

A pilot study of *Vipassana* meditation with female drug users at a rehabilitation centre, Thailand

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Abstract

Purpose – Substance abuse has become a major health issue in Thailand, contributing to high numbers of premature deaths and requiring considerable expenditure on treatment and rehabilitation programs. The purpose of this paper is to explore use of *Vipassana* meditation to reduce depression and improve empathy and self-awareness in drug dependent women at a rehabilitation centre.

Design/methodology/approach – Mixed methods were employed. Data were collected in a randomised controlled trial and focus group interviews with 24 intervention subjects and 22 controls.

Findings – Findings showed no significant differences in depression, empathy or mindfulness levels between intervention and control groups, but intervention subjects had a small decline in depression at one-month follow up. The focus group interviews showed that drug users had developed self-awareness, moral values and greater understanding of right and wrong acts.

Originality/value – Findings suggest that *Vipassana* meditation which is cultural appropriate for Thai culture and religion, should be incorporated into treatments in rehabilitation centres to increase successful outcomes.

Keywords Qualitative research, Quantitative research, Inpatient, Substance dependence, Drugs, Trial

Paper type Research paper

Introduction

Substance abuse is a costly burden for the Thai government's health budget, with an estimated 220,000 drug users needing treatment and rehabilitation programs in 2016 (Health Focus, 2016). There are several public drug rehabilitation centres in each region, but these are struggling to keep up with the needs of the growing number of drug users (Fairbairn *et al.*, 2015). While multiple approaches are available for substance use disorders, traditional treatments often result in high relapse rates and improvements are required (Maisto *et al.*, 2003; Witkiewitz and Masyn, 2008). The Therapeutic Community (TC) has been well recognised for promoting behavioural changes for persons with substance abuse disorders (SUDs) (De Leon, 2000). A TC model is based on peer confrontation to create a therapeutic atmosphere for behavioural change and identify issues around drug addictions. A confrontation approach may be inappropriate in some situations with hierarchal power structures and especially for women with SUDs, because confrontation from peers might exacerbate feelings of oppression that lead to low self-esteem and reduce the chances of successful recovery (Eliason, 2006). Although the efficacy and effectiveness of TCs for treating drug users has been demonstrated, they cannot be considered suitable for all cases, given the great diversity of drug users and illegal drugs. Clinicians have sought culturally appropriate contemporary approaches, and mindfulness-based interventions have gained attention (Zgierska *et al.*, 2009). Mindfulness training has been considered a promising treatment for substance abuse (Chiesa and Serretti, 2014; Katz and Toner, 2013) through enhancing cognitive awareness for better monitoring of automatic cognitive and emotional processes which are similar to the TC effectiveness. Fundamental behavioural

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changes and enhanced self-awareness are seen in mindfulness meditation and TC programmes (Lange, 2011). Results have shown reductions in craving, substance seeking and using, and improvement in psychological disorders (Garland *et al.*, 2014; Witkiewitz *et al.*, 2014). Multiple mindfulness-based interventions have been evaluated as effective against substance use, including *Vipassana* meditation (VM) (Bowen *et al.*, 2006) and mindfulness-based stress reduction (Davis *et al.*, 2007).

