The Impact of Meditation Practice on Depression, General Distress, Self-Esteem, and Mindfulness Among Thai College Students

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The Impact of Meditation Practice on Depression, General Distress, Self-Esteem, and Mindfulness Among Thai College Students

Abstract
Meditation is an intervention proven to be rich with its depth of application, with more recent studies focusing on emotional disorders. The current literature purports that meditation can have several mediating effects in regards to emotional problems, including: decreased depression levels, decreased general distress, and higher levels of self-esteem. In addition, several recent scales have been constructed to measure levels of mindfulness, with increased meditation yielding higher levels. While meditation has been studied extensively in the West, little investigation exists within a Thai population. Therefore, the purpose of this study was to explore the influence of meditation on various emotional problems as well as levels of mindfulness. The literature on the above variables was reviewed to support the claim for meditation's effectiveness. The specific hypotheses tested were that self-reported meditation practice would be related to decreased levels of depression, decreased levels of general distress, increased levels of self-esteem, and increased levels of mindfulness. Results revealed only one expected difference between meditators and non-meditators: a sub scale on a mindfulness measure (observe). Post hoc tests were also conducted within the sample of meditators, with two significant correlations found: the amount of time spent meditating per day was associated with two factors on one of the mindfulness measures, acting with awareness and accepting without judgment. Possible factors contributing to and implications of these results are discussed.

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THE IMPACT OF MEDITATION PRACTICE ON DEPRESSION,
GENERAL DISTRESS, SELF-ESTEEM, AND MINDFULNESS
AMONG THAI COLLEGE STUDENTS

A THESIS
SUBMITTED TO THE FACULTY
OF
SCHOOL OF PROFESSIONAL PSYCHOLOGY
PACIFIC UNIVERSITY
FOREST GROVE, OREGON

BY
ALEX R. Z. BLOOM

IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF
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APPROVED: Michael R. Christopher, PhD
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ABSTRACT

Meditation is an intervention proven to be rich with its depth of application, with more recent studies focusing on emotional disorders. The current literature purports that meditation can have several mediating effects in regards to emotional problems, including: decreased depression levels, decreased general distress, and higher levels of self-esteem. In addition, several recent scales have been constructed to measure levels of mindfulness, with increased meditation yielding higher levels. While meditation has been studied extensively in the West, little investigation exists within a Thai population. Therefore, the purpose of this study was to explore the influence of meditation on various emotional problems as well as levels of mindfulness. The literature on the above variables was reviewed to support the claim for meditation’s effectiveness. The specific hypotheses tested were that self-reported meditation practice would be related to decreased levels of depression, decreased levels of general distress, increased levels of self-esteem, and increased levels of mindfulness. Results revealed only one expected difference between meditators and non-meditators: a subscale on a mindfulness measure (observe). Post hoc tests were also conducted within the sample of meditators, with two significant correlations found: the amount of time spent meditating per day was associated with two factors on one of the mindfulness measures, acting with awareness and accepting without judgment. Possible factors contributing to and implications of these results are discussed.
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INTRODUCTION

Meditation has been in practice for more than three thousand years. Its roots can be traced back to Hinduism and forms of meditation can be found in every major religion. While meditation styles, sources, and ideologies greatly differ, its purpose is uniform: personal transformation (Gunaratana, 1992). That is, one who enters a meditation practice will not be the same after the experience. The mind calms, concentration and thinking power increase, and tension and anxiety decrease as one becomes more able to handle life events (Goleman, 1988). Although personal transformation is the goal, its definition varies depending on the source. Some view this transformation as a vehicle to unite with a greater power while others might yearn for obtaining just the mental and physical benefits of meditation, while foregoing the deeper explorations into the mind’s potential. Buddhists see meditation as a way to end suffering in this world by perceiving things as they inherently are (Rahula, 1974).

