers/कुशल श्रमिक और दुकानों और बाजार बिक्री कर्मचारी
- g. Clerks/लिपिक
- h. Technician or Associate Professionals/ तकनीशियन और सहयोगी पेशेवर कर्मचारी
- i. Professional/पेशेवर
- j. Legislators, senior officers, managers/वरिष्ठ अधिकारी, प्रबंधक, पेशेवर

12. Monthly Family Income पारिवारिक मासिक आय

13. Annual Family Income पारिवारिक वार्षिक आय

14. What is your religion? आपका धर्म क्या है?

- a. Hinduism/हिंदू धर्म
- b. Islam/इस्लाम
- c. Christian/ईसाई
- d. Sikh/सिख
- e. Buddhist, Neo Buddhist/बौद्ध/नव बौद्ध
- f. Jain/जैन

- g. No religion/कोई धर्म नहीं
- h. Prefer not to say/बताना नहीं चाहते
- i. Other (specify)/अन्य (विवरण)

15. What was your caste at birth? जन्म के समय आपकी वर्ग क्या थी?

- a. OBC-Other Backwards Class /पिछड़ा वर्ग
- b. SC- Scheduled caste/अनुसूचित जाति
- c. ST- Scheduled tribe/अनुसूचित जनजाति
- d. General /सामान्य
- e. Prefer not to say/बताना नहीं चाहते

1.2. Patient Health Questionnaire (PHQ-9)

I am going to ask if you have been bothered by different problems at any time in the LAST WEEK. If you have any of these problems, I want to know if you were bothered for several days, more than half the days, or nearly every day. Over the LAST WEEK, how often have you been bothered by any of the following problems?

परिचय: अब मैं आपसे उन विभिन्न समस्याओं के बारे में पूछने जा रहा/रही हूँ जो कि पिछले सप्ताह में कभी आपको हुई हों और जिसके कारण आपको परेशानी का सामना करना पड़ा हो। यदि आपको कोई समस्या हुई थी तो मैं जानना चाहूँगा/ चाहूँगी कि वह कितने समय तक रही। अपना उत्तर कुछ दिनों तक, आधे से अधिक दिनों तक या लगभग प्रतिदिन दें। पिछले सप्ताह के दौरान आपको कितनी बार निम्नलिखित परेशानियाँ या समस्याएं हुईं

1. Little interest or pleasure in doing things /काम करने में कम दिलचस्पी या उत्साह में कमी
 - a. Not at all/बिल्कुल नहीं
 - b. Several days/कुछ दिन तक
 - c. More than half the days/आधे से अधिक दिनों तक
 - d. Nearly every day/लगभग प्रतिदिन
 - e. Prefer not to say/ बताना नहीं चाहते
2. Feeling down, depressed, or hopeless /खिन्न या दुखी रहना निराशा महसूस करना
 - a. Not at all/बिल्कुल नहीं
 - b. Several days/कुछ दिन तक

- c. More than half the days/आधे से अधिक दिनों तक
 - d. Nearly every day/लगभग प्रतिदिन
 - e. Prefer not to say/ बताना नहीं चाहते
3. Trouble falling or staying asleep, or sleeping too much /नींद आने में तकलीफ या जरूरत से ज्यादा नींद आना
- a. Not at all/बिलकुल नहीं
 - b. Several days/कुछ दिन तक
 - c. More than half the days/आधे से अधिक दिनों तक
 - d. Nearly every day/लगभग प्रतिदिन
 - e. Prefer not to say/ बताना नहीं चाहते
4. Feeling tired or having little energy /थकान महसूस करना या ताकत में कमी महसूस करना
- a. Not at all/बिलकुल नहीं
 - b. Several days/कुछ दिन तक
 - c. More than half the days/आधे से अधिक दिनों तक
 - d. Nearly every day/लगभग प्रतिदिन
 - e. Prefer not to say/ बताना नहीं चाहते
5. Poor appetite or overeating /भूख कम लगना या जरूरत से ज्यादा खाना
- a. Not at all/बिलकुल नहीं
 - b. Several days/कुछ दिन तक
 - c. More than half the days/आधे से अधिक दिनों तक
 - d. Nearly every day/लगभग प्रतिदिन
 - e. Prefer not to say/ बताना नहीं चाहते
6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down /आप खुद के बारे में बुरा महसूस करते हैं या आपको लगता है कि आपके कारण आपके परिवार को नीचा देखना पड़ा
- a. Not at all/बिलकुल नहीं
 - b. Several days/कुछ दिन तक
 - c. More than half the days/आधे से अधिक दिनों तक
 - d. Nearly every day/लगभग प्रतिदिन