Vipassana is derived from an ancient Buddhist tradition that originated in India and spread throughout the world, particularly in southeast Asia including Thailand (Hart, 1987). *Vipassana* means “insight” or “awareness” and its practice consists of morality, mindfulness and experiential wisdom, achieved through self-observation of sensations without creating familiar patterns of thought, feelings and behaviours (Adhikari *et al.*, 2018). The *Vipassana* technique normally uses silent observation of the breath as a primary focus of awareness (Burke, 2012) and this approach has never been explored with drug users in Thailand. A series of *Vipassana* techniques was tested with drug-dependent inmates in the USA. For instance, Bowen and colleagues used a quasi-experimental design to compare an intensive ten-day VM course with treatment-as-usual (TAU) and found that VM contributed to a significant reduction in substance abuse (alcohol, marijuana and crack cocaine), decrease in psychiatric symptoms and enhanced positive psychological outcomes (locus of control and optimism) at three-month follow-up (Bowen *et al.*, 2006). In 2007, these researchers employed VM with an incarcerated population at a minimum-security jail in Seattle and found that VM participants reported a decrease in attempts to avoid unwanted thoughts related to alcohol use (Bowen *et al.*, 2007). Similarly, in a study conducted at North Rehabilitation Facility there were no significant differences in severity of post-traumatic stress disorder (PTSD) symptoms between *Vipassana* and TAU groups but *Vipassana* intervention predicted lower alcohol consumption at three-month follow-up (Simpson *et al.*, 2007). Those drug users who had poorer outcomes from treatments than their peers often had psychological disorders (PTSD, anxiety, stress) co-occurring with substance abuse (Swendsen and Merikangas, 2000) but there is little evidence of studies assessing empathy in drug users. Empathy is referred to as cognitive and affective aspects that are strongly associated with helping behaviours, and sociability that leads to non-aggressive responses to conflicts (Asada *et al.*, 2004). This might be a valuable skill set for recovering drug users. Several forms of empathy have been described, including trait and state empathies. Trait empathy refers to showing empathetic concern for those in need, while state or situational empathy involves displaying empathy under specific circumstances (Batson *et al.*, 1987). An individual who has low trait empathy is likely to experience more social problems in daily life, which in turn leads to maladaptive use of substances as a problem-solving approach (Thoma *et al.*, 2013). Unfortunately, in Thailand there have been no trials of *Vipassana* for inmates or in rehabilitation centres, and few reports mention comorbidity of psychological issues and substance abuse.

This study was a pilot study to assess effectiveness of *Vipassana* approach in reducing drug use and psychological disorders in drug-dependent women at a rehabilitation centre.

Methods

Mixed methods with a randomised controlled trial and focus group interviews were employed. A randomised controlled trial was carried out in a female rehabilitation ward at a treatment and rehabilitation centre in Pathum Thani province, Central region, Thailand. This centre has a drug-free environment in which individual residents are prohibited from consuming any illegal drugs. Nurses in the rehabilitation ward distributed information about the study and collected informed consent from participants. Participation was voluntary. Residents were eligible if they were aged 18 years or over, had illegal substance problems, and were proficient in spoken and written Thai. Participants showing severe psychotic symptoms and those who disrupted others while meditating were excluded from the study. Potential participants were assured that information related to drug use would be not disclosed or shared with staff in the centre. Participants were selected through a simple random allocation by a nurse, and were matched on demographic characteristics (age, education, and marital status) to undertake VM or be in a

control group (TAU). A battery of self-report questionnaires was employed at one week prior to and one month after the intervention.

There were 24 participants randomly allocated to the *Vipassana* course and 22 received TAU. Subsequently, 10 participants withdrew from each group, leaving 14 in the intervention and 12 in the control group at one-month follow-up. Ethics approval was given by the Institutional Review Board of Princess Mother National Institute on Drug Abuse Treatment.

Vipassana meditation intervention

The *Vipassana* intervention was delivered by a monk who had more than 20 years' experience of teaching children and adults. There were three components of the *Vipassana* exercise, a 1-h sitting meditation, a 1-h walking meditation and 15 min for discussion and answering questions, with a 15-min break between the first two meditations. It was delivered each day for five consecutive days. This *Vipassana* course was based upon empirical studies that showed how an intensive mindfulness course with brief mindfulness sessions for 20–25 min on four to five consecutive days enhanced attentional and working memory performance (Tang *et al.*, 2007; Zeidan *et al.*, 2010). In Goenka and Hart's *Vipassana* programme carried out in prisons, the first three days were allocated to a foundation of raising awareness of the breath and observing the impermanence of individuals' thoughts (Goenka and Hart, 2000), a concept already perceived by Thais from their religious practice. Western societies are considered as "talking" cultures (Pagis, 2015) and when persons from these cultures are asked to practice complete silence, they require substantial time to achieve the desired outcomes. In contrast, Thai people require a short time period to attain complete silence. Therefore, the duration of *Vipassana* practice in this study was 2.5 h a day for five consecutive days, and this was considered adequate for practising silent observation and thought awareness. Engaging in social interaction with others should not affect results in a Thai study.

