

Suicide Prevention in Rural Nepal: A Cultural Adaptation of Dialectical Behavior

Therapy

by

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Thesis submitted in partial fulfillment of
the requirements for the degree of
Master of Science in the Duke Global Health Institute
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ABSTRACT

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Abstract

Published research on suicide and suicidal behavior has expanded rapidly in recent years and indicates the presence of a growing global public health concern. In Nepal, suicide is the number one of cause of mortality in women of childbearing age, accounting for 16 percent of deaths within this age group. Although treatments and therapies for suicide vary considerably, adapting existing interventions to allow them to remain culturally congruent with the worldviews of ethnic and racial minority groups is becoming an essential practice. In this study, we conducted a cultural adaptation, training, and piloting of manualized dialectical behavior therapy (DBT) in rural Nepal. DBT is a pliable, evidence-based treatment that is proven effective for risk reduction of suicidal behavior and non-suicidal self-injury (NSSI). However, its feasibility and acceptability has yet to be studied in a low-resource, international setting. In this study, the formative process used to guide modification of the standard DBT regimen is outlined. Qualitative research including focus group discussions and key informant interviews aided in incorporation of crucial elements of Nepali ethnopsychology, and a training based on the manualized adaptation with psychosocial counselors was conducted. Culturally adapted DBT (CA-DBT) was then piloted with ten women in a rural district in Northwest Nepal. Preliminary data suggests that, with additional modification and piloting, CA-DBT holds promising potential as a psychological

intervention in Nepal. A number of qualitative successes and challenges in implementation are highlighted, as are suggestions for program bolstering and further testing.

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1. Introduction

Suicide and suicidal behavior are serious global public health issues (Collins et al., 2009; Bertolote, 2002). Suicide is among the ten leading causes of death in many countries, and every incident of completed suicide is accompanied by an estimated twenty attempted acts (Gelder, Mayou, & Cowen, 2001). In 2007 alone, over one million people died of suicide internationally (Prince et al., 2007), representing a global mortality rate of 16 people per 100,000, or approximately one death every forty seconds (WHO, 2012). Worldwide, suicide is the third leading cause of death among young people aged 15 to 30. These statistics belie the slow but steady improvement across MDG-related health indicators in many countries, and indicate the existence of a growing crisis. By 2020, the WHO estimates that the suicide rate will likely double unless considerable efforts to mitigate the issue are underway.

1.1 Suicide in Nepal

In Nepal, the case for suicide is elaborate and concerning. According to a national Report, an estimated 31,000 people committed suicide cumulatively over the last decade (Subba et al., 2009). Evidence suggests, however, that this estimate is an inaccurate prediction of its true burden within the country. A constellation of factors contributes to this discrepancy. For one, Nepal lacks any systematic, reliable, or regularly implemented surveillance protocol to account for suicide-related deaths (Pradhan et al., 2010). Of the 75 districts in the country, the majority of the seven

epidemiological studies that included a suicide survey between 1998 and 2010 were deployed in seven or fewer. Of these studies, two are publically unavailable. Second, there is no standardized or enforceable reporting structure for suicide-related deaths. In Nepal, post-mortem examinations are legally required for all unnaturally occurring deaths; police are then held informally accountable for electronic storage and management of these reports in a central repository (known as Crime Record System, or CRS) (Subba et al., 2009). However, exams are not conducted consistently, in part due to speculation that post-mortem examiners are unaware of the legal mandate. Districts often fail to electronically report post-mortem data to the CRS, leading to a difficult-to-trace paper report trail. Lastly, community stigma surrounding suicide and perceived legal repercussions contribute to intentional underreporting. Suicide attempts are illegal in Nepal, and are subject to imprisonment, fines, or both. Cumulatively, these factors lead to sparse, oppositional, and contradictor data on the behavior.

Despite these barriers, an expansion of research and media reporting on suicide in Nepal has occurred since the last decade, thrusting the issue into the foreground (Subba et al., 2009). One notable discovery is the disproportionate burden the disease exerts on women. According to one recent prospective epidemiological survey across eight districts, 256 suicides were identified via verbal autopsy (Pradhan et al., 2010). Although an arguably small absolute quantity, this number accounted for 16 percent of all deaths among Nepali women of reproductive age, making suicide the number one

cause of death for this demographic. Youths under the age of 18 appear to be at highest risk.

This comes as an initial surprise, given particular notable improvements spearheaded by the country to improve women's education, health, and political representation (Pradhan et al., 2009). Over the span of the last decade, women have been represented in governance in politics at an unprecedented rate, maternal mortality rates are at an all-time low, and the percentage of women in the workforce has increased in almost every economic sector (Joiner et al., 2005). However, a number of factors contributing to this discrepancy are at play. For instance, Nepal still tops the South Asian gender inequality index, reporting a higher workload for women, lower literacy and educational mobility, and earlier average mortality compared to men (Gautam et al., 2001). Second, rural areas are slower to reap the benefits of political and sociocultural change. Domestic violence, significant stigma surrounding suicide, ingrained paternalism, and school-related anxieties are all heavily at work in resource-poor rural settings; these factors are all correlated with increased psychological and psychosocial vulnerability, specifically to suicide and self-harm. A history of prior mental health problems among women also plays a role, and may be in part attributable to psychological fallout following the decade-long Nepalese Civil War. Although these findings underscore a need to address this issue, it has received scant attention in the

form of targeted intervention development and prevention since its significance was first noted nearly two decades ago.

1.2 Prevention of Suicide in LMICs

Policies and programmes for suicide prevention and treatment vary considerably by nation. In lower-and-middle-income countries (LMIC) such as Nepal, where emphasis on suicide reduction is noticeably limited, targeted intervention efforts rarely targeted psychological change (Phillips & Cheng, 2007). For instance, the World Health Organization (WHO) initiated a multisite suicide study (SUPRE-MISS) using a suicide education program as the sole intervention model. Its Mental Health Gap Action Programme (mHGA), a program aiming to scale up access to mental health resources in LMICs, also these efforts. Additional studies throughout Asia commonly investigate the effectiveness of reducing access to self-harm means and piloting of referral systems.

For individuals who require directed psychological intervention, rather, the options are few and far between (Phillips & Cheng, 2007; Nakimuli-Mpungu, 2012). In Nepal, hospitalization is a rare and questionable route due to limited resources, improper training, and inadequate care. Although individuals may consult with traditional healers and religious leaders, they often times attempt to persist without any variety of care whatsoever (Pradhan et al., 2009).

Although validated and evidence-based treatments (e.g. cognitive behavioral therapy, motivational interviewing, and dialectical behavior therapy) for suicide have

been developed in western contexts, they are not frequently deployed in LMICs (Patel, 2009). When used, they are primarily targeted at reducing PTSD and mood disorders, rather than systematically and specifically addressing self-destructive behaviors. Of greater significance, the majority of these interventions use Western therapeutic modalities without accounting for a patient's unique cultural norms and values (Bernal et al., 2009; Katz et al., 2006; Summerfield 2009). Given the rising evidence base in favor of the role culture and context in influencing almost every aspect of the treatment process, researchers are more inclined to be wary of interventions that fail to address a client's cultural patterns. This is particularly significant for suicide, where interventions must address a complex and entangled web of social, personal, and historical factors (Chang et al., 2007).

1.3 Cultural Adaptations of Psychotherapeutic Interventions

In response to the assertion that western psychotherapies are developed in a specific context and, as such, may not be applicable outside of their specific cultural context, adapting evidence-based psychotherapies to incorporate the role of culture is becoming a widespread practice (Castro et al., 2010). The results these adaptations are manifold: culturally-tailored interventions are increasingly recognized as an effective way of increasing patient satisfaction, mental health service utilization, symptom reduction, and overall quality of life improvements (Chowdhary et al., 2013).

According to one common theoretical orientation, cultural adaptations of pre-existing psychotherapies can be viewed as a useful middle-ground approach (Benish et al., 2011). On one end of the spectrum lie exclusively western models of psychotherapy: they are evidence-based, abundant, and, according to numerous adherents of this model, universally adaptable by nature. The opposing end contains the grounded theory model, which is rooted in the belief that interventions that are (1) culturally sensitive, (2) constructivist by nature, and (3) ultimately most efficacious should be wholly tailored to meet the needs of an individual population. The cultural adaptation model, then, exists between these two poles. This middle-ground approach ensures that fidelity to an evidence-based therapy is maintained, while still allowing for the inclusion of culturally specific elements to enhance acceptability and efficacy (Barrera et al., 2010).

Such adaptations to existing Western psychotherapies are becoming increasingly popular among researchers and practitioners in global mental health (Benish et al., 2011). While the documented literature on the effectiveness of adapted variants is quickly growing in scope, the existing evidence base in their favor is already compelling. Multiple studies have adapted CBT to fit the broader social and psychological contexts of Latino and adult refugee populations residing in the United States (Hinton et al., 2012, 2004, 2009; Lau, 2006; Van Loon et al., 2012). Others have focused on modifying psychotherapies for use with mothers and their infants in rural parts of Asia (Rahman et al., 2008; Van Loon et al., 2012), and group-based therapies with women and children

(Danner et al., 2008) have been modified to suit the needs of Asian-American populations with family-centric social structures. Statistical outcome measures have documented the feasibility and acceptability of these adapted models, often empirically documenting their superiority over non-adapted or minimally tailored variants (Van Loon et al., 2012; Benish et al., 2011). In studies reporting qualitative outcomes, clients report preference over adapted variance, indicating a number of specific perceived benefits (Lau et al., 2011).

Although the utility of culturally adapted therapies for non-Western populations is clear, their applications have been limited (Benish et al., 2011). Modified therapies are primarily targeted at reducing symptoms related to post-traumatic stress disorder (PTSD), anxiety, and mood disorders. For suicide, adapted therapies for other disorders may often be used to address suicidal behaviors; however, suicide has rarely been studied as a direct outcome measure. In Nepal, specifically, virtually no work has been done to develop and assess the impact of adapted variants on patients. With the exception of a single case study exploring the process of a CBT adaptation in a patient experiencing pseudoseizures (Kohrt et al., 2012), no additional studies indicating use of a culturally adapted model for suicide have been documented in the published literature.

1.4 Nepali Ethnopsychology & Cultural Adaptations

In spite of this research gap, a preliminary foundation for modifying particular therapies to treat suicide in Nepal is already in place (Kohrt et al., 2008, 2010, 2012). Over a decade of work has been conducted in Nepal to develop and enrich the field of ethnopsychology. Defined as the study of cultural or “folk” models of psychological subjectivity, the study of ethnopsychology is considered a powerful means of uncovering a culture’s own understanding and experience of the self, emotions, physical body, and connections to the social world. In Nepal, specifically, work in the field has led to the development of a conceptual framework outlining the individual and relational components of the self. Five elements of this conceptualization of the self are particularly useful in the context of mental health and psychological wellbeing. Here, I briefly outline them below:

1. Man (“heart-mind”): In Nepal, the *man* is locus of memory and emotions, and is the source of one’s irreducible originality. It includes the domains of individual psychological affect, concentration, motivation, intentionality, and subjective opinion. Common, normative levels of emotions (e.g. generalized sadness, worry, fear, etc.) are localized to the heart-mind. This conceptualization of *man* similar to those found in other South Asian cultures (e.g. India and Bangladesh; Pugh, 1984; Fenton & Sadiq-Sangster, 1996).