- e. Prefer not to say/ बताना नहीं चाहते
7. Trouble concentrating on things, such as reading the newspaper or watching television/ किसी भी चीज पर ध्यान लगाने में परेशानी जैसे कि समाचार पत्र पढ़ते वक्त या टीवी देखते समय
- Not at all/बिलकुल नहीं
 - Several days/कुछ दिन तक
 - More than half the days/आधे से अधिक दिनों तक
 - Nearly every day/लगभग प्रतिदिन
 - Prefer not to say/ बताना नहीं चाहते
8. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual/ इतना धीरे चलना या बोलना कि लोगो के ध्यान में आ जाये या इसके विपरीत जरूरत से ज्यादा घूमना फिरना या बैचेन रहना
- Not at all/बिलकुल नहीं
 - Several days/कुछ दिन तक
 - More than half the days/आधे से अधिक दिनों तक
 - Nearly every day/लगभग प्रतिदिन
 - Prefer not to say/ बताना नहीं चाहते
9. Thoughts that you would be better off dead or of hurting yourself in some way/विचार आना कि मर जाना ही ठीक है या स्वयं को नुकसान पहुँचाने का विचार आना
- Not at all/बिलकुल नहीं
 - Several days/कुछ दिन तक
 - More than half the days/आधे से अधिक दिनों तक
 - Nearly every day/लगभग प्रतिदिन
 - Prefer not to say/ बताना नहीं चाहते

EVENT 2: Study Questionnaire

2.1. PHQ 15 Somatic Symptom Severity Scale

Section Header: INTRO: Below is a list of symptoms that people sometimes have. Please read each one carefully and enter the number that best describes how much you were bothered by that problem during the LAST WEEK. During the LAST WEEK, how much have you been bothered by any of the following problems?

नीचे उन लक्षणों की सूची दी गई है जो कभी-कभी लोगों में होते हैं। कृपया हर एक सूची को ध्यान से पढ़ें और उस संख्या को दर्ज करें जो सबसे अच्छा वर्णन करती है कि पिछले सप्ताह के दौरान आप उस समस्या से कितने परेशान थे। पिछले सप्ताह के दौरान, आप निम्नलिखित में से किसी भी समस्या से कितने परेशान रहे हैं?

1. Stomach pain/ पेट दर्द
 - a. Not bothered at all/ कुछ परेशानी नहीं
 - b. Bothered a little/ थोड़ा परेशानी
 - c. Bothered a lot/ बहुत परेशानी
 - d. Prefer not to say/ बताना नहीं चाहते

2. Back pain/ पीठ दर्द
 - a. Not bothered at all/ कुछ परेशानी नहीं
 - b. Bothered a little/ थोड़ा परेशानी
 - c. Bothered a lot/ बहुत परेशानी
 - d. Prefer not to say/ बताना नहीं चाहते

3. Pain in your arms, legs or joints (knees, hips, etc.)/ . आपकी बाहों, पैरों या जोड़ों (झों घुटनों, नों कूल्हों आदि) में दर्द।
 - a. Not bothered at all/ कुछ परेशानी नहीं
 - b. Bothered a little/ थोड़ा परेशानी
 - c. Bothered a lot/ बहुत परेशानी
 - d. Prefer not to say/ बताना नहीं चाहते

4. Menstrual cramps or other problems with your periods/ माहवारी में ऐंठनें या उसके साथ अन्य समस्याएं (केवल महिलाएं)
 - a. Not bothered at all/ कुछ परेशानी नहीं
 - b. Bothered a little/ थोड़ा परेशानी
 - c. Bothered a lot/ बहुत परेशानी
 - d. Prefer not to say/ बताना नहीं चाहते

5. Headaches/ सिर दर्द
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
6. Chest pain/ छाती में दर्द
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
7. Dizziness/ चक्कर आना
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
8. Fainting spells/ बेहोश होना
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
9. Feeling your heart pound or race/ अपने दिल की धड़कन या दौड़ महसूस करना
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
10. Shortness of breath/ सांस लेने में कठिनाई
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते

11. Pain or problems during sexual intercourse/ सम्भोग, शाररिक सम्बन्ध के दौरान दर्द या समस्या
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
12. Constipation, loose bowels or diarrhea/ कब्ज, ढीली आंत या दस्त होना
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
13. Nausea, gas or indigestion/ मतली, गैस, या अपच
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
14. Feeling tired or having low energy/ थकान महसूस करना या कम ऊर्जा होना
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते
15. Trouble sleeping/ नींद न आना
- Not bothered at all/ कुछ परेशानी नहीं
 - Bothered a little/ थोडा परेशानी
 - Bothered a lot/ बहुत परेशानी
 - Prefer not to say/ बताना नहीं चाहते

2.2. Client Service Receipt Inventory Form (CSRI)

Section Header: I am going to ask you some questions about time and payments that are related to received health care in the last 3 months.

