

# Mental health services provided by medical officers in primary health centres in Kolar district in Karnataka, India: A situational assessment

Gautham Melur Sukumar<sup>1</sup>, Bujabali D Yalgudri<sup>2</sup>, Manjunatha Narayana<sup>3</sup>, Girish N Rao<sup>1</sup>

<sup>1</sup>Department of Epidemiology, National Institute of Mental Health and Neuro Sciences (NIMHANS) Bengaluru, Karnataka,

<sup>2</sup>Department of Health and Family Welfare, Government of Karnataka, Karnataka, <sup>3</sup>Department of Psychiatry, National Institute of Mental Health and Neuro Sciences (NIMHANS) Bengaluru, Karnataka, India

## ABSTRACT

**Context:** Mental health services are integrated into primary healthcare and delivered by medical officers (MOs). Assessment of mental health services provided by MOs and their ability to manage mental disorders in primary health centers (PHCs) would provide evidence to strengthen the quality of this integration. **Aims:** To conduct a situational assessment of mental health services provided by medical officers in PHCs in Kolar district in terms of availability and nature of services. To assess the ability of MOs to diagnose and treat mental disorders in PHCs. **Materials and Methods:** We interviewed all eligible and available PHC medical officers (45). The nature of mental health services provided (diagnosis, treatment, counseling and referral) was enquired. A case-vignette based assessment of the ability of MOs to diagnose and treat mental disorders was conducted. **Results:** Nearly 87% of MOs delivered psychiatric out-patient services on all working days. MOs were significantly better in diagnosing compared to providing treatment ( $P = 0.04$ ). In spite of being trained in mental health, concerns exist in translating training into quality service delivery. MH drugs were available in regular supply and utilised to great extent. **Conclusion:** MOs are providing psychiatric out-patient services in PHCs regularly but their ability is limited. The study recommends the reorientation of existing training from a service delivery perspective.

**Keywords:** Kolara mental health services, medical officers, primary health centres

Most MOs provided psychiatric treatment services in PHCs but their ability to diagnose and treat needs to be strengthened. Study recommends reorienting training of MOs from a service delivery perspective. Time has come to focus on achieving quality and functional integration of mental health services at primary level.

**Address for correspondence:** Dr. Gautham Melur Sukumar, Department of Epidemiology, Centre for Public Health, National Institute of Mental Health and Neuro Sciences, Bangalore - 560 029, Karnataka, India. E-mail: drgauthammihans@gmail.com

Received: 18-10-2019

Revised: 23-11-2019

Accepted: 05-12-2019

Published: 28-01-2020

### Access this article online

#### Quick Response Code:



**Website:**  
www.jfmpc.com

**DOI:**  
10.4103/jfmpc.jfmpc\_906\_19

## Introduction

The current prevalence of mental morbidity among adults in Kolar district is estimated at 7.5%<sup>[1,2]</sup> indicating that approximately 112,500 persons need mental healthcare at any given point of time. Meeting their treatment needs is vital to reduce the treatment gap.

There are seven psychiatrists for a million population in India.<sup>[3,4]</sup> Apart from shortage, these specialists are urban-oriented, maldistributed and cater to 10%–20% of the total burden of mental disorders.<sup>[4]</sup> In such situations, mental healthcare

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

**How to cite this article:** Sukumar GM, Yalgudri BD, Narayana M, Rao GN. Mental health services provided by medical officers in primary health centres in Kolar district in Karnataka, India: A situational assessment. *J Family Med Prim Care* 2020;9:173-9.

gets culturally channelised to traditional healers and other care providers.<sup>[5]</sup> To address the above, mental healthcare is integrated into existing primary health systems to universalise access<sup>[6]</sup> and is delivered through the National Mental Health Programme (NMHP) and District Mental Health Programme (DMHP).<sup>[7-9]</sup> Though the programme is operational for three decades, the treatment gap for mental disorders is >90% (NMHS 2016).<sup>[11]</sup>

Medical Officers (MOs) and primary care doctors have a significant role to reduce the treatment gap by providing regular and quality mental health services in the PHCs/clinics. The ability of MOs to identify and treat mental disorders is a central issue for integration to be successful. Hence, assessment of availability and nature of psychiatric out-patient services, ability to identify psychiatric disorders, prescribe drugs, provide counselling and referral services at PHC level is vital to monitor progress towards integration and reduction of treatment gap.<sup>[4,10]</sup>

The Centre for Public Health, National Institute of Mental Health and Neuro Sciences (NIMHANS) is facilitating the strengthening of public health response to mental health in Kolara district. In this background, this study was conducted in Kolara to assess mental health services provided by MOs in PHCs and also assess their ability to diagnose and treat mental disorders. Observations would help to strengthen ongoing initiatives to improve access and quality of mental health services.

