

# Teaching Psychosocial Interventions for Opioid Use Disorder in Low and Middle Income Countries: Malaysia and China

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Focus has increased on the provision of mental health care in low and middle income countries (LMICs), and many initiatives have been started to improve the provision of mental health care [1]. Prioritizing the provision of mental health is vital in furthering global health [2]. Many medical conditions have a poorer prognosis with co-occurring substance use and mental disorders that prevent seeking of healthcare, increase the risk for communicable and non-communicable disease, contribute to both intentional and unintentional injury, and may lead to stigma that prevents delivery of care [1, 3].

The growing recognition of the need for mental health care is promising, yet there is widespread scarcity of resources for mental health care in LMICs, including resources such as policy and infrastructure, mental health services, community resources, and human resources, in addition to financial resources [3]. One possible barrier for the implementation of mental health services is the lack of efficacy studies in these areas in LMICs [4], though some work has been done looking at training needs for the delivery of community based psychosocial interventions (for example in Italy [5]). In addition, medical training in LMICs focuses primarily on the biomedical model with limited focus on behavioral medicine or psychosocial interventions that improve health. In India, the syllabus prescribed by the Medical Council of India devotes only 20 lectures and 2 weeks at 3 h per day to psychiatry [4]. In Malaysia, where some of our interventions are implemented, the psychiatric aspects of clinical disorders are examined as early as the first year of training, and separate courses include topics on community and general psychiatry [6]. In China,

psychiatric training is a variable in medical education from very basic exposure among China's rural physicians to highly advanced training in other centers, yet there are studies showing the value of increased education among rural physicians [7, 8]. Training healthcare workers and integrating care into existing infrastructures are two strategies to maximize psychosocial care at minimal cost.

## Incorporating Mental Health and Substance Use Care into Current Care Models

Integrating substance use health care into community care is important for improving mental health services. The World Health Organization defined several factors that may improve mental health services, including providing treatment for mental health disorders in primary care, providing care in the community, educating the public, developing human resources, linking with other sectors, and supporting relevant research [2]. The lack of mental health care in the community and in primary care is a key barrier for accessing appropriate substance use and mental health care [9]. A related barrier to accessing psychiatric care in LMICs is that it is largely delivered in cities and dedicated hospitals. To decrease this barrier, psychiatry should be practiced at all levels of healthcare starting from primary care in order to manage behavioral interventions for all patients [4].

While studies show that the provision of mental health care could be improved with incorporation into primary care and community settings, substance use treatment in particular fits well within the medical model of disease and treatment. McLellan et al. [10] compared many facets of drug dependence to type 2 diabetes mellitus, hypertension, and asthma. Genetic heritability, personal choice, and environmental factors are comparably involved in the etiology and course of all

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of these disorders. Further similarities include the evidence for lasting changes in brain chemistry, and the availability of effective medications for treatment (particularly for opiate addiction) [10].

### Substance Abuse Treatment, HIV, and Health Policy in the Low and Middle Income Countries

A recent review of research about drug and alcohol treatment in LMICs failed to show significant delivery of treatment outside of dedicated substance use treatment settings, though there is a paucity of literature on the topic [11]. Yet, given the burden of HIV that is increasing in many Asian countries and concerns about the risks of injection drug use increasing the risk for HIV spread, some governments, including China and Malaysia, have recently revised their drug policies to reorganize the drug treatment systems to allow medical treatments in the public sector [12, 13]. Sexual risk reduction interventions address individual, peer-level, and structural-level determinants of risk, and are important in the prevention of HIV transmission in the global HIV epidemic, particularly among drug users [14]. By providing care in the public sector through existing models of delivery, some of the barriers to accessing care are decreased [9]. In addition to policy changes, many small-scale examples exist in Asia about provision of treatment outside of dedicated centers. For example, alcohol interventions can be delivered by nurses and community members in the community or in primary care units in Thailand [15, 16].

### Training Health Care Workers and Psychosocial Interventions

A review of trends in drug use disorders in China stated that psychosocial help is necessary [17], and work has been done to investigate the best methods for training health care workers. Rowe et al. [18] reviewed studies in LMICs and found that simple dissemination of written guidelines is often ineffective, that supervision and audit with feedback is generally effective, and that multifaceted interventions might be more effective than single interventions. In the USA, studies have been done looking at the efficacy of various models of training. Workshops are frequently used, but clinical supervision following the workshop and utilization of novel training methods may allow for greater effectiveness [19, 20]. A review of training showed that workshops alone tend to improve attendees' knowledge, attitudes, and confidence while working with substance using individuals. And though there are skill improvements immediately after training, they are not maintained. As seen in LMICs, extended contact (follow-up

consultation, supervision, or feedback) seems important for effective adoption of skills [20].