The intervention began with a sitting meditation in which all participants were instructed to sit on the floor, with legs crossed, backs straight and eyes closed. They were to focus on awareness of their breathing and the present moment. Participants were directed simply to notice their thoughts and feelings without judging and when their thoughts wandered, to draw attention back gently to their breathing. In the walking meditation, participants were asked to walk at a slow pace, to direct attention to their feet instead of their breathing and be aware of each foot rising and falling. Before the end of each day's session, participants were encouraged to ask questions about meditation experiences and the benefits of meditation in helping to manage craving and other symptoms. After finished the morning meditation, participants were required to attend their mandatory normal daily activities in the centre.

Instruments

Participants completed four self-administered instruments, Beck Depression Inventory (BDI), Interpersonal Reactivity Index (IRI), Mindfulness Attention Awareness Scale (MAAS) and Daily Drug-Taking Questionnaire one week before and one month after the intervention.

Demographic information was collected, including age, sex, marital status and education, and details of drug use including number of previous admissions and duration of substance use.

BDI is a 21-item self-report scale that measures cognitive distortions underlying depressive symptoms. The scale is widely used in clinical and non-clinical samples (Beck *et al.*, 1996). It is scored on a four-point scale from "0" to "3" with higher scores indicating increasing symptom severity. Cognitive/affective and somatic symptoms are summed separately, with items 11 and 15–21 representing somatic symptoms (e.g. irritability, work difficulty, insomnia). Internal consistency (Cronbach's α) of the sample was 0.878.

IRI is a 28-item scale measuring four empathetic components, empathic concern (EC), personal distress (PD), Perspective Taking (PT) and Fantasy (F). Each subdomain has seven items (Davis, 1980, 1983) with each item describing a particular characteristic of empathy. Items are rated on a five-point scale, ranging from "0 = Does not describe me well" to "4 = Describes me well".

Items are summed, with a total score of 0 to 28 for each subscale. Higher scores in each subscale represent higher functioning in that aspect of empathy. Cronbach's α was 0.661.

MAAS is a 15-item single dimension assessing trait mindfulness regarding frequency of openness and awareness of ongoing events and experience (Brown and Ryan, 2003). Trait mindfulness refers to an individual's ability to achieve mindfulness without meditative experiences and can be stable over time, while state mindfulness is the condition that can be attained through specific meditation practice (Quickel *et al.*, 2014). The instrument is scored on a six-point Likert scale ranging from "almost always" to "almost never". Higher total scores purportedly reflect higher mindfulness experiences. Cronbach's α for the instrument was 0.753.

Daily Drug-Taking Questionnaire measures use of 14 illegal substances (e.g. tobacco, marijuana, cocaine, methamphetamine, ecstasy, heroin) in the past 30 days (Parks, 2001).

Qualitative: focus group interviews

The group of 12 intervention participants voluntarily participated in an informal focus group interview inside the centre to explore their life histories of using illegal substances, perceptions of engaging in substance abuse, the impact of *Vipassana* programme on drug addiction and ideas about how to improve the programme.

Data analysis

Descriptive statistics for demographic and illicit drug use variables were presented as percentages, means and standard deviations (SD). χ^2 test was employed to analyse categorical data and *t*-test was used to determine mean difference between two groups. Scores on the depression, empathy and mindfulness scales were compared both pre- and post-intervention and across groups by *t*-test. *p*-values below 0.05 were taken as statistically significant.

Content analysis for focus group interviews

Two research assistants read and re-read transcripts to retrieve axial codes and inter-coder agreement was checked. Discrepancies between coders were resolved by the principal investigator, leading to a consensus-coded transcript used in the final analysis. The codes were used to identify themes and specific categories emerging from the text.

Results

Female participants were aged from 18 to 45 years old, with a mean age of 29.54 years for each group. Most women had finished primary school, nearly 45 per cent of control group participants were married while 60 per cent of the intervention group were single.