2. *Dimaag* ("brain-mind"): Known as the brain-mind, *dimaag* is the rational complement to the heart-mind. The locus of individual thoughts, the brain-mind is also the apparatus responsible for regulating appropriate social behavior. Problems in the brain-mind (of which suicide is considered an extreme) are considered chronic, and lead to the onset of short or long-term expressions socially unacceptable behavior. Due to their deleterious effects on normative social interaction, brain-mind problems are prey to internalized and community stigma, resulting in a wariness to publicize mental health problems, seek out, and adhere to treatment. In the mental health literature, for example, psychosis and personality disorders (particularly antisocial) would be considered brain-mind problems.
3. *jiu* (physical body): *Jiu* is similar to Western conceptualization of the corporal body. *Jiu* can be affected by direct physical injuries and disease. Problems with the physical body can also lead to both heart-mind (e.g. somatic pain can cause "worries to dance in the heart-mind") and brain-mind problems (e.g. abusive, physical battering or sexual violence can contribute to an avoidant personality state).
4. *saato* (spirit): Defined as spirit, *saato* imbues life with vitality. It is similar to the Nepali conception of the soul, or *aatma*. Traditional healers often target this domain, as it is the gatekeeper of supernatural force entry. In ancient

Buddhist traditions, particularly of a Tibetan nature, direct (e.g. real-time witnessing) or indirect (e.g. knowing a family member who committed suicide) observation of suicide renders one more susceptible to spirit loss.

5. *ijjat* (social status): Like the *dimaag*, *ijjat* is another interpersonal component of the self. Brain-mind problems are frequently causes of *ijjat* loss. *Ijjat* loss is also contagious; for example, a daughter who has attempted suicide (a brain-mind problem) will experience *ijjat* loss herself, while also directly transferring the same loss of social status to her family.

In a mental health context, the heart-mind and brain-mind are of particular relevance, due to their direct associations with emotion and cognition. When superimposed onto psychotherapies, these constructs can be useful in the development of culturally grounded interventions for suicide reduction.

This understanding of Nepali psychology, while nuanced and systematic, is still prey to oversimplification. Nepal is a richly diverse nation, with over 40 ethnic groups speaking well over 100 languages (Bhattachan, 2008). As such, there are multiple existing ethnopsychologies throughout the country. Given this high level of cultural variation, one can assert that modified interventions should include a Western psychotherapy that is elastic and easily adaptable, so as to account for differences in political, religious, linguistic, and geographical orientation. This principle should be

kept in mind when determining which psychotherapy and ethnopsychology are most appropriate when developing an intervention.

1.5 Dialectical Behavior Therapy

One manualized cognitive behavioral psychotherapy of particular interest to global mental health practitioners is dialectical behavior therapy, or DBT. Created by Marsha Linehan in the late 1980's, DBT was developed for chronically suicidal or self-injurious women suffering from borderline personality disorder (BPD) (Linehan, 1993a). It is also used to prevent suicide and non-suicidal self-injury (NSSI) in the absence of BPD. To date, empirical studies have found DBT to be efficacious in treating suicidal patients, and many have even demonstrated the enhanced utility of DBT over other therapies in reducing suicidal behaviors (Fuchs et al., 2013). Although competing stand-alone treatments for BPD and related suicidal behaviors exist and are gathering a slow stream of additional support, (see Bateman & Fonagy, 2008, as well as Young, Klosko, & Weishaar for reviews of mentalization-based treatment and schema therapy, respectively), DBT remains the frontline intervention for self-destructive behaviors.

DBT's theoretical orientation is based on Linehan's biosocial theory of BPD (Linehan, 1993a). According to this theory, pervasive emotion dysregulation is the result of a transaction between heightened biological vulnerability to intense that transacts with an invalidating environment. DBT has robust empirical support for

addressing emotion regulation difficulties in individuals with and without BPD (Lynch, Trost, Salsman, & Linehan, 2007).

The primary goal of DBT is to reduce ineffective behaviors linked with dysregulated emotions (Lynch et al., 2006). It is integrative in nature, involving a synthesis of change-oriented strategies with acceptance-oriented principles and strategies adapted from Zen Buddhism and mindfulness practice (Robins, 2002). At its heart lies the search for synthesis and balance, a task that has proven effective in replacing the rigid, often extreme and dichotomous responses characteristic of self-destructive individuals.

In DBT, patients are taught to develop a non-judgmental awareness and acceptance of their own emotional experience, and use change strategies to address maladaptive behaviors (of which suicide is considered an extreme) (Rosch, 2007). Treatment requires confrontation, commitment, and patient responsibility, and focuses considerable therapeutic energy on accepting and validating the patient's current condition, while simultaneously equipping the patient with a broad range of behavioral skills. Moreover, it is a non-linear, skills-based and flexible treatment that emphasizes a contextual, functional (rather than symptomatological) approach to human behavior and emotional dysregulation. It can also be conceived of as a values-driven treatment, emphasizing an exploration of the subjective, inner experience of the client. Because of this pliability, it is often considered ideal for therapeutic adaptations tailored for a

variety of demographic, geographic settings, and sociocultural settings (Keng et al., unpublished).

The combination of DBT's flexible, skills-oriented and systematic approach to addressing dysfunctional behaviors makes it a promising intervention to reduce suicide risk in Nepal (Kohrt et al., 2012). To our knowledge, however, there are no published treatment interventions using a culturally adapted (or even traditional) DBT model for Nepali women.

1.6 Study Purpose

This study hopes to fill the void in targeted suicide prevention interventions by generating access to an evidence-based, culturally sensitive therapy for suicide reduction that is unavailable in Nepal. The purpose of this paper is to outline one formative, phasic approach used to culturally tailor dialectical behavior therapy to a rural Nepali setting with a high female suicide prevalence. I will highlight in detail the collaborative adaptation process (along with relevant justifications) used to develop CA-DBT, as well as provide preliminary insight into the intervention's feasibility and acceptability. Detailed analysis of CA-DBT's efficacy with the target population will be included in a separate publication.

1.7 Research Setting

Nepal is a South Asian country between India and China with a population of 27 million. Hinduism and Buddhism are the major religions. Rural Nepal is characterized

by poor access to physical health care, nonexistent mental health services, and high rates of poverty and illiteracy (UNDP, 2004). Maternal and child health outcomes are also dismal (Suvedhi et al., 2009). In addition to chronic socioeconomic problems, the country suffered a decade-long civil war from 1996-2006. Nepal was also home to over 100,000 ethnic Nepali Bhutanese refugees, the majority of whom are currently being resettled in the United States. Recently, the suicide rate among women 18-45 years old in Nepal was found to be 28/100,000, and suicide is the leading cause of death in this demographic group, accounting for 16% of mortality. Among Nepali refugees in the United States the suicide rate is 32/100,000 (UNDP, 2004).

Jumla, a rural community, is located in a mountainous zone in Northern Nepal. Poor health, illiteracy, educational, and economic status are common, and these rates are often lower than national statistics (Bhatta, 2004). Jumla has nine health posts, 20 sub-health posts and one hospital with an average of three doctors, of whom only one is a local citizen; however, the majority of these posts are not functional (United Nations, 2008). The residents of Jumla district seek health care primarily from traditional healers, largely of a spiritual or supernatural denomination. Between 2001 and 2006, Jumla suffered the effects of the People's War, including major battles leading to civilian, Maoist, and government casualties, destruction of all communication infrastructure, abduction and torture of citizens, government blockades, school bombings, bombing of schools, and elimination of any stable medical infrastructure (See Tol and colleagues'

review (2010) for a thorough review on the history of the war and its associated psychosocial impact).

In 2007, a Jumla study with 754 adults was conducted by a member of the study team to examine the rates of depression, anxiety, and somatization. The lifetime rate of suicide attempts in this sample was 8.1% and, for women, was correlated with low social caste and severity of trauma exposure (Kohrt et al., 2009). Similar to national trends in suicide reporting and surveillance, this rate is likely an underestimation.

2. Methods

The entirety of this formative study was conducted using an iterative and adaptable research process, with each phase informing design and development of the proceeding one (See Figure 1 for a study design outline). Research culminated in development of a 5-day training curriculum and manualized protocol for training in and dissemination of culturally adapted dialectical behavior therapy¹. All aspects of the study received approval by both Duke University's Institutional Review Board and the Nepal Health Research Council, the government body responsible for authorization of all health research conducted in Nepal. All components of the research were conducted in collaboration with Transcultural Psychosocial Organization (TPO)- Nepal, a research-oriented nongovernmental organization in Kathmandu.

¹ I will refer to culturally adapted dialectical behavior therapy as CA-DBT throughout the remainder of this paper.

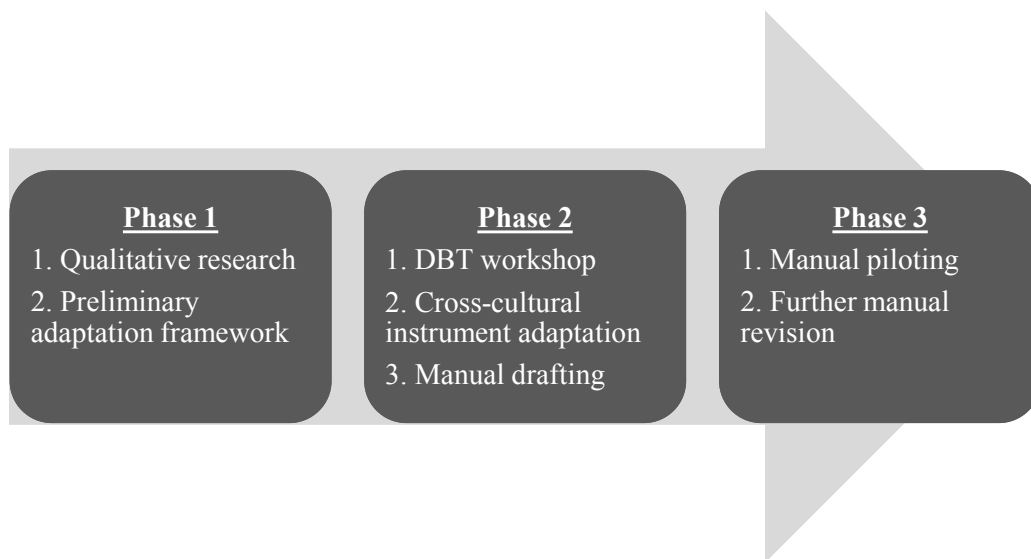


Figure 2: Three-Phase Study Design and Flow.

2.1 Phase I

In Phase I of this study, in-depth interviews with a range of clinicians and related mental health care providers were conducted to qualitatively explore attitudes towards treatment of suicidal and self-harming clients, risk factors underlying the onset and severity of emotion dysregulation symptoms, relevant domains of treatment adaptation, and barriers to effective delivery of DBT in Nepal.

2.1.1 Study Participants

Study participants (n=12) belonged to the following four groups: respected religious (Buddhist and Hindu) leaders, psychosocial counselors, psychiatrists, and traditional healers. Participants were identified through key informants employed by

Transcultural Psychosocial Organization (TPO)-Nepal. Select participants served as key informants themselves and aided in further recruitment. Participants were eligible for participation in this phase of the study if they (a) had a minimum of two years professional experience in their chosen discipline; and (b) resided within a 30-mile radius of Kathmandu Valley. Individuals with no direct experience with suicidal clients were excluded.

2.1.2 Instrument Development

Interview questions were developed in close collaboration with key informants and the first author. A total of four semi-structured interview guides were developed for each distinct group of participants. Questions focused on participants' treatment overall experiences with suicidal and self-harming clients, external and internal prompting events, attempted treatment strategies and their potential utility, community perceptions towards suicide, and salient metaphors describing difficulties in emotion regulation. Interviews also explored basic processes of recruitment, engagement, and retention in care for suicidal and self-harming clients. Each semi-structured guide was piloted with two researchers at TPO-Nepal, with minor revisions made for clarity and flow.

2.1.3 Data Collection & Analysis

Twelve semi-structured interviews were conducted in-person and included translation assistance from a research assistant fluent in Nepali. Prior to beginning each

interview, written informed consent was obtained from all participants. All interviews were digitally recorded, and ranged from 30-90 minutes. Nine were conducted solely in English, two in Nepali, and one using a combination of both languages. Following Nepali-English translation and written transcription, transcripts were analyzed by the study team using the constant comparative method of data analysis (Corbin & Strauss, 2007). This method consisted of (1) reading each transcript multiple times for content, then (2) open-coding an interview transcript for data on key themes surrounding suicide and self-harm in Nepal. This same, iterative process was applied to remaining transcripts until a final set of emergent themes was present. Results from interviews were used to guide the DBT adaptation process for both curriculum and manual development in Phases II and III, respectively.