परिचय: मैं आपसे आपके समय और खर्च के बारे में कुछ प्रश्न पूछने जा रहा/रही हूँ जो पिछले ३ महीनों में प्राप्त स्वास्थ्य देखभाल से संबंधित हैं।

1. Have you had outpatient visits with these healthcare providers in the last 3 months? Check all that apply क्या आपने पिछले ३ महीनों में इन तीन स्वास्थ्य सेवा प्रदाताओं के साथ आउट पेशेंट का दौरा किया है? लागू होने वाले सभी पर चिन्हित करें। Have you had outpatient visits with these healthcare providers in the last 3 months?
 - a. No/नहीं
 - b. Public doctors (in PHC or public hospitals)/सार्वजनिक चिकित्सक (पीएचसी या सार्वजनिक अस्पतालों में)
 - c. Private doctor/निजी चिकित्सक
 - d. Traditional healer/पारंपरिक चिकित्सक
 - e. Prefer not to say/बताना नहीं चाहते
2. How many times did you visit the public doctors? आप कितनी बार सार्वजनिक चिकित्सकों के पास गए?
3. How much consultation fees did you pay for out-patient visits to the public doctors in the past three months? (exclude the costs of any tests or medicines) पिछले तीन महीनों में आपने सार्वजनिक डॉक्टरों के पास बाह्य रोगी दौरे के लिए कितनी परामर्श फीस का भुगतान किया? (किसी भी परीक्षण या दवा की लागत को छोड़कर)
4. How many adults accompanied you to the visits to the public doctors? सार्वजनिक चिकित्सकों के पास जाने के लिए आपके साथ कितने वयस्क थे?
5. On average, in each visit to the public doctor, how much did you spend on travel (round trip) and food? औसतन, सार्वजनिक चिकित्सक को दिखाने के लिए आपकी प्रत्येक यात्रा में, आपने यात्रा (आने - जाने) और भोजन पर कितना पैसा खर्च किया
6. On average, in each visit to the public doctor, what is the travel time (round trip)? औसतन, सार्वजनिक चिकित्सक को दिखाने के लिए आपकी प्रत्येक यात्रा में, यात्रा (आने- जाने) का समय क्या है?
7. On average, in each visit, what is the amount of time spent with the public doctor (including waiting time)? औसतन, प्रत्येक यात्रा में, सार्वजनिक चिकित्सकों के साथ बिताए गए समय की मात्रा (प्रतीक्षा समय सहित) क्या है?
8. How many times did you visit the private doctors? आप कितनी बार निजी चिकित्सकों के पास गए?
9. How much consultation fees did you pay for out-patient visits to the private doctors in the past three months? (exclude the costs of any tests or medicines)

- पिछले तीन महीनों में आपने निजी डॉक्टरों के पास बाह्य रोगी दौरे के लिए कितनी परामर्श फीस का भुगतान किया? (किसी भी परीक्षण या दवा की लागत को छोड़कर)
10. How many adults accompanied you to the visits to the private doctors? निजी चिकित्सकों के पास जाने के लिए आपके साथ कितने वयस्क थे?
 11. On average, in each visit to the private doctor, how much did you spend on travel (round trip) and food? औसतन, निजी चिकित्सक को दिखाने के लिए आपकी प्रत्येक यात्रा में, आपने यात्रा (आने-जाने) और भोजन पर कितना पैसा खर्च किया?
 12. On average, in each visit to the private doctor, what is the travel time (round trip)? औसतन, निजी चिकित्सक को दिखाने के लिए आपकी प्रत्येक यात्रा में, यात्रा का समय (आने - जाने) क्या है?
 13. On average, in each visit, what is the amount of time spent with the private doctor (including waiting time)? औसतन, प्रत्येक यात्रा में, निजी चिकित्सकों के साथ बिताए गए समय की मात्रा (प्रतीक्षा समय सहित) क्या है?
 14. How many times did you visit the traditional healers? आपने कितनी बार पारंपरिक चिकित्सकों के पास गए?
 15. How much consultation fees did you pay for out-patient visits to the traditional healers in the past three months? (exclude the costs of any tests or medicines) पिछले तीन महीनों में आपने पारंपरिक चिकित्सकों के पास बाह्य रोगी दौरे के लिए कितनी परामर्श फीस का भुगतान किया? (किसी भी परीक्षण या दवा की लागत को छोड़कर)
 16. How many adults accompanied you to the visits to the traditional healers? पारंपरिक उपचारकर्ता के पास जाने के लिए आपके साथ कितने वयस्क थे?
 17. On average, in each visit to the traditional healer, how much did you spend on travel (round trip) and food? औसतन, पारंपरिक चिकित्सक को दिखाने के लिए आपकी प्रत्येक यात्रा में, आपने यात्रा (आने - जाने) और भोजन पर कितना पैसा खर्च किया?
 18. On average, in each visit to the traditional healer, what is the travel time (round trip)? औसतन, पारंपरिक चिकित्सक को दिखाने के लिए आपकी प्रत्येक यात्रा में, यात्रा (आने -जाने) का समय क्या है?
 19. On average, in each visit, what is the amount of time spent with the traditional healer (including waiting time)? औसतन, प्रत्येक यात्रा में, पारंपरिक चिकित्सकों के साथ बिताए गए समय की मात्रा (प्रतीक्षा समय सहित) क्या है?
 20. Have you been admitted to a hospital (at least one night in hospital) in the last 3 months? क्या आप पिछले ३ महीनों में अस्पताल में भर्ती हुए हैं (कम से कम एक रात अस्पताल में)?

