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# Innovative virtual mentoring using the Extension for Community Healthcare Outcomes model for primary care providers for the management of alcohol use disorders

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**The number of experts available for the management of alcohol use disorders (AUDs) in rural and underserved areas in India is limited. In this study, a blended training programme was conducted for 26 primary care providers (PCPs) from nine districts of Bihar, in best practices for the management of AUDs. A two weeks on-site training was followed by fortnightly online tele-Extension for Community Healthcare Outcomes (ECHO) clinics for six months using the 'Hub and Spokes' ECHO model, accessible through internet-enabled smartphones. A questionnaire administered at baseline and after six months assessed changes in the PCPs compliance with principles of AUD management. Significant improvements were noted in compliance to principles in the management of AUDs based on self-report. Over the six months period 2695 individuals were screened, of whom 832 (30.8%) had an AUD Identification Test score of more than 16, indicating harmful use or dependence. The PCPs reported retaining 49.1 per cent of the cases for at least one follow up and needed to refer only 80 (3%) cases to specialists for further management. The ECHO model was found to be effective in training PCPs to provide quality healthcare. To confirm these findings, it needs to be tested in a large number of PCPs with a robust study design.**

**Key words** Alcohol use disorders - capacity building - primary care providers - Project ECHO - telementoring - virtual knowledge network

Alcohol use disorders (AUDs) are a major health and social problem in India[1]. In the State of Bihar, 28.9 per cent of men in the age group of 15 to 49 yr reported alcohol use in 2015[2]. Addiction treatment facilities staffed by primary care providers (PCPs), non-specialist doctors and counsellors, were established at the district level in Bihar in 2016[3]. In low- and middle-income countries, PCPs are often overburdened with the implementation of several national programmes, in addition to routine clinical and administrative responsibilities[4]. This results in a limited amount of time dedicated to clinical practice and acquisition of new skills[5]. Given these constraints and a lack of training in the effective management of AUDs, health professionals often do not provide care for these patients. Due to this felt need, we adapted an existing

model, Project Extension for Community Healthcare Outcomes (ECHO)[6] which has demonstrated successful outcomes globally in the management of hepatitis C[7], chronic pain, dementia and substance use disorders (SUDs)[8-11]. The ECHO model has also been piloted in India to train physicians to manage cancer, liver disease and SUDs[12-14]. Although much is known about the kind of training modules and its impact on the competence of PCPs, there is less information available about the profile of patients seen by the trained PCPs and the management of these patients[15], particularly in the Indian setup. The objective of the present study was to document the change in compliance to established principles of the management of AUDs before and after the blended training modification of the ECHO model. Further, the profile of patients treated by the PCPs was also studied.

The study was conducted by the department of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, India, with prior approval from the Institutional Ethics Committee.

A total of 26 PCPs (17 doctors and 9 counsellors) from across nine districts of Bihar were nominated by the State Health Society. They attended the first component of the blended training, a 15-days onsite sensitization programme. A booklet with simple training algorithms was also developed and subsequently disseminated in the local language to all PCPs. This was followed by six months of fortnightly telementoring sessions from March to September 2016. Fourteen online NIMHANS tele-ECHO clinics were conducted, linking PCPs who joined from their workplaces (Spokes) with the multidisciplinary specialists at NIMHANS (Hub) using a cloud-based multipoint videoconferencing application on their smartphones or laptops. Each clinic consisted of case presentations by the PCPs to the Hub team which provided recommendations on best practices in the management of their patients. The objective was to improve skills in case formulation, management and self-efficacy. Each clinic would end with a brief didactic delivered by an expert in the area of addiction and co-morbid illnesses.

Twenty PCPs (14 doctors and 6 counsellors) participated in at least one NIMHANS tele-ECHO clinic. The total number of instances of participation was 137 constituting a total of 274 h. A total of 50 patient summaries were discussed. The mean number of tele-clinics attended by each member of the group was five, while the average attendance per tele-clinic was 10. Eight PCPs (6 doctors and 2 counsellors) attended more than 75 per cent of the online sessions, presented more than four cases, scored more than 80 per cent in an online evaluation and were awarded a certificate of competence. The reasons for dropout were mainly because most of the PCPs were assigned other responsibilities and hence could not attend the online component of the programme. The telementoring sessions were supplemented with an internet message-based handholding, for day-to-day management dilemmas using a social networking application (WhatsApp). The common queries were about the dosing of medications, management of common medical problems and handling uncooperative patients. The answers were provided by the members of the Hub team. A total of 20 of the 26 PCPs used the internet messaging service and all of them perceived this as extremely useful support. While the utility of this component was not systematically evaluated, other studies have found it useful to facilitate service delivery, particularly in developing countries[16]. The PCPs reported that online components of the training programme were overall responsible for an average of 72 per cent of the total learning gained from the blended training. Data analysis was done using IBM SPSS Statistics version 23.0 (IBM Corp., Armonk, NY, USA).

As a part of the programme evaluation, a set of 14 positively weighted first-person statements were framed to estimate the compliance of PCPs to principles of assessment and delivery of brief interventions for AUDs. These were administered at baseline prior to the virtual telementoring and at the end of the programme. The statements were based on the 5A's model - Ask, Advise, Assess, Assist and Arrange, which has been used in primary care for smoking cessation[17] and alcohol and other SUDs[18]. This approach for evaluating PCPs competence has been used earlier also in our centre[14]. The responses were collected online and anonymously.