2.2 Phase II

During Phase II, a 5-day training workshop in Dialectical Behavior Therapy was conducted with a cohort of TPO-employed counselors at the organization's headquarters in Kathmandu. The workshop was facilitated by members of the study team, which included one doctoral level clinical psychologist, psychiatrist, and masters-level researcher. It followed several cycles of alternating lecture-based didactics and demonstrations punctuated by multiple small group activities. Data from Phases 1 & 2 of the study was used to inform development of a preliminary CA-DBT manual for use in Phase 3.

2.2.1 Participant Recruitment

A total of fifteen psychosocial providers from Kathmandu and surrounding districts were included in this portion of the study. Fourteen of the participants were counselors with prior training, and one was a social worker at a collaborating non-governmental organization. Participants were eligible for this portion of the study if they were (1) employed by TPO-Nepal or a related mental health organization; (2) actively engaged in clinical work, including 1:1 contact with suicidal and self-harming clients; and (3) versed in basic principles of cognitive behavioral treatment. All participants signed written consent forms prior to participation. No attendees received financial compensation in exchange for their participation.

2.2.2 Workshop Curriculum Development and Piloting

A 5-day Nepali training curriculum was designed and deployed by the study team. Materials were developed using a variety of sources, including (1) the initial version of the Dialectical Behavior Therapy Skills Training Manual Linehan, 1993); (2) a modified, time-limited (10-week) DBT group structured for survivors of domestic violence developed by Alan Fruzzetti and colleagues at University of Nevada, Reno (Iverson, Shenk, & Fruzzetti, 2009); and (3) qualitative information from Phase 1 of the study. The curriculum spanned all four modules typically covered in traditional skills training groups, with additional didactics on the biosocial theory of emotion

dysregulation, treatment hierarchies and prioritization, validated screening methods for suicide and non-suicidal self-injury (NSSI) , behavioral chain analysis, and basic validation strategies.

The workshop relied heavily on small group activities (See Table 3) in which one facilitator and 4-5 participants collaborated to adapt one or more components of the standard DBT protocol. Engagement and elicitation of feedback from participants was vital. Each activity lasted 30-45 minutes in length, and was followed by individual group presentations and group discussion that, on average, ran one-half hour. This period proceeding activities was used to make further modifications to adapted skills and exercises.

2.2.3 Data Collection & Analysis

All participants completed a 25-item DBT exam and taped interactions with a standardized client with active suicidal ideation before and after the training. A satisfaction survey was also distributed on the fifth day. All components of the workshop were digitally recorded and underwent Nepali-English translation and written transcription. Transcripts were analyzed using the same methodology outlined in Phase I. Results from workshop analyses were used to guide further development and modification of the CA-DBT manual.

2.3 Phase III

Phase III included two components. First, a series of five assessments (including those for emotion regulation, suicidality, borderline personality disorder, DBT skills uptake, and reasons for living) were adapted to a rural context using a truncated version of a transcultural instrument adaptation procedure (Van Ommeren, 1999). Group CA-DBT was then conducted with ten women using a multiple (n=10) single-case study design to identify feasible and acceptable treatment elements. Results from the clinical replication series are presented elsewhere (Ramaiya et al., unpublished).

2.3.1 Manual Development

Following Phase 2, an initial, rural CA-DBT treatment manual for use with psychosocial counselors and clinicians was developed using a combination of (a) qualitative research from Phases 1 & 2 of the study, (b) literature-based adaptation frameworks, (c) prior research in Nepali ethnopsychology, and (d) DBT skills training manuals. The skills used in this program were those in the DBT skills training manual for survivors of domestic violence developed by Fruzzetti and colleagues at University of Nevada, Reno (Iverson, Shenk, & Fruzzetti, 2009). The manualized program incorporated all four DBT modules, with the addition of a validation module to target non-acceptance, criticism, and stigma typically encountered by suicidal clients from family members and the community. Throughout the intervention, the manual was

adjusted in a dynamic and iterative fashion to account for novel outcomes in skills uptake and comprehension encountered in weekly treatment sessions.

To simplify manual content, each session had a corresponding 5-11 page "manual" section, one-page list of session objectives, and a schedule. This objectives list included both a list of required skills review and materials. Session-specific content also included lengthy examples of wording for specific skills, in order to provide additional guidance for newly trained counselors. These included sample role-plays, introductory mindfulness exercises, and explanations for associated handouts. All handouts were laminated and came with punched holes; women were encouraged to place them on home walls to promote skills generalization. Each session manual concluded with required homework assignment and diary card dissemination. All manual materials were designed to be flexibly tailored using counselor and client feedback both during and after each session.

2.3.2 Instrument Adaptation

Five instruments underwent a 5-step transcultural adaptation procedure. In accordance with an established transcultural translation procedure, four criteria were evaluated at each research step: comprehensibility, acceptability, relevance, and completeness. First, a group of three mental health experts reviewed the original instruments and modified them according to the above criteria. A Nepali version and lexical back-translation was then created for all five instruments, which was reviewed by

the study's Principal Investigator and primary researcher. The instruments were again revised and presented in a focus group discussion (FGD) with eleven rural Nepali women. Final modifications to the instruments were made following the FGD.

2.3.3 Participant Recruitment

For this phase, purposive sampling was used to recruit ten women of reproductive age (18-45) to participate in the study. Participants were identified by a local counselor using community contacts and his existing client base. Clients were eligible for participation if they met the following two criteria: (1) a score of 1 ("I have thoughts of killing myself, but would not carry them out) or greater Beck Depression Inventory item #9 and (2) an attempted suicide or self-harming incident within the prior two years. Women with evidence of developmental disabilities, substance abuse, and/or psychosis were excluded from the study. A total of ten women were enrolled in the study. The intervention was provided at no financial cost to the participants.

2.3.4 Intervention Procedures

This modification of DBT was a specialized group intervention in which the majority of functions of DBT were accomplished in a shortened treatment program. CA-DBT consisted of 10 sessions of group therapy, each lasting approximately 3 hours. For this pilot study, we conducted one group, which was held on Saturdays to accommodate for work, child care, or related scheduling barriers encountered during typical weekdays (Sunday-Friday). There were two group leaders: one female, master's-level study team

with foundational training in DBT, and a male counselor who resides in Jumla and attended the workshop in Phase II. A doctoral-level clinical psychologist and DBT expert provided a minimum of weekly remote supervision. All sessions followed a certain structure. Almost all sessions (with the exception of the initial meeting) began with a group mindfulness exercise, followed by a behavioral chain analysis. Skills-specific didactics and experiential activities for one of the five CA-DBT modules (Mindfulness, Distress Tolerance, Self-Validation, Emotion Regulation, and Interpersonal Effectiveness) followed. Each session concluded with homework assignment and generalization strategies for skills learning during the session.

2.3.5 Data Collection

For each participant, data were collected in three stages. First, baseline assessments were taken to assess symptoms related to suicidality and emotion dysregulation, and served as within-case baseline controls. The intake session also served to create a brief case history and identify specific presenting problems to be included as outcome variables for each client. Second, data was collected throughout the intervention period using (a) digital recordings of weekly group sessions, and (b) re-administration of measures on a weekly basis. Measurements were taken prior to each group session in either the client's residence or in a private location within the TPO clinic. The third-stage consisted of follow-up assessments at 4 and 8-week intervals,

along with exit interviews to gauge therapy perceptions and elicit suggestions for future enhancement.

3. Results

3.1 Key Informant Interviews

3.1.1 Interview Findings and Adaptations to CA-DBT Manual

Results of the in-depth interviewing process indicated that careful consideration should be given to the following five areas when making preliminary modifications to the standard DBT manual and training curriculum (See Table 1 for an outline of modifications resulting from this phase).

Table 1: List of adaptation considerations from Phase 1 and applications to training and dissemination

Suicide and Self-Harm Related Factors	Application to Workshop Curriculum	Application to CA-DBT Protocol
Relationship between interpersonal conflict and impulse control deficits	<ul style="list-style-type: none"> ▪ Highlight impulse control as suicide and self-harm associated dysfunction 	<ul style="list-style-type: none"> ▪ Role plays using culturally consonant relationship discord examples ▪ Group safety plan development ▪ Addition of self-validation module to validate individual emotional responses to interpersonal distress
Lack of validated diagnostic criteria for Borderline Personality Disorder (BPD) in Nepal	<ul style="list-style-type: none"> ▪ Limited background on relationship between BPD and DBT ▪ Extended emphasis on DBT as a transdiagnostic and modular treatment 	<ul style="list-style-type: none"> ▪ Omission of disorder-specific jargon in presentation of therapy
Low linkage and adherence to care	<ul style="list-style-type: none"> ▪ Address common myths and proverbs related to poor linkage ▪ Specification of recruitment and treatment linkage pathways ▪ Case conceptualization exercises incorporating linkage and engagement strategies 	<ul style="list-style-type: none"> ▪ Incorporation of literate family members into treatment process for low-literacy clients
Internalized and community stigma	<ul style="list-style-type: none"> ▪ Address common myths related to suicide and self-harm 	<ul style="list-style-type: none"> ▪ Incorporate family into treatment orientation ▪ Use of non-self-destructive-specific language during treatment orientation ▪ Description of skills as universally applicable across individuals and contexts
Chronic deficits in emotion regulation skills	<ul style="list-style-type: none"> ▪ Prioritized didactics on group skills training ▪ Group adaptation of module-specific skills 	<ul style="list-style-type: none"> ▪ Weekly skills training with time-variable phone coaching and individual treatment components

3.1.1.1 High prevalence of interpersonal conflict

Findings: All providers or specialists indicated that self-destructive behaviors were largely the result of rife personal relationships that had either stagnated or perilously declined. Types of interpersonal conflict encountered by women varied, ranging from chronic disputes with husbands or in-laws (particularly mothers) to short-lived inter-caste romances that were heavily stigmatized and resulted in intense, internalized shame for women involved. The majority of these case studies also incorporated elements of both physical and psychological domestic violence, supporting our initial conjecture that a manual specifically for female victims of domestic violence would be ideal in this setting. All participants linked issues with interpersonal conflict to poor impulse control behaviors.

Modifications: As a result of this factor, we designed culturally consonant role-plays highlighting relationship discord and heavily incorporated them into CA-DBT manual. We also chose to incorporate a brainstorming session on viable safety plans into the workshop curriculum, to assure appropriateness of plans in the context of Nepali attitudes toward marital separation and familial integration. Finally, we chose to prioritize *self-validation* over more general validation strategies in the CA-DBT manual, due to the identification of shame and shame-related behaviors in our target population.

3.1.1.2 Lack of Nepal-specific presentation and etiology of borderline personality disorder

Findings: Although problems in impulse control, troubled relationships, and externalizing behaviors such as self-harm and threatening others are clinical hallmarks of borderline personality disorder, three participants cited a lack of research characterizing the prevalence, etiology, or presentation of borderline personality disorder in Nepal.

Modifications: Because of the lack of BPD-related criteria in this setting, we chose to limit discussion on the disorder during the workshop, so as to minimize use of potentially inaccurate and stigmatizing labeling by mental health providers. Instead, we emphasized DBT's transdiagnostic potential, highlighting its effectiveness in treating a wide range of disorders, many of which Nepali counselors in the workshop had prior familiarity with and had treated.

3.1.1.3 Low linkage and adherence to mental health care

Findings: All participants cited difficulties in successfully treating self-destructive clients, in large part due to failures to adequately engage and retain patients in treatment. In urban or urbanizing environments, specifically, providers noted that increasing migration rates generally lead to infrequent or short-lived client-provider interactions, thereby limiting the effectiveness of psychosocial interventions.

Modifications: As a result, we included myths related to retention and successful treatment of suicidal and self-harming clients (e.g. "Improvement following a suicide

attempt or crisis means that the risk is over.") in our training curriculum. We also expanded our model of case conceptualization to include aspects such as entry and engagement into care, and had counselors during the workshop brainstorm strategies to address these structural barriers when formulating case strategies.