- a. Yes
- b. No
- c. Prefer not to say/बताना नहीं चाहते

21. How many nights did you spend in the hospital in the last 3 months? पिछले ३ महीनों में आपने अस्पताल में कितनी रातें बिताईं?

22. How much did you pay for hospitalization in the last 3 months? पिछले ३ महीनों में अस्पताल में भर्ती होने के लिए आपने कितना पैसा खर्च किया?

23. How many adults accompanied you in these hospitalizations? इन अस्पतालों में भर्ती होने में आपके साथ कितने वयस्क थे?

24. How much time did you spend on travel? आपने यात्रा पर कितना समय बिताया?

25. How much did you have to pay for food, lodging, and travel for accompanying persons? आपको साथ आने वाले वयस्क/व्यक्तियों के भोजन, आवास और यात्रा के लिए कितना पैसा खर्च करना पड़ा?

26. In the last 3 months, have you had any medical examinations or tests (e.g., X-rays, blood tests, ECGs, ultrasounds, scans)? पिछले ३ महीनों में, क्या आपकी कोई चिकित्सीय जांच हुई है (उदाहरण के लिए, एक्स-रे, रक्त परीक्षण, ईसीजी, अल्ट्रा साउंड, स्कैन)?

- a. Yes
- b. No
- c. Prefer not to say/बताना नहीं चाहते

27. What's the total amount of money that you paid for these tests or examinations? आपने इन चिकित्सीय जांच के लिए कुल मिलाकर कितना पैसा खर्च किया?

28. In the last 3 months, have you taken tablets, medicines, or injections? पिछले ३ महीनों में, क्या आपने गोलियां, दवाएं या इंजेक्शन लिए हैं?

- a. Yes
- b. No
- c. Prefer not to say/बताना नहीं चाहते

29. What's the total amount of money that you paid for these medicines? इन दवाओं के लिए आपने कुल कितने पैसे खर्च किये हैं?

30. In the last 3 months, have you, your family, or your friends have to stop or reduce usual work/activities due to your health? Check all that apply पिछले ३ महीनों में, क्या आपको, आपके परिवार, या आपके दोस्तों को आपके स्वास्थ्य के कारण सामान्य काम/ गतिविधियों को बंद या कम करना पड़ा है? लागू होने वाले सभी को चिन्हित करें

- a. No/नहीं
 - b. Yes, myself/हाँ, अपने आप को
 - c. Yes, family/हाँ, मेरा परिवार
 - d. Yes, friends/हाँ, मेरे दोस्त
 - e. Prefer not to say/बताना नहीं चाहते
31. How many days did you have to stop or reduce your usual work/activities due to your ill health? अपने बीमार स्वास्थ्य के कारण आपको अपने सामान्य काम/गतिविधियों को कितने दिनों तक रोकना या कम करना पड़ा?
32. What is your main business? आपका मुख्य व्यवसाय क्या है?
- a. Full-time/पूर्णकालीन
 - b. Part-time/अंशकालिक कर्मचारी
 - c. Unemployed, looking for a job/बेरोजगार, नौकरी की तलाश में
 - d. Not looking for a job/नौकरी की तलाश नहीं कर रहे
 - e. Retired/सेवानिवृत्त
 - f. Prefer not to say/बताना नहीं चाहते
 - g. Other (specify)/अन्य (निर्दिष्ट करें)
33. How much income did you lose as a result of this? इसके परिणामस्वरूप आपको कितनी आय का नुकसान हुआ?
34. How many days did your family have to stop or reduce their usual work/activities due to your ill health? आपके परिवार को आपके बीमार स्वास्थ्य के कारण अपने सामान्य काम/ गतिविधियों को कितने दिनों तक रोकना या कम करना पड़ा?
35. What is the main business of the affected family member? प्रभावित परिवार के सदस्य का मुख्य व्यवसाय क्या है?
- a. Full-time/पूर्णकालीनपूर्णकालीन
 - b. Part-time/अंशकालिक कर्मचारी
 - c. Unemployed, looking for a job/बेरोजगार, नौकरी की तलाश में
 - d. Not looking for a job/नौकरी की तलाश नहीं कर रहे
 - e. Retired/सेवानिवृत्त
 - f. Prefer not to say/बताना नहीं चाहते
 - g. Other (specify)/अन्य (निर्दिष्ट करें)