For most women, this was their first admission to the centre (72.73 per cent for control vs 79.17 per cent for intervention). Nearly 55 per cent of the control group had used illegal drugs for six to ten years while nearly 42 per cent of the intervention group years had used illegal drugs for over ten years. Across both groups, the most widely used substance was a combination of methamphetamine and ice. There were no significant differences ($p > 0.05$) between groups on demographic or drug use data, see Table I.

Results of pre- and post-intervention psychological assessments are shown in Table II. There were no significant differences on the IRI between groups or before and after the intervention for total scores or any of the empathy domains, fantasy, EC, PT and PD. The total empathy score was higher in the intervention than the control group after completing the intervention (60.21 ± 9.09 vs 58.25 ± 9.48 , $t(24) = -0.53$, $p = 0.59$). Similarly, on the BDI there were no significant differences for cognitive and somatic categories between pre- and post-test. When comparing the groups at one-month post-intervention, the intervention group showed a larger fall in total depression scores (mean difference = 3.55) than the control

Table I Demographic and substance abuse variables between groups

Demographic	Control	Intervention	t-test	p-value
Age (years) (Mean±SD)	29.54±6.56	29.54±7.43	0.00	0.99
			χ^2 test	
Marital status				
Single	6 (37.50%)	14 (58.33%)	1.89	0.38
Married	7 (43.75%)	6 (25%)		
Widowed, separated, divorced	3 (18.75%)	4 (16.67%)		
Education				
Primary school	9 (60%)	13 (56.52%)	2.05	0.35
Secondary school	2 (13.33%)	7 (30.43%)		
Diploma, certificate or degree	4 (26.67%)	3 (13.04%)		
Number of previous admission				
One	16 (72.73%)	19 (79.17%)	0.26	0.73
> 1	6 (27.27%)	5 (20.83%)		
Duration of substance use (years)				
< 5	6 (27.27%)	9 (37.50%)	5.97	0.50
6–10	12 (54.55%)	5 (20.83%)		
> 10	4 (18.18%)	10 (41.67%)		
Mean±SD	8.07±4.31	10.00±7.69		
Type of substance use				
Methamphetamine	6 (27.27%)	6 (25%)		
Mean±SD (tabs)	7.37±9.53	6.50±5.31	1.73	0.78
Ice	4 (18.18%)	3 (12.50%)		
Mean±SD (grams)	1.22±0.63	0.88±0.54		
Marijuana	0	2 (8.33%)		
Methamphetamine + Cigarette	2 (9.09%)	5 (20.83%)		
Methamphetamine + Ice	10 (45.45%)	8 (33.33%)		

Table II Comparison psychological assessments between groups and pre-post intervention

	Pre-assessment		t-test		1-month post intervention		t-test		p-value	
	Control (Mean±SD)	Intervention (Mean±SD)			Control (Mean±SD)	Intervention (Mean±SD)				
<i>Empathy (interpersonal reactivity index)</i>										
Fantasy	12.13±4.61	11.83±3.18	0.25	0.79	11.50±4.98	12.35±2.76	-0.53	0.60		
Empathic concern	20.72±3.11	20.25±4.27	0.43	0.66	21.00±3.56	19.92±4.59	0.66	0.51		
Perspective taking	15.63±3.10	13.95±3.01	1.85	0.07	14.66±4.03	14.92±4.25	-0.16	0.87		
Personal Distress	13.13±3.65	12.62±5.26	0.38	0.70	11.08±3.62	13.00±4.22	-1.24	0.22		
Total empathy	61.63±8.62	58.66±7.66	1.23	0.22	58.25±9.48	60.21±9.09	-0.53	0.59		
<i>Depression (beck depression inventory)</i>										
Cognitive	11.27±4.96	11.54±6.17	-0.16	0.87	10.00±5.55	9.71±6.63	0.11	0.90		
Somatic	3.90±3.30	5.08±3.61	-1.15	0.25	3.00±3.07	3.35±3.43	-0.28	0.78		
Total depression	15.18±7.35	16.62±9.24	-0.58	0.56	13.00±7.62	13.07±9.44	-0.02	0.98		
Total mindfulness	62.31±7.65	64.04±14.20	-0.51	0.60	64.25±13.81	62.62±18.44	0.25	0.80		

group (mean difference = 2.18) but the difference was not statistically significant. Scores on the MAAS were lower in the intervention group than the control group at 1-month post-intervention (64.04±14.20 vs 62.62±18.44) but the difference was not significant. Surprisingly, members of both groups had completely stopped using illegal substances at 1-month follow-up (data not shown).

