Peer-reviewed version available at *Healthcare* **2019**, *7*, 53; doi:10.3390/healthcare7020053

Article

Mental Health Issues in Madhya Pradesh: Insights from National Mental Health Survey of India 2016

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Abstract: Background: India has one-fifth of the world's population with contribution of mental disorders to the overall burden of the disease being 13.9 %. Objectives of Study: To estimate prevalence and patterns of mental illnesses in Madhya Pradesh. Material and Methods: Multi-stage, cluster random sampling technique, with selection probability proportionate to size at each stage. A total of 3240 individuals 18 years or older were interviewed. The methodology employed had both quantitative and qualitative components. Mini International Neuro-psychiatric Interview along with 10 other instruments were used. Results: The overall weighted prevalence for any mental illness was 13.9% with 16.7% over the lifetime. The treatment-gap for all mental health problems is very high (91%) along with huge impact on the socioeconomic condition in Madhya Pradesh. Conclusions: This study provides an evidence of huge burden of mental, behavioral and substance use disorders as well as treatment gap in Madhya Pradesh. There is an immediate need for the attention of all stakeholders including policy makers, political leaders, health care professionals and the society at large. These findings also highlight need for multi-pronged interventions rooted in health policy directed at reducing treatment gap in the short term and disease burden in the long run.

Keywords: Mental disorder; treatment gap; health system; Madhya Pradesh

1. Introduction

Mental illness is an emerging public health problem of global concern. In India, mental disorders with 22 million years lived with disability (YLD) ranks number one cause for YLD as per latest Global Burden of Disease study 2017 estimates. [1] Adults between 15-49 years have more burden of YLD due to mental disorders. In terms of Disability Adjusted Life Years (DALY) which measures both potential Years of Life Lost (YLL) and YLD, in the same age-group mental disorders (8.76% of all DALY) rank as number 2 cause after cardiovascular diseases (10% of all DALY) in terms of disability adjusted life years (DALYs). This is approximately 30% increase in percent of total DALY from 6% in 1990. [1] Although, developed counties have higher prevalence of mental disorders, developing countries have larges global burden of untreated mental disease. [2,3,4] Almost four in five persons with mental disorder are from low-and-middle-income (LAMI) countries. [2]

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Mental as well as neurological and substance use disorders (MNSUDs) categorized under the non-communicable (NCD) are recognized as important public health problems in India. [5,7] The presence of mental illness is considered as stigma and impacts familial, social as well as occupational life of person. This has considerable negative influence on the family and society at large. Also, mental healthcare access is limited in most parts of India including Madhya Pradesh.

Madhya Pradesh is the second largest state in India having 7.2 million population and 51 districts. [8] It is a high priority state for Reproductive Maternal New-Born Child and Adolescent Health (RMNCH+A) interventions for reducing maternal and child mortality. Consequently, MNSUDs have not received the needed attention from various concerned stakeholders. Insufficiency of the data from previous studies often precludes its use for development of mental health programs in Madhya Pradesh [5,6] Thus, in order to strengthen mental health policies and programmes at the state levels, the present study was conducted as a part of National Mental Health Survey 2015-16 with the objective of estimating prevalence and patterns of mental illnesses, identification of the treatment gap, health care utilisation and self-reported disability among respondents with current mental illness.

2. Material and Methods

National Mental Health Survey of India (include reference of all 3 NMHS reports *i.e.* prevalence, mental health system and summary report) was undertaken in 12 states of India including Madhya Pradesh during 2015-16. [7]

2.1. Study design

Community based cross-sectional study was undertaken to assess the prevalence, pattern, treatment gap and disability associated with mental disorders in the state. Focus group discussions were conducted to understand the perception of the community regarding. Mental health systems in the state were assessed through Key informant interview and also by collecting secondary data.

2.2. Study duration

April 2015 to May 2016.

2.3. Sample size

Since, National Institute of Mental health and Neurosciences, Bangalore was assigned the overall responsibility of coordinating NMHS at the national level, a pilot study for NMHS was undertaken in Kolar district of Karnataka. [9] In the pilot study, the prevalence of any mental health morbidity among adults was found to be 7.5%. Therefore, the final sample size was calculated to be 3000; derived at with a design effect of 3, an absolute error of 2% at the confidence level of 95%. The non-response rate was estimated to be 30%. Accounting for the work to be done and team size, 60 clusters of 50 adults were taken for the study.