36. How much income did your family lose as a result of this? इसके परिणामस्वरूप आपके परिवार को कितनी आय का नुकसान हुआ?
37. How many days did your friends have to stop or reduce their usual work/activities due to your ill health? आपके दोस्तों को आपके बीमार स्वास्थ्य के कारण अपने सामान्य काम/ गतिविधियों को कितने दिनों तक रोकना या कम करना पड़ा?
38. What is the main business of the affected friend? प्रभावित मित्र का मुख्य व्यवसाय क्या है?
- Full-time/पूर्णकालीनपूर्णकालीन
 - Part-time/अंशकालिक कर्मचारी
 - Unemployed, looking for a job/बेरोजगार, नौकरी की तलाश में
 - Not looking for a job/नौकरी की तलाश नहीं कर रहे
 - Retired/सेवानिवृत्त 98 Prefer not to say/बताना नहीं चाहते
 - Other (specify)/अन्य (निर्दिष्ट करें)
39. How much income did your friends lose as a result of this? इसके परिणामस्वरूप आपके दोस्तों को कितनी आय का नुकसान हुआ?

Annexure 2: Participant Information Sheet

INFORMATION SHEET FOR STUDY PARTICIPANTS

You will be given a copy of this information sheet

TITLE OF STUDY: Health care utilization and Out -Of-Pocket (OOP) expenditure associated with Depression in Adults in PHC settings of Urban Bhopal.

NAME OF CO- INVESTIGATOR: Dr. Anuja Lahiri (Sangath, Bhopal); Dr. Prakash B.N. (TDU, Bangalore)

PRINCIPAL INVESTIGATOR: Dr. Sruthi G (Sangath, Bhopal)

I would like to invite you to take part in a research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Ask questions if anything you read is not clear or if you would like more information. Take time to decide whether or not to take part.

ABOUT THIS STUDY

The purpose of this study is to conduct a survey where we want to screen adults for a probable diagnosis of Depression in the eight primary health care settings of urban Bhopal and we want to estimate the direct and indirect cost of illness associated with individuals who have a probable diagnosis of moderate to severe depression.

This study is done as a part of MSc Life Sciences dissertation project.

We are surveying 300 adults in Bhopal, aged 18 years and above. The purpose of this survey is to gather information from individuals living near primary health centers. We will be selecting 1 person from households of the 8 primary health centers. We will be asking questions regarding their general information, socioeconomic status, mood, sleep, interests, associated somatic symptoms, direct and indirect costs of these symptoms.

WHAT WILL HAPPEN IF I TAKE PART?

Once you have decided to take part in this research study, you will be provided an information sheet and a consent form. Your signature on the consent form will indicate your willingness to take part in this study. If you encounter any difficulty in understanding the information, the researcher will make every effort to help you understand that. Once, you have given your signature, you will be administered the questionnaire which would take about 10 minutes to complete.

DO YOU HAVE TO TAKE PART?

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. Once you sign the consent form, you will be a part of the study. You are free to withdraw at any point of time without giving a reason and if you withdraw before completing the survey then your data will be destroyed.

WHAT ARE THE POSSIBLE RISKS OR DISADVANTAGES OF TAKING PART?

We are asking you to share with us some very personal information, and you may feel uncomfortable talking about some of the questions. You do not have to answer any

question or take part in the survey if you don't wish to do so, and you may withdraw from this study at any point of time, if you choose to.

WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?

The participant will gain awareness about depression and an insight into their current mental health status. However, we hope that the information obtained from this study could potentially be used to create more effective mental health support in primary care settings.

Moreover, if it is determined that you require assistance, we will provide access to free treatment through our other project (Optimize-D) located in a nearby primary health care facility.

WILL MY DATA BE SHARED WITH OTHERS?

Your responses to this survey will be anonymous. Every effort will be made by the researcher to preserve your confidentiality including the following: Code names/numbers will be assigned for participants that will be used on all research notes and documents. Nobody except the Principal Investigators, Data collectors, Data manager will know that the information belongs to you.

All notes, and any other identifying participant information will be kept in a locked file cabinet in the personal possession of the researcher.

Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

WHAT WILL BE DONE WITH THE RESULTS OF THE STUDY?

