

Education and training on addiction psychiatry in low and middle income countries: Observations from existing literature and recommendations going ahead

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Abstract

Background: Addictive disorders are a significant contributor to the global burden of disease. The burden of addictive disorders in LMIC is expected to grow further over the coming years.

Aims: In this article we present the observations from the existing literature on the current status of education and training on addiction psychiatry in LMIC and provide recommendation on way forward for this specialized field of psychiatry.

Materials and Methods: We searched electronic databases of PubMed to access the literature on the current status of education and training on addiction psychiatry. Additional searches were also conducted in other database of Google Scholar for potential 'grey' literature.

Results: We were able to identify a total of 11 relevant articles.

Discussion: Currently there is limited published literature on education and training on addiction psychiatry from the LMICs.

Conclusions: Strengthening of the training on addictive disorders shall not only help bridge the gap of the unmet need for the evidence-based interventions of addictive disorders across these countries it shall also help enhance the research capacity on addictive disorders in these countries.

KEYWORDS

addiction, education, LMICs, substance use disorder, training

1 | INTRODUCTION

Addictive disorders account for a significant global burden of disease (Rehm & Shield, 2019). The 2020 World Drug Report estimated a prevalence of drug use of about 5.4% in the global adult population aged between 15 and 64 years (World Drug Report, 2020). A systematic review showed that alcohol use disorders have a prevalence of 1320.8 cases per 100 000 people. As per WHO estimates, 20.2% of the world's population aged 15 years or more are current smokers, and 4.7% of world's population use smokeless tobacco (Kendrick et al., 2021; Reitsma et al., 2021). The prevalence of Internet gaming disorder is reported to be 2.47% (Pan et al., 2020).

While currently the burden due to substance use disorders is highest in upper-middle-income countries, the prevalence and burden of addictive disorders is increasing in low and middle income countries (LMIC) as the disease pattern continues to shift from communicable to non-communicable diseases (Rane et al., 2017). Also, the current prevalence of substance use is very high in certain LMICs and persons with addictive disorders experience higher mortality rates compared to their counterparts in high-income countries (Medina-Mora & Gibbs, 2013).

Recently, progresses in behavioral and pharmacological interventions for addictive disorders have been made, but the treatment gap for these disorders globally remains among the widest of most

medical and mental health disorders (Connery et al., 2020). Effective interventions are available only in 30% of the countries, and only a minority of patients receive recommended treatment. The situation is even worse in LMIC, where the prevalence of and mortality due to substance use are higher than in high-income countries, probably as a consequence of the fact that people are less likely to receive treatment (Medina-Mora & Gibbs, 2013).

Besides the limited availability of evidence-based treatment services for addictive disorders, there is also limited research from the LMIC on addictive disorders. A study in 2008 suggested a dearth of scientific literature on prevention, treatment and rehabilitation in middle-income countries regarding addictive disorders (Perngpan et al., 2008). The dearth of specialized medical care and research in the field of addictive disorders in LMIC can, in part, be explained by the limited expertise in such settings. In fact, the lack of adequate training of health care professionals on addictive disorders has been identified as one of the major contributors to the gap between existing scientific knowledge and addiction treatment being offered in

many of those countries (Pinxten et al., 2019). In fact, around 52% of the low-income countries reported that no training program for any of the workforce for the management of SUD is available in their country (WHO | 2017 WHO Forum on Alcohol, Drugs and Addictive Behaviours). In this paper, we review the existing literature on the current status of education and training on addiction psychiatry in LMIC and provide recommendations on how to improve this specialized field of psychiatry.

2 | MATERIAL AND METHODS

We searched electronic databases of PubMed to access the literature on the current status of education and training on addiction psychiatry in LMIC. We used the following search terms: substance abuse, addiction medicine, education and training in various combinations. The search was conducted independently by two authors (P.S. and N.C.). Any discrepancies were resolved by mutual consensus. We found