In addition to considering the setting and providers of care, it is also important to consider the content of care. Our model provides an intervention focused on behaviorally oriented drug counseling in patients with opioid use disorder. Psychosocial interventions in substance use disorders have shown moderate effect sizes in the US [21], and a recent Cochrane review showed improved abstinence at follow-up, and studies in opiate detoxification show improved completion of treatment, use of opiate, compliance, and results at follow-up [22, 23]. A 2009 review showed that in the US, significant progress has been made for care providers in the field of substance use disorders in both knowledge and attitudes toward evidence-based therapies, and that they have been adopted into practice [24].

### Behavioral Drug and HIV-Risk Reduction Counseling (BDRC)

Behavioral Drug and HIV-risk Reduction Counseling (BDRC), the psychosocial intervention taught in our studies, is rooted in the cognitive behavioral therapy (CBT) approach pioneered by Aaron Beck [25] and Albert Ellis [26], the social learning theory and the concept of self-efficacy from Albert Bandura [27, 28] and Julian Rotter, the locus of control of Julian Rotter [29], and the gain-framed health promotion messages effecting behavior change by Alexander Rothman and Peter Salovey [30]. BDRC developed as a CBT-based approach that was pilot tested and further refined using focus groups with patients who experienced the technique in a series of small scale research and clinical practice efforts at Yale and internationally in Malaysia and China prior to the studies described here.

BDRC is highly specialized, time limited counseling focusing on a specific set of problem areas typically experienced by individuals with opioid use disorder entering medication assisted treatments. The targets of BDRC include (a) education about opioid use disorder as a medical condition and a disease of the brain, (b) education about the roles of medications, psychosocial interventions, and behavioral or lifestyle changes as the necessary and integral components of recovery, (c) skills to improve treatment participation and compliance, (d) cognitive and decision making skills and behavior changes to promote cessation or reduction of drug use and drug- and sex-related risk behaviors.

Important goals of BDRC are to enhance the patient's knowledge, skills, and self-efficacy to support his or her long-term recovery efforts. BDRC is prescriptive; the counselor selects initial intervention components, behavioral changes, activities, and skills to learn. The early stages of BDRC focus on reducing drug use or achieving and

maintaining abstinence and reducing or eliminating harmful and risky behaviors. Later treatment helps link the patient's initial progress with longer-term recovery goals. BDRC focuses on positive aspects of recovery and the counselors are instructed not to dwell on negative consequences of drug use or the patient's previous or recent failures. During each session, counselors provide detailed and immediate feedback and positive reinforcement of patient progress, utilizing a gain-framed communication style, which may increase the likelihood of patient adherence to treatment recommendations and engagement in behavioral change [30, 31]. Treatment is offered in outpatient settings; during BDRC sessions counselors and patients work on educational and skill-learning components while the patient practices new skills in his or her natural environment in-between the sessions. A key BDRC intervention is a behavioral contract between the counselor and the patient regarding a small step change in the patient's behaviors or lifestyle to achieve small but measurable progress toward the overall recovery goals. The initial behavioral changes target improved treatment participation and compliance with treatment regimens (both psychosocial and medication components) and reduction or elimination of drug use and related harmful and risky behaviors. Later contracts focus on gradual development of pleasurable and rewarding activities that are replacing previously dominant activities supporting drug use, with a long term goal to help the patient develop skills and a lifestyle supportive for prolonged and sustained recovery from drugs.

BDRC utilizes modified versions of other CBT tools and techniques, including the functional analysis of behavior to better understand the cognitive and behavioral impediments to full recovery and relapse prevention components focusing on understanding high risk situations (things, places, people, emotional states) while collaboratively developing strategies to avoid and replace or manage such situations that are highly individualized for each patient. Using behavioral contracting techniques, and focusing on positive aspects of treatment participation and recovery, the counselor guides the patient through a series of small step behavioral exercises to fully engage and successfully maintain treatment and recovery efforts.