Once the study is completed, the findings of the study will be published in M.Sc. dissertation and peer-reviewed journals.

WHO HAS APPROVED THIS STUDY?

This study is approved by the Institutional Review Board of Sangath.

IF I HAVE ANY QUERIES, WHAT SHOULD I DO?

If you have questions at any time about this study, you may contact the researcher or if you want to know more about the study, you can contact:

Dr. Anuja Lahiri,

Designation: Co-Investigator

Sangath, Flat No 106,

Good Shepherd Colony,

Danish Kunj, Bhopal,

Madhya Pradesh, India.

Pin: 462042

If you would like to talk with someone other than the researchers to discuss problems or concerns regarding the research, to discuss situations in the event that a member of the research team is not available, or to discuss your rights as a research participant, you may contact the Chairperson of Institutional Ethics Committee of Sangath using the following contact details. Please note that this will not have any consequences for you and your confidentiality will be maintained.

Raj Vaidya

Chairperson, Institutional Review Board of Sangath

841/1, Behind Electricity Dept.,

Alto – Porvorim, Bardez – Goa.

Pin: 403521.

Tel: 0788-7872345

Fax:2411709

Email: irb@sangath.in

अध्ययन प्रतिभागियों के लिए सूचना पत्र

आपको इस सूचना पत्र की एक प्रति दी जाएगी

अध्ययन का शीर्षक: वयस्कों में तनाव से जुड़े स्वास्थ्य देखभाल और खर्च का अध्ययन (भोपाल की शहरी प्राथमिक देखभाल परिवेश के संदर्भ में)

परियोजना सह अन्वेषकों का नाम: डॉ. अनुजा लहिरी (संगत, भोपाल), डॉ. प्रकाश बी.एन. (टीडीयू, बेंगलुरु)

प्रधान अन्वेषक: श्रुति जी (संगत, भोपाल)

में आपको एक शोध अध्ययन में भाग लेने के लिए आमंत्रित करना चाहती हूँ। निर्णय लेने से पहले आपको यह समझना होगा कि शोध क्यों किया जा रहा है और इसमें आपके भागीदारी कैसे होगी? अध्यादक कृपया निम्नलिखित जानकारी को ध्यानपूर्वक पढ़ने के लिए समय निकालें। यदि आपने जो कुछ भी पढ़ा है वह स्पष्ट नहीं है या यदि आप अधिक इससे सम्बंधित अधिक जानकारी चाहते हैं तो कृपया प्रश्न पूछें। आपको इस अध्ययन में भाग लेना है या नहीं, यह तय करने के लिए आप समय ले सकते हैं।

इस अध्ययन का उद्देश्य

इस अध्ययन का उद्देश्य एक सर्वेक्षण करना है जहां हम शहरी भोपाल की आठ प्राथमिक स्वास्थ्य देखभाल परिवेश में तनाव के संभावित निदान के लिए वयस्कों की स्क्रीनिंग करना चाहते हैं और हम मध्यम से गंभीर अवसाद व्यक्तियों से जुड़ी बीमारी की प्रत्यक्ष और अप्रत्यक्ष लागत का अनुमान लगाना चाहते हैं।

यह अध्ययन एमएससी लाइफ साइंसेज शोध प्रबंध परियोजना के एक भाग के रूप में किया जा रहा है।

अध्ययन किस बारे में है?

इस अध्ययन में शहरी भोपाल में 18 वर्ष एवं उससे ऊपर की आयु के 300 वयस्कों का सर्वेक्षण कर रहे हैं। हम प्राथमिक स्वास्थ्य केंद्रों के आसपास रहने वाले लोगों से जानकारी एकत्र करने के लिए यह सर्वेक्षण कर रहे हैं, जहां 8 प्राथमिक स्वास्थ्य केंद्रों में से प्रत्येक घरों से 1 व्यक्ति का चयन किया जाएगा। हम उनकी सामान्य जानकारी, सामाजिक आर्थिक स्थिति, मनोदशा, नींद और रुचियों, संबंधित दैहिक लक्षणों की प्रत्यक्ष और अप्रत्यक्ष लागत के बारे में प्रश्न पूछेंगे।

अगर मैं भाग लेता हूँ तो क्या होगा ?

यदि आपने इस शोध अध्ययन में भाग लेने का निर्णय लिया है, तो आपको एक सूचना पत्र और एक सहमति पत्र प्रदान किया जाएगा। आपको सहमति पत्र पर हस्ताक्षर करना होगा जिसमें आपके द्वारा ये सहमति दी जायेगी के आप इस अध्ययन में भाग लेने के लिए तैयार है। यदि जानकारी को समझने में कोई कठिनाई हो तो शोधकर्ता आपको उसे समझने में सहायता करेगा। आपकी सहमति के पश्चात्

आपको प्रश्नावली दी जाएगी जिसमें लगभग जिसके जवाब आपको देने होंगे इस प्रक्रिया में **10** मिनट का समय लगेगा।

क्या आपको भाग लेना है?