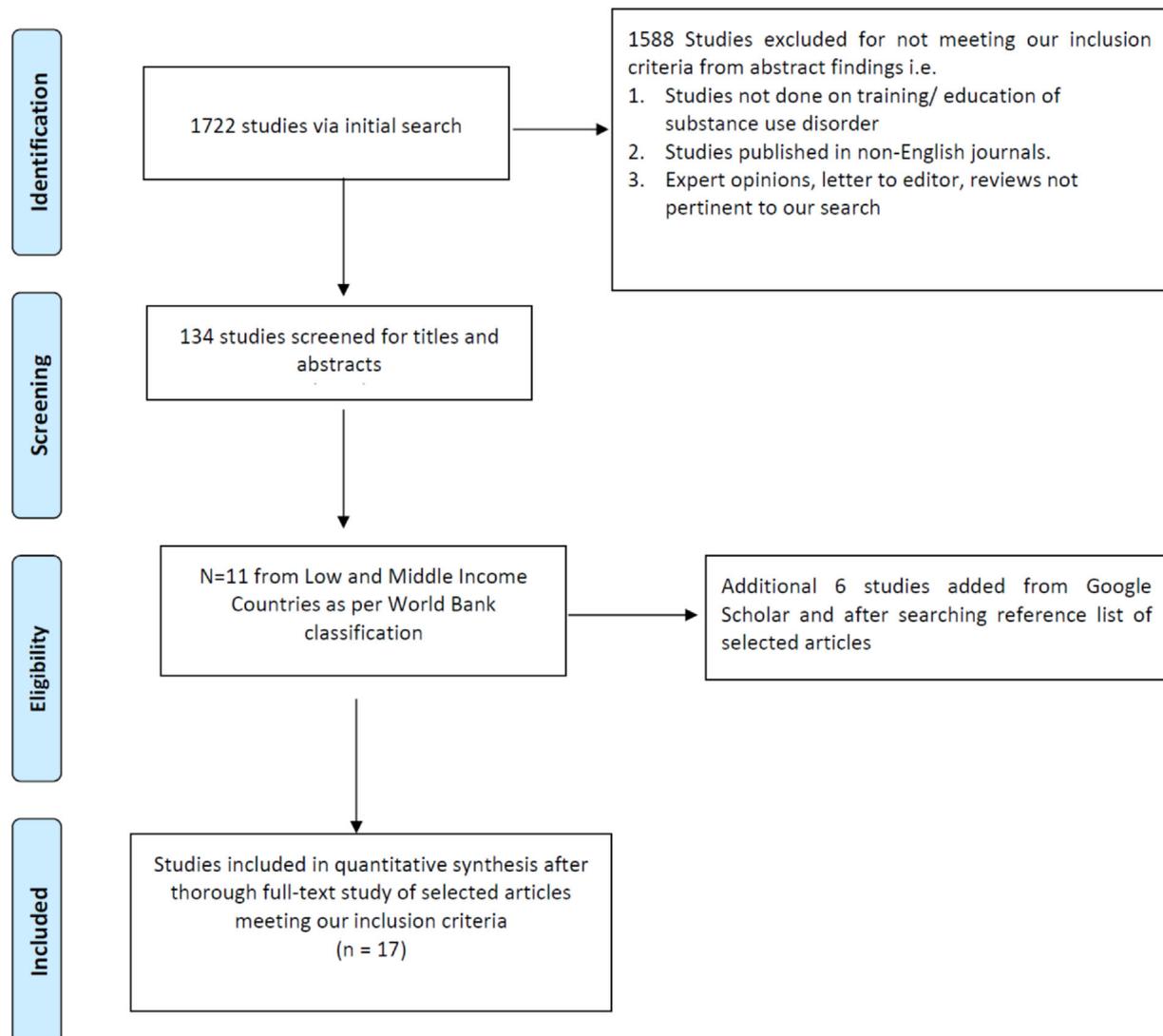


FIGURE 1 PRISMA 2009 flow diagram

TABLE 1 Summary of studies on training on addictive disorders from LMICs

No.	Author, year	Place of study	Type of study	Themes explored/ objectives	Outcomes variables/assessment instruments	Study subjects/target population	Type of course	Results/conclusion
1	Ayu et al. (2015)	Indonesia	Quasi-experimental non-randomized study with pre and post measurements	Evaluation of effect of 5-week addiction medicine elective training on students' attitude towards individuals with addictive disorder and their perception of addiction	Medical Condition Regard Scale, Illness Perception Questionnaire Addiction version	Fourth year medical students in a university in Indonesia (N = 296; 86 intervention, 210 controls)	Addiction topics ranged from theoretical (epidemiology, neurobiology, etc.) to clinical aspects (assessment, and treatment, and comorbidities. Methods of teaching: lectures, group discussions, problem-based learning, and case-based learning, clinical skills training	Addiction medicine training improved students' attitudes toward patients with addiction, compared to the control group. Demoralized perception reduced after training, and participants had a more coherent understanding of addiction as a cyclical condition.
2	Bairy et al. (2019)	India	Narrative literature review (PubMed and Google Scholar searched)	Exploration of the role of digital technology as a training platform in addiction psychiatry and experience sharing of NIMHANS in the use of various digital platforms	Number of digital courses searched and their description/narration	Four studies included in the review	Online/digital courses	Large number of freely available massive Open Online Course (MOOC) available for physicians on edX, Coursera and Udemy. But poor retention seen in online courses. Digital technology not yet a replacement for adequate curriculum at medical school. VKN-NIMHANS-ECHO model for training has been proposed for capacity development of PCPs.
3	Balhara et al. (2016)	France, India, Israel, Spain	Review (comparison of the strengths and limitations of dual disorder system in different countries)	Exploration of training, clinical services, and research in dual disorders across 4 countries	NA	NA	NA	The level of attention to dual disorders in terms of care, policy, research, and training is less than desirable; a large treatment gap for mental disorders in India
4	Pal Singh Balhara and Singh (2019)	India	Intervention study (pre and post assessment)	Studying the effectiveness and feasibility of an online course for school teachers and counselors on early identification, detection and intervention for behavioral addictions involving use of internet among school students	Pre and post evaluations in various domains (concept of addiction, problematic internet use, principles of screening and motivation enhancement, common errors while working with students, interventions, and referral for behavioral addictions). Feedback at the end of the course using Visual Analog Scales (scored 0–10).	N = 28 schoolteachers and counselors (15 completed pre and post evaluation)	Online course targeted to strengthen the knowledge, skills, and attitude of the participants on the theme of behavioral addictions involving internet use (90 min/week over 10 weeks)	Online course is feasible, acceptable, and effective in strengthening the capacity of schoolteachers and counselors on behavioral addictions involving use of internet