Qualitative results

Onset of drug dependence and types of substances used

Drug users had started taking illegal substance at a very young age and all of them had been using for more than ten years:

“9”, “10”, “11 years old”,

“11”, “15”, “more than 20 years”.

Various illegal substances were used, including ice and methamphetamines, sometimes in conjunction with cigarettes, and intakes ranged from a few tablets to large amounts:

I used a combined drug once, sometimes lots but some occasions were a few.

Original cause of drug addictions

Several reasons for drug dependence were mentioned, but family issues were the main precipitating cause of drug addiction:

I used drugs due to working. If I was not working, there was no need to consume drugs.

I ran away from home because of family problems. During that time, I lived with cousins who traded illegal substances. Anyone who sold drugs, was most likely to consume as well. I helped them to trade drugs that was a starting point of using drugs.

I started using “ice” at 12 years old because of parents’ divorce.

I began taking drugs because I saw my friends could stay up a whole night for playing cards, so I used that drug to stay up late at night.

Temporarily stopping substance use

Although they were addicted to substances, they had been able to stop using sometimes without developing withdrawal symptoms:

“I have taken drugs for 14 years but I stopped using them sometimes”, “I had no symptoms of withdrawal but felt sleepy and did not want to eat anything”.

When I did not use drugs, no any symptoms were present. It seemed when consumed drugs, I felt thrilling, energetic and ready to work.

I did not have any withdrawal symptom. I thought I did not become a drug addict – it seemed like a habit, taking a drug to get something done.

Reasons for being unable to stop use

Familiar environments and socialisation with friends were the main reasons that drug dependent persons could not quit:

I thought people abused drugs because of habits. When I have money, I can’t resist purchasing drugs. It seemed inevitable. I attempted so many times to quit but seemed impossible. I thought I was in a familiar environment that encouraged me to do that.

I could temporarily quit using drugs some days but when friends turned up, I could avoid socialising with them.

Benefits of mindfulness practice

When users participated in mindfulness practice, they learned how to control desires to consume drugs and developed an awareness of right and wrong. Although they had never taken drugs while residing in the centre, nor did they display withdrawal symptoms, they wanted options to resist engaging in drugs:

While undertaking a mindfulness course, a master told us that we should be aware of our thoughts whether we are inclined to the drugs. Maintaining meditative exercise could help us to ease feelings of

craving and when we do it repeatedly, it will cease craving eventually because the ability to quit drugs is upon our mind. We need to practice and get succeed by ourselves.

When reminded about the drugs, we have to be aware of our thoughts and maintain contemplation of such idea.

When I meditated, I reduced a desire and intention to consume drugs.

Drug users learned to restrain their feelings, distinguish correct behaviour from wrongful acts and became willing to do good deeds for their family in future:

I learn how to control my emotions and decrease my turmoil feeling after practicing mindfulness.

When I meditated, it was quiet and previous images and thoughts from the past passed through my mind, thereby giving me understanding of matters in the past. It seemed it reminded me of what I had done wrong previously.

After practicing mediation, I changed my attitude and don't want to repeat itself as in the past. The drugs destroyed my family. I want to be a good mum for my kids and a good daughter for my mum [...] I thought our mind is more powerful than craving. If we intend to quit drugs, so we can do it.

Adverse effects of mindfulness training

Women indicated they developed muscle soreness after sitting with crossed legs for 1 h without moving during *Vipassana* practice:

The first day of practicing I was very sore, I hardly moved my legs. However, when went through a second day, I felt very good, relaxing and being calm.