Concentration Meditation

Two widely practiced forms of meditation can be found in Buddhism: concentration meditation and awareness/insight meditation. Concentration meditation, or samadhi in Pali (the primary language in which many of the early Buddhist texts were written), involves focusing one’s attention on a single stimulus (e.g., a candle flame or a mantra). While any stimulus would do, 40 objects of focus have been recommended in a Theravāda Buddhist text entitled The Visuddhimagga (Goleman, 1988). Two common objects of focus are anapanasati (mindfulness of breath) and metta (loving kindness). Both types of meditation are central to Buddhism, and are practiced regularly by many
people in Buddhist Thailand. When attention begins to stray while practicing either
meditation, it is purposefully brought back to the object. Progress is made when the
meditator becomes unmoved by both outer distractions such as sounds, as well as inner
distractions including thoughts, feelings, or sensations. Over time, this “one-
pointedness,” or the ability to concentrate on the object without distraction, is sustained
in increased amounts. Benefits from this form of meditation include positive experiences
of peacefulness, tranquility and mental silence (Rahula, 1974). The cultivation of
attention cannot be ignored. The common ingredient for both types of Buddhist
meditation, or any meditation form for that matter, is the need for the meditator to refocus
his attention (Goleman, 1988). In fact, Buddhists view the calming of the mind attained
from concentration meditation as a prerequisite to awareness meditation, believing that
proper insight into the nature of reality cannot otherwise occur (Williams & Tribe, 2002).
One’s mind becomes purified of defilements through sustained attention and can then
penetrate through the illusions of the world.

In the West, concentration meditation has been refined into several forms,
including transcendental meditation (TM). The TM movement began with its founder
Maharishi Mahesh Yogi who took many of the principles of Yoga and stripped the
“nonessential” components (Benson, 1975, p. 62). Then, in 1958, he brought his revised
form of Yoga to the West from India, in hopes that his condensed form could be more
easily grasped by Westerners. Essentially, the technique involves the meditator being
given a “secret” mantra from the teacher which he/she then repeats mentally while sitting
comfortably (Benson, 1975, p. 63). Meditators are instructed to assume a passive attitude
and if distracting thoughts come into the mind, disregard them and return to the mantra.
Adherents of this approach meditate for twenty minutes in the morning and again for twenty minutes in the evening.

Mindfulness Meditation

As noted above, another central Buddhist type of meditation is mindfulness. It involves focusing on one’s moment-to-moment awareness (Gunaratana, 1992). Mindfulness meditation is distinguished from samadhi in that the meditator focuses his or her awareness on the present moment instead of concentrating on a particular stimulus. There is no rigidity of attention on a single stimuli; the goal is to focus on any object (either internal or external), as long as it is in the present moment. Mindfulness also differs from samadhi in that there is no requirement for specific meditation rituals. One could practice mindfulness throughout the day while performing daily tasks such as eating, driving, and washing dishes.

There are many definitions of mindfulness meditation, varying most significantly by culture. Because mindfulness had its inception from Buddhism, defining it from an Eastern perspective is an essential starting place. In Pali, the term most equivalent to mindfulness is sati, meaning attention, awareness, and remembering (Rahula, 1974). In fact, it is often called the “heart” of Buddhist meditation (Thera, 1962) and resides at the core of the Buddha’s teachings (Gunaratana, 1992). Sati is usually identified with Vipassanā (clear seeing), an integral practice of Theravāda Buddhism (Gunaratana, 1992) which combines both concentration meditation and mindfulness (Goleman, 1988).

Mindfulness training developed out of Buddhist tradition and flourished particularly within the Theravāda branch of the religion. Theravāda Buddhism is most
prevalent in the South and Southeastern regions of Asia. In Thailand, for example, 95% of the population is Buddhist, and most Thai Buddhists identify with the Theravāda school (McNair, 1998). The purpose of mindfulness in Eastern religious definitions is to increase one’s level of awareness, with the aim of reaching enlightenment. Cultivating mindfulness, a process known as Right Mindfulness, is one of the eight categories of the Noble Eightfold Path, the Buddha’s approach to the cessation of suffering (*dukkha* in Pali). In Buddhist thought, the practicing and cultivation of these eight categories is what brings about enlightenment. Describing mindfulness from this Eastern standpoint is clear to those who practice Buddhism; however, no similar consensus has emerged from Western definitions of mindfulness.