(Continues)

TABLE 1 (Continued)

No.	Author, year	Place of study	Type of study	Themes explored/ objectives	Outcomes variables/assessment instruments	Study subjects/target population	Type of course	Results/conclusion
5	Chikezie et al. (2021)	Nigeria	Cross-sectional survey	Assessment of psychiatry residents' perception of their SUD training	Self-completion of questionnaire (14 N = 51 participants) MCQs, and 6 open-ended questions) administered face-to-face	Among 164 enrolled community health providers 52 discussed cases	NA	~70% participants expressed interest in addiction psychiatry, 47% perceived their addiction training inadequate. Nearly half were dissatisfied with their training mainly due to the absence of in-house SUD training. Most common suggestions: provision of SUD treatment units, structured SUD training, and continuity of such training
6	Khan et al. (2020)	India	Descriptive study	Investigation of the characteristics of 102 cases discussed by remote community health providers in 28 weekly tele-ECHO addiction clinics	Descriptive statistics	Among 164 enrolled community health providers 52 discussed cases	28 weekly tele-ECHO Clinics comprising of case presentation in a specific case proforma and objective assessment (AUDIT, PHQ9), clarification, recommendations for management and 15-minute didactic lecture	The lifetime and current use of alcohol was 80 and 71%, respectively, and that of tobacco was 60% and 56. ECHO model can be considered for capacity building and increase access to care
7	Kruse et al. (2016)	Global (online)	Cross-sectional web-based international survey	Assessment of training program availability and type of professionals being trained to meet the human resource to treat tobacco across the globe	37-item web-based survey	N = 122 experts in tobacco control and training from 84 countries	Tobacco treatment training program	18 (21%) countries (mostly LMIC) reported no training program. Of the 66, 84% trained healthcare professionals, and 54% trained community health worker, teachers, and religious leaders. 54% countries reported funding challenges; HIC relied on government for funding. While LMIC funded by NGOs primarily
8	Kumar et al. (2020)	India	Description of two randomized controlled trials	Methodology description for comparing two different capacity building models for scaling up public mental health and addiction services	NA	NA	Virtual Knowledge Network (VKN) National Institute of Mental Health and Neurosciences (NIMHANS) Extension of Community Health Outcomes (ECHO) (VKN-NIMHANS-ECHO)	The operational differences: trial 1 utilizes a tertiary care neuropsychiatric center (NIMHANS, Bengaluru) as the "hub" and the psychiatrists and other health professionals at the district mental health program as the "spokes," whereas trial 2 will have the "hub" situated in a district hospital with the General health care workers (ANMs and ASHA workers) and PHC medical officers forming the "spokes."