Discussion

This study showed that VM seemed to have no beneficial effects on psychological measures including depression, empathy or mindfulness for drug users at a rehabilitation centre in Thailand. These findings are not consistent with previous studies in the Western world. However, women using the Thai *Vipassana* approach appeared to show slightly decreased depression scores on both cognitive and somatic subdomains, but differences were not statistically significant. There are several possible reasons for these findings. First, the length of time of spent practicing *Vipassana* in this study was shorter than that used in similar studies in the USA. For instance, in one study of an incarcerated population the standardised *Vipassana* course ran for ten days and required 11 h of meditation exercises every day (Hart, 1987; Marlatt, 2002). Subjects were housed separately from other inmates throughout the course. In contrast, in the Thai study reported here, women undertook 2.5 h of meditation for five consecutive days and lived with their peers. Even so, they showed positive results for enhanced self-awareness and self-control to overcome the desire to engage in drugs and were able to distinguish right from wrong through *Vipassana* mediation, as reported in qualitative results. Carmody and Baer (2008) carried out an eight-week mindfulness programme for nearly 200 subjects and found that a longer practice time was strongly associated with an increase in mindfulness and wellbeing and reduction in emotional disorders. Increasing the length of meditation practice enabled meditators not to react to immediate unpleasant thoughts and to maintain an inner stability, which in turn resulted in growing self-awareness and self-control (Carmody and Baer, 2008). Frequency of mindfulness practice helped participants to maintain a mindful stance, which was the goal of the exercise (Soler *et al.*, 2014).

Second, people with previous experience of meditation practices may show different results to novices. This argument was supported by Soler and colleagues, who indicated that people with prior mindfulness experiences had higher scores on mindfulness domains than naïve meditators (Soler *et al.*, 2014). Both control and intervention participants in this study had used *Vipassana* approach from a very young age when accompanying their parents to temples for traditional Buddhist practices, and this approach has also been taught to primary school students at public schools in Thailand (Chansomsak and Vale, 2008). Hence it was unsurprising that no difference in mindfulness score was found between groups or between pre- and post-intervention.

Third, the early age of onset of drug use and use of other drugs in addition to methamphetamine may be associated with no significant changes in psychological disorders. A US study clearly demonstrated that use of methamphetamine with other drugs was strongly associated with an increase of abuse (sexual and physical), lifetime suicidal thoughts, psychotic and psychosis disorders (Christian *et al.*, 2007), and this may have reduced the effectiveness of the intervention.

Although the quantitative results showed no benefits from the *Vipassana* exercise on psychological variables the focus group interviews captured positive aspects of this technique, including increasing self-awareness, self-control, being calm and learning right from wrongful conduct. The quantitative self-report assessments may have been unable to detect and differentiate psychological symptoms between meditators and non-meditators. Consistently, Leigh and colleagues found mindfulness scores to be higher in a substance abuse group than a comparison group (Leigh *et al.*, 2005) and MacKillop and Anderson pointed out there were no significant differences on MAAS scores between participants with and without previous meditation experience (MacKillop *et al.*, 2007). Additionally, ethnicity may play a significant role in detection of psychological disorders using self-administered instruments even where those assessments reflected high internal reliability and validity in the samples, because cultural and social norms influence an understanding and interpretation of the wording of psychosomatic properties.

Limitations of the study

Selection bias played an important part in the study because recruitment was organised by staff members from the institute. There were an insufficient number of participants to meet effect size criteria, limiting the ability to generalise results to similar populations. There was a lack of gender diversity in the study, with all participants being female. According to staff of the institute, it was not possible to separate participants from other inmates after finishing the intervention each day, as reported by Hart (1987) and Marlatt (2002), because they were required to follow their usual treatment and rehabilitation programs and this may have interfered with research outcomes.

Policy implications

As discussed above, the quantitative research findings from the study showed that use of the *Vipassana* approach was unlikely to lead to success. However, the qualitative evidence demonstrated that the *Vipassana* approach still provided benefits for drug users by enhancing self-awareness, self-control and improving moral values. This approach is culturally appropriate and consistent with Thai Buddhism and it should be integrated into routine treatment and rehabilitation programs in the organisation to synergise achievements of outcomes. Frequent *Vipassana* exercises should be considered for meditation courses in future rather an intensive activity of 10 or 11 h a day which is not a feasible daily routine for the general population or drug dependent persons. The beneficial effects of reducing psychological disorders and improving self-awareness could develop when practising *Vipassana* regularly.

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