There were significant improvements with regard to compliance with established principles for the management of AUDs as reported by the participants. This was evidenced by an increase in median scores for individual statements as well as the median total score, which increased from 41.0 to 65.0 (Table). This was similar to the findings from most other studies which have evaluated the ECHO programme[15,19].

**Table.** Self-reported change in compliance to evaluation and management principles in alcohol use disorders before and after online training (n=16)

| Questions to trainees (1=never, 2=less than half the time, 3=about half the time, 4=usually, 5=always) | Median (IQR) | | *P* |
|---|---|---|---|
| | Before NIMHANS ECHO virtual telementoring | After NIMHANS ECHO virtual telementoring | |
| I ask my patients whether they use alcohol | 4.0 (1.5) | 5.0 (1.0) | 0.009 |
| I ask about the amount, duration of use, frequency and reason for using alcohol | 4.0 (2.0) | 5.0 (0.5) | 0.002 |
| I ask about the knowledge of alcohol related harm | 4.0 (1.0) | 5.0 (0.0) | 0.001 |
| I assess the user's willingness to quit | 3.0 (2.0) | 5.0 (1.0) | 0.001 |
| I order liver function tests in cases of heavy alcohol use[#] | 4.0 (2.0) | 5.0 (0.0) | 0.001 |
| I discuss the risks of alcohol use | 4.0 (2.0) | 5.0 (1.0) | 0.01 |
| I discuss about why quitting is personally relevant | 2.0 (3.0) | 5.0 (0.5) | <0.001 |
| I advise to quit | 4.0 (1.5) | 5.0 (0.5) | 0.013 |
| I highlight the benefit of quitting | 4.0 (2.0) | 5.0 (0.0) | 0.004 |
| I counsel about the harmful effect of continuing alcohol | 4.0 (2.0) | 5.0 (1.0) | 0.001 |
| I assist by identifying and helping to handle trigger or situation that trigger alcohol use | 1.0 (1.0) | 5.0 (1.0) | <0.001 |
| I assist by prescribing detoxification[#] | 1.0 (2.0) | 5.0 (1.0) | 0.001 |
| I assist by prescribing anti-craving drugs[#] | 1.0 (1.5) | 4.0 (2.0) | 0.001 |
| During follow up visits, I ask about alcohol use | 2.0 (3.0) | 5.0 (0.0) | <0.001 |
| Total score | 41.0 (12.0) | 65.0 (5.0) | <0.001 |

[#]Answered by doctors. ECHO, Extension for Community Healthcare Outcomes; IQR, interquartile range. Wilcoxon signed-rank test used for paired ordinal data.

A total of 2695 individuals were screened at the nine district centres over a period of six months. Of these, 832 (30.8%) were found to have an AUD Identification Test (AUDIT) score >16, indicating harmful use or dependence. The information on AUDIT scores of the remaining individuals was not available. A total of 536 patients (19.8%) were admitted as inpatients and received detoxification in the hospital and 80 (3%) patients required referral to a higher centre. Three hundred and fifty eight (13.2%) patients were prescribed some form of long-term pharmacotherapy for AUDs and no deaths were reported. During this period, 581 (21.5%) patients who reported to the district centres for treatment were also using other substances (in addition to alcohol and tobacco). Overall, 1336 patients returned for at least one follow up visit, indicating a crude follow up rate of 49.1 per cent. This was based on the monthly report by the PCPs.

During the training, participants reported clinical challenges (difficulties in dealing with clients with other substance use and mental health issues), technological (difficulty in access to high-speed internet connectivity) and other challenges such as lack of time on account of their busy schedule and being able to sustain interest over the course of the training. As a response to the clinical challenges, a reorientation of the curriculum was required. Topics such as management of other SUDs (like benzodiazepine use disorders), methanol poisoning and common mental disorders (like depression and anxiety) were added.

The strength of the present study was that it tested out a relatively new service delivery model in India (*i.e.*, ECHO Hub and Spokes model) in which specialized addiction care could be delivered to underserved patients by telementoring local PCPs. It provided an impetus to create a network of local experts who could provide quality care in remote areas.

There were many limitations that required to be overcome in future studies. The overall number of PCPs trained in this programme was small and might limit the generalizability. The dropout rate among PCPs was high which was due to their other duties and responsibilities. There were no objective measures for evaluating theoretical and practical knowledge and

application of this knowledge such as random blinded evaluation of treatment charts and prescriptions to demonstrate changes in quality of care. There was no information available about the patient's duration of follow up, no independent patient outcome evaluation or patient satisfaction ratings. It must also be emphasized that robust conclusions could not be drawn due to the absence of a control group and lack of baseline patient data for comparison. The use of a randomized stepped wedge design to provide a comparator group could have helped to determine the differential impact of training on patient outcomes.

In conclusion, despite the preliminary nature of the study, the blended training modification of the ECHO model was found to be beneficial in sustaining interest, improving compliance with AUD management principles and provision of services for patients in a resource-poor setting.

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