TABLE 1 (Continued)

No.	Author, year	Place of study	Type of study	Themes explored/ objectives	Outcomes variables/assessment instruments	Study subjects/target population	Type of course	Results/conclusion
9	Lososová et al. (2021)	Africa	Review (Database: Google, EBSCO, PubMed, Web of Science, and Science Direct)	Exploration of the number of academic programs in the addiction field in Africa, the types of degrees, and themes and characteristics of the programs	NA	Keywords: addiction studies, drug/alcohol addiction, master in addiction, addiction counseling, substance use plus the region's name)	2 graduate courses, 4 post-graduate courses, 1 certificate level course	6 universities offering 8 types of courses identified in Kenya only 2 institutions had training of SUDs
10	Mahadevan et al. (2020)	India	Pre- and post-design	Assessment of the effectiveness of blended training modification of the Extension for Community Healthcare Outcomes (ECHO) model in bringing about a change in compliance to established principles of the management of alcohol use disorder (AUD) in primary care physicians	A questionnaire containing set of 14 positively weighted first-person statements to estimate the compliance of PCPs to principles of assessment and delivery of brief interventions for AUDs	Primary care providers (PCPs) (N = 26) from 9 districts of Bihar, India	On-site training for 2 weeks, followed by online tele-ECHO clinics fortnightly, for six months using the "Hub and Spokes" ECHO model, accessible through internet-enabled smartphones	Improvements in compliance to principles in the management of AUDs based on self-report. Increase in screening, retention into treatment, and reduced need for referral to specialists
11	Mehrotra et al. (2018)	India	Pre and post design	Assessing the feasibility and effectiveness of Project ECHO, a Hub and Spokes tele-mentoring model to bridge the urban-rural divide in mental health and addiction care in the context India	Evaluation framework of continued medical education: Participation, Satisfaction, Learning, Competence, performance	12 clinical psychologists and psychiatric social workers from eleven districts	Participants connected to NIMHANS multidisciplinary specialists by smartphone app and virtual mentoring to learn and translate "best practices" in Mental health and Addiction by using patient-centric learning of NIMHANS ECHO model	Significant increase in learning and self-confidence after six months. The participants liked "relevance of the courses to clinical practices," "a group based discussions," and "a reduction in professional's isolation." This model could be a potential tool for capacity building.
12	Nilan et al. (2017)	Global	Cross-sectional web-based international survey	Estimation of the number of parties providing tobacco dependence treatment training as per article 14 of FCTC and find their association with income level and progress over time	A 26-item questionnaire based on the FCTC's article 14 recommendations including tobacco treatment infrastructure and cessation support systems	N = 172 countries surveyed (142 responded)	Tobacco treatment training program	7 out of 36 Lower middle income countries and 4 out of 17 low income countries had tobacco cessation incorporated into the training curricula of health-care students and workers

(Continues)

TABLE 1 (Continued)