Mindfulness research in the West has increased substantially over the past 20 years; yet as noted above, there has been a lack of consistency in terms of how it has been defined. One of the first, and still most popular attempts was made by one of the pioneers of Western-oriented mindfulness, Jon Kabat-Zinn. He described it as “paying attention on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1994, p. 4). Though widely accepted, some feel as though this definition does not adequately incorporate “scientific” terms (Hayes & Shenk, 2004). A consistent operational definition of mindfulness has been lacking until Bishop et al. (2004) recently proposed a two-fold definition involving both attention to the present moment and an attitude of acceptance. Specifically, they stated, “The first component involves the self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment. The second component involves adopting a particular orientation toward one’s experiences in the present moment, an orientation that
is characterized by curiosity, openness, and acceptance.” The research on mindfulness and meditation in general has grown to be one of the most enduring, widespread, and researched of all therapeutic practices over the past five years (Walsh & Shapiro, 2006).

Many scholars agree that both forms of meditation outlined above have value. Concentration can heighten the mind’s degree of attention, while actively observing the present moment (mindfulness) can produce insight into the nature of conscious experience (Goleman, 1988). Mindfulness can also aid in accessing experiences that usually lie outside conscious awareness (Kornfield, 1993; Wilber, 2000). Therefore, studies using concentration-based treatments in both Thailand and the U.S. will be reviewed next.

Meditation’s Impact on Health

Concentration-Based Meditation in Healthcare

While mindfulness is a popular form of meditation for most Thai Buddhists, concentration meditation is often practiced as well (Buddhism in Contemporary Thailand, 2005). Although used much more in actual practice, there has been little empirical research on the effects of concentration meditation for physical and emotional ailments in Thailand in comparison to the West. The studies that have been conducted using meditation in both medical and psychological healthcare settings have been mostly mindfulness-based, however a variant of Buddhist concentration meditation called dhammakaya meditation has also been studied. For example, Sudsuang, Chentanez, and Veluvan (1990) found that Thai college students trained in dhammakaya meditation experience significant decreases in serum cortisol level, blood pressure, and pulse rate.
These results suggest that concentration-based treatments can be effective in decreasing stress.

Before mindfulness was introduced to Western society as a form of treatment, concentration meditation had been the primary source of meditation. As noted above, TM became the first popular form of meditation introduced in the West beginning in the late 1950's. Then, in 1975, Herbert Benson conducted research on a condensed version of TM, calling it the relaxation response (RR). Included in RR were many of the same characteristics of TM, such as repetition of a word or sound, sitting quietly in a comfortable position with closed eyes, adopting a passive attitude where one is to not worry about how well the technique is being performed, and gently returning to the stimuli when thoughts wander. The research on TM and RR suggest that they can be used to successfully decrease symptoms associated with a variety of physical and mental conditions, including anger and hostility, insomnia, hypertension, pain, premenstrual syndrome, irritable bowel syndrome, and infertility (Benson, 1975). Overall, concentration-based meditations have been shown to be effective in ameliorating both physical and psychological disorders.

*Mindfulness-Based Meditation in Healthcare*

As stated, most of the research conducted in Thailand on meditation has involved using some form of mindfulness meditation. Research is continuing to expand in both breadth and width of the effects of meditation for the amelioration of emotional and physical distress. In addition, although not generally studied in Western “scientific” terms, for centuries, Buddhist monks and nuns have contributed to Thailand’s healthcare system by acting as community health volunteers (Trerutkuarkul, 2008). Their presence
is particular noteworthy in rural and remote areas, where they may function as the lone healthcare providers. In fact, in rural and urban areas, many Thais visit Buddhist temples to participate in various exercises, including meditation (Treerutkuarkul, 2008).