इस अध्ययन में आपकी भागीदारी स्वैच्छिक है। यह आपको तय करना है कि इस अध्ययन में भाग लेना है या नहीं। यदि आप इस अध्ययन में भाग लेने का निर्णय लेते हैं, तो आपसे एक सहमति प्रपत्र पर हस्ताक्षर करने के लिए कहा जाएगा। सहमति प्रपत्र पर हस्ताक्षर करने के बाद भी आप किसी भी समय बिना कोई कारण बताए इसे वापस लेने के लिए स्वतंत्र हैं। इस अध्ययन से हटने से शोधकर्ता के साथ आपके संबंध, यदि कोई हो, पर कोई प्रभाव नहीं पड़ेगा। यदि आप डेटा संग्रह पूरा होने से पहले अध्ययन से हट जाते हैं, तो आपका डेटा नष्ट कर दिया जाएगा।

क्या इस सर्वेक्षण में भाग लेने से कोई जोखिम या नुकसान हैं?

हम आपसे कुछ बहुत ही निजी जानकारी हमारे साथ साझा करने के लिए कह रहे हैं और आप कुछ प्रश्नों के बारे में बात करने में असहज महसूस कर सकते हैं। यदि आप ऐसा नहीं करना चाहते हैं तो आपको किसी भी प्रश्न का उत्तर देने या सर्वेक्षण में भाग लेने की आवश्यकता नहीं है और यदि आप चाहें तो आप किसी भी समय अपनी भागीदारी समाप्त कर सकते हैं और यह ठीक भी है। किसी भी प्रश्न का उत्तर न देने या सर्वेक्षण में भाग लेने से इनकार करने के लिए आपको हमें कोई कारण बताने की आवश्यकता नहीं है।

क्या इस सर्वेक्षण में भाग लेने के कोई लाभ हैं?

प्रतिभागी को अवसाद के बारे में जानकारी और उनकी वर्तमान मानसिक स्वास्थ्य स्थिति के बारे में जानकारी मिलेगी। हालाँकि, हमें उम्मीद है कि इस अध्ययन से प्राप्त जानकारी का उपयोग संभावित रूप से प्राथमिक स्वास्थ्य केंद्र में अधिक प्रभावी मानसिक स्वास्थ्य सहायता देने के लिए किया जा सकता है।

इसके अलावा, यदि यह सुनिश्चित होता है कि आपको सहायता की आवश्यकता है, तो हम नजदीकी प्राथमिक स्वास्थ्य देखभाल सुविधा में स्थित हमारी अन्य परियोजना के माध्यम से मुफ्त उपचार तक पहुंच प्रदान करेंगे।

क्या मेरा डेटा दूसरों के साथ साझा किया जाएगा?

इस सर्वेक्षण पर आपकी प्रतिक्रियाएँ गोपनीय रहेंगी। शोधकर्ता द्वारा आपकी गोपनीयता बनाए रखने के लिए हर संभव प्रयास किया जाएगा। प्रतिभागियों के लिए कोड नाम/नंबर निर्दिष्ट किए जाएंगे जिनका उपयोग सभी शोध नोट्स और दस्तावेजों पर किया जाएगा। प्रिंसिपल इन्वेस्टिगेटर्स, डेटा

कलेक्टर्स, और प्रोजेक्ट डेटा मैनेजर्स के अलावा किसी को भी पता नहीं चलेगा कि यह जानकारी आपकी है।

सभी नोट्स, और प्रतिभागी की पहचान करने वाली कोई भी अन्य जानकारी शोधकर्ता के निजी कब्जे में एक बंद फ़ाइल कैबिनेट में रखी जाएगी।

उन मामलों को छोड़कर, जहां शोधकर्ता विशिष्ट घटनाओं की रिपोर्ट करने के लिए कानूनी रूप से बाध्य है, प्रतिभागियों के डेटा को गोपनीय रखा जाएगा। इन घटनाओं में दुर्व्यवहार और आत्महत्या के जोखिम की घटनाएं शामिल हैं।

अध्ययन के परिणामों के साथ हम क्या करेंगे ?

एक बार अध्ययन पूरा हो जाने पर, अध्ययन के निष्कर्षों को एम.एससी शोध प्रबंध में और सहकर्मी-समीक्षित पत्रिकाएँ में प्रकाशित किया जाएगा।

इस अध्ययन को किसने मंजूरी दी है?