2.4. Sampling technique

Multistage, Stratified, Random Cluster sampling technique, with random selection based on Probability Proportional to Size at each stage (MSRS-PPS) was used. The cluster was either a named inhabited village or wards in an urban area as per Census 2011. Selection of cluster was done as per PPS method. In each cluster, first house listing and mapping were done and then 15 households were selected by systematic random sampling. The primary and secondary sampling units were derived from the state's districts and talukas. The districts were selected using district level poverty estimates based on stratified random sampling technique. Only non-institutionalised individuals were considered as a respondent. All resident members of the household (HH) were enlisted and eligible members (aged >18 years) were interviewed. In the event of non-availability of a member of the household, two additional visits were planned. If the individual was not available even after three

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visits, the individual was declared as a non-responder. An informed consent was obtained from each respondent of HH before initiation of the interview (Figure 1).

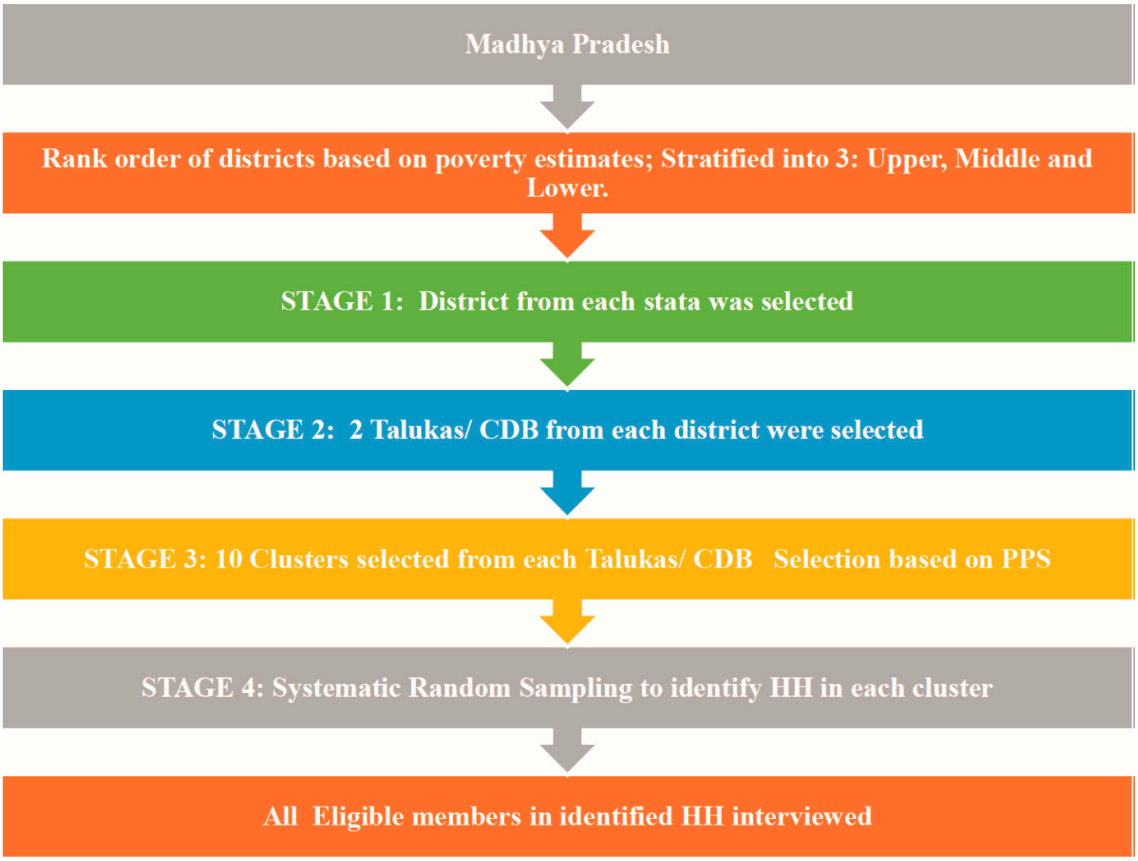

Figure 1. Sampling methodology adopted during NMHS, 2015–2016.