3.1.1.4 Robust internalized and community stigma

Findings: All twelve participants indicated that, in Nepal, suicide is considered a crime and is cloaked in irreversible stigma for both victims and their families. Local Nepali (ethnopsychological) models consider suicide to result from an imbalance or dysfunction of the *dimaag* (brain-mind), the rational apparatus that governs cognitions as well as proper social functioning. Because psychological problems in the *dimaag* are considered severe and permanent, they are often associated with profound stigma. One participant, a member of the indigenous *Hyolmo* Buddhist group, explained his religious community's belief in the phenomenon of suicide contagion, whereby exposure to a suicide-related death influences others (who may or may not already be at risk) to similarly take their life.

Modifications: To avoid reinforcing stigmatizing stereotypes and behaviors amongst providers and community members, we chose to incorporate common suicide and self-harm related myths (e.g. "Only uneducated or lower-caste groups commit suicide.") into the workshop curriculum. For the CA-DBT manual, we described DBT

skills to clients and family members as relevant and applicable to anyone, regardless of mental health status, in order to avoid stigmatizing perceptions of treatment.

3.1.1.5 Chronic coping skills deficits

Findings: Seven providers specifically identified skills deficits as major contributors to self-destructive behaviors. Through client-specific case studies elicited during this portion of the study, we identified these barriers to productive coping skills as inability to reduce or modulate intense reactions to emotions, which align with problems of emotion regulation targeted by DBT.

Modifications: We prioritized didactics on group skills training in the workshop, and included multiple small group activities to culturally adapt module-specific skills. In the CA-DBT manual, we standardized weekly skills training across manual variations. Lastly, due to time-related engagement issues outlined earlier, we reduced phone coaching and individual treatment to optional, time-variable components depending on the needs and availability of the target population in rural Nepal.

3.2 Dialectic Behavior Therapy Workshop

3.2.1 Workshop Demographics & Structure

Table 2 provides demographic information for participants of the 5-day Dialectical Behavior Therapy training workshop conducted during Phase II of the study in Kathmandu. A total of fifteen participants joined and completed the workshop, with a 100% retention rate over the 5-day period. The average age for participants was 33.3

years (SD= 6.57), and the majority (66.67%) were female. All participants had a minimum of a bachelor's level-education and were currently active as mental health or psychosocial providers in one of multiple (4) Nepali districts represented. Higher caste *Bahun* and *Chhetri* groups predominated (66.7%), with no representation from the lowest, "untouchable" Dalit caste.

Table 2: Workshop Demographics

	Participants (n=15)
Age, Mean (SD)	33.3 (6.57)
Female, No. (%)	10 (66.7)
Work experience in years, Mean (SD)	
Married, No. (%)	15 (100)
Religion, No. (%)	
<i>Hindu</i>	13 (86.7)
<i>Buddhist</i>	2 (13.3)
Caste, No. (%)	
<i>Bahun</i>	7 (46.7)
<i>Chhetri</i>	3 (20.0)
<i>Janajati</i>	5 (33.3)
<i>Dalit/Nepali</i>	0 (0.0)
Highest level of education completed (%)	
<i>Bachelors</i>	7 (46.7)
<i>Masters, completed</i>	6 (40.0)
<i>Masters, incomplete</i>	2 (13.3)

In Table 3, we outline the curriculum used to initially train Nepali mental health providers in Dialectical Behavior Therapy. Study authors drafted an initial agenda based on formative research conducted in Phase I. The content and structure of the workshop

remained flexible in order to accommodate naturally arising needs, interests, and issues identified by participants and workshop facilitators.

Table 3: Five-day DBT Workshop Curriculum in Nepal

Time	Day 1	Day 2	Day 3	Day 4	Day 5
10:00am	Registration & Sign-in	Mindfulness Exercise			
10:15am	Mindfulness Exercise				
10:30am	Opening Remarks	Prior Day Review			
10:45am	Pretest	Biosocial Theory and Treatment Model	Distress Tolerance Skills	Interpersonal Effectiveness skills	Group Activity #7: Nepali DBT Case Conceptualization
11:15am	Roleplays			Group Activity #6: Adapting Interpersonal Effectiveness Skills	
12:00pm	Introductions			Group Presentations & Discussion	
12:30pm	Group Activity #1: Successes & Challenges with Self-Destructive Clients	Group Activity #2: Freelisting Nepali Dysregulations	Group Activity #4: Adapting Distress Tolerance Skills	Consultation Team	
1:00pm	Group Presentations & Discussion	Group Presentations & Discussion	Group Presentations & Discussion	Skills Training Strategies	
1:30pm	Lunch				
2:30pm	Suicide and Self-harm Review	Mindfulness Skills	Mindfulness Exercise		
2:45pm		Mindfulness Exercise	Emotion Regulation Skills	Commitment & Orientation Strategies	Assess Interest in Continued Adaptation Research
3:00pm			Validation & Dialectics		
3:30pm	Introduction to DBT	Group Activity #3: Describing Mindfulness to Clients	Group Activity #5: Describing and Labeling Emotions	Diary Card	Posttest and Roleplays
4:00pm		Group Presentations & Discussion	Group Presentations & Discussion	Behavioral Chain Analysis	
4:30pm	Closing Activities				Certificates and Closing Remarks

3.2.2. Workshop Findings and Adaptations to CA-DBT Manual

Findings from the 5-day workshop informed further development and modification of the CA-DBT program. Six domains of adaptation were identified following workshop data analysis (See Table 4 for a review of post-workshop domains of adaptation.)

Table 4: List of second wave of adaptations following Phase II DBT workshop

Adaptation Domain	Description	Key Examples
Language	Identification of culturally syntonc Nepali counterparts to standard DBT terminology (should contain adequate semantic equivalence, comprehensibility, and acceptability)	<ul style="list-style-type: none"> ▪ Translations of Mindfulness (<i>sachetansilata</i>), validation (<i>baidhanikata</i>), and wise mind (<i>buddhi mani soch</i>) tailored to rural Nepali dialect ▪ Limited use of self-respect language arising from lack of cultural equivalent
Sociodemographics	Population characterization using key sociodemographic indicators (religion, education, economic status, literacy level)	<ul style="list-style-type: none"> ▪ Use of Buddhist and Hindu cosmology to describe negative consequences of intensely unregulated emotions ▪ Elimination of text-based handouts and replacement with graphic aids ▪ Use of modified diary card with illustrations of emotion words and pictorial likert scoring
Culturally consonant metaphors, allegories, and imagery	Incorporation of Nepali-specific representations of DBT skills, theories, and concepts	<ul style="list-style-type: none"> ▪ Use of 'Tortoise and hare' allegory to frame distress tolerance skills ▪ 'Tree of life' pathway used to describe and label emotions
Skills Training Content	Culturally appropriate organization, presentation, and delivery of skills and associated exercises	<ul style="list-style-type: none"> ▪ Limited instruction in interpersonal assertiveness training (FAST skills) ▪ Heightened emphasis on awareness of interpersonal connections as emotion regulation strategy ▪ Tailoring of skills to available resources
Vulnerability Factors	Identification of individual and community-level stressors in rural Nepal	<ul style="list-style-type: none"> ▪ Linkage to microfinance initiatives and women's groups to address salient structural barriers
Ethnopsychology	Incorporation of Nepali conceptualizations of affect, cognitions, social connections, and the self	<ul style="list-style-type: none"> ▪ Framing of wise mind as integration of heart-mind (<i>man</i>) and brain-mind (<i>dimaag</i>) ▪ Distress from brain-mind (<i>dimaag</i>) dysfunctions and related loss of social status minimized through radical acceptance of current emotional state

3.2.2.1 Language

Findings: All workshop activities and the de novo, verbal translation process utilized by bilingual (Nepali and English) facilitators were a rich source of language equivalents. During adaptation of Interpersonal Effectiveness skills (Group Activity #6; See Table 3), participants expressed difficulties grasping the meaning of the word 'self-respect.'

Modifications: We sought out Nepali companions for DBT-related jargon with adequate comprehensibility, acceptability, and semantic equivalence. Accurate, non-stigmatizing translations for mindfulness (*sachetansilata*), wise mind (*buddhi mani soch*) identified during the workshop were incorporated into the CA-DBT manual. We limited discussion of 'self-respect' and combined Objectives Effectiveness skills with particular Self-Respect Effectiveness strategies (action in accordance with personal values, for instance).

3.2.2.2 Sociodemographic variables

Findings: In the final day, group members were asked to design a DBT case conceptualization using a former or current client (Group Activity #7). Considerations included (1) linkage and commitment to care; (2) self-destructive triggers and related urges; (3) process of therapy (group vs. individual, hierarchical targeting, specific exercises); (4) strategies for skills generalization for illiterate clientele; and (5) therapy-interfering behaviors and countering strategies. All participants identified the need to

modify text-based DBT diary cards and homework assignments with meaningful equivalents for illiterate or low-literacy clientele. Two groups also chose to highlight the value of interpersonal and universal connectedness with clients, primarily through use of Buddhist cosmology.

Modifications: This adaptation domain consists of a variety of indicators, including but not limited to religion, education, and literacy level. For the CA-DBT diary card, we used a series of facial expression images depicting emotional states, along with a modified likert scale using glasses with varying levels of water (0 = 'empty glass,' or lack of presence of an emotion, and 4 = 'overflowing,' or presence of strong emotion). To account for clients' religious backgrounds, we used religious cosmology to highlight interpersonal advantages and disadvantages of positive and negative emotions. For example, we described the unproductive communication of negative emotions to others as a means of harming another's karma. See Figure 2 for the associated diary card.

नाम: _____

जुम्ला डिबिट डायरी कार्ड

सुरु गरेको मिति: _____

























		भावना						लक्ष्य			
		चिन्ता	लाज	रिस	डर	निराशा	खुसी	आत्महत्याको बिचार	आत्महानी	लक्ष्य १	लक्ष्य २
											
शनिवार											
मङ्गलबार											

Figure 2. CA-DBT Diary Card. From left to right are the following emotions: worry, shame, anger, fear, sadness, and joy. A column for suicidal ideation and self-harming urge are also included. This diary card is for two days (Sunday & Monday).

3.2.2.3 Metaphors, imagery, and symbolism

Findings: When modifying specific Distress Tolerance Skills during Group Activity #4, we asked groups to develop alternatives to text-based acronyms for illiterate or low-literacy patients. One group used the tortoise (*kachuwu*) and hare metaphor to illustrate the need and utility of tolerating distress in the long, and others brainstormed culturally consonant skill equivalents for the remaining acronyms (e.g. lighting incense, drinking lassi, or adding aromatic masala to a dish as a self-soothing mechanism).

Modifications: We included culturally salient stories, images, and symbols to represent western DBT concepts. We replaced text-based distress tolerance handouts with commonly understood pictorial aids. In the tortoise and hare allegory, a turtle bearing the weight ("stress") of a heavy shell outpaces his opponent by "not acting hastily" and skillfully managing his load. We used this story to describe the utility of distress tolerance skills, as well as to illustrate the short and long-term consequences of hasty and impulsive action. Because of the limited utility of mnemonic devices with illiterate clientele, ACCEPTS and IMPROVE' skills were collapsed into a single handout for simplification, with associated graphics. See Figure 3 for the Nepali handout.