No.	Author, year	Place of study	Type of study	Themes explored/ objectives	Outcomes variables/assessment instruments	Study subjects/target population	Type of course	Results/conclusion
13	Nolan et al. (2018)	Global	Descriptive	Descriptive evaluation of a novel grant funding mechanism initiated in 2014 to address barriers to tobacco treatment training in LMIC	Program impact outcomes, curriculum characteristics, learner outcomes, dissemination outcomes, political outcomes	Healthcare providers (including physicians, dentists, community health workers, nurses, psychologists, pharmacists)	Tobacco treatment training program (including distance learning programs)	19 grants were awarded by Global Bridges to organizations in LMIC across the globe. This led to 9000 healthcare providers being trained and more than 150 000 patients of tobacco dependence being offered treatment.
14	Pahuja et al. (2020)	India	Descriptive	Description on how digitally driven optional module of primary care psychiatry program (PCPP) helped a primary care doctor (PCD) in managing difficult patients of OST clinic	Learning points (one or two) from each patient (N = 11)	N = 1 PCD posted in Uttarakhand state in India who was trained in handling management difficulties in 11 patients with opioid use disorder	Distance education-based clinical course called "Diploma in Primary Care Psychiatry" (DPCP) for in-service PCDs	Using PCPP module, PCD was able to manage all the patients at primary care level with assistance from a tele-psychiatrist, and none of them required referral. This was accomplished using various non-pharmacological and pharmacological measures.
15	Pinxten et al. (2019)	Indonesia, Ireland, Lithuania, Netherlands	Cross-sectional multicountry study	Evaluation of psychometric properties of the AM-TNA Scale (designed to develop competence-based curriculum of the Indonesian AM course)	Exploratory factor analysis was used to assess the factor structure, Cronbach's alpha for reliability, and ANOVA for discriminant validity	N = 428 (health professionals working in addiction care in Netherlands, Lithuania, Indonesia and General Practitioners in-training in Ireland)	NA	2-factor structure revealed: clinical and non-clinical; overall reliability: 0.983. The AM-TNA was able to differentiate training needs across groups of AM professionals on all 30 addiction medicine competencies
16	Pinxten et al. (2011)	Indonesia	Cross-sectional exploratory study	TNA and development of a national evidence-based addiction medicine curriculum	30-item TNA filled on the second day of the workshop	N = 31 addiction care professionals who attended a 2-day workshop, of which 27 filled the TNA	2-day workshop on the content/duration/resource of the addiction medicine course and practical teaching	It was decided that addiction training course should include 7 theoretical modules: (1) History of addiction; (2) Basic concepts of addiction; (3)
17	Rigotti et al. (2009)	Global (online)	Cross-sectional web-based international survey	Exploration of the global status of programs that train individuals to provide tobacco dependence treatment	37-item web-based survey (program prevalence, frequency, duration and size; background of trainees; content; funding sources; challenges)	N = 48 countries' key informants	Programs on tobacco dependence treatment training	Psychopharmacological characteristics and neurobiology of psychoactive substances; (4) Clinical features assessment and diagnosis; (5) Management; (6) Addiction care skills; and (7) Monitoring, evaluation, and research. Among 20 middle income countries that responded 16 countries had training programs in Tobacco control. In lower income countries 6 out of 9 contacted countries responded and it was seen that only one country had a tobacco control program

Abbreviations: AM-TNA, Addiction medicine-training need assessment; FCTC, framework convention on tobacco control; LMIC, low and middle income countries; NA, not applicable; TNA, training need assessment.

a total of 1722 entries. The titles of all articles were screened and those related to training or education on addictive disorders were selected ($n = 134$). These 134 studies were screened and only articles that were relevant to LMICs as per World Bank categories were shortlisted (World Bank Country and Lending Groups – World Bank Data Help Desk, 2021). A total of 11 relevant articles were identified. The reference sections of these articles were also searched for potentially relevant articles. However, we could not find any additional article using this strategy. Additional searches were also conducted in other database of Google Scholar for potential “grey” literature. This yielded six more relevant articles (Figure 1). Data were extracted and were presented under different headings for ease of presentation of the information as shown in Table 1.

3 | RESULTS

3.1 | Studies on the need for training in addiction psychiatry

Among the 17 relevant articles, three studies looked at the need for training in addiction psychiatry (Kruse et al., 2016; Pinxten et al., 2011, 2019). An international survey carried out in 84 countries across the globe documented that 21% of countries, mostly LMIC, had no specific training programs on tobacco dependence (Kruse et al., 2016). In addition, government funding for such training programs was greater in high-income countries, while LMIC largely relied on funding from non-governmental bodies. Pinxten et al. (2011) reported that only 17% of 200 addiction clinicians had received a formal training, although too brief, on opioid substitution therapy or needle syringe exchange program. Of the 27 participants at a 2-day conference aimed at highlighting the need to develop a competency-based curriculum, only 10 had experience in the field of addiction care (Pinxten et al., 2011). Pinxten et al. also developed the Addiction Medicine Training needs Assessment (AM-TNA) scale, whose psychometric properties have been tested in four countries ($n = 428$). It was concluded that the scale had 2-factor structure: clinical and non-clinical, with an overall reliability of 0.983 and a good validity. The AM-TNA can be used for tailoring the addiction medicine training to the local needs (Pinxten et al., 2019).

3.2 | Description of training programs

Out of the 17 studies, six included description of curricula related to addiction psychiatry (Bairy et al., 2019; Balhara et al., 2016; Kumar et al., 2020; Lososová et al., 2021; Nilan et al., 2017; Rigotti et al., 2009). A cross-sectional web-based survey was conducted in various countries categorized according to the WHO geographic region and world-bank income categories. The survey aimed to assess the prevalence, frequency, duration, content, trainee status, funding, and challenges of tobacco control training programs. Among the 20 middle income countries that responded to the survey, 16 countries