यह अध्ययन संगत के संस्थागत समीक्षा बोर्ड द्वारा अनुमोदित है।

यदि मेरे पास कोई अन्य प्रश्न हों तो क्या होगा?

यदि इस अध्ययन के बारे में किसी भी समय आपके कोई प्रश्न हों, तो आप शोधकर्ता से संपर्क कर सकते हैं या यदि आपको अध्ययन के बारे में अधिक जानकारी की आवश्यकता है, तो कृपया निम्नलिखित संपर्क विवरण का उपयोग करें:

डॉ. अनुजा लहिरी

पदनाम: सह-अन्वेषक

संगत, फ्लैट नंबर 106, गुड शेफर्ड कॉलोनी,

दानिश कुंज, भोपाल, मध्य प्रदेश, भारत.

पिन: 462042

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यदि आप शोधकर्ताओं के अलावा किसी अन्य व्यक्ति के साथ अनुसंधान के संबंध में समस्याओं या चिंताओं पर चर्चा करना चाहते हैं, या शोध दल का कोई भी सदस्य उपलब्ध नहीं है, शोध प्रतिभागी के रूप में आपके अधिकारों पर चर्चा करने के लिए, आप संस्थागत नैतिकता समिति अध्यक्ष से संपर्क

कर सकते हैं निम्नलिखित संपर्क विवरण का उपयोग भी कर सकते हैं। कृपया ध्यान दें कि इसका आप पर कोई प्रभाव नहीं पड़ेगा और आपकी गोपनीयता बनाए रखी जाएगी।

राज वैद्य

अध्यक्ष, संस्थागत समीक्षा मंडल के अध्यक्ष

841/1, बिजली विभाग के पीछे, ऑल्टो - पोरवोरिम, बर्देज - गोवा .403521

Tel: 0788-7872345

Fax:2411709

Email: irb@sangath.in

Annexure 3: Informed Consent Form

TITLE OF THE STUDY: Health care utilization and Out -Of- Pocket (OOP) expenditure associated with Depression in Adults in PHC settings of Urban Bhopal.

CO- PI: Dr. Anuja Lahiri (Sangath, Bhopal), Dr. Prakash B.N. (TDU, Bangalore)

PRINCIPAL INVESTIGATOR: Sruthi G (Sangath, Bhopal)

I, _____, have been invited to participate in this study; Which is being organized in Bhopal Madhya Pradesh, India. I have read or had the preceding information read to me. I have understood and I have got the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without any cost. I understand that I will be given a copy of this consent form. I voluntarily agree to participate in this study.

Name of Participant:

Signature:

Date:

Name of Investigator:

Signature:

Date:

Witness:

Signature:

Date:

In case of queries, contact:

Dr. Anuja Lahiri

Sangath, Flat No 106, Good Shepherd Colony,

Danish Kunj, Bhopal,

Madhya Pradesh, India.

Pin: 462042

Email: anuja.lahiri@sangath.in

अध्ययन का शीर्षक: वयस्कों में तनाव से जुड़े स्वास्थ्य देखभाल और खर्च का अध्ययन (भोपाल की शहरी प्राथमिक देखभाल परिवेश के संदर्भ)

परियोजना सह अन्वेषकों का नाम: डॉ. अनुजा लहिरी (संगत, भोपाल), डॉ. प्रकाश बी.एन. (टीडीयू, बेंगलुरु)

प्रधान अन्वेषक: श्रुति जी (संगत, भोपाल)

मुझे, _____ को इस अध्ययन में भाग लेने के लिए आमंत्रित किया गया है; जो भोपाल, मध्य प्रदेश, भारत में आयोजित किया जा रहा है | मैंने पहले की जानकारी को पढ़ लिया है / मेरे लिए पढ़ा गया है | मैंने इसे समझ लिया है एवं मुझे प्रश्न पूछने का अवसर मिला है।

मैं समझता/समझती हूँ कि मेरी भागीदारी स्वैच्छिक है और मैं किसी भी समय, बिना कोई कारण बताए और बिना किसी लागत के इसे वापस लेने के लिए स्वतंत्र हूँ। मैं समझता/समझती हूँ कि मुझे इस सहमति प्रपत्र की एक प्रति दी जाएगी। मैं स्वेच्छा से इस अध्ययन में भाग लेने के लिए सहमत हूँ।

प्रतिभागी के नाम: _____ हस्ताक्षर: _____

दिनांक:

अन्वेषक के नाम: _____ हस्ताक्षर: _____

दिनांक:

गवाह के नाम: _____ हस्ताक्षर: _____

दिनांक:

प्रश्नों के मामले में, संपर्क करें:

अनुजा लहिरी,

संगत, नंबर 106,

गुड शेफर्ड कॉलोनी,

दानिश कुंज, भोपाल,

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