In order to explore the extent, pattern, geographic distribution, along with the community attributes such as stigma, health seeking patterns, barriers and challenges associated with substance/drug use and mental health problems; qualitative methodology was adopted. Two focus group discussions (one each with patients and health care providers) and four key informant interviews (one each with Health Care Provider, social worker, health care provider from NGO and Pharmacist) were conducted in each of the three selected districts.

2.5. Data collection tools and procedures

A set of ten study instruments were used in the study which comprises of:

1. *Socio-demographic form:* This form had information on age, gender, place of residence, income, education, occupation and marital status.
2. *Mini International Neuro-psychiatric Inventory (MINI) 6.0* [10]: M.I.N.I. was chosen for its multiple inherent advantages. It is an instrument which requires limited training to collect validated data, has validated translations in Indian language and could be administered to a large population. In epidemiological studies requiring psychiatric evaluation and outcome tracking M.I.N.I. is usually the interview of choice. With an administration time of fewer than 30 minutes, it is a short but accurate structured diagnostic psychiatric interview. M.I.N.I.
3. *Intellectual Disability:* Intellectual Disability, referred to as mental retardation in earlier times, has been included under the mental health programme for programmatic purposes. Being a developmental disorder, it is not a mental health problem; however, because of co-morbidities, overlaps still exist. The ID screener consisted of two questions, the response for which was

recorded as either Yes or No, and probably yes was also recorded as Yes. A yes to any one of the two questions was considered to be screener positive ID. 1) Did the person appear backward, slow, dull, or markedly less intelligent in everything since childhood? Did the person always have a difficulty in learning to do things that other individuals of his age did easily (for e.g., eating by oneself, dressing, bathing, toilet management).

4. *Fagerström Nicotine Dependence Scale* for tobacco assessment (smoking and non-smoking variants). [11]
5. *Pathways Interview Schedule* (Encounter Form) by WHO was adopted and used to gathers systematic information about the sources of care used by patients before approaching a mental health professional for assessing their health care seeking behaviour. [12]
6. *Sheehan Disability Scale*. It was used to assess Disability status and derive socio-economic costs involved in it. [10]
7. *Assessment of Epilepsy*. It includes questions related to epilepsy in order to provisionally diagnose Generalised Tonic-Clonic Seizures. [13]
8. Socio-economic impact on illness (Modified as per WHO-DAS-2.0): A 7 question set looking at subjective reporting of overall difficulties, duration of these difficulties in the past 30 days, its impact on routine activities, expenditure due to illness, respondent missing on family, social or leisure activities due to illness was used.

2.6. Training and Quality control

The AIIMS Bhopal team in collaboration with NIMHANS team conducted a detailed training for the field survey staff (using a structured training protocol) for a period of 6 weeks and included theoretical orientation about the mental illnesses and survey methods, demonstration of asking questions to elicit mental illness symptoms, supervised interview in the hospital, and later in the community. Data was collected by these trained Field Data Collectors (FDC) who were postgraduates in psychology using Hand Held Devices which were configured for the purpose of the survey. Standard translation and back-translation protocols were used to translate all the study instruments into different local languages of the individual states. Daily and weekly monitoring and surprise on-field supervisory visits, along with systematic training of the field data collectors was done to ensure quality in data collection (including missing data). Quality control was performed by independent scrutiny of five percent of the total interviews by the state team.

2.7. Statistical analysis

Descriptive analysis provided estimates of the prevalence of mental illnesses coded by using International Classification of Disease, 10th revision, Diagnostic Criteria for Research (ICD 10 DCR). The probability of selection and non-response was used to weigh the results. Analysis was done using SPSS 18.0 [14] and STATA 11.0 [15].

3. Results

A total of 3,240 individuals were contacted and 2,621 were interviewed during NMHS-MP 2015-16. An 80.9% response rate was achieved at the individual level and 87.3% at the household level.

3.1. Mental morbidity in Madhya Pradesh

The current prevalence of any mental illnesses amongst individuals aged >18 years was 13.9% (95% CI 13.7% -14.1%) and the lifetime prevalence was 16.7% (95% CI 16.5% -16.9%). Among current mental illnesses common mental disorders (CMDs) including depression, anxiety and substance abuse were reported in 13.55% of the individuals, whereas the weighted prevalence of Severe Mental Disorders (SMDs) was 0.38%.