## Objectives

- To conduct a situational assessment of mental health services provided by MOs in PHCs in Kolara district in terms of availability and nature of services
- To assess the ability of MOs to diagnose and treat mental disorders in PHCs.

## Methodology

This cross-sectional study was conducted among MOs with minimum MBBS qualification working in PHCs at the time of assessment (Oct-2016 to Jan-2017). MOs with  $\geq 2$  years of service in PHCs were included, as most MOs would have completed their induction training and gained experience in delivering primary healthcare by this time.

As per records in district health office (Sep-2016), 65 MOs were serving in 61 PHCs in Kolara of which 45 were eligible. In this study the terms 'psychiatric' and 'mental health' are used interchangeably. Ethical clearance for the project was obtained by the NIMHANS ethics committee (Ref-NIMH/DO/Ethics Subcommittee (BS and NS) Meeting-2016 dated 15/11/2016).

Each MO was contacted in-person by the investigator (also a doctor), informed consent was obtained and interviewed using a pre-tested semi-structured questionnaire developed for this study. The questionnaire was used to collect information on the

availability and nature of psychiatric OPD services (diagnosis, treatment, counseling and referral) provided by the MOs in PHCs.

A case-vignette based assessment was additionally undertaken to assess 'ability of MOs to diagnose and treat mental disorders'. This was specifically undertaken as we anticipated a social desirability bias wherein most MOs would favourably report (in the interview) that treatment services were indeed provided and they are adept in diagnosing and treating psychiatric disorders. Ten case vignettes (pertaining to commonly observed mental disorders in primary care settings) were developed by the investigating team comprising of public health professionals and psychiatrists.

The study instrument consisted of the following sections and variables.

- Section I: General details of MOs (Age, gender, years of service in the PHC).
- Section II: Assessment of mental health service delivery in terms of availability of psychiatric out-patient services, days of service availability, type of services provided (diagnosis, treatment, counseling, referral and record maintenance), availability and utilisation of mental health drugs.
- Section III: Ability of MOs to identify and treat mental disorders. Each MO was asked to solve ten case vignettes and provide diagnosis and predominant treatment (mental health drugs) for each case vignette. They were asked to read each case vignette, write the diagnosis, three key diagnostic points in favour of the diagnosis and list their choice of drug, dose and duration they would prescribe as the first-line of treatment.

Responses by MOs were scored by the investigators against an answer key developed for the same. Each vignette was scored for a maximum of 10 marks (5 for diagnosis and 5 for treatment). The total score obtained is proxy to the ability of the MO to identify and treat mental disorders (value between 0–100). Higher the value, better the ability [Table 1].

The case vignettes, developed by the investigating team was piloted among junior residents in psychiatry (first-year post-graduates) as they were expected to be similar to MOs in their experience in managing mental disorders. The answer key for the case vignettes was prepared by the psychiatrist.

The semi-structured questionnaire to elicit information on the availability and nature of psychiatric OPD services was validated for face and content by experts. A pilot study was conducted on a sample of 10 MOs from a neighboring district to understand operational issues in data collection.

Without prior intimation, the investigator visited the PHCs and sought time for the interview and completed it on the same visit. MOs were instructed to complete case vignettes in less than half an hour. They were requested not to inform other MOs to prevent contamination in the data collection process.

Table 1: Answer Key And Scoring - Case-vignette

| Case-vignette | Diagnosis  | Score            | Treatment and Dosage  | Score          | Total |
|---------------|--|------------------|---|----------------|-------|
| 1             | Depression<br>Or<br>Neurosis   | 05               | Any Antidepressant  | 05             | 10    |
| 2             | Mania<br>Or<br>Psychosis   | 05               | Any Antipsychotics<br>Sodium Valporate Carbamazepine<br>Lithium       | 05             | 10    |
| 3             | Schizophrenia<br>Psychosis   | 05<br>2.5        | Any Antipsychotics  | 05             | 10    |
| 4             | Generalized Anxiety Disorder<br>Or Neurosis<br>Or Anxiety Neurosis           | 05               | Antidepressants<br>Or<br>Benzodiazepines- Alprazolam                  | 05<br>2.5      | 10    |
| 5             | Panic Disorder<br>Neurosis<br>Anxiety Neurosis                               | 05<br>2.5<br>2.5 | Antidepressants<br>Benzodiazepines/Alprazolam                         | 05<br>2.5      | 10    |
| 6             | Pseudoseizure/Conversion disorder<br>Dissociative Disorder<br>Or<br>Neurosis | 05<br>2.5        | Benzodiazepines<br>Antidepressants<br>No Antipsychotics               | 05             | 10    |
| 7             | Somatization Disorder<br>Neurosis  | 05<br>2.5        | Tri-cyclic Antidepressants (Amitryptiline)<br>SSRI (Fluoxetine)       | 05<br>2.5      | 10    |
| 8             | Epilepsy<br>Seizures<br>GTCS<br>Convulsion<br>Fits                           | 05<br>2.5        | Antiepileptics  | 05             | 10    |
| 9             | Alcohol Abuse/Harmful Use<br>Alcohol Gastritis/Acute Gastritis               | 05<br>2.5        | Counselling/Referral<br>H2 Blockers Or Ppi<br>Anta-acids              | 05<br>2.5      | 10    |
| 10            | Alcohol Dependence<br>Alcohol Addiction<br>Alcohol Tremors                   | 05<br>2.5        | Multivitamin<br>Benzodiazepine Tapering Dose<br>Antabuse (Disulfaram) | 01<br>02<br>01 | 10    |

Categorical variables were presented as frequency and percentages. Age, years of experience, the number of patients seen per day were summarised as mean and standard deviation. Shapiro-Wilk test was applied to test for normal distribution. Independent 't-test' was applied to test for significant differences in diagnosis and treatment scores in case-vignette based assessment (Significant at  $P < 0.05$ ). Comparison of diagnostic and treatment scores obtained in case of vignettes by age, gender and years of service of MOs was tested by Mann-Whitney U test. (Significant at  $P < 0.05$ ).

## Results

We completed interview of all 45 eligible MOs (response rate 100%). The mean service duration of MOs in PHCs was 4.5 years, 55.6% were males and 11.1% were aged <30 years.

### Mental health services provided by MOs

Though all MOs reported providing out-patient psychiatric services in PHCs, 87% provided services on 'all working days' and 13% provided services only on 'tuesdays'. Under 'Manochaitanya' programme implemented by the Government of Karnataka, treatment, counseling and medicines to mentally ill are provided every tuesday (called super tuesdays) in PHCs,

taluka hospitals and community health centres.<sup>[11]</sup> Psychiatrists, psychologists and counselors are made available in PHCs every tuesday on-rotation basis. Treatment and referral services for mental disorders were reported to be provided by 93% and 98% of MOs, respectively [Table 2].

MOs reported that a median of two patients per day per PHC presented with symptoms suggestive of psychiatric illness. The top five 'symptoms suggestive of psychiatric illness' in PHCs were multiple, repeated body aches and pains (reported by 66% of MOs) followed by alcohol abuse (48%), disturbed sleep (25%), suicidal thoughts (15.9%) and lack of sleep (13.6%).

### Diagnosis and treatment services

Around 12 (26.7%) MOs reported they were 'definitely' able to diagnose mental disorders while 67% were able to do diagnose 'to some extent'. Interestingly, 33% of MOs reported using an algorithm to diagnose mental disorders [Table 2]. Depression was the most common diagnosis (reported by 75% of MOs) followed by epilepsy (55% of MOs), alcohol use disorder (46.6%) and anxiety disorder (38%). On average, seven cases of depression, epilepsy and alcohol were diagnosed every month.

The majority of MOs were not aware of the assessment of alcohol (73%) and nicotine (69%) dependence. Only two MOs reported providing alcohol and tobacco de-addiction services.

MOs (82%) reported that they provided out-patient treatment in the form of counselling and drugs. Though 82% of MOs prescribed psychiatric drugs, only 18% opined they were definitely confident of prescribing the same [Table 3]. MOs lacked the confidence to prescribe mental health (MH) drugs at PHC level.

Information regarding the number of persons with epilepsy, psychoses, neurosis and mental retardation collecting drugs from the pharmacy is recorded and reported to taluka health

**Table 2: Mental health (MH) services provided by medical officers**

| MH services (n=45)          | Frequency n (%) |
|-----------------------------|-----------------|
| Provide MH services in PHCs | 45 (100)        |
| Services provided on        |                 |
| All working days            | 39 (86.7)       |
| Fixed day every week*       | 6 (13.3)        |
| MH services provided **     |                 |
| Treatment                   | 42 (93.3)       |
| Counselling                 | 36 (80)         |
| Referral                    | 44 (97.8)       |
| Health education            | 39 (86.7)       |
| All of the above            | 32 (71.1)       |

MH=Mental Health, \*Tuesday – Manochaitanya Programme, Note: Figures in (%) refer to percent of medical officers

**Table 3: Diagnosis and treatment services for mental disorders**

| Variable (n=45)                                       | Frequency n (%) |
|---|-----------------|
| Able to diagnose mental disorders (reported)          |                 |
| Definitely Yes  | 12 (26.7)       |
| Yes, to some extent                                   | 30 (66.7)       |
| No  | 03 (6.7)        |
| Algorithm available for diagnosis of mental disorders | 19 (42.2)       |
| Follow the algorithm to diagnose mental disorders     | 15 (33.3)       |
| Treatment   |                 |
| Provide Out treatment for mental disorders            |                 |
| Definitely Yes  | 29 (64.4)       |
| Yes, to some extent                                   | 13 (28.8)       |
| No  | 03 (6.7)        |
| Treatment options                                     |                 |
| Mental health drugs                                   | 6 (13.3)        |
| Counselling   | 02 (4.4)        |
| Both  | 37 (82)         |
| Confident of prescribing MH drugs                     |                 |
| Definitely Yes  | 08 (17.8)       |
| Yes to some extent                                    | 29 (64.4)       |
| No  | 08 (17.8)       |
| Aware of adverse effects of MH drugs                  |                 |
| Definitely Yes  | 29 (64.4)       |
| Yes to some extent                                    | 14 (31.1)       |
| No  | 2 (4.5)         |

\*Algorithm refers to step by step procedure or flow chart helps the MO to arrive at diagnosis

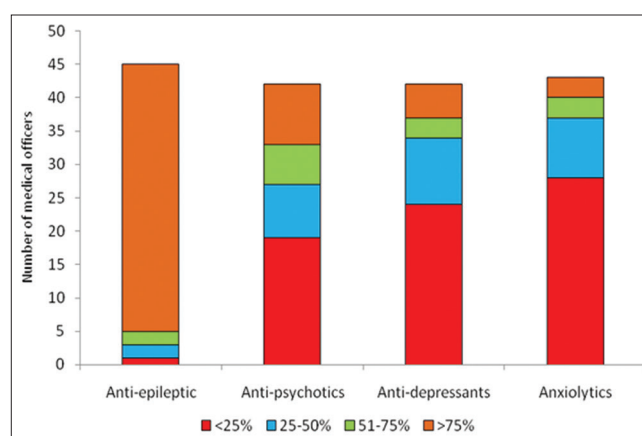
office every month. There was no data to indicate number of new cases versus repeat visits.

Eight out of every ten MOs reported that MH drugs were available in PHCs and 75% opined that they were regular in supply. Half the medical officers opined that the available MH drugs were 'utilised to a great extent'. Nearly 93% of antiepileptic drugs, 38% of antipsychotic drugs, 27% of antidepressants and 21% of anti-anxiety drugs were utilized in PHCs. (Data not shown). Nearly 40 (88.8%) MOs reported more than 75% utilization rate for antiepileptic drugs [Figure 1]. Around 34 and 27 MOs reported less than 50% utilization rates for antidepressants and antipsychotics, respectively. Commonly prescribed drugs were phenobarbitone, phenytoin sodium, amitriptyline, diazepam and alprazolam.

**Counseling and referral services** were available in 73% of PHCs on all days and mostly provided by MOs themselves. Around 52% of MOs referred <1% of the cases seen by them and 4.5% referred >50% of all psychiatric cases seeking care at the PHCs. MOs referred the patients for better care, mostly (75%) to the district hospital where the specialist psychiatrist is available. Cases were referred to as MOs felt the patient needed specialist care (91%) and around 48% referred as they were not able to diagnose accurately.

### Ability of medical officers to identify and treat mental disorders

Case-vignette based assessment (proxy to ability) revealed that the mean score for the ability to identify and treat mental disorders was  $48.04 \pm 20.66$ . The correct response was highest for depression (mean  $\pm$  SD,  $7.1 \pm 3.60$ ), followed by epilepsy ( $6.38 \pm 4.38$ ) and schizophrenia ( $5.51 \pm 4.03$ ). MOs scored significantly better in their knowledge in making a 'diagnosis' ( $26.44 \pm 10.3$ ) as compared to providing 'treatment' ( $21.60 \pm 12.3$ ), ( $P = 0.04$ ) [Table 4]. Nearly 18% of MOs scored <25, 33% scored from 26–50 and 44% scored from 51–74. Around 49% of MOs scored 50 and above in the assessment. There was no significant difference in diagnosis and treatment scores for mental disorders by gender ( $P = 0.78$



**Figure 1: Extent of utilisation of MH drugs in PHCs**

**Table 4: Mean Scores obtained by medical officers (Diagnosis and Treatment of mental disorders)**

| Case-vignette             | Diagnosis   | Treatment   | Total       |
|---------------------------|-------------|-------------|-------------|
|                           | (5 marks)   | (5 marks)   |             |
|                           | Mean±SD     | Mean±SD     | Mean±SD     |
| Depression                | 4.44±1.58   | 2.66±2.025  | 7.1±3.60    |
| Mania                     | 2.17±2.36   | 1.71±1.97   | 3.88±4.33   |
| Psychoses (Schizophrenia) | 3.41±2.02   | 2.10±2.01   | 5.51±4.03   |
| Neurosis (GAD)            | 2.72±2.49   | 2.22±1.70   | 4.94±4.19   |
| Neurosis (Panic disorder) | 2.0±2.2     | 1.61±1.85   | 3.61±4.05   |
| Dissociative disorder     | 0.72±1.37   | 0.89±1.42   | 1.61±2.79   |
| Somatization disorder     | 2.61±2.32   | 2.39±2.12   | 5±4.44      |
| Epilepsy                  | 3.60±2.24   | 2.78±2.14   | 6.38±4.38   |
| Alcohol - Harmful use     | 2.0±2.2     | 1.85±1.43   | 3.91±3.22   |
| Alcohol dependence        | 2.06±2.27   | 1.82±1.60   | 3.88±3.87   |
| Total score               | 26.44±10.3* | 21.60±12.3* | 48.04±20.66 |

\*Independent 't' test,  $P=0.046$

and  $P = 0.07$ ) or years of service of MOs ( $P = 0.09$ ,  $P = 0.23$ ). Scores were higher for MOs with less than 10 years experience as compared to those more than 10 years, though the difference was not statistically significant (data not shown).

Around 87% of MOs were trained to deliver mental health care and 68% were trained in the district training centre, Kolar. The latest training was conducted 2 months prior to this assessment. Yet 90% of medical officers reported a need for further reinforcement training.

## Discussion

This study was conducted in the background of efforts undertaken to strengthen the capacity of MOs in mental health in Kolar. Assessment reiterated that people do seek mental health care in PHCs justifying the need to build the capacity of MO's to deliver care.<sup>[8,12,13]</sup> Though integration serves to universalise access to mental healthcare in India,<sup>[8,14-16]</sup> quality treatment and regular availability of drugs is crucial for meaningful integration.

Though most MOs reported providing psychiatric OPD services in PHCs, social desirability bias might have influenced their response. Kolar is the public health observatory of NIMHANS and MOs were recently (2 months prior to data collection) trained in mental health. This would have prompted socially desirable reporting. Data from neighboring districts revealed mental health services were provided by 58% of MOs.<sup>[12]</sup>

Our study reported 2.8% of daily OPD attendees in PHCs presented with symptoms suggesting psychiatric illness, similar to other studies (2.7–5%), though on the lower side.<sup>[13,14]</sup> This translates to 2600 patients across 65 PHCs in Kolar. National Mental Health Survey-2016<sup>[11]</sup> pilot study in Kolar,<sup>[2]</sup> estimated that around 112,500 individuals needed mental healthcare in Kolar but number seeking OPD care in PHCs (assuming they have mental morbidity) is 2.3% of expected caseload in the community. Though data are from different time periods, it indicates that PHCs cater to minuscule proportions of the

caseload in the community. This could be attributed to differential health-seeking behaviours, negative perception of government hospitals, lower mental health literacy, client satisfaction, stigma and other socio-cultural influences. Nevertheless, there is a need to quantify psychiatric caseload in PHCs using patient records to supplement available data from mental health drug registers.

Common mental disorders and alcohol use predominated mental healthcare seeking in Kolar PHCs, as observed by other studies conducted in primary care settings; multiple somatic symptoms (28–41.8%) and symptoms of depression (25.5–52.2%).<sup>[12-19]</sup> Planning service delivery or capacity strengthening of MOs needs to take the above information into cognisance.

We expected MO's to report difficulties in diagnosing and treating psychiatric disorders owing to lesser exposure to psychiatry in undergraduate medical education.<sup>[17,18]</sup> Studies indicated MOs recognise 49% of mental disorders ascertained by a study instrument.<sup>[20]</sup> Similar situation prevailed in our study in spite of recent training in mental health, indicating a need for introspection.

Unlike other diseases in national health programmes (tuberculosis, malaria and others), there is no standardised algorithm for the identification and management of mental disorders in NMHP. Though manuals and guidelines are available (NIMHANS,<sup>[21]</sup> WHO mhGAP guidelines,<sup>[22]</sup> hands-on-training methods and clinical decision-making tools are limited. Evaluation of primary care doctors by the Indian Council of Medical Research indicated that existing manuals, though useful, needed more practical details and more clinical case examples.<sup>[15,23]</sup> Observations imply a need to develop clinical decision-making tools for psychiatric diagnosis and treatment for primary level.

In the present study, 40% of MOs reported that training has actually helped to deliver services. Most (90%) reported the need for further training. What constitutes 'adequate training duration' and 'process' for the best possible skill transfer to deliver acceptable level of mental health services is an enigma. Different institutes use different training contents, modality and duration (ICMR-DST study-15 sessions of 2 h each,<sup>[16,23]</sup> NIMHANS -2 weeks, DMHP -3 days.<sup>[7,9]</sup> The virtual knowledge network in NIMHANS provides digital platform-based training.<sup>[24]</sup> Though training methods are different, perception of MOs regarding need for service delivery oriented training is uniform across studies. MOs opined that mental health has to be delivered using a combination of bedside training and lectures. They indicated a need for refresher training once in 3 months or 6 months. An initial hand-holding by psychiatrist in PHCs for diagnosing and treating cases is essential.

Our assessment revealed a gap in the self-reported abilities of MOs to diagnose and treat psychiatric disorders in comparison to abilities assessed by a case-vignette approach. Case-vignette based assessment is a better option to assess the skill transition of training programmes for MOs. Multiple studies reported

the need for more practical training and case-vignette based assessments.<sup>[12,15,25]</sup>

With MOs reaching 2.8% of expectant psychiatric caseloads in the community, the role of primary care doctors in private sector to reduce treatment gap is significant. Family practise-based care for common mental disorders is present in many countries<sup>[26,27]</sup> but like MOs, primary care/family physicians too have limited undergraduate exposure to psychiatry. Inter-professional capacity building,<sup>[28]</sup> clinical decision-making tools and using case-vignette based evaluations in family medicine courses and in general practise could improve abilities of primary care physicians to manage mental disorders. Their involvement is limited to the programme. Our study findings are equally relevant to primary care physicians/family medicine practitioners as they cater to huge section of the population.

MOs provided treatment through a combination of mental health drugs and counseling (82%) in Kolara, similar to 89% observed in Ludhiana.<sup>[29]</sup> As we did not frame operational definitions of counseling or objective assessments of counseling, there is a high probability of 'patient education' being misclassified as counseling.

Many studies indicate that a shortage of mental health drugs is an issue in PHCs<sup>[9,30]</sup> but our study reported a regular supply of mental health drugs. The highest utilised were antiepileptics and lowest was antipsychotic drugs. High utilisation of antiepileptic drugs is observed as earlier diagnosed cases of epilepsy (in higher centres) are referred to PHCs for regular collection of monthly antiepileptic drugs. Nearly 97% of MOs referred the patients with 91% referring to 'for better care'. Survey of nonpsychiatric clinicians<sup>[13]</sup> indicated that 60% of doctors reported that only 1/4<sup>th</sup> of patients treated for psychiatric disorders sought referral to specialist.

The above discussion related to psychiatric services provided by MOs in PHCs must be viewed in the background of stigma, discrimination, low priority for mental health, socio-cultural barriers and negligence of caregivers. Improving the abilities of MOs and strengthening services may not be sufficient to improve the existing treatment gap if other macro determinants are ignored.

## Conclusions

Our study revealed that though nonspecialist doctors (MOs) provided mental health treatment and referral services in PHCs in Kolara district but their ability to diagnose and treat needs to be strengthened. Counseling and mental health information systems are not well-established. Mental health drugs were in regular supply.

The study recommends a review of existing mental health training of MOs and reorients the training from a service delivery perspective. There is a need to develop clinical decision-making

tools for psychiatric diagnosis and treatment for primary level, based on commonly observed symptomatology, focusing on broad category diagnosis and treatment. The study also recommends greater involvement of district psychiatrists in capacity building process and use of case-vignette based approach to assessing ability of MOs to deliver psychiatric OPD services.

India has officially integrated mental health services but now the focus needs to be shifted towards ensuring the quality of integration. This could be achieved by implementing innovative strategies aimed at enhancing skills of MOs to deliver quality mental healthcare. This would accentuate reduction of treatment gap for mental disorders in India.

## Limitations

Social desirability bias might have influenced favourable reporting of responses by medical officers, as most of them had undergone recent training in mental health. Services such as counseling were not assessed objectively and hence there is scope for misclassification.

## Acknowledgements

We acknowledge the support of District Health Officer, Kolara and Medical officers from Kolara District. Sincere thanks for the support extended by The Director, NIMHANS and faculty/staff of Dept of Epidemiology, NIMHANS.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Gururaj G, Varghese M, Benegal V, Rao GN, Pathak K, Singh LK, *et al.* National Mental Health Survey of India, 2015-16: Prevalence, patterns and outcomes. Report No: 129. Bengaluru: NIMHANS; 2016. p. 90-1.
2. Gururaj G, Varghese M, Benegal V, Rao GN. NMHS pilot study Kolar. NIMHANS; 2015. [cited 2019 Apr 19]. Available from: [https://www.google.co.in/search?q=NMHS+pilot+study+kolar&ie=utf-8&oe=utf-8&client=firefox-b-ab&gfe\\_rd=cr&ei=QHr3WKqgJJPY8AfzIKiWBA](https://www.google.co.in/search?q=NMHS+pilot+study+kolar&ie=utf-8&oe=utf-8&client=firefox-b-ab&gfe_rd=cr&ei=QHr3WKqgJJPY8AfzIKiWBA).
3. Garg K, Kumar CN, Chandra PS. Number of psychiatrists in India: Baby steps forward, but a long way to go. Indian J

- Psychiatry 2019;61:104-5.
4. Kumar A. Mental health services in rural India: Challenges and prospects. *Health (NY)* 2011;3:757-61.
  5. Biswal R, Subudhi C, Acharya SK. Healers and healing practices of mental illness in India: The role of proposed eclectic healing model. *J Health Res Rev* 2017;4:89-95.
  6. Patel V, Belkin GS, Chockalingam A, Cooper J, Saxena S, Unützer J. Grand challenges: Integrating mental health services into priority health care platforms. *PLoS Med* 2013;10:e1001448.
  7. National Mental Health Programme. Directorate General Of Health Services; [updated 2019 October 17; cited 2019 Oct 16]. Available from: [https://dghs.gov.in/content/1350\\_3\\_NationalMentalHealthProgramme.aspx](https://dghs.gov.in/content/1350_3_NationalMentalHealthProgramme.aspx).
  8. Singh OP. District mental health program-Need to look into strategies in the era of Mental Health Care Act, 2017 and moving beyond Bellary Model. *Indian J Psychiatry* 2018;60:163.
  9. Nagaraja D. Report of Evaluation of District Mental Health Programme. Bengaluru: NIMHANS; 2003. [cited 2019 August 10]. Available from: <https://mhpolicy.files.wordpress.com/2011/05/nimhans-report-evaluation-of-dmhp.pdf>.
  10. Van Ginneken N, Jain S, Patel V, Berridge V. The development of mental health services within primary care in India: Learning from oral history. *Int J Ment Health Syst* 2014;8:30.
  11. Manjunatha N, Singh G, Chaturvedi SK. Manochaitanya programme for better utilization of primary health centres. *Indian J Med Res* 2017;145:163-5.
  12. Cowan J, Raja S, Naik A, Armstrong G. Knowledge and attitudes of doctors regarding the provision of mental health care in Doddaballapur Taluk, Bangalore Rural district, Karnataka. *Int J Ment Health Syst* 2012;6:21.
  13. Chadda RK, Shome S. psychiatric aspects of clinical practice in general hospitals: A survey of non-psychiatric clinicians. *Indian J Psychiatry* 1996;38:86-92.
  14. Wig NN, Murthy RS, Harding TW. A model for rural psychiatric services—Raipur rani experience. *Indian J Psychiatry* 1981;23:275-90.
  15. Bhawan R, Nagar A. Mental Health Research in India. [cited 2017 Apr 24]; Available from: <https://pdfs.semanticscholar.org/de7b/e186f1183c9b5f2ec5165101b906e950a55d.pdf>.
  16. Agarwal SP, Goel DS, Ichhpujani RL, Salhan RN, Shrivastava S. Mental health: An Indian perspective, 1946-2003. In: Agarwal SP, editor. New Delhi: Directorate General of Health Services, Ministry of Health and Family Welfare; 2004. p. 549.
  17. Badrakalimuthu VR, Rangasamy Sathyavathy V. Mental health practice in private primary care In rural India: A survey of practitioners. *World Psychiatry* 2009;8:124-5.
  18. Patel V, Pereira J, Mann AH. Somatic and psychological models of common mental disorder in primary care in India. *Psychol Med* 1998;28:135-43.
  19. Kishore J, Reddaiah VP, Kapoor V, Gill JS. Characteristics of mental morbidity in a rural primary health centre of haryana. *Indian J Psychiatry* 1996;38:137-42.
  20. Wittchen H-U, Mühlig S, Beesdo K. Mental disorders in primary care. *Dialogues Clin Neurosci* 2003;5:115-28.
  21. Kishore Kumar KV, Chandrashekar CR, Gangadhar BN, Suresh BM, Shiva Kumar PT, Jagadisha, *et al.* Training for Medical Officers to Integrate Mental Health into Primary Health Care-My Work Book. 1<sup>st</sup> ed. Bangalore: NIMHANS; 2008. p. 63.
  22. mhGAP training manuals for the mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings - version 2.0 (for field testing) [Internet]. Geneva: World Health Organisation; 2017. [ cited 2019 April 20]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/259161/WHO-MSD-MER-17.6-eng.pdf;jsessionid=078D8B75C35AF65FE9679C77248AECOC?sequence=1>.
  23. Kumar N, Shah B, Parea R, Khanna T, Singh R. Mental Health Research in India (Technical Monograph on ICMR Mental Health Studies) [Internet]. New Delhi: Indian Council of Medical Research; 2005. [cited 2019 April 20]. Available from: [https://www.icmr.nic.in/sites/default/files/reports/Mental\\_Health.pdf](https://www.icmr.nic.in/sites/default/files/reports/Mental_Health.pdf).
  24. Virtual Knowledge Network. NIMHANS Digital Academy - Centre for Addiction Medicine. [Internet]. Bengaluru: NIMHANS; [updated 2019 Oct 1; cited 2019 Oct 14]. Available from: <http://vlc.nimhans.ac.in/>.
  25. Sriram TG, Chandrashekar CR, Isaac MK, Srinivasa Murthy R, Shanmugham V. Training primary care medical officers in mental health care: An evaluation using a multiple-choice questionnaire. *Acta Psychiatr Scand* 1990;81:414-7.
  26. Mel Krass. Family physician-based care of patients with serious mental illness. *Can Fam Physician* 2016; 62:956-7.
  27. Jago M, Debaty E, Ouirini L, Carrier H, Beetlestone E. Caring for patients with mental disorders in primary care: A qualitative study on French GPs' views, attitudes and needs. *Fam Pract* 2019;36:72-6.
  28. Althubaiti N, Ghamri R. Family physicians' approaches to mental health care and collaboration with psychiatrists. *Cureus* 2019;11:e4755.
  29. Chaudhary RK, Mishra BP. Knowledge and practices of general practitioners regarding psychiatric problems. *Ind Psychiatry J* 2009;18:22-6.
  30. Keshavan MS, Shrivastava A, Gangadhar BN. Early intervention in psychotic disorders: Challenges and relevance in the Indian context. *Indian J Psychiatry* 2010;52(Suppl 1):S153-8.