had training programs on tobacco control. In case of lower income countries, six out of nine countries responded and only one country had a training program in tobacco control. Training programs were less frequently available in Africa and low-income countries (Rigotti et al., 2009). Another cross sectional study in 172 countries using the 26-item questionnaire based on the Article 14 recommendations of Framework Convention on Tobacco Control (FCTC) showed that only seven out of 36 lower middle income countries and four out of 17 low income countries had tobacco cessation incorporated into the training curricula of health-care students and workers (Nilan et al., 2017). A review on addiction training program in Africa identified six centers, which provided specific addiction training (Lososová et al., 2021). Among these, two programs had a postgraduate diploma in addiction treatment science. Also, one of these programs offered higher diploma in addiction science and certificate in mental health and addiction (Lososová et al., 2021). Another study from India documented the efficacy of the ECHO model for capacity building (Khan et al., 2020).

A review of the training program on dual disorders across four countries (France, India, Israel and Spain) reported that lower-than-desirable level of attention was being given to dual disorders in terms of care, policy, research, and training across all countries. Psychiatric services were primarily public sector driven in France and little training is provided on dual disorders. Israel, on the other hand, had both private and public sector services for dual disorders with services for managing crisis (including emergency and in-patient services) as well as long-term rehabilitation (e.g., day-care and therapeutic community). In Spain, psychiatry and addiction are considered separate disciplines with separate governing bodies with limited services for dual diagnosis. Of the four countries, Indian health care system struggled the most in addiction training due to huge treatment gap, with the training on dual diagnosis was in its infancy. The undergraduate medical students in India have a 2-week clinical posting in psychiatry during a yearlong internship (clerkship) which subsumes training on addictive disorders (Pinto da Costa, 2020; Pinto da Costa et al., 2019). Training in addiction psychiatry is offered as part of general psychiatry training during three years post-graduation to a small number of postgraduate medical students every year, differently from the other four countries where the amount of time on addiction training is better than what is offered in India. For example, in France certain medical education programs address dual diagnosis (although psychiatry and addiction training during medical school is separate); in Israel the training lasts 4.5 years for comprehensive psychiatry (and addiction), with a 1-year program dedicated to patients with dual disorders and separate mental health and addiction treatment network, in Spain, a 4-year long general psychiatry training with 2–4 months dedicated to addiction training (with an elective 4 months dual disorder training) along with specific degrees in dual diagnosis is available (Balhara et al., 2016).

A narrative review from India concluded that a large number of freely available massive open online courses (MOOC) are available for physicians on various online platforms. However, the retention rates were poor. Also, this review described an online hub and spoke model based course being offered to the primary care providers (PCPs) like

doctors, psychologists, counselors, public health experts, and so on in rural and underserved areas in India. In these courses, the experts mentor and share their expertise through case-based learning during multipoint videoconference from their workplace or home (Bairy et al., 2019).

3.3 | Impact and perception of training in addiction psychiatry

Out of the 17 studies included in this review, eight explored the effect and perceptions of training in addiction psychiatry/medicine (Ayu et al., 2020; Pal Singh Balhara & Singh, 2019; Chikezie et al., 2021; Khan et al., 2020; Mahadevan et al., 2020; Mehrotra et al., 2018; Nolan et al., 2018; Pahuja et al., 2020). A descriptive evaluation of a novel grant funding mechanism for tobacco training programs showed that 19 grants were awarded by Global Bridges to organizations in low- and middle-income countries across all six WHO regions. Virtually all had a focus on developing a tobacco dependence treatment curriculum for healthcare providers. The programs that were funded were effective in the short-term improvement of domains like knowledge about tobacco treatment services, extent of practice of asking, advising and referring patients, intent to use these practices and post-intervention practice of learned skills (Nolan et al., 2018). A training program on alcohol use disorder for 26 primary care providers that included onsite training for two weeks and fortnightly online tele-consultation sessions showed significant improvements in compliance to recommended principles in the management of the disorder. The retention rate of patients was 49.1% for at least one follow-up, and referral need to specialists was only 3% (Mahadevan et al., 2020). A cross-sectional survey among 51 general psychiatry living in Nigeria showed that 70.6% expressed interest in addiction psychiatry and 47.1% perceived their SUD training as inadequate. Their suggestions for making addiction psychiatry an attractive subspecialty included structured SUD training among others (Chikezie et al., 2021). Another quasi-experimental non-randomized study among 296 fourth-year students using the Medical Condition Regards Scale showed that addiction medicine training improved students' attitudes toward patients with addiction, reduced demoralized perception, and increased the perception of a coherent understanding of addiction. This study concluded that addiction medicine training was effective in improving attitudes of medical students toward patients with addiction and their perception of addiction (Ayu et al., 2020). Pal Singh Balhara and Singh (2019) documented the feasibility, acceptability and effectiveness of an online course to strengthen the knowledge, skills, and attitude of the participants on behavioral addictions involving Internet use. The study was conducted among 28 school teachers and counselors. The capacity of participants to screen, offer brief intervention and offer referral services increased after the participation in the course (Pal Singh Balhara & Singh, 2019). Another study documented the effectiveness of the ECHO model: in a total of 12 tele-ECHO clinics, 41 patients' case summaries were discussed by the counselors with hub specialists. There was a significant increase in learning and