In the West, mindfulness has been incorporated into various treatment packages. Beginning in the early 1980’s, Jon Kabat-Zinn began to integrate mindfulness meditation into a Western approach to treating psychophysiological and stress-related disorders. His treatment came to be known as mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982). Originally designed for the management of chronic pain, the program was based on the idea that one should not continually search for an escape to pain, but instead, embrace the suffering and eventually come to accept it. Since its introduction, MBSR has been shown to be effective in reducing symptoms associated with a wide variety of disorders (Baer, 2003). Other treatment protocols soon followed, with successful results. Marsha Linnehan’s dialectical behavior therapy (DBT) incorporated mindfulness techniques into her treatment program for borderline personality disorder (Linnehan, 1993). Such techniques include “observing, describing, participating, taking a nonjudgmental stance, focusing on one thing in the moment, being effective” (p. 114). Acceptance and commitment therapy (ACT) approaches mindfulness in a similar way as DBT, viewing specific techniques such as acceptance and attention to present experience as skills to be learned (Hayes, Strosahl, & Wilson, 1999). In 2002, mindfulness-based cognitive therapy (MBCT) was developed to help treat depressive relapse by blending mindfulness meditation and cognitive therapy (Segal, Williams, & Teasdale, 2002).

As described, both concentration and mindfulness-based meditations have been used throughout both countries’ healthcare systems to aid in the treatment of a wide
variety of disorders. It is important to note that mindfulness has been a major part of Thai culture for over a thousand years, while it has only begun to gain prominence in the U.S. Next, the literature on the effectiveness of both meditation types in reducing symptoms associated with several disorders and enhancing several positive traits will be reviewed.

*Meditation and Depression*

It appears that regardless of culture, meditation yields positive results in a variety of areas of life. For example, meditation has been shown to decrease the risk of depressive relapse. Numerous randomized control trials have yielded results in support of MBCT as an effective treatment for recurrent depression, especially for those with three or more prior depressive episodes (Ma & Teasdale, 2004; Teasdale et al., 2000). RR has also had promising results in the alleviation of mild to moderate depressive symptoms (Benson, 1975). In Thailand, similar outcomes have been found. Santivong (2007) demonstrated MBCT’s effectiveness for decreasing the risk of depressive relapse among a sample with depressive symptoms as well as HIV. In Thailand, mindfulness has also been shown to be effective in conjunction with drug treatments for the alleviation of symptoms associated with both depression and anxiety disorders (Lowsatennkit, 2006).

Furthermore, *Vipassanā* (insight) meditation has also been used to enhance the treatment of several disorders, including depression (Disayavanish & Disayavanish, 2007). More specifically, Disayavanish and Disayavanish (2007) argue that *Vipassanā* can “free the mind from suicidal thoughts and impulses” (p. 1685). They also suggest that meditation can aid in diminishing greed and anger and increase will power, self-confidence, and self-esteem.

*Meditation and General Distress*

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Meditation has also been shown to impact general distress. In the U.S., mindfulness meditation, for example, has been shown to decrease both general distress and anxiety (Jain et al., 2007; Ostaﬁn et al., 2006). RR has evinced similar results in the reduction of anxiety (Benson, 1975). Similarly, TM has been shown to ameliorate anxiety, aggression, and recidivism in prisoners, and can result in reduced use of both legal and illegal drugs (Alexander & Orme-Johnson, 2003; Gelderloos, Walton, Orme-Johnson, & Alexander, 1991).

Mindfulness training has been demonstrated to decrease anxiety in a Thai sample as well. For example, Thapinta (1992) found that mindfulness training and cognitive restructuring signiﬁcantly decreased anxiety in staff nurses working with AIDS patients. In addition, Wongwutthi (2002) found that anapanasati meditation (mindfulness of breathing) signiﬁcantly diminished learning anxiety. Anapanasati has also been shown to decrease stress in nursing students (Udomsinka, 1998). As stated earlier, Sudsuang et al. (1990) also found that Thai college students trained in dhammakaya meditation experience signiﬁcant decreases in serum cortisol level, blood pressure, and pulse rate. Vipassanā meditation has also been used to enhance the treatment of several disorders, including anxiety (Charutsilp, 2001).

Meditation and Self-Esteem

To date, little research has been conducted on the impact of meditation on self-esteem. However, a recent theory-based paper has argued that cultivating mindfulness can increase self-esteem (Fennell, 2004). Similarly, in Thailand, Emavardhana and Tori (1997) found that self-esteem increased among participants attending a 7-day Vipassanā retreat. Furthermore, young Thai males who are ordained as novice Theravāda Buddhist
monks or who follow the same daily schedule as monks evince positive changes in self-concept, improved coping, and enhanced religiosity (Emavardhana & Tori, 1997; Thananart, Tori, & Emavardhana, 2000).