3.2. Treatment patterns and care characteristics among respondents with current mental morbidity

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There was a huge treatment gap of 90.7% among those identified with mental morbidity (n = 333) and those currently on treatment (n = 31). The median duration of illness was found to be 11 years and the median duration of the treatment was 5 years. The median interval between onset of illness and consultation was found to be one year. A median of 2 health care providers was consulted by the patient and 2/3rds of the time the most recent consulted doctor was from the public sector (Table 1). Before accessing mental health care professionals, majority of the patients admitted to seek mental health care from temples, dargah, local priest or traditional healer and the main reasons cited for not seeking advice from the professionals were costly treatment, distant hospitals, lack of professionals and unawareness of availability of treatment. [KII]

Table 1. Treatment patterns and care characteristics among respondents with current mental morbidity.

Treatment Related Characteristics (*N* = 333)	Frequency
Currently on treatment (n)	31
Treatment gap (%)	90.69
Median duration of illness (in months)	132 (1-480)
Median interval between onset of illness and consultation (months)	12 (1-352)
Median number of treatment providers consulted	2 (1-10)
Most recent provider being a government doctor- n (%)	23 (74.19%)
Median duration of being on treatment (months)	60 (1-480)

3.3. Substance abuse disorder in Madhya Pradesh

In this study the prevalence of alcohol use disorder was found about 10.33% (CI: 10.19-10.46) and was much higher among male residents (20.23% CI: 19.98-20.49), those residing in urban non-metro areas (11.6% CI: 11.29-11.91)) and those in age group 40-49 years (16.07% CI:15.69-16.45). Alcohol use disorder was found surprisingly to be the lowest among people living in urban metro city (6.42% CI:5.93-6.91). The prevalence of tobacco use disorder was found to be the highest *i.e.* 34.89% (CI: 34.68-35.1) and was highest among male, those aged more than 40 years and among rural residents. Khaini, Gutka, Nus, Bidi, Madhu, Munnaka (Sasan) were the most commonly consumed tobacco forms prevalent in local areas. Few health care workers also reported some unusual form of substance abuse like cough syrups, drugs like diclofenac, cetirizine, derivatives of barbiturates, whitener and thinners, for which prevalence was found to be 0.6%. Stress relief, curiosity, recreation, lack of family support/ emotional support, family conflicts for youths and depression are some of the reasons for consumption of these substances brought out by the participants.

3.4. Suicides and Risk of suicides

Suicidal risk was estimated to be present among 0.8% of the study participants. Males, residents of urban metros and individuals aged between 30- 49 years were found to be at the highest risk of suicides (Table 2).

Table 2. Prevalence of Suicidal risk by age, gender and residence.

Classification	Biosocial Characteristic	Prevalence in % (CI)
Gender	Male	0.93 (0.87-0.99)
	Female	0.67 (0.62-0.72)
Residence	Rural	0.68 (0.64-0.72)
	Urban non- metro	0.83 (0.74-0.91)
	Urban metro	2.67 (2.35-3)

3.5. Mental Health Services in Madhya Pradesh

Currently, the District Mental Health Program (DMHP) covers 14% of the total population of the state with a meager allocation of 0.2% of the total budget for mental health by the state health department. The state of Madhya Pradesh has two mental hospitals and 14 medical colleges with

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Department of Psychiatry; which are engaged in mental health care delivery services. About 12% of the District/General hospitals of the state are providing mental health services. However, only 3% and 0.1% of CHCs and PHCs respectively are providing mental health care services. Also, the number of core hospital-based mental health facilities in the state per lakh population was found to be near 0.03, whereas the numbers of beds available for mental health patient services are only 1.18 per one lakh population. It was found that only 124 health care professionals are available to deliver mental health services; with only two specialists and three trained MBBS doctors for one lakh population. There are 0.2 mental health professionals and 0.05 psychiatrists in the state per one lakh population. There was also a shortage of rehabilitation workers and special education teachers in the state. Health care professionals who had undergone training in mental health in the previous three years were 99 *i.e.* 0.1 per lakh population.