self-confidence among the participants after 6 months (Mehrotra et al., 2018). Pahuja et al. (2020) reported the experience of tele-mentoring (using collaborative video consultation model) of a general physician practicing in primary care setting in running a opioid substitution therapy (OST) clinic. The study documented the process, the challenges, the possible solutions and ways to improve the quality of care, thereby reducing the risk of relapses (Pahuja et al., 2020). Another study described the methodology of two randomized control trials for ECHO-based training models that were being rolled out (Kumar et al., 2020).

Most of the published studies from LMIC have been focused on short duration training and capacity building initiatives and on a specific addictive disorder. Such programs are usually short-term with focus on a narrow set of aims and planned with limited consideration of future training needs (Arya et al., 2020). There is limited literature on structured residency programs in addiction psychiatry/medicine. Moreover, the outcome of these residency programs has not been published. For example, Tripathi et al. (2020) commented on the super specialization course in addiction psychiatry (3 year residency program) being offered in four institutes in India (Tripathi et al., 2020). Similarly, the authors referred to other short-term training programs being offered to non-medical professionals by agencies, such as National Institute of Social Defense (NISD) under the Ministry of Social Justice and Empowerment in India (Tripathi et al., 2020).

4 | RECOMMENDATIONS

We observed lacunae in the published literature from LMIC on curriculum and outcomes of specialized trainings; assessment of curriculums and competency of addiction medicine in post-graduate psychiatry training; assessment of curriculum of undergraduate training and standardization of addiction psychiatry/medicine courses; standardization of addiction psychiatry/medicine training for nurses and other paraprofessionals; and impact of the trainings on service care delivery. More than half of the studies were based on the impact of short-term training programs. Three studies reported on the need for an addiction medicine training, six studies described the curricula/trainings and eight studies looked into effect of the trainings.

Given the existing burden of the addictive disorders, the projected rise and a substantial treatment gap over the coming years, there is the need to strengthen service delivery and research capacity on addictive disorders in LMIC. One of the key strategies to achieve the stated target is to strengthen the training on addictive disorders in these countries. The process should begin with needs assessment exercise. This shall guide development of contextually relevant training programs across the countries. Also, the approach to implement this strategy should factor in the existing resource crunch of qualified mental health professionals in most of these countries. In order to keep pace with the advances in the field and to ensure that updated, evidence-based specialized interventions are made available to the public, at least a proportion of the qualified (mental) health professionals should be offered the specialization in addiction psychiatry/

medicine. In many LMICs, for example those from the Indian sub-continent, the number of hours allotted to training in psychiatry during undergraduate training is miniscule (Isaac et al., 2011). This means that the time specified for training on addictive disorders is even less. Hence, it is imperative that residency programs offer specialized training on addiction psychiatry/medicine. These “specialists” shall have the mandate to develop a larger pool of trained addiction professionals in these countries. This larger pool created out of the “non-specialist” health care workers shall have the primary mandate of service delivery. Also, the qualified (mental) health professionals who have specialized in addiction psychiatry/medicine shall engage in the research on addictive disorders. This approach to capacity building shall help to strike a balance between the limited human resources on one hand and the need to keep pace with the existing demands and upcoming challenges on the other.