Meditation and Self-Report of Mindfulness

Recently in the West, several self-report measures of mindfulness have been developed. Little research, however, has investigated whether or not meditators will score higher on these measures than non-meditators. Two measures are commonly used to measure mindfulness levels: the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004) and the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). Some have found that meditators do indeed score higher on these measures. In the MAAS validation study Zen meditators evinced higher levels of mindfulness than non-meditating college students (Brown & Ryan, 2003). MacKillop and Anderson (2007), however, found no differences on the MAAS between meditators and non-meditators in a college student sample.

While the research on meditation continues to grow, it is still relatively young and in need of additional support. Most of the studies have been conducted in Western cultures, and little focus has been placed on examining the impact of meditation on functioning in cultural groups in which mindfulness and other types of meditation have been cultivated and practiced for thousands of years. Therefore, the purpose of this thesis was to investigate the impact of self-report meditation practice on depression, general distress, mindfulness levels, and self-esteem in a sample of Thai college students. More specifically the hypotheses were as follows:
1. Participants who endorse a current meditation practice would have lower levels of depression than those who do not currently meditate.

2. Participants who endorse a current meditation practice would have lower levels of general distress than those who do not currently meditate.

3. Participants who endorse a current meditation practice would have higher levels of mindfulness than those who do not currently meditate.

4. Participants who endorse a current meditation practice would have higher levels of self-esteem than those who do not currently meditate.
METHOD

Participants

The participants included 385 (221 female, 164 male) undergraduate students recruited from Assumption University in Bangkok, Thailand. The mean age for participants was 19.90 years ($SD = 1.70$). Because the research hypotheses were focused on a Thai population, participants who reported anything other than a Thai ethnic heritage were excluded from the analyses (i.e., all 385 participants are ethnic Thai).

Measures

Mindful Attention Awareness Scale (MAAS)

The MAAS is a 15-item questionnaire in which respondents indicate their level of awareness and attention to present events and experiences on a 6-point Likert-type scale ranging from 1 (almost always) to 6 (almost never) (Brown & Ryan, 2003). In developing the scale, the authors attempted to measure the attentional components of mindfulness rather than the intent or attitudinal approaches. They did so with the purpose of obtaining the actual experience that may be indicative of mindfulness instead of the intent or feeling attained from being in a mindful state. Moreover, they argued that acceptance and tolerance of events as they happen is implied in the capacity for present-centered attention and awareness. Sample MAAS items include “It seems I am ‘running on automatic’ without much awareness of what I’m doing” and “I find it difficult to stay focused on what’s happening in the present.” A mean rating score is calculated with higher scores suggesting greater levels of mindfulness. The MAAS demonstrates a good range of internal consistency across a wide variety of samples ($\alpha = .80 - .87$) and excellent test re-test reliability over a 1-month time period ($r = .81$). The MAAS also
demonstrates negative relationships with psychological distress (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), depressive symptoms (Brown & Ryan, 2003), depressive affect (Brown & Ryan, 2003; Carlson & Brown, 2005; Zvolensky et al., 2006), and rumination (Brown & Ryan, 2003).

Brown and Ryan (2003) also found that for those individuals with no meditation experience, there is a great deal of variability in mindfulness levels. Brown and Ryan (2003, 2004) also found that meditators scored higher on the MAAS than non-meditators, as well as a positive correlation between MAAS scores and length of time meditating among meditators. Therefore, the MAAS is considered to be an instrument of trait mindfulness which is sensitive to changes that can occur through meditation practice.

There is no indication in the extant literature that this measure has been used with a Thai sample.