3.6. Treatment gap

Treatment-gap for all mental health problems is as high as 91% in the state. Only 30% of patients with intellectual disability, 8% with tobacco use disorder, 5.8% with alcohol use disorder, 20% with the major depressive disorder and 12.5%with neuro disorder received treatment. However, 80% of the patients with epilepsy received treatment (Figure 2).

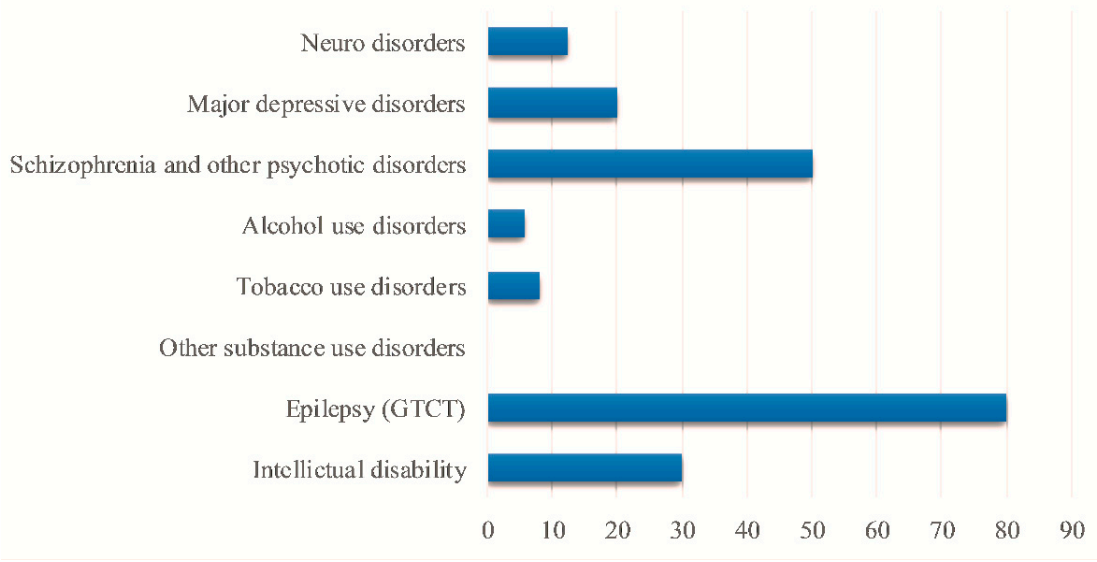

Figure 2. Treatment gap for mental morbidity in Madhya Pradesh.

3.7. Socioeconomic Impact of Mental Illnesses

The median number of days in which difficulty was shown by people with mental morbidity in carrying out daily activities in the past 30 days was 25. While median number of days for which the family members were not able to go for work due to the care of the patient in the past three months were 5, whereas median number of days where family could not attend family, social or leisure activities due to the care of patient care were 6 and median monthly expense on the care of the patient was 1450 Rupees INR (Figure 3).

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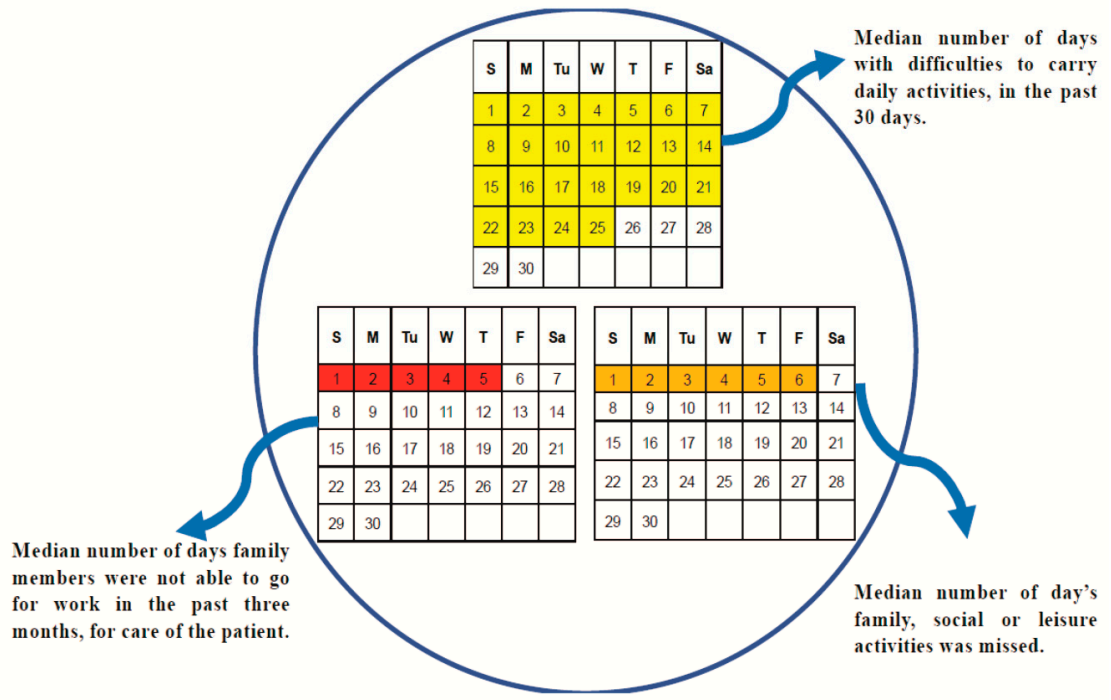

Figure 3. Socioeconomic impact of mental morbidities.

4. Discussion

The present study is the first large scale, comprehensive mental health problem assessment undertaken in the state of Madhya Pradesh which has provided state-level prevalence estimates. The hallmark of the study is the strict quality control measures undertaken at multiple levels. The lifetime prevalence of mental morbidity in the state is 16.7% which is higher than the national average (13.7%). [6,9] This is also higher than reported by several other studies done in India and other developing nations. [15,16,17,18] The prevalence of psychoactive substance use disorder is also three times higher than the national estimage. [6,9, 20,21, 22] In recent studies by Chavan *et al*., [23] at Chandigarh and Gururaj G *et al*. at Bangalore; [24] the prevalence rates were found to be lower than the present study. Among substance use disorders, tobacco use disorders are highest in the state; [6] which is similar to the findings reported by Ghulam R, *et al*. [24] Most affected population for tobacco use disorder is males having age more than 40 years. Similar findings have been reported in a study by Singh A & Ladusingh L. [26] High prevalence is attributed to social and cultural acceptance of tobacco consumption in the rural community and adding onto it, at some places local customs and cultures necessitates its consumption. [6,9] Thus a package of comprehensive, un-fractured and integrated services targeting this huge burden of substance abuse in the state should be formulated.

Suicide rate per lakh population in Madhya Pradesh is also found to be higher than the national suicide rate. [6,9, 27] About 11.9 people per lakh population commit suicide per year accounting for a huge loss attributed to a high treatment gap in mental healthcare in MP. The treatment gap (not consulting health provider despite having a mental health problem) in the state is much higher (91%) as compared to the national level (60%). [6,9] Similar findings have been reported by other studies. [28,29]

This huge treatment gap can be attributed to severe shortages of skilled mental health professionals in the public health system for delivering mental health care to the patients and very few capacity building initiatives for general health professionals and non-specialists health workers. Availability of psychiatrists is least in Madhya Pradesh and has fallen short of the recommended requirement of at least 1 psychiatrist per lakh population highlighting the severe inadequacy of mental health specialists in the state. [30] Also, the existing facilities for mental health care are inadequate, mostly urban-centric and available in few of Medical Colleges only. Moreover, even the rehabilitative facilities like daycare centres, halfway homes, sheltered workshops, temporary stay

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facilities, etc are also very limited in addition to mental health care personnel like social workers, counsellors, physiotherapists. A large proportion of the individuals with mental morbidity belonging to rural and tribal areas face difficulty in accessing mental health services due to the long distance of the health care centres from their residence. Also, the majority of psychiatric patients do not seek health care due to low mental health literacy, lack of awareness about treatment services, and the stigma associated with treatment. Although mental health NGOs are working in the state, their impact at ground level is lowest. Score for intra and intersectoral collaboration among various departments for mental health is also smallest for Madhya Pradesh which is an important cog in the wheel of effective prevention, management and rehabilitative services for Mental Health. Thus, the unavailability, inaccessibility of mental health care resources amalgamated by the diverse and complex sociocultural factors appear to influence the mental health-seeking behaviour of the population in the state.