Concerns have been raised about the difficulty of training clinicians in a complex CBT-based approach. Solutions proposed to address these concerns include focusing on the most effective portions of CBT while removing other components and simplifying and shortening treatment delivery, resulting in implementations of CBT-based interventions that are more relevant and more easily taught [32]. BDRC is an example of a simplified CBT-based intervention. BDRC training is rooted in the same theoretical foundations of CBT and employs integral components of the learned intervention, including structured, guided, and supervised clinical practice and immediate positively focused feedback. Learning basic knowledge about underlying mechanisms of substance use

disorders and key principles of effective recovery while practicing a simplified and shortened CBT-based intervention may result in enhancement of the counselor's self-efficacy contributing to a positive reinforcing cycle [27] and facilitating the mastery of necessary skills for individuals without extensive prior training and experience, such as nurses and other healthcare professionals that are generally available in LMICs.

### Educational Intervention

The most frequent BDRC trainees are nurses with varying medical background, but also includes general medical practitioners, psychologists, psychiatrists, social workers, and peer counselors. In several settings, the training workshops were conducted as part of their work related ongoing education efforts or they were compensated for the participation in addition to their salaries. In other settings, BDRC training workshops were conducted in academic settings where the workshop participants were volunteers who are otherwise students or trainees in graduate or postgraduate programs offered in the respective academic institutions.

### Training for BDRC Counselors

BDRC training methods utilize an approach where, in addition to learning new information, the trainees have opportunities to experience and practice the key principles of the treatment firsthand. BDRC training is based upon the social learning theory and utilizes modeling of communication and therapeutic skills by the trainers and employs behavioral contracts and positively framed feedback during group and individual supervision sessions with trainees. Behavioral contracts with the trainees are explicit, detailed, and focus on small, initial steps that foster initial mastery and self-efficacy that can be expanded upon in further work. The trainees experience the effectiveness of both the overall learning style or approach and specific tools or techniques during their training, as well as effectiveness of modeling when learning new behaviors.

The initial training consists of an introductory multiday workshop with didactic lectures, interactive discussion sessions, video demonstrations, role-playing exercises, live patient demonstrations, and case discussions. After the workshop, continuity of learning is achieved through a practicum involving provision of closely supervised care to several training cases, in addition to ongoing internet-based videoconference supervision, and continuing education using other available resources. Practitioners, including physicians, residents, fellows, and researchers in local settings in China and Malaysia, who achieve good mastery of BDRC skills are involved in the conduct of the training and supervision of new trainees, gradually expanding the pool of locally available experts.

## Introductory Workshop

The initial workshop is conducted over 3 to 5 days. In some settings, it combines modules for medical doctors focusing on medical components of treatment and recovery (e.g., medically assisted detoxification, maintenance and ancillary medications, prescribing and monitoring protocols) along with BDRC focused training for both medical doctors and other healthcare personnel. The first day focuses on education addressing better understanding of substance use disorders, effects of psychoactive substances on humans (both neurobiology and behavior), and effective evidence-based recovery and rehabilitation strategies. In some settings, general principles of conducting randomized controlled trials and research design components are also included. On the second day, training for the doctors and nurses is separated. The doctors are provided with didactic and interactive discussion about biology and natural history of disease, treatment options, psychopharmacology, and management of patient encounters including adverse events. The nurses receive didactic presentations about the goals and roles of psychosocial interventions in effective recovery and rehabilitation, effective communication and general therapeutic principles, and key components and techniques of BDRC. The didactic presentations provide opportunities to ask questions and further explore the presented information or concepts. Later days of training involve interactive methods, including case discussions or live interactions with drug-using individuals. Video recordings of patient interactions serve as examples of techniques and effective therapeutic interactions. Opportunities for clarification and questions are given, and these often become lively conversations where cultural adaptation can be discussed. During later stages of the workshop, participants are assigned to roles as patient or provider and various scenarios are enacted for the group illustrating key principles, techniques, and communication styles. The scenarios are culturally specific to the setting and population. The group can then comment on adherence to the technique, help to troubleshoot the practiced tools or methods with patient scenarios of varying levels of challenge or difficulty. Specifically, these exercises can focus on ways to effectively communicate and engage patients, on how to use the manual-guided therapy in real-life situations, or other related topics.

## Ongoing Supervision and Monitoring

Training patients are recruited ahead of time (about two per health care worker) in order to practice techniques, use of the manual, and the communication style. On-site supervision is conducted by the dedicated local supervisor for the healthcare worker for about 1 h per week per trainee. Online video supervision is provided weekly for the on-site supervisor by experienced, highly trained faculty in the US via a secure online video chat interface. Counseling sessions are voice

recorded, and 25 % of randomly selected voice recordings are reviewed and independently rated for overall fidelity to the counseling intervention and adherence to the manual, communication style, and consistency between patients. During supervision, counselors present structured case evaluations where they report on the components of the therapy they used and the communication style. The communication style is assessed in the voice recorded sessions by noting format of counseling (open-ended vs. closed-ended questions, for example) and the content (related to the therapeutic technique). Records of the session (such as clinical notes) as well as patient data are kept as part of the larger trial and for the clinical program. The on-site supervisor reviews these records overall and does an assessment of the sessions based on a check-list agenda for each session.

## Continuing Education

Counselors are provided with updates about the current state of science and medicine on substance use disorders, treatment, and recovery. They are encouraged to continue their training through available methods of education, including provision of information from US trainers, use of peer-reviewed journal articles, high-quality internet-based education, local government resources and other available sources.

Follow-up training workshops are conducted for trainees after they complete the practicum part of the training, typically 3–4 months after the initial workshop. The follow-up training workshops include updating, refreshing, and sometimes expansion of didactic training components (e.g., education on epidemiology and new local trends in drug use, polysubstance use, psychiatric comorbidities frequently present in the targeted populations), but primarily focus on ways of improving the mastery of learned and practiced therapeutic tools and techniques. Question and answer group discussions, case presentations and discussions, and role-play exercises are predominant activities during the follow-up workshops. Greater focus on developing teaching skills and effective clinical supervision skills, tools, and organizational support for clinical supervision are also emphasized. The leadership roles of the local trainers are also encouraged, emphasized, and supported by the US trainers during the follow-up training.

The follow-up training workshop creates opportunities to discuss challenges and potential solutions for successful implementation of the learned treatment in the local cultural and healthcare resources context. Based on our experiences so far, frequently encountered challenges include the following: access to treatment or other recovery resources (e.g., transportation to and from the treatment centers); barriers to treatment participation (e.g., family or society views on substance use disorders as medical conditions; local laws and the police, security force, or other organizations views or attitudes toward recovery from drug use problems by treatment participation); managing or



scheduling work and family responsibilities and treatment participation (e.g., disclosing treatment participation to obtain support from employers and family members for the patient's recovery efforts); potential involvement, roles and responsibilities, and sometimes demands for disclosure of information on treatment progress by the patients' families; various cultural or environmental challenges when developing alternative activities or new behaviors supporting successful recovery. Group discussions of such challenges during the ongoing supervision and the follow-up workshop create opportunities for all trainees to brainstorm about feasible and acceptable solutions, and involvement of trainers facilitates the process of adaptation of BDRC to the local context without altering the key underlying therapeutic principles and maintaining the overall integrity and close similarity of the treatment across varying cultural and environmental contexts.

### Cultural Adaptation

The training workshop is typically conducted with interpreters; training materials and treatment manuals and all additional handouts are translated to the local language ahead of time. Often, a previously identified local healthcare professional with good skills in the English and the native language is identified to serve as an on-site co-facilitator and active participant during the training, and later, as a supervisor of the BDRC trainees.

The initial training workshop aims to educate the trainees about important concepts, key principles, and effective skills and tools. The translated manuals and supplementary materials offer additional guidance when providing care to patients. Nonetheless, effective provision of care requires implementation of the learned skills, techniques, and tools in the local cultural context within the realm of locally available healthcare and other supportive resources. The BDRC materials do not offer ready-to-use scripts, or step-by-step "how to" instructions. Therefore, after understanding the underlying key principles and learning useful clinical skills, during the practicum (a supervised provision of care) the trainees make efforts to develop their own, individualized, and locally acceptable and therapeutically effective BDRC intervention. Adaptations include verbal and non-verbal communication styles, effective educational scripts and behavioral contracts, and acceptable ways of giving positive feedback. These efforts go beyond simple translation of learned materials and concepts from English to the local language. During the practicum portion of the BDRC training, both the trainees and their supervisors, including the local and US-based supervisors, collaborate together on adapting and evaluating therapeutic effectiveness of the intervention components so they are both compatible with the overall principles of BDRC and

with the local culture and available resources. For example, education about the effects of drugs on the brain may involve different metaphors or stories in China and Malaysia. Similarly, replacing a drug-related lifestyle with an alternative lifestyle and pleasurable activities involves efforts of engaging the patient in different activities in China and in Malaysia.

### Evaluation

As published elsewhere [33, 34], a pilot randomized clinical trial conducted in Muar, Malaysia evaluated whether the efficacy of office-based buprenorphine maintenance treatment, provided with limited counseling is improved by the addition of BDRC and abstinence-contingent take-home doses of buprenorphine. The reductions in opiate positive urines were significantly greater in the BDRC group ( $p < 0.05$ ), and this group achieved higher overall proportions of opiate negative urine toxicology tests (87 % vs. 69 %,  $p = 0.04$ ) and longer periods of consecutive abstinence from opiates (10.3 weeks vs. 7.8 weeks,  $p = 0.154$ ) [34]. Another pilot clinical trial conducted in China evaluated the efficacy of methadone maintenance treatment provided with limited psychosocial services or with the addition of BDRC. Participants in methadone treatment + BDRC achieved both greater reductions of HIV risk behaviors ( $p < 0.01$ ) and of illicit opiate use ( $p < 0.001$ ). 83.3 % in the MMT + BDRC group and 76.2 % in the standard MMT group were still actively participating in MMT at 6 months [33].

Since 2004, BDRC has been used in research projects (published and unpublished) and clinical implementation efforts (unpublished) enrolling a total of over 2000 patients with opioid use disorder participating in agonist (methadone or buprenorphine) maintenance treatment programs in Malaysia and China. Additionally, several hundred patients were treated with BDRC in Indonesia and Taiwan (unpublished). There are currently two ongoing, large randomized clinical trials of BDRC: one in China and one in Russia (no results are available yet). Overall, these research and clinical implementation efforts demonstrate the following: very good feasibility of training and mastery of BDRC by healthcare personnel with minimal prior education and experience in provision of psychosocial interventions (primarily nurses, over 100 trained in China and Malaysia); good ability to implement and provide the treatment to substantial number of patients over extended periods of time in settings with previously limited healthcare resources that are now committed to treatment of individuals with substance use disorders; and generally very good acceptability by the patients of the BDRC counseling model in a broad range of clinical settings in Asia. However, data on the therapeutic efficacy of BDRC as compared to other interventions or no intervention is currently limited. The two published pilot studies [33, 34] showed significant improvements

on drug use outcomes among patients receiving BDRC as compared to the control groups used in those studies. Patients in clinical BDRC treatment in China and Malaysia, show an overall improvement during treatment as indicated by the reductions in drug use and risk behaviors and improvements on functional indicators (employment, social functioning). Result of several ongoing or recently completed studies will be published within the next year.

Data pertaining to the effectiveness of BDRC learning, its feasibility, or acceptability has not been collected systematically, nor were rigorous measures adapted to evaluate the teaching, learning, or the satisfaction of those who were trained. During a few training workshops, we conducted a formal evaluation and collected a written feedback from workshop participants (unpublished). While the evaluations were generally overwhelmingly positive, it is not possible for us to compare the effectiveness of our training efforts with other training initiatives based on these evaluations since there was no comparison group. For most BDRC training participants, the novelty of learned materials and teaching techniques, combined with their own drive to learn new skills to improve or enhance their professional effectiveness may have contributed to their overall positive evaluations.

In conclusion, we developed a viable multifaceted model for training of a broad range of healthcare personnel from LMICs in provision of behaviorally oriented psychosocial intervention for treatment of substance use disorders. The training and treatment implementation are feasible and the expert provision of BDRC intervention may improve the health outcomes of patients involved in comprehensive, medically oriented recovery efforts, such as medication assisted treatments. Such models, specifically adapted for the particular setting, culture, and diagnosis, are feasible for the scale-up and training of broadly available healthcare workforce in LMICs who have no prior extensive education or experience in treating patients with substance use disorders. These healthcare workers can be trained to provide effective care with a good degree of mastery after completing time-limited and a relatively low-cost and low-burden training curriculum.

#### Implications for Educators

- Allied health professionals in developing countries can quickly and easily learn and conduct specific psychosocial therapy skill sets with a combination of acute and long-term training and supervision.
- Adherence to and quality of psychotherapeutic interventions in developing countries can be assessed through ongoing supervision conducted via the internet.
- Evaluation of training methods in psychosocial interventions can be accomplished through detecting differences in populations exposed to the therapeutic modality taught.

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