**Kentucky Inventory of Mindfulness Skills (KIMS)**

The KIMS is a 39-item questionnaire in which respondents rate their meditation experience using a 5-point Likert-type scale 1 (*never or very rarely true*) to 5 (*almost always or always true*) (Baer et al., 2004). The assessment is designed to measure one’s general penchant of being mindful in daily living, to be understandable for both general and clinical populations regardless of their meditation experience, and to quantify several components of mindfulness (Baer et al.). The KIMS has four factors: observing, describing, acting with awareness, and accepting without judgment. Sample items for each factor are as follows: “I pay attention to sensations, such as the wind in my hair or sun on my face” (observe), “I’m good at finding the words to describe my feelings” (describe), “When I’m doing something, I’m only focused on what I’m doing, nothing
else” (act with awareness), and “I make judgments about whether my thoughts are good or bad” (reverse scored; accept without judgment). All four KIMS factors appear to have good internal consistency with alphas ranging from .83 to .91 (Baer et al.). It also has solid test-retest reliability with over a 2 week period (Baer et al.). A high convergent validity also exists between the KIMS and the MAAS, with all factors of the KIMS significantly correlating with the MAAS except for observe (Baer et al.). There is no indication in the extant literature that this measure has been used with a Thai sample.

Crandell Cognitions Inventory (CCI)

The CCI is a 45-item questionnaire in which respondents rate their depressive cognitions on a 5-point Likert-type scale ranging from 1 (almost never) to 5 (almost always) (Crandell & Chambless, 1986). The 34 items which tap negative thoughts are scored while the eleven positively phrased questions are included to act as a buffer. The CCI items are designed to measure the negative self-attributions and negative distortions of self, relationships, and the future which characterize depression. Sample items include, “I mess everything up” and “I’ll never feel good again.” The alpha coefficient of the CCI in a sample comprised of depressed patients, psychiatric patients, and non-depressed controls was .95 (Crandell & Chambless, 1986). Convergent validity was exhibited with a strong correlation \((r = .77, p < .001)\) between the CCI and BDI (Crandell & Chambless, 1986) and between the CCI and another popular measure of negative thoughts, the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) \((r = .65, p < .001)\) (Crandell & Chambless, 1986). In an adolescent Thai sample, Charoensuk (2007) reported good internal consistency \((\alpha = .90)\) and good convergent validity with the CES-D \((r = .74)\).
Center for Epidemiological Studies Depression Scale (CES-D)

The CES-D is a 20-item, self-report measure in which respondents rate their depression symptoms over the previous week on a 4-point Likert-type scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time) (Radloff, 1977). Out of the 20 items, four of them are positive and are reversed scored. The CES-D has four factors designed to address several domains of depressive symptoms: depressed affect, positive affect, somatic and retarded activity, and interpersonal. Sample items from each factor are as follows: “I felt sad” (depressed affect), “I was happy” (reverse scored; positive affect), “My sleep was restless” (somatic and retarded activity), and “I felt that people dislike me” (interpersonal). The CES-D has established criterion validity by predicting depressive status, and demonstrated convergent validity through its high correlation with other measures of depression (Radloff, 1977). An overall alpha coefficient of .85 was reported in a general population sample (Radloff, 1977). Charoensuk (2007) reported a Chrobach’s alpha of .88 among a Thai adolescent sample.

Rosenberg Self-Esteem Scale (RSES)

The RSES is a 10-item self-report measure in which respondents rate their self-esteem on a 5-point Likert-type scale ranging from 1 (not very true of me) to 5 (very true of me) (Rosenberg, 1965). Sample items include, “I am able to do things as well as most people” and “I wish I could have more respect for myself” (reverse scored). The alpha coefficient of the RSES in college students was found to be .88 and a one-week test-retest coefficient yielded .82 (Fleming & Courtney, 1984). In a diverse college student sample, convergent validity with a similar item, the Single-Item Self-Esteem Scale produced
results ranging from .72 to .76 (Robins, Hendin, & Trzyniewski, 2001). Charoensuk (2007) reported an internal consistency of .73 in a Thai adolescent sample.

**Hopkins Symptom Checklist-21 (HSCL-21)**

The HSCL-21 is a 21-item self-report measure in which respondents indicate symptom distress (Deane, Leathem, & Spicer, 1992) and is a shorter version of the Hopkins Symptom Checklist (Green, Walkey, McCormick, & Taylor, 1988). The HSCL-21 has three factors (general feelings of distress, somatic distress, and performance difficulty) producing three subscales, each with seven items. The three scales can be totaled to acquire a total distress score. Sample items for each factor are as follows: “Your feelings being easily hurt” (general feelings of distress), “Soreness of your muscles” (somatic distress), