The effect of mental health training on the knowledge of common mental disorders among medical officers in primary health centres in rural Karnataka

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Abstract

Background: Deficits in knowledge regarding identification and treatment of common mental disorders (CMD) and stigmatizing attitudes towards CMDs exist among primary care physicians in India. **Objectives:** We aimed to assess the gain in knowledge of CMDs among primary health centre (PHC) doctors, after they underwent training in the identification and treatment of CMDs, and to assess the relationship between the gain in knowledge and demographic variables. We also assessed attitudes towards depression among PHC doctors who underwent training. **Methods:** We assessed knowledge of CMDs among 38 PHC doctors before and after training using a multiple-choice questionnaire (MCQ). The training session included didactic teaching and case-based discussions. **Results:** The post-test mean score was significantly higher compared to the pre-test mean score ($P < 0.0001$), indicative of a significant mean gain in knowledge of CMDs among PHC doctors following training. Significant improvements were noted on the questions assessing identification of CMDs, knowledge of depressive symptoms and identification of panic attacks, post-training (all $P < 0.05$). Participants with lower pre-test scores had greater improvements in knowledge post-training. Around half of the PHC doctors endorsed negative attitudes towards depression. **Conclusions:** We demonstrated the efficacy of a training programme for PHC doctors in improving their knowledge of CMDs. Stigmatizing attitudes towards depression were present among around half the PHC doctors even after the training. This has implications for the strategy of integrating mental healthcare into primary care, with the overall goal of reducing the treatment gap for CMDs.

Keywords: Common mental disorders, knowledge, mental health training, primary care physicians, primary healthcare

Introduction

The point prevalence of mental disorders in India among individuals above the age of 18 years is 10.6% of the population.[1] In real numbers, this translates to around 150 million Indians suffering from a psychiatric disorder and in need of an active intervention. Common mental disorders (CMD) contribute a significant proportion of the burden of mental morbidity, with around 88 million people diagnosed with depression or anxiety disorders. However, the majority of people with CMD do not receive appropriate treatment. The disability caused by these conditions was also observed to be high across various domains (work, social and family life), ranging from 67% to 70% for depressive disorders and 46% to 49% for anxiety disorders.

Primary care physicians are uniquely positioned within the community to deliver patient-centric care in addressing mental health needs in the community.[2] Therefore, integration of mental health into primary care, and specifically into the National Programme for prevention and control of cancer, diabetes, cardiovascular disease and stroke (NPCDCS), are key strategies proposed by national and international bodies to address the treatment gap for CMDs.[1,3,4] However, studies conducted in India among primary care physicians have noted significant deficits in knowledge regarding identification and treatment of CMDs. In a questionnaire survey conducted in Doddaballapur in rural Karnataka, only half of the 46 primary care physicians who responded were able to name three common symptoms and signs of depression and almost one-third reported that they had not received any training in providing mental healthcare.[5] The same study revealed the presence of negative attitudes towards mental health, particularly among doctors who had not received training in mental health, where the respondents endorsed statements like 'mental health problems are a sign of personal weakness', 'it is difficult to work with mental health patients' and 'PHC doctors have little to offer these patients'. In another survey conducted in community clinics and hospitals in Gujarat that included 80 non-psychiatrist physicians and physician trainees, around 40% of the participants agreed with each of the following statements – 'depression is a sign of weakness', 'people who attempt suicide are weak', 'people with depression are hard to talk with' and 'people with depression are unpredictable'.[6]

The impact of training on primary care physicians' knowledge of mental health has been a subject of multiple studies, both in India and elsewhere.[7-12] While some studies have assessed knowledge before and after training in mental health was imparted to doctors in single-arm studies,[7-9] others have used randomized controlled trial (RCT) design wherein participants were randomized to training sessions or a control group.[10-12] Studies have examined the effect of various forms of physician training such as seminars,[9,12] didactic classes,[7,8,10,11] role play[7,12] and case-based discussions.[7,8,12] Outcomes were measured using either multiple-choice questionnaires (MCQ),[7,9] a case vignette-based approach[8,10] or a knowledge scale.[11] Several of these studies showed that training increased primary care physicians' knowledge of CMD.[7-11] Two RCTs showed that physicians in the intervention groups showed significantly greater increase in knowledge, as compared to controls,[10,11] while a third study did not find any difference between the intervention and control groups.[12] Younger doctors seem to benefit more from training than their older counterparts.[7] Baseline level of knowledge regarding treatment of CMD is inversely related to the gain in knowledge post-training – that is, doctors with lower scores before training seem to show greater improvements in scores after undergoing training.[7,10]

Additionally, the COVID-19 pandemic has accentuated the role of primary care physicians in managing the mental health impact of the pandemic.[13]

Given the deficits in knowledge and presence of negative attitudes towards CMD among PHC physicians in India,[5,6] there is a gap in our understanding of the impact of training on addressing these deficits in knowledge of CMDs among PHC doctors. The present study was designed to meet this need.

The aims of the present analyses were:
1. To assess the gain in knowledge of CMDs among PHC doctors, by comparing their test scores before and after they underwent training in the identification and treatment of CMD.
2. To assess the relationship between gain in knowledge and demographic variables (age, sex, and years since medical graduation).
3. To describe attitudes towards depression among PHC doctors who underwent training.

Methods

Setting and participants

The present analyses were a part of a cluster-RCT designed to implement and evaluate the effects of a collaborative care model to integrate screening and treatment of primary health centre (PHC) patients with CMD who were also diagnosed with chronic medical conditions in rural Karnataka.[14] The present analysis included 38 PHC doctors, 26 from the collaborative care arm and 12 from the standard care arm.

Procedures

All staff in PHCs randomized to the collaborative care arm received a full day of training in the collaborative care model designed to enable them to effectively integrate treatment of CMDs into their regular practice in patients with co-morbid medical conditions. In the morning session, all staff of the PHCs were provided training on the management of chronic non-communicable diseases at the clinic level and the afternoon sessions were devoted to management of CMD. PHC doctors from the collaborative care arm were trained to identify and treat patients presenting with CMDs within the collaborative care framework. Standard treatment of CMD in the PHC often includes inappropriate use of vitamins, symptomatic treatment and anxiolytics.[15] Hence, for ethical reasons, we trained PHC doctors in the control PHCs in our study in the treatment of CMDs per standard treatment protocols that included appropriate use of antidepressant medications for in the treatment of depression.

Mental health training session for PHC doctors in the intervention and control arms

The mental health training session was imparted in a group format, with collaborative care doctors in one group and standard care doctors in another. The training session was guided by manuals created for the purpose of the trial, based on standard treatment protocols and lasted approximately 3 hours. Training methods included didactic teaching and case-based discussion.

There was a question-and-answer session for clarification of doubts and discussion. The training of PHC doctors in the use of antidepressant medications for the treatment of depression was based on the World Health Organization (WHO) mental health gap guidelines (mhGAP) for treatment of mental disorders in primary care, which recommends treating moderate-to-severe depression with antidepressants.[16] The training modules included 'What are Common Mental Disorders?', 'How to screen for Common Mental disorders?', 'How to diagnose Common Mental Disorders?' and 'How are Common Mental Disorders treated?'. These modules were based on guidance documents developed by the WHO and the National Institute of Mental Health and Neurosciences, Bangalore,[4,17,18] for the training of PHC physicians in the identification and treatment of CMD. Additionally, collaborative care doctors received training in procedures particular to the collaborative care model.

Measures

Sociodemographic details

A questionnaire that captured demographic characteristics that included age, gender and the year of completion of medical training was administered to all the PHC doctors who attended the training. In addition, they were also asked about any prior training in mental health.

Knowledge questionnaire

MCQ-based tests were administered to the PHC doctors before and after the training session. There were seven questions with four response options and each MCQ had one correct answer. One mark was awarded for each correct answer and there were no negative marks for wrong answers or no response. The questionnaire is given in the appendix.

Revised-Depression Attitudes Questionnaire

The Revised-Depression Attitudes Questionnaire (R-DAQ) is a 22-item scale derived from the 20-item Depression Attitudes Questionnaire (DAQ).[19] The scale items are attitude statements towards depression with response options for level of agreement from 'strongly agree' to 'strongly disagree', scored on a 5-point Likert scale. Eleven items are reversed-scored. Scores can range from 22 to 110. Higher scores indicate positive attitudes, whereas lower scores indicate negative attitudes towards depression. To estimate only the frequency of negative attitudes, the number of respondents who rate the R-DAQ items reflecting negative attitudes towards depression as 'strongly agree' or 'agree' is calculated without reverse scoring. It has shown good internal consistency and satisfactory test–retest reliability[20] and contains three subscales based on exploratory factor analysis – professional confidence in depression care (7 items), therapeutic optimism/pessimism about depression (10 items) and generalist perspective about depression occurrence, recognition, and management (5 items). It has been previously used in low- and middle-income countries (LMIC).[21] The R-DAQ was self-administered to participating PHC doctors during a visit to their respective PHCs, approximately 1 month after they completed training.

Statistical analysis

Paired *t*-test was used to compare pre-test and post-test scores. Analysis of covariance (ANCOVA) was performed considering post-test score as outcome, adjusted for age, gender and year of education and pre-test score. Spearman's rho correlation coefficient was used to assess the correlation between delta score (post–pre score) with pre-test score. McNemar Chi-square test was used to compare the proportion of correct responses for each item at pre- and post-training. Statistical significance was arrived at 0.05 level of significance. Analysis was carried out using SPSS version 25.0.

Ethical considerations

Ethics approval was obtained from the Institutional Ethical Review Board at St. John's Medical College and Hospital, and the Committee on Human Research, University of California, San Francisco. All participants provided written informed consent.

Results

Descriptive statistics

Pre-test and post-test scores were available for 38 PHC doctors, 26 from collaborative care and 12 from standard care PHCs, which were included in the analysis. Only pre-test and only post-test scores were available for two and one PHC doctors, respectively, and both were missing for 27. The total number of doctors trained ($n = 68$) is higher than the number of participating PHCs, because some PHC doctors were transferred during the study and replaced by doctors who underwent individual training. These doctors did not complete the knowledge tests before and after training and were therefore not included in the analysis. The mean age of the doctors and years since graduation were comparable between the doctors who were included ($n = 38$) and not included ($n = 30$) in the study (mean age 39.9 ± 7.51 vs. 39.9 ± 7.93, years since graduation 15.5 ± 6.44 vs. 16.5 ± 7.42, respectively). However, the proportion of males was significantly lower in the included group, compared to those who were not included in the study (42% vs. 67%, respectively, Chi-square statistic 4.05, *P* value 0.043).

The characteristics of the 38 doctors included in the analysis are shown in Table 1. Only one medical officer had received prior additional training in mental health; therefore, this variable was excluded as an independent variable from subsequent analyses.

The mean pre-test and post-test scores were 3.47 ± 1.87 and 4.79 ± 2.02, respectively [Table 1]. The post-test mean score was significantly higher compared to the pre-test mean score (test statistic = −4.05, *P* < 0.0001), indicative of a significant mean gain in knowledge of CMDs among PHC doctors following training. ANCOVA, considering pre-test score as a covariate, revealed that age, sex and years since Medicinae Baccalaureus Baccalaureus Chirurgiae graduation were not significantly associated with the post-test score. In addition, a significant negative correlation was noted between change

in knowledge score (post-test score minus pre-test score) and pre-test score (Spearman's rho = −0.37, $P = 0.02$), indicating that participants with lower pre-test scores had greater improvements in knowledge after training.

The proportion of doctors who answered correctly on each of the items of the knowledge questionnaire are given in Table 2. Significant improvements were noted on the questions assessing identification of CMDs, knowledge of depressive symptoms and identification of panic attacks, post-training (all $P < 0.05$).

The R-DAQ scores were available for 50 PHC doctors. The number of doctors endorsing items reflecting negative attitudes towards depression on the R-DAQ is shown in Table 3. The number of doctors in agreement with the R-DAQ items was taken as all those who rated the R-DAQ items as 'strongly agree' or 'agree'. Around half of the PHC doctors endorsed each of these negative or pessimistic attitudes towards depression.

Discussion

We set out to assess whether a training programme for PHC doctors led to a gain in their knowledge of CMDs and to describe the factors that were associated with this gain in knowledge, within a collaborative care framework, when linked to and delivered alongside training in chronic medical conditions. The results demonstrated that there was a significant gain in knowledge of CMDs, among the PHC doctors following a half-day training program.

In our study, training consisted of a single-session didactic teaching and case-based discussions on CMDs. Our study therefore adds to the literature on the efficacy of didactic teaching

and case-based discussion in improving primary care physicians' knowledge of CMDs,[7,8,10,11,12] and after a single session of training.[10] This finding has relevance as primary care physicians are embedded within the fabric of the community, which affords them unique perspectives and opportunities to deliver person-oriented mental health services.[2] Our study demonstrates that training in mental health does improve knowledge of CMDs among primary care physicians and can therefore improve the quality of mental health services delivered by them. This is especially relevant in addressing the increased burden of CMDs in the wake of the COVID-19 pandemic.[13]

Our findings are in line with those of previous studies that have found that the baseline level of knowledge is inversely related to the gain in knowledge post-training.[7,10] This shows that it is possible to improve PHC doctors' knowledge of CMDs, especially when they have little or no knowledge about identification and treatment of CMDs. The results of our study indicate that deficits in knowledge of CMDs are present most frequently in the domains of identification of CMDs and panic attacks, and diagnostic criteria of depression. These deficits in knowledge may be related to a lack of adequate training in psychiatry, particularly in the application of structured diagnostic approach to elicit psychiatric diagnosis, at a medical undergraduate level.[22]

It was disconcerting to note the presence of stigmatizing and negative attitudes towards depression among at least half of the PHC doctors, even after the training session. This finding is comparable to other studies from India that have addressed the prevalence of such attitudes among physicians in primary care settings.[5,6] Studies have also shown that stigmatizing and negative attitudes towards depression can be present among doctors even if they possess adequate knowledge of symptoms of depression.[23,24] It is possible that these stigmatizing and negative attitudes may have their origins in the community, where such attitudes are prevalent,[25] may be deeply ingrained and may therefore not be affected merely by gain in knowledge of CMDs. Singh *et al.*[26] demonstrated the efficacy of two different curricula in changing medical students' attitudes towards mental illness in the United Kingdom. To our knowledge, there are no similar studies done among primary care physicians in India. Addressing stigmatizing and negative attitudes towards depression among primary care physicians is necessary since perceived stigma

Table 1: Characteristics of study subjects

Characteristic	$n=38$
Sex*	
Males	16 (42.1)
Females	22 (57.9)
Age	39.9 (7.51)
Years since MBBS graduation	15.4 (6.44)
Pre-test knowledge score (0-7 range)	3.47 (1.87)
Post-test knowledge score (0-7 range)	4.79 (2.02)
Change in knowledge score (post-pre)	1.35 (2.01)
R-DAQ score (22-110 range)	79.1 (9.37)

MBBS=Medicinae Baccalaureus Baccalaureus Chirurgiae. Values are mean (SD), *number (%)

Table 2: Proportion of doctors who answered correctly on each question of the knowledge questionnaire before and after training ($n=38$)

Question	Answered correctly in pre-test *n* (%)	Answered correctly in post-test *n* (%)	P
Identification of common mental disorders	24 (63.2)	33 (86.8)	**0.02**
Knowledge of depressive symptoms	10 (26.3)	22 (57.9)	**0.004**
Identification of a panic attack	23 (60.5)	32 (84.2)	**0.01**
Identification of generalized anxiety disorder	22 (57.9)	29 (76.3)	0.14
Identification of antidepressant medication	14 (36.8)	18 (47.4)	0.38
Knowledge of indications for patient referral	21 (55.3)	26 (68.4)	0.12
Knowledge of side effects of antidepressant medication	18 (47.4)	22 (57.9)	0.38

Bold values are statistically significant

Table 3: Number of PHC doctors endorsing items reflecting negative attitudes towards depression (*n*=50)

R-DAQ item	Number in agreement	Percentage
One of the main causes of depression is a lack of self-discipline and will power	33	66
I am more comfortable working with physical illness than with mental illnesses like depression	22	44
Becoming depressed is a way that people with poor stamina deal with life difficulties	29	58
Once a person has made up their mind about taking their own life no one can stop them	26	52
There is little to be offered to depressed patients who do not respond to initial treatments	27	54

R-DAQ=Revised-Depression Attitudes Questionnaire

among patients with depression is known to negatively influence help-seeking in primary care and adherence to antidepressant medication.[27-29]

Our study has few limitations. There was a rapid turnover of PHC physicians during the course of the study. Although all these physicians were provided training in the identification and treatment of CMD as per the protocol in individual sessions, we missed administering questionnaires to assess the impact of training. This resulted in a small sample size which limited power of the study and the generalizability of our findings. The MCQ-based questionnaire method of assessment is limited in its ability to assess depth of knowledge and understanding of a particular topic. The use of case vignettes and Objective Structured Clinical Examination (OSCE) may be better suited to achieve a more comprehensive assessment of gains from training.[30]

Conclusions

We demonstrated the efficacy of a training programme consisting of didactic teaching and case-based discussion for PHC doctors, in improving their knowledge of CMDs. The training was linked to training in chronic medical conditions. The gain in knowledge after training seemed to most benefit PHC doctors with lower levels of knowledge prior to training. Stigmatizing attitudes towards depression were present among around half the PHC doctors even after the training. This has implications for the strategy of integrating mental healthcare into primary care, with the overall goal of reducing the treatment gap for CMDs.

Key messages

Primary care physicians' knowledge of CMDs can be improved with mental health training using didactic teaching and case-based discussions. This can ensure better delivery of mental health services by primary care physicians and is especially relevant in mitigating the mental health impact of the COVID-19 pandemic.

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Conflicts of interest

There are no conflicts of interest.

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