Despite of its high disease burden, mental morbidities and substance use disorder receive very little attention from the legislators and stakeholders of policy making in the state of Madhya Pradesh. Though mental morbidities are included in the existing routine HMIS in the state, the reality of the situation is not reflected as the data related to this is scarce. Also, there is no separate budget head for mental health in the state. The total budget available for mental health was less than 1% in the state and of the available the budgetary support, utilization could not be done due to lack of administrative and procedural clarity and skilled human resource constraints. [28]

Thus, the development and proper implementation of policies for building a strong health system that integrates mental health with the larger public health system based on evidence-based practices is the burning need.

Limitation of study

The study does not include children and adolescent population which comprises a significant proportion of those with mental morbidities in the state.

5. Conclusion

This study has generated evidence of high burden of mental disorders in Madhya Pradesh. It also highlights huge treatment gap which needs to be addressed on priority. Despite this, the problem of mental health is neglected and left unaddressed during the planning and delivery of health care programmes. Therefore, high priority should be ascertained for the development of inclusive and integrated mental health services, with a greater focus on substance use disorders.

6. Recommendations

Development of stand-alone comprehensive mental health approach with specified goals and targets is the need of the hour. Being a high prevalent state in context to substance use the approach should be prioritized on the treatment of related morbidities along with a focus on rehabilitation of mentally unhealthy population and health promotional activities. Quality assured mental health services should be provided through skill development of human resources engaged in mental health services along with upgradation of the basic infrastructure and functioning of the concerned institution. Proper training of the existing manpower should be done periodically to enhance their basic expertise to deal with mental health issues both at community and facility level. Apart from that there is also a need to increase the involvement of qualified specialist *viz.* psychologists and psychiatrists along with the paramedical workforce so as to deal with the situation more effectively. Creating awareness among upcoming younger generation through school-based Information Education Communication/ Behavioral Change Communication (IEC/BCC) activities and involvement of important stakeholders like community leaders could boost the already existing preventive strategies.

More significantly regular evaluation of the mental health services with a rapid and periodic appraisal of the programs should be done so as to stringently monitor the innovation, new actions/strategies and their efficacy to deal with the mental health problems.

Author Contributions: Conceptualization: A.K., A.P., G.G., M.V., V.B., G.N.R., B.A., M.S. and A.R.; Data curation: A.K. and G.G.; Formal analysis: A.K., A.P., G.G. and B.A.; Funding acquisition: G.G., M.V. and V.B.; Investigation: A.K., A.P., G.G. and B.A.; Methodology: A.K., A.P., G.G., M.V., V.B., G.N.R., B.A., M.S. and A.R.; Project administration: A.K., A.P., G.G., M.V., V.B., G.N.R., B.A., R.C., S.R; Resources: G.G., M.V. and V.B.; Software: A.K., A.P., G.G., G.N.R. and B.A.; Supervision: A.K., A.P., G.N.R., B.A., R.C., S.R. and A.R.; Validation: A.K., A.P., S.R., M.S., B.A., G.G., M.V., V.B., G.N.R., A.M., K.Y. and A.R.; Visualization: A.K., A.P. and G.G.; Writing—original draft: A.K., A.P., M.S., A.M. and A.R.; Writing—review & editing: A.K., A.P., G.G., G.N.R., B.A., A.M., K.Y. and A.R.

Funding: This study was conducted as a part of the National Mental Health Survey of India, 2016. The data used for analysis in this publication is from the National Mental Health Survey (NMHS) funded by the Ministry of Health and Family Welfare, Government of India and was implemented and coordinated by NIMHANS, Bengaluru, India in collaboration with state partners. NMHS phase 1 (2015-16) was undertaken in 12 states of India across the 6 regions and interviewed 39,532 individuals (http://indianmhs.nimhans.ac.in).

Conflicts of Interest: The authors declare no conflict of interest.

Consent for Publication: The data that support the findings of this study are available from [NIMHANS, India] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [NIMHANS, India].

Ethical Approval: The study protocol was approved by NIMHANS Institutional Ethics Committee and Institutional Human Ethical Committee, All India Institute of Medical Sciences Bhopal prior to the start of the study vide letter No. No. NIMHANS/DO/98th IEC/2015 dated 16th July 2015 and No. IHEC-LOP/2015/EF0021 dated 7th Aug. 2015 respectively.

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