A form of continued education, that is, first education during undergraduate program (before initiation of professional practice), and second anytime during professional performance, is considered desirable (Pillon et al., 2003). Training can be taken up at three levels: basic training, advanced training, and specialized training (Pillon et al., 2003). Basic training may be taken up at graduation/MBBS level, where the students may be sensitized to the issue (medical as well as social) of addictive disorders, as well as individuals' attitude toward persons with addictive disorders. It should also include the development of skill set required to recognize the problem in a person and plan a necessary action (treatment or referral to specialist). Advanced training may target those working in close contact with such patient population, for example, MD in psychiatry/internal medicine, psychiatric nurses, psychiatric social workers working in drug dependence treatment centers. The training on interventions and prevention can be scaled up in advanced courses. Specialized training would focus on individuals primarily working in addiction medicine, for example, doctors with a DM degree in addiction. They can be taught advanced interventions like harm reduction, policy making for prevention, strategies for motivation enhancement or relapse prevention. Experiential methods of teaching and training have been proposed as a welcome step in training on addictive disorders (Armaos & Tsiboukli, 2019; Polydorou et al., 2008). The training on addictive disorders should not include only didactic lectures, but also be offered via interactive and experiential methods of teaching. Armaos and Tsiboukli (2019) proposed a curriculum for addiction training at undergraduate medical level, teaching the etiology, nosology, assessment and screening instruments, non-pharmacological measures like motivational interviewing, relapse prevention, self-help/group therapy, family interventions, basic pharmacological treatment, referral designs, and outcomes of treatment.

A simple dissemination of prescribed guidelines may not be an effective way of training, but it requires supervision and audit with feedback (Rowe et al., 2005; Watkins, 2020). The need for having a comprehensive education plan outside psychiatry to address addictive disorders has been already stated (Clark et al., 2020). However, it is essential that such trainings ensure a high fidelity. Most of the programs existing in LMICs are of short duration and do not comment on

the credentialing requirements for those who undergo such training. Lack of evidence-based interventions for addictive disorders in LMICs has been documented. Short term, focused training programs can be a good tool to further enhance the skill set of those with the basic training in addiction psychiatry/medicine. However, use of brief training programs for those new to the field is unlikely to build the required skill set among the trainees. Workshops along with clinical supervision and some novel training ideas need to be adopted to make training workshops more effective (Carroll & Rounsaville, 2007; Walters et al., 2005). Additionally, since these trainees are expected to deliver the clinical service, the training must be hands-on and should offer an opportunity to the trainees to work with the clinical or simulated population. Moreover, those who undergo such training should appear for qualifying and credentialing examination before they can be authorized to offer clinical services.

While the training programs on addictive disorders across LMICs need to conform to the globally accepted standards, these should be adapted to cater to the needs of the local population. Hence, while these training programs should adhere to well accepted and effective principle of training, the course content should be adapted to make it relevant to the context. These adaptations shall be guided by the themes such as the type of addictive disorders prevalent in the country, the type of interventions available, etc. The delivery of the course content shall also be guided by the locally available, acceptable and feasible approaches.

A promising approach to train medical and para-medical professionals in management of addictive disorders is through distance learning or online learning approach, which has already shown positive outcomes in various low-resources settings (Clair et al., 2019). Development of online regional resource hubs on addictive disorders can be helpful by sharing the relevant resources across the countries from the same region. Such resource hubs shall also help establish regional collaborative networks that can be utilized for training and research on addictive disorders. Behavior (the Behavioral Addictions Resource hub) is one such online resource hub that has been developed for the Southeast Asia region. The expected end-users of this digital platform include health-care providers, academics and researchers among others (Balhara & Anwar, 2019). The focus of the training programs on addictive disorders should extend beyond management and should incorporate prevention as well. We could find only one study from LMIC on a prevention focused training program on addictive disorders (Pal Singh Balhara & Singh, 2019).

Finally, these training programs should be better documented. This should include documentation of the process of development and setting up of the program, evaluation findings for acceptability and effectiveness, challenges and strategies to address them. This shall contribute to develop a system of sharing the best practices from diverse training programs across the different countries.

5 | CONCLUSIONS

Addictive disorders are a significant contributor to the global burden of disease. The burden of addictive disorders in LMIC is

expected to grow further over the coming years. Currently there is limited published literature on education and training on addiction psychiatry from LMICs. Strengthening the training on addictive disorders shall not only help to bridge the gap of the unmet need for the evidence-based interventions of addictive disorders across these countries, but it shall also enhance the research capacity on addictive disorders in these countries. There is a need to address the existing challenges in form of the lack of trained manpower, lack of infrastructure, poor funding, and attitudinal factors. The last decade has seen some efforts being made in different countries to build up infrastructure and manpower for addiction training. Digital technology can be a valuable resource to leverage upon going ahead. Given the current supply demand gap and projected increase in demand for qualified and credentialed addiction professionals, it is imperative to focus on education and training on addictive disorders in LMICs.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

NA.

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