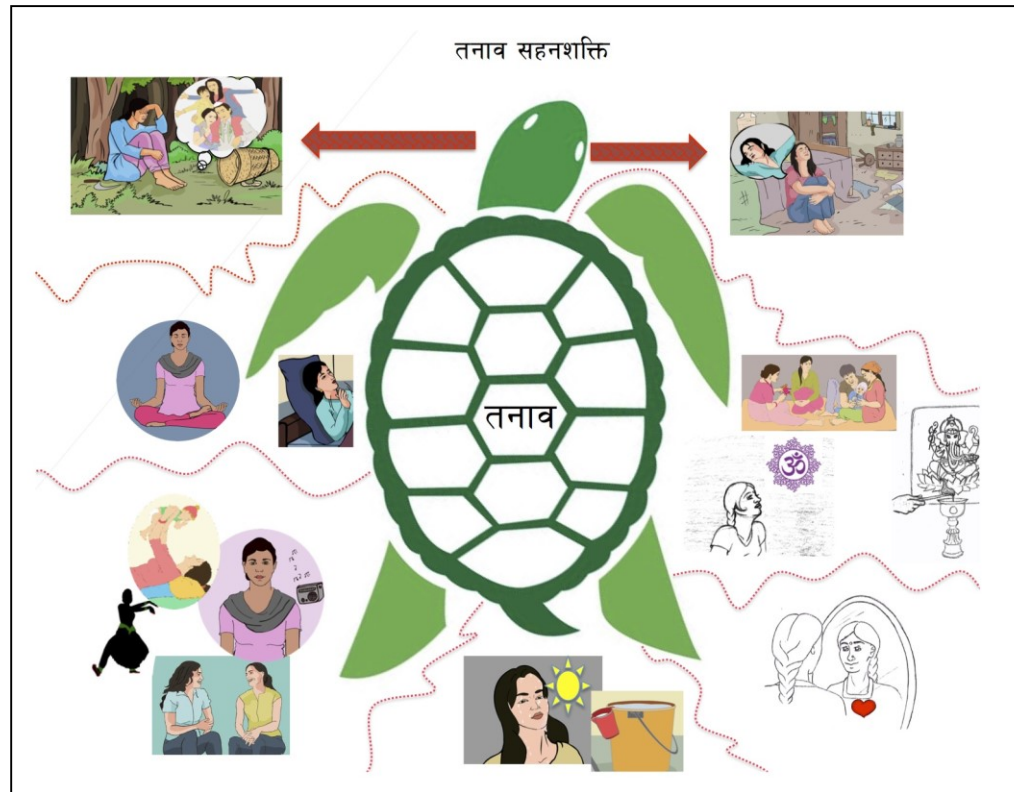


Figure 3: Nepali Counterpart to Crisis Survival Skills (ACCEPTS and IMPROVE). Clockwise, beginning at the turtle's right eye: comparisons, contributing, (self-)encouragement, sensations, activities, relaxation, and pleasant memories. See Linehan (1993b) for a complete description of Distress Tolerance skills.

3.2.2.4 Skills training content

Findings: In the case conceptualization exercise, all fifteen participants unanimously prioritized use of mindfulness skills with clients, partly on account of their belief that 'focused awareness' or 'meditation' (both formal and informal) are embedded in common Nepali religious practices and traditions. Participants also emphasized use of distress tolerance skills, due to their assertion that they would be easily understood and implemented by low-educated, lay women. Lastly, all workshop members were reluctant to incorporate directed assertiveness training (via self-respect effectiveness skills) into sessions, due to their potential to create long-term physical and emotional harm for rural women raised in a conservative, patriarchal milieu.

Modifications: Protracted periods of mindfulness and distress tolerance training were incorporated into the manual. Because Northwest Nepal is heavily dominated by traditional patriarchal belief systems, we chose to limit instruction in self-respect effectiveness skills to a group brainstorming session on feasible and acceptable assertiveness strategies. This took place in Session 8. We also tailored skills to known available resources in rural Nepal. For example, a mindful eating exercise using apples was added, since the Jumla district is the country's largest manufacturer and exporter of the fruit.

3.2.2.5 Salient life stressors

Findings: Throughout the workshop, we sought to foster awareness of worry thoughts and concerns present in a rural context similar to our pilot setting. These practical, daily concerns ("stressors") included financial strain, substance abuse by family members, and restricted opportunities for social networking and engagement in enjoyable social interactions for community women.

During the case conceptualization exercise in Day 5, two groups raised concerns about reducing treatment-interfering behaviors (e.g. financial or familial constraints to remaining in therapy) in the absence of broader sociocultural changes.

Modifications: Manualized role-plays to demonstrate aspects of DBT skills were tailored to the lay concerns identified above. A group brainstorming of potential microfinance initiatives and linkages to support groups was also included in Session 9.

3.2.2.6 Nepali ethnopsychology

Findings: During the "Successes & Challenges" group exercise, participants identified difficulties using traditional cognitive behavioral methods (e.g. identifying of links between cognitions and emotions, use of cognitive restructuring and other change-oriented strategies) with treatment-naïve clients.

Modifications: We designed skills embedded in Nepali ethnopsychological models so as to appeal to "lay" clientele. Wise mind was conceptualized as a synthesis of brain-mind (*dimaag*) and heart-mind (*man*) (See Figure 4). Because of lay concerns that

intense, prolonged heart-mind (*man*) problems can lead to brain-mind (*dimaag*) and eventual loss of social status, we defined radical acceptance as a means of reducing intense *man* distress, preventing ultimate loss of valuable social currency.

नाम: _____

मिति: _____

बुद्धिमानी
सोच

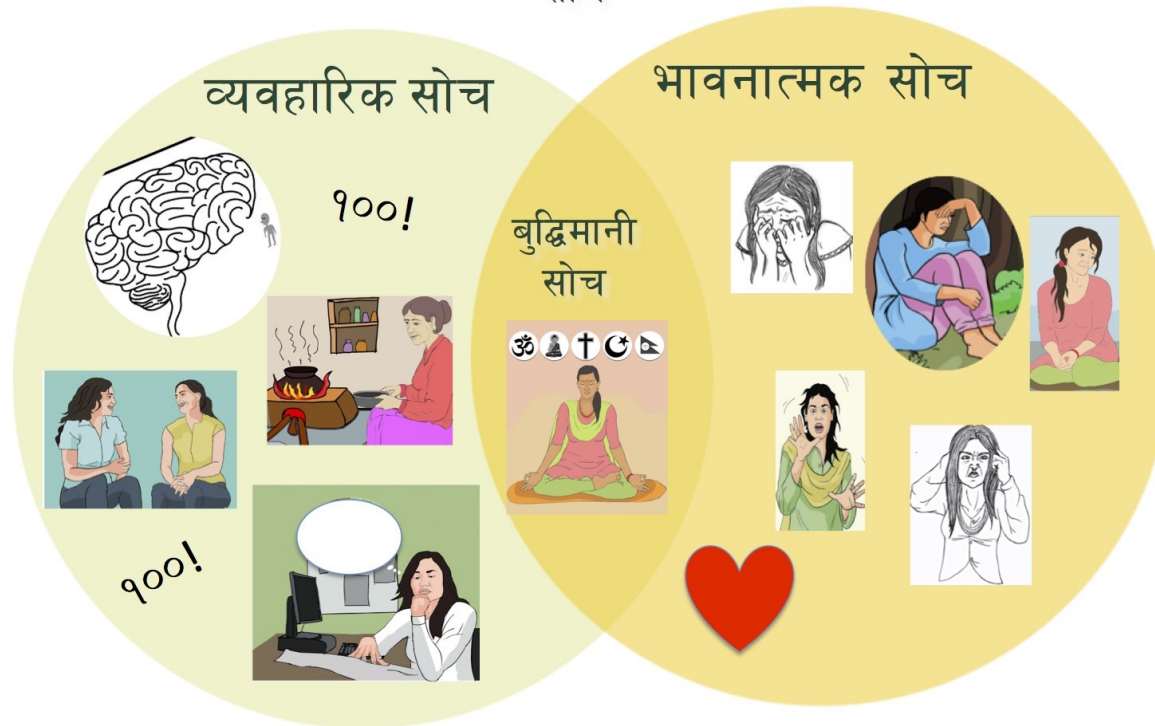


Figure 4. CA-DBT Wise Mind Handout. The left portion of the handout refers to the brain-mind (*dimaag*), with associated images. The right side represents the heart-mind (*man*) division of self. The overlapping portion in the diagram signifies wise mind (*buddhi mani soch*).

3.2.2.7 Engagement in therapy

Findings: In first small group exercise, we had participants outline notable successes and challenges encountered during past or present interactions with self-destructive clients. All groups deemed group treatment infeasible due to urban-related migration, and claimed to have more leverage with clients in a 1:1 environment. This perspective was echoed again during the case conceptualization exercise, where 1:1 skills training was prioritized.

Modifications: We developed a rough prototype for individual skills delivery while preserving the group delivery option if it proved feasible in rural Nepal.

3.2.3 Pre-Post Assessments

Table 5 provides results from a paired t-test analysis using pre-test and post-test scores on a 23-item Dialectical Behavior Therapy exam administered to participants before and after the workshop. When analyzing all participants together, there was a significant increase in knowledge ($p < 0.0001$) as scores improved significantly between the pre (65.79%, SD= 12.39) and post-exam (79.42, SD= 6.03) administrations.

Table 5: Paired t-test comparison of matched pretest and posttest scores on 23-item DBT exam

Test (n=15) ^a	Mean	SD	Paired t-test	Probability
Pretest (%)	65.79	12.39		
Posttest (%)	79.42	6.03		
			4.85	<0.0001

Note: ^aOriginal exam contained 25 items. Two questions were excluded from analyses due to poor wording clarity and acceptability of multiple responses.

A pre-post analysis of individual items on the exam is presented in Table 6. Participants improved significantly ($p < 0.05$) on questions relating to the structure and components of skills training groups, as well as on one question that reviews the short-term nature of distress tolerance skills. Pre-post scores were static for questions regarding behavioral chain analyses and the concept of wise-mind; the number of improvements between administrations was minute and insignificant. Participants continued to incorrectly identify the reporting mechanism for a suicide attempt (First reporting to a supervisor, then encouraging client-generated action by helping her disclose to family members). Pre-post scores showed a non-significant decline for one item requiring an example of opposite action, indicating inadequate uptake of knowledge.

Table 6: Individual item analysis for 23-item DBT exam

Question Number	Item	% Correct (Pre-Test)	% Correct (Post-Test)	McNemar chi-squared	p-value	Common Post-Test Responses*
Q1.	Research on DBT supports its effectiveness over other therapies in treatment of:	20.0	33.3	2.00	.500	<i>All of the above (depression, personality disorders, suicide & self-harm, binge eating)</i> (33.3) Suicide & Self-Harm (66.7)
Q2.	Which of the following is not one of the core DBT modules?	20.0	100	6.00	.031	<i>Re-exposure to traumatic memories</i> (100)
Q3.	Which of the following is a component of DBT?	53.3	86.7	5.00	.025	<i>All of the above (Learning new skills in a group setting, weekly therapist consultation team, weekly one-on-one therapy sessions, & phone coaching)</i> (86.7) Phone coaching (0.067)
Q4.	What is a core assumption in DBT?	80.0	100	3.00	.250	<i>Clients are doing the best they can, and still need to change</i> (100)
Q5.	Which of the following is not part of mindfulness practice	53.3	80.0	2.67	.103	<i>Clients are taught to escape from and forget negative thoughts and feelings</i> (80) Weekly one-on-one therapy sessions (20)
Q6.	What is an example of a dialectic in DBT?	60.0	33.3	2.67	.219	<i>Acceptance of one's current circumstances and a commitment to change them for the better</i> (33.3) Establishing rules at the beginning of therapy (40)
Q7.	What is the function of a dialectic in DBT?	86.7	100	2.00	.157	<i>A way of helping clients see the world in less black-and-white terms</i> (100)
Q8.	What is considered "wise mind" in DBT?	80.0	100	3.00	.250	<i>Finding the balance between man (heart-mind) and dimaag (brain-mind)</i> (100)
Q9.	What is the purpose of interpersonal effectiveness in DBT?	26.7	40.0	0.50	.480	<i>All of the above (Maintaining or improving a relationship, asking for something or saying no, maintaining your self-respect while communicating with others, & helping a client tolerate that friends and family may be upset with them)</i> (40) Maintaining or improving a relationship (33.3)

Q10.	Who should you report a suicide attempt to?	60.0	46.7	1.00	.625	<i>Report to your supervisor immediately and help the client disclose to his/her family.</i> <i>Always report to the police (33.3)</i>
Q11.	In DBT, a chain analysis is used to:	93.3	100	1.00	.000	<i>Help a client understand how events, thoughts, and emotions influence problem behaviors (100)</i>
Q13.	When a client comes to her group counseling session, she becomes so angry she cannot think or concentrate. Which of the following factors is most interfering with her interpersonal effectiveness?	60.0	60.0	0.00	.000	<i>Lack of skill or emotions she cannot regulate (60)</i> <i>A poor relationship with her child (33.3)</i>
Q14.	Which of the following is NOT part of DBT Skills Training groups	53.3	100	7.00	.016	<i>Talking about how the person attempted suicide (100)</i>
Q15.	In DBT, validation means:	46.7	66.7	1.29	.257	<i>Understanding the client's experience (including thoughts & feelings) (66.7)</i> <i>Homework assignment (20)</i>
Q16.	What is the "opposite action" for anger?	60.0	60.0	0.00	.000	<i>Being kind and gently sympathetic to the person you are angry with.</i> <i>Withdrawing from the situation that is upsetting (33.3)</i>
Q17.	Distress tolerance skills are:	26.7	86.7	9.00	.004	<i>A short-term way of coping during overwhelming situations (86.7)</i> <i>A long-term way of reducing life's problems (13.3)</i>
Q18.	What is considered a 'vulnerability' in DBT?	46.7	86.7	4.50	.034	<i>All of the above (Lack of proper sleep, not getting enough to eat, not exercising enough, use of mood-altering drugs) (60)</i> <i>Use of mood-altering drugs (6.7)</i>
Q19.	In DBT:	73.3	60.0	0.67	.414	<i>Both the person and the environment are responsible for the client's problems (60)</i>

						Neither the person nor the environment is responsible for the client's problems (40)
Q20.	According to DBT theory, what is the main reason people commit suicide?	100	93.3	1.00	.000	<i>Failure to regulate emotions (93.3)</i> Desire to get attention from others. (6.7)
Q21.	Which of the following is true about suicide?	86.7	86.7	0.00	.000	<i>Anyone can have suicidal thoughts (86.7)</i> Only persons with mental illness can have suicidal thoughts (6.7)
Q22.	Which of the following is true about suicide prevention?	100	100	0.00	.000	<i>Suicide can be prevented with proper therapy and support (100)</i>
Q23.	When should you break confidentiality?	100	100	0.00	.000	<i>When the client has a suicide means and plan (100)</i>
Q25.	If a client tells you they have a plan to hurt themselves, they:	73.3	93.3	3.00	.083	<i>Should be asked more about the thoughts, means, and prior attempts (93.3)</i> Should be hospitalized immediately without asking about prior means, plans, or attempts.

Note: * Italics indicate most common post-test response (%). The second most common response is listed in normal font type, including the percentage (in parenthesis) of corresponding post-test responses.

3.3 Dialectical Behavior Therapy Pilot in Rural Nepal

3.3.1 Pilot Demographics & Structure

Table 7 provides summary demographics for ten female clients enrolled in the CA-DBT skills training group in Jumla. See Table 8 for a review of the curriculum.

Table 7: Summary statistics on Phase III pilot in Jumla

	Participants (n=10)
Age, Mean (SD)	30.8 (8.33)
Female, No. (%)	10 (100)
Married, No. (%)	8 (80)
No. Children, Mean (SD)	2.2 (1.08)
Religion, No. (%)	10 (100)
<i>Hindu</i>	0 (0)
<i>Buddhist</i>	
Caste, No. (%)	2 (20)
<i>Brahmin</i>	3 (30)
<i>Chhetri</i>	0 (0)
<i>Janajati</i>	5 (50)
<i>Dalit</i>	
Highest education level completed (%)	
<i>None</i>	5 (50)
<i>Form 5</i>	3 (30)
<i>SLC^a</i>	2 (20)
No. Sessions Attended, Average (Range)	
<i>10 sessions, No. (%)</i>	7.9 (3,10)
<i>9 sessions, No. (%)</i>	3 (30)
<i>8 sessions, No. (%)</i>	2 (20)
<i>7 sessions, No. (%)</i>	1 (10)
<i>6 sessions, No. (%)</i>	2 (20)
<i>5 sessions, No. (%)</i>	1 (10)
<i>3 sessions, No. (%)</i>	1 (0)

Note: ^a refers to School Leaving Certificate, the national exam required for admission to upper secondary school in Nepal. In 2010, the pass rate was 62 percent (WENR, 2013).

Table 8: Outline for CA-DBT treatment schedule piloted with Nepali women

Time	Topics Covered
Orientation & Pre-Treatment	<i>Diary card Contact Information Treatment Schedule Group Guidelines</i>
Session Two	<i>Mindfulness* Wise mind "What" skills: Observe, describe, participate Chain Analysis Establish Treatment Targets</i>
Session Three	<i>Mindfulness* Wise mind "How" skills: One-at-a-time, Nonjudgmentally, Effectively Chain Analysis</i>
Session Four	<i>Distress Tolerance* "Distracts" Skills "Self-Soothe" Skills Chain Analysis</i>
Session Five	<i>Distress Tolerance* Radical Acceptance Chain Analysis</i>
Session Six	<i>Radical Acceptance Self-validation Step 1: Awareness of Emotion Step 2: Normalizing of Emotion Chain Analysis</i>
Session Seven	<i>Self-validation Step 3: Self-forgiveness Step 4: Self-encouragement Emotion Regulation Model for Describing Emotions Chain Analysis</i>
Session Eight	<i>Emotion Regulation* Mindfulness of Positive Emotion Reducing Vulnerabilities Nepali Pleasant Activities Opposite Action Chain Analysis</i>
Session Nine	<i>Interpersonal Effectiveness* Relationship Effectiveness Group adaptation of Objectives Effectiveness Skills Safety Plan Development Chain Analysis</i>
Session Ten	<i>Interpersonal Effectiveness* Objectives Effectiveness Skills Program Recap & Review Closing</i>

Note: * refers to module derived from original Skills Training manual (Linehan, 1993b)

The average age of participants was 30.8 years (SD= 8.33). The majority (80%) of women were illiterate, with no reading or writing capabilities. Two (20%) had obtained their School Leaving Certificate, the final secondary school examination in Nepal. The group was equally divided among higher (20% and 30% Bahun and Chhetri, respectively) and lower (50% Dalit/Nepali) castes. Each woman attended an average of 7.9 sessions, with a range of 3 to 10 sessions attended. One of the 10 women dropped out of treatment due to a domestic interpersonal conflict.

3.3.2 Pilot Findings and Adaptations to CA-DBT Manual

We incorporated a number of ad-hoc changes to the CA-DBT protocol on a weekly or bi-weekly basis, depending on issues, sensitivities, or requests that arose in preceding sessions. Table 9 highlights additional alterations to the manual. Following it is an outline of key modifications.

Table 9: Additional CA-DBT manual modifications during Phase III pilot stage in rural Nepal

Adaptation Domain	Key Examples
Sociodemographics	<ul style="list-style-type: none"> ▪ Development of brief, step-wise processes for self-validation and interpersonal effectiveness skills to encourage generalization ▪ Diary card and homework orientation for literate and moderately literate family members ▪ Practical description of mindfulness as "taking a five-minute break" for lower-literacy clients
Culturally consonant metaphors, allegories, and imagery	<ul style="list-style-type: none"> ▪ Use of farming and agriculture metaphors for rural, agrarian setting ▪ 'Hindu clay pot' metaphor to target self-criticism and shame-related affects
Skills Training Content	<ul style="list-style-type: none"> ▪ Inclusion of dizziness, headaches, intestinal discomfort, and similar distress-related somatic complaints into behavioral chain analysis ▪ Use of behavioral chain analysis to build preliminary explanatory models of distress and impulsivity for rural population ▪ Priority ordering of modules encouraging autonomous skills mastery ▪ Inclusion of self-forgiveness skills using heart-mind (<i>man</i>) mapping exercise ▪ Continued tailoring of skills grounded to daily life (e.g. 'Mindful weeding,' substitution of incense for candles and cold morning water for ice to self-soothe)
Therapy Engagement	<ul style="list-style-type: none"> ▪ Weekly non-financial incentive to maximize adherence and minimize issues of social desirability ▪ Removal of phone coaching and individual sessions, extension of group session length ▪ Use of proxy terms for in-session references to suicide and self-harm
Vulnerability Factors	<ul style="list-style-type: none"> ▪ Extended Interpersonal Effectiveness module to model and practice effective social behaviors ▪ Included discussion on socially acceptable assertiveness and negotiation strategies

3.3.2.1 Sociodemographics

Findings: Additional, unanticipated barriers arose during the treatment process with a group with little-to-no prior education. These included difficulties associating unique pictorial aids with unique skills or treatment targets, inability to grasp simplified yet still abstract psychological concepts, and problems in diary card completion.

Modifications: We continued to condense and simplify module-specific skills. For example, Objectives Effectiveness was reduced to a four-step process using culturally relevant imagery. See Figure 5 for a sample handout in English.

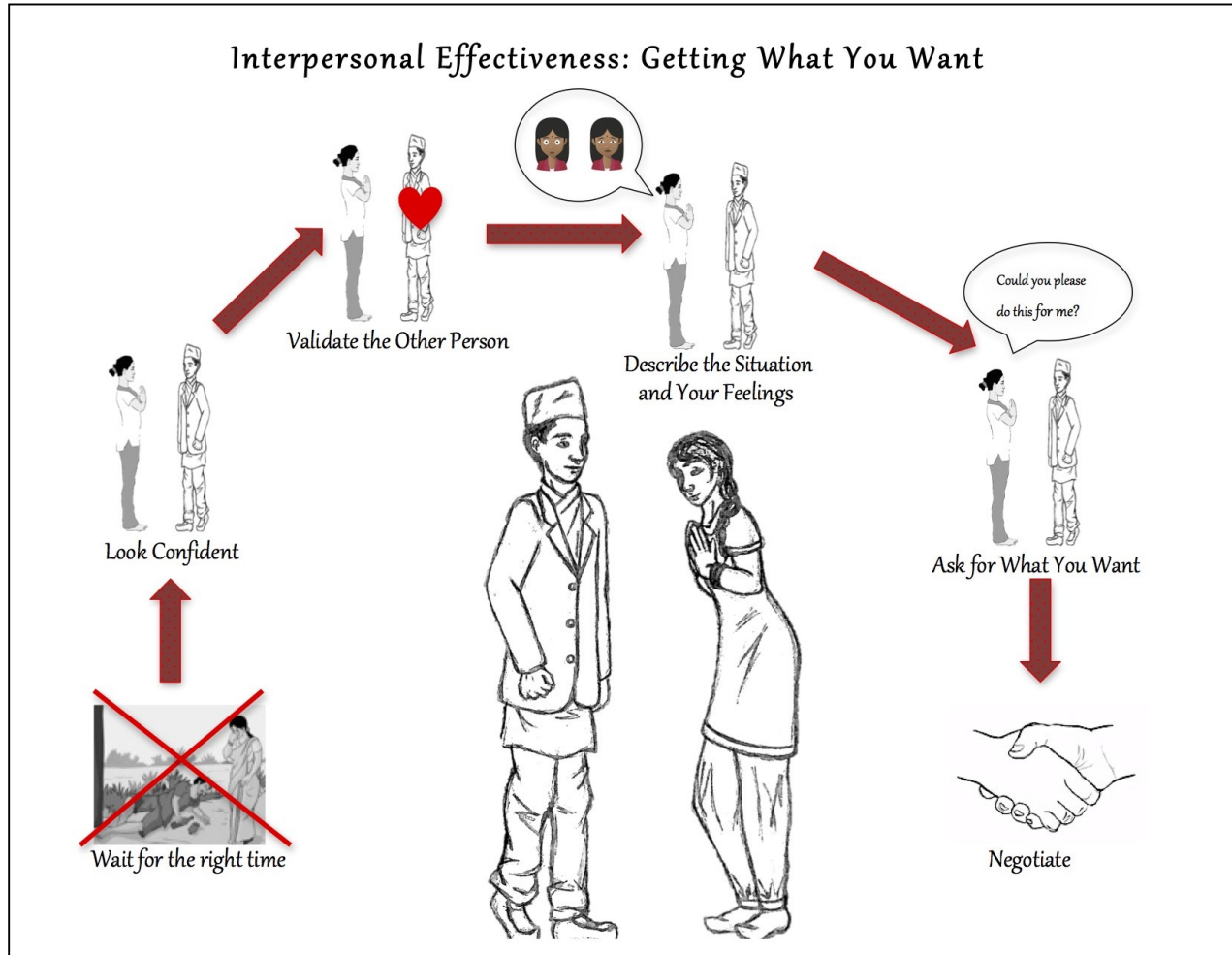


Figure 5: CA-DBT Counterpart to Objectives Effectiveness Skills

3.3.2.2 Metaphors, imagery, and symbolism

Findings: All women made living wages as subsistence farmers, and identified with skills presented using an agrarian perspective. Additionally, all women subscribed to Hinduism and had exceedingly limited familiarity with Buddhist concepts and terminology.

Modifications: We continued to embed skills in applicable metaphors, allegories, and symbols to encourage their uptake and applicability. For self-validation, for example, we created a step-wise process embedded in a common Hindu allegory ('The Story of the Clay Pot')¹. We also incorporated culturally consonant imagery. For example, compassion meditation was presented using Hindu-type imagery (which involved cool, yellow light emanating from Shiva's heart). Because all women in the group made livings via subsistence agriculture, farming-specific metaphors (e.g. planting seeds for adaptive and maladaptive emotions, crop harvesting as a metaphor for long-term consequences) were also frequently employed.

¹ The story: A Nepali water-bearer carries two pots, one of which contains a large crack. This allowed it to only deliver a fraction of the other pot's water to its master. This continued for two years. One day, the broken pot spoke to the water-bearer, expressing shame and sense of failure at not having been able to mend the crack or do better. Her master had her notice a row of marigolds flourishing directly beneath the leaking point. He continued: "For two years, I have been able to pick these beautiful flowers to decorate my table. Without you being just the way you are, he would not have this beauty to grace his house." We used this allegory to demonstrate the utility of self-forgiveness, self-awareness, and self-encouragement in the context of validation.

3.3.2.3 Skills training content

Findings: As expected given workshop feedback, clients struggled to identify specific cognitive-affective connections during behavioral chain analysis. A large number of women continued to report notable feelings of shame and guilt, resulting from prolonged interpersonal conflict at home.

Modifications: We incorporated abdominal discomfort, redness of face, and similar distress-related somatic complaints into weekly chain analyses. Due to the strong presence of shame and guilt as secondary emotions, we also added skills for self-forgiveness into the self-validation module. These skills were grounded in local explanatory models, and included *man* (heart-mind) mapping to encourage uptake. Finally, ongoing tailoring of skills to daily resources and realities was made (e.g. using a mindful weeding exercise during harvest season, and replacing ice with a frigid morning bath to counter intense sensations in the absence of water-freezing technology).

3.3.2.4 Therapy engagement:

Findings: Women were habituated to financial compensation in exchange for observational research conducted over decades in the Jumla district. Four women also traveled upwards of three hours one-way to attend weekly sessions. Due to articulated financial concerns and limited time availability, repeated attempts to receive compensation in exchange for group participation were made to the on-site assessor.

Daily mobile phone network interruptions also precluded any possibility of regular phone coaching.

Modifications: We sought to encourage intrinsic motivation to participate in CA-DBT through use of non-financial incentives. We provided metal-plated bangles to women after attendance of each session; this incentive fostered sufficient levels of internal competition among participants to remain in treatment and resulted in successful therapy adherence. Phone coaching was removed from the curriculum.

3.3.2.5 Vulnerability factors

Findings: Women made frequent, distressing references to inconsolable or irresolvable conflicts with family members. Traditional assertiveness strategies were also deemed untenable due to safety concerns.

Modifications: We extended interpersonal effectiveness skills review. Protracted discussion and practice of modified assertion strategies (e.g. inclusion of a family mediator or close friend into the request-making process, heavier validation of another prior to saying no) was included.

3.3.3 Client Implementation Experiences

A number of successes were experienced by the study team during the Phase III pilot.

First, a group-based skills training group was considered a feasible and acceptable vehicle for treatment delivery. Women experienced limited barriers arriving

from and departing the treatment center, and all session attendees were present for the entirety of the 3-hour sessions. Therapy engagement was also optimized through use of a mixed-caste group and non-financial incentives; innocuous levels of competition generated between lower-caste and higher-caste clientele led to positive treatment adherence, leading to high retention rates.

Creative pictorial aids and handouts were well-received by participants. Women reported tacking handouts bedrooms and common areas as useful reminders of skills taught in preceding weeks; particular women requested additional copies of handouts to share with family members and friends. Incorporation of family members into the weekly diary card process was also productive for four of ten women; daughters of these illiterate participants aided in reminding women of emotions associated with pictorial aids, and often spent time daily reviewing and completing the card with participants. Eighty percent of all diary cards returned were completed with fidelity between sessions attended.

The truncated, step-wise presentation of particular skills was also well-received within certain modules. Women recalled Mindfulness "What" and "How" skills with greater frequency than all others, and were more readably able to associate skills-related pictures with their corresponding skills during sessions. Participants also reported using these skills (particularly in the form of "Leaves on a Stream" exercises) on a semi-regular basis outside of the treatment session.

Despite these preliminary successes, a number of notable and prolonged challenges were encountered during the pilot. Women consistently struggled to identify and label private, internal experiences (cognitive, affective, and/or behavioral), instead favoring identification of the role(s) others played in causing problems or dysfunctions in their lives. For example, problem behaviors in chain analyses were frequently referred to as problematic events that others (husbands, friends, or children, specifically) had initiated. This barrier was not relieved in spite of extended in-session practice of describing and labeling of emotions during Emotion Regulation exercises.

Module-specific challenges were also encountered. Despite the ease of uptake of Mindfulness skills, clients struggled to describe the function and utility of wise mind. This difficulty persisted in spite of three attempts to encourage uptake: (1) ethnopsychological modifying of the concept (substitution of 'reasonable mind' and 'emotional mind' with brain-mind (*dimaag*) and heart-mind (*man*), respectively), (2) simplifying the concept as "taking a 5-minute break before acting", and (3) a one-hour refresher in Session 9.

There were also key obstacles in Distress Tolerance and Interpersonal Effectiveness skills comprehension and generalization. The number of skills present on the *kachurva* handout (refer to Figure 1) generated difficulties in recollection and continued use. Women reported doing these activities on a daily basis, yet struggled to reconceptualize them as therapeutic skills for targeted use in stressful or distressing

situations. Psychoeducation and occasional experiential skills practice did not alleviate this barrier.

Interpersonal Effectiveness proved similarly challenging to adapt and implement. Brainstorming of feasible and acceptable self-assertion strategies was ineffective due to the potential for imminent harm, with women struggling to view their domestic strife as soluble. An added session (Session 9) was included to brainstorm alternatives to and provide in-session practice for making direct requests to husbands or other loved ones. However, women were unable to generate alternatives they felt confident in.

Women also articulated structural barriers to skills use. Limited education and financial means were cited as common impediments to autonomy, psychological improvement, and overall well-being. In development of an ad-hoc safety plan, women also expressed concern over lack of a functional, long-term or temporary community shelter for domestic abuse.

A number of women also expressed stigma-related concerns. One woman described the Jumla community as critical of the CA-DBT program, describing it as a place for the "deranged or psychotic." Half of women were also reticent regarding their participation in the group, choosing to conceal their travel plans and homework assignments at home. One, specifically, told her husband she was working with a local non-profit she had prior experiences with on Saturdays. These concerns were raised in

spite of the study team's attempts to describe the intervention to clients, family, and community members in non-stigmatizing, accessible language.

3.3.4 Treatment Team Implementation Experiences

For the group co-facilitator trained during the Phase II workshop, there were difficulties integrating prior counseling repertoire with DBT-specific clinical strategies. Preference for and prior training in traditional supportive therapy and adoption of a nondirective, inquiring stance clashed with the classroom-based skills learning environment mandated by DBT skills groups. As anticipated, feedback requests from group members often led to venting of personal problems and concerns. Difficulties re-orienting to skills use and practice at times resulted, due to asynchronous counseling strategies and inability to cover targeted session material. As a result of these delays, specific exercises (referrals to microfinance initiatives and related case-management strategies) included in the manual were not covered.

Difficulties in counselor uptake of specific DBT concepts were also encountered. Practically describing "wise mind" and leading mindfulness practice were difficult for the clinician to grasp, despite prior knowledge of traditional Buddhist meditation strategies. Difficulties labeling emotions and identifying judgments were also encountered by the clinician.

Although weekly remote supervision was provided throughout the 10-week duration, regularly compromised telephone and network signals were encountered, often times resulting in multi-hour (on average, five to six) attempts to moving through required material.

4. Discussion

4.1 Main Findings

This paper provides outlines a cross-cultural adaptation and implementation process of an evidence-based intervention for suicide and self-harm in a rural, resource-strained setting in Northwest Nepal. CA-DBT was designed specifically for use with this population for four reasons. First, Dialectical Behavior Therapy falls into a third generation of cognitive behavioral therapies that emphasizes a flexible, contextual, and principle-driven view of behaviors. Because of its emphasis on identifying and adhering to underlying principles, application of DBT requires constant tailoring of techniques or strategies to the client's unique set of circumstances. Because of its inherent flexibility, it was considered ideal for cultural modification with ethnic Nepalis. Second, DBT's emphasis on teaching practical, real-world skills via group setting allowed for development of a manualized protocol for use by lay counselors. Use of a structured, classroom-style skills delivery format had the potential to both reach a wider number of clients while also providing potential ease of implementation by counselors recently trained in mental health service delivery. Third, DBT explicitly integrates Zen Buddhist principles, mindfulness practice, and acceptance into treatment. Its conceptualization of clients and events using these Buddhist perspectives potentially aligned with Nepali religious traditions and worldviews. Lastly, DBT is currently the frontline therapy for prevention of self-destructive behaviors. Suicide is the primary cause of mortality

among women of childbearing age in Nepal, and no treatments specifically targeting these behaviors currently exist in Nepal. Thus, DBT had the potential to fill an essential public health need.

We conducted a number of adaptation activities to modify the traditional DBT regimen to a rural Nepali environment. This iterative process resulted in a constellation of modifications that were incorporated into a culturally adapted DBT manual. CA-DBT was then co-delivered to ten women in the Jumla district, the majority of whom were illiterate. One lay counselor trained in Phase II of the study and a member of the study team facilitated weekly sessions. Participants attended an average of 7.8 sessions, which accompanied by a series of preliminary successes and challenges.

Specific modifications made to encourage comprehensibility were well-received by illiterate women in the group. Diary card simplification and use of pictorial aids are particular examples. Although few cultural adaptations directly address problems with illiteracy (Bernal et al., 2009), those do suggest the similar utility of such adaptations. For example, The Thinking Healthy Program (Rahman et al., 2008) was developed after extensive formative research undertaken to understand the challenges of low-resource, depressed women in a naturalized Pakistani setting. The intervention relied on didactic illustrations for non-literate women, which, too, were left on walls in clients' homes and used as between-session aids. Significant between-group effects were observed at 12

months post-intervention. The successful use of modified likert skills has also been documented in the literature (Bolton et al., 2002; Miller et al., 2006).

Step-wise presentation of skills was another feasible and acceptable treatment method. Mindfulness skills, in particular, were met with a high level of enthusiasm by women. A number of culturally adapted variants of evidence-based therapies (EBTs) have incorporated mindfulness-based treatment elements into cognitive behavioral curricula with Asian or Asian American populations (Gross et al., 2007). A large fraction of these studies have reported positive statistical outcomes resulting from the overall intervention. To our knowledge, however, no studies have provided qualitative evidence on the feasibility and acceptability of mindfulness training in naturalized, low-resource international settings. Because outcome research in the cultural adaptation field relies primarily on gross pre-post estimates, the specific efficacy of mindfulness components has yet to be examined in rural, Asian populations. With the exception of Hinton and colleagues' (Hinton et al., 2007; 2009; 2013) work with Cambodian and Vietnamese refugees, no published studies have reported on the potential to augment traditional treatments among illiterate clientele.

It is interesting to note that, despite ease of uptake of mindfulness skills, women in Jumla struggled to grasp the concept of wise mind (*buddhi mani soch*). This struggle persisted in light of ethnopsychological modification and extended experiential training. This finding was met with surprise by members of the study team. In South Asia in

particular, there is a rich body of both religious and secular history supporting the idea of 'balance' and equanimity. In Ayurveda, treatment is sought as a means of restoring balance to the body's basic elements and functional principles (Mukherjee & Wahile, 2006). One mechanism of creating balance is by supplying deficient humors and reducing those in excess. These practices are present throughout South Asian countries, including rural or geographically isolated pockets where access to traditional allopathic medicine is restricted. Kleinman (1988) uncovered the South Asian body as an open system interlocking the social and personal with the cosmos by way of a "vital balance." One possible explanation for this is the faulty assumption of culture (religious and otherwise) as a static and homogenous entity. Our failure to sufficiently modify "wise mind" to a local, lay conceptualization of balance partially account for this issue.

Engagement and adherence to therapy was also unexpected, given migration concerns echoed by both Phase I interviewees workshop participants. Data supports these concerns. In one systematic review on the efficacy of cultural adaptations with ethnic minority adults (Benish, Quintana, & Wampold, 2011), authors present evidence supporting the assertion that there is, as of yet, no conclusive evidence that engagement-targeting adaptations significantly improve attendance and retention of underserved ethnocultural groups. However, the majority of these studies were located in urban or peri-urban settings, where migration rates are historically high (Lau et al., 2007).

Literature suggests that one salient threat to high retention is both the community and patient's internal perception of his or herself as irreparably weak or incurable (Patel et al., 2007). As such, interventions as seen as for "failed" clients, leading to stigmatizing of both participation and possibly the treatment itself. This mirrors aspects of Nepali ethnopsychology, whereby brain-mind problems (such as suicide) lead to socially dysregulated behavior and loss of social status (*ijjat*). However, stigma surrounding CA-DBT did not appear to significantly impact treatment adherence. It's possible that engagement-targeting adaptations were a sufficient counter to this barrier. Or, because all clients were either self-referred or referred by immediate family members, another possibility is that the pilot group was self-selecting, thus inherently more motivated to attend sessions. However, due to the lack of additional information, these claims are purely speculative.

A last point of contention among cultural adaptation researchers is the level of adaptation, if any at all, that is required for optimal outcomes. According to one meta-analysis by Gonzales and colleagues (2012), culturally adapted interventions demonstrated moderate effect sizes, with an average effect size of $d=0.45$ compared to non-adapted control groups. This conclusion may be common sense for most researchers; it is difficult to imagine providing effective, unaltered evidence-based interventions to minority groups without making basic adjustments to language, therapist matching, and metaphor adjustment. However, a small but growing body of

evidence suggests that cultural adaptations may perform just as well as, if not slightly worse than, their unmodified counterparts. Huey & Polo, for instance, have demonstrated comparable effect sizes between culturally adapted and un-adapted treatments for ethnic minority adolescents (Huey & Polo, 2008). These results were replicated in a similar randomized trial study with phobic Asian American adults (Huey & Pan, 2006). Even in light of this evidence, however, it is clear that a standardized definition of what adaptation constitutes did not exist. Studies comparing adapted vs. non-adapted variants often fail to explicitly define the specific domains of adaptation and their associated justifications, often correlating "adaptation" with superficial logistical modifications to treatment (e.g. language, time of session, length of session, etc.) that would be natural, obvious targets in non-adapted variations as well. Further, these comparison studies are few and far between, and heterogeneous in their clinical targets. Generalization is thus rendered difficult. In this study, we chose to explicitly define "adaptation" as a host of factors that move beyond logistical modifications, in order to more clearly define a meaningful level of inter-treatment difference for future potential comparison studies in Nepal.

Similarly, Resnicow and colleagues (2000) have identified a distinction between *surface structure* and *deep structure* adaptations. Surface structure adaptations, like the ones outlined above, incorporate changes to original interventions that address easily observable ("superficial," according to the authors) elements of a particular group's

culture such as language, music, and specific ethnocultural traditions. Superficial modifications involve using a therapist from the client's predominant ethnic background, providing content and materials relevant to participants' daily lives, and making changes to maximize treatment comprehension (e.g. linguistic changes, accounting for literacy level, etc.). Deep structure adaptations, on the other hand, may include modifications of the core components of the original treatment. Evidence on the effectiveness of these deeper, structural level changes are mixed (Falicov, 2009). For standard DBT, specifically, the boundaries of deep and superficial structure are muddled. Few mediation studies have been conducted to identify core components or change processes worthy of conservation (Neacsiu et al., 2014), and there exists a point of contention among DBT practitioners regarding what truly constitutes DBT (e.g. does "doing DBT" constitute delivery of the full model? Is group skills training one primary therapeutically active component? Do validation and promotion of dialectical balance account for significant clinical change?). In the absence of specific information on this topic, we chose to prioritize comprehensibility and accessibility in designing the intervention, collaborating with therapists and clients to eliminate or significantly modify elements impractical or infeasible elements (e.g. one-on-one sessions, phone coaching, cognition-heavy chain analysis, etc.).

4.2 Study Limitations

Because of no representation from the Dalit caste in Phase II of the study, workshop findings are suspect in their applicability across additional caste divisions. In

the district of Jumla, 17.8% of the population is Dalit (HMG-CBC, 2003). Although ad-hoc modifications to account for unique cultural variation within this group were included during the pilot, not all tailoring resulting from Phase II was incorporated.

Additionally, the vast majority of participants (86.7%) in the CA-DBT workshop were Hindu, thereby limiting the utility of findings across populations that prescribe to either exclusively Buddhist religious beliefs or a syncretic combination of the two. Buddhist-practicing populations, which comprise a sizeable portion of religious variation in Nepal (Desjarlais, 1992).

Similarly, in Phase III, all women self-identified as Hindu. As a result, discussion on the treatment's feasibility and acceptability is limited to one specific religious group. Members of the Janajati class in Nepal have largely Buddhist, animist, or supernatural spiritual inclinations, and comprise 9.6% of the caste variation in Jumla (HMG-CBS, 2003); no members of this class were present in the pilot trial. As a result, aspects of the CA-DBT manual may not be relevant to a significant proportion of culturally distinct regional groups.

Lastly, the overwhelming majority of analyses, discussion, and conclusions stemming from this research are qualitative in nature. Further, discussion of relevant adaptations is limited to the Jumla district, since CA-DBT was developed with this specific sociocultural and regional group in mind. As such, generalization of findings to other regions of Nepal with high endemic levels of suicide is not possible. Quantitative

insight into questions of feasibility, acceptability, and treatment efficacy also cannot be provided.

4.3 Implications and Recommendations for Future Research

Five suggestions are proposed for future studies. First, research should explore a model for how emotion dysregulation is generated in suicidal and self-harming individuals, along with a detailed and systematic description of co-occurring symptoms and co-morbidities. For the local Jumla population, for example, the mechanism through which specific psychological or physiological complaints are generated for self-destructive women should be identified. Understanding of the mechanisms that maintain disorder symptoms in this population is an effective strategy for developing simple, targeted, and responsible treatments (Barlow et al., 2006). Hinton and colleagues have done this to explain the high rate of somatization and panic attacks, and have developed a validated model through which PTSD is generated via physiological arousal in Cambodian refugees (Hinton, Hofmann, Pitman, Pollack, & Barlow, 2008; Hinton, Nickerson, et al., 2011). In Nepal, specifically, a working ethnopsychological framework that broadly explains the development of common and more severe mental illness has been proposed (Kohrt & Harper, 2008); however, this model does not specifically address more proximal and local causes of emotion dysregulation in self-destructive individuals. This can be accomplished through further ethnographic study

with member of the Jumla community, and should ideally be done prior to more robust piloting of this intervention.

Second, although CA-DBT at present was developed specifically to target suicidal and self-injurious behaviors, future studies should be explore its transdiagnostic potential and isolate therapeutically active ingredients with a lay Nepali population. In global mental health, treatments have largely focused on improvements within one diagnostic category (e.g. depression, anxiety, or PTSD) (Murray et al., 2013). Evidence-based treatments in the field often also have significant overlap in their principle components, with potentially unnecessary components and simple, effective elements needlessly integrated. This results in potentially inefficient design and delivery of interventions within the field. Because transdiagnostic treatments provide one solution to this problem, further piloting examining CA-DBT's effectiveness across moderate-to-common emotional disorders (including BPD) should be conducted. Use of dismantling study designs (e.g. single-case methods) are also warranted, in order to identify salient mediators and moderators.

Efforts should also be taken to improve sustainable training and supervision in the intervention. Due to lack of guidelines for training and intervention delivery in lower-and-middle-income settings (World Health Organization, 2008), the majority of psychotherapy trainings in these settings are brief "one-offs" with limited or entirely absent supervision and oversight following the initial training program. Because

effective delivery of DBT requires multi-level mastery of key treatment principles (Koerner et al., 2003), training in the modified Nepali version should be conducted on a regular or semi-regular basis for lay counselors to gain sufficient mastery over key techniques. One option would be to conduct an initial, protracted training (e.g. 10-12 days, similar in length to other intensive trainings conducted in Nepal) , followed by repeated "booster sessions" to target specialized learning components and issues encountered by therapists who have begun utilizing the skills with clients. Another option could include development of standardized tools to streamline and simplify particular aspects of treatment delivery for clinicians. One possibility could be use of in-session audio or video-recordings of experiential activities (e.g. opening mindfulness exercises or relaxation techniques), skills practice, or client-counselor role-plays. This could have the potential to aid client instruction in nuanced, difficult-to-grasp treatment components, while also reducing a portion of the training and time burden for clinicians. An additional possibility could also include development of a local network for training and supervision to bolster local capacity for intervention delivery (see Murray et al. for a discussion on apprenticeship models in global mental health). Ideally, future studies could incorporate a combination of these factors.

Further, evidence from this research indicates that individual mental health issues are not solely responsible for predicting suicide, self-harm, and related emotional distress. In other words, an intervention that exclusively targets psychological change at

the individual-level is likely to be ineffective if broader sociocultural factors are also simultaneously addressed. Programs combining case management with group therapy (e.g. Miranda et al., 2003) result in better outcomes on psychological indicators, lending support to this suggestion. In the context of a collectivist society like Nepal, CA-DBT should continue to incorporate resources, interactive brainstorming sessions, and referral for issues including domestic violence, alcoholism, and women's access to reliable financial and educational opportunities. Considering an adjunct family intervention for family members of self-harming women may be useful in promoting further treatment adherence and stigma reduction. Similar DBT-informed interventions at the family level are backed by strong empirical support (Fruzzetti & Shenk, 2005; Hoffman, Fruzzetti, & Buteau, 2006).

Lastly, it may be somewhat of a misnomer to label CA-DBT as a suicide prevention intervention. One-on-one counseling, an ideal venue to directly address and problem solve around suicidal symptomology, was determined to be infeasible in our pilot. Further, we chose to limit group skills training to discussion of suicidal proxy terms only (e.g. feeling "overwhelmed" or "out-of-control"), in order to minimize negative reinforcement and emotional arousal that may result from within-group discussion of suicide-related problems. Future programs could determine the feasibility of adjunct group sessions to address specific suicide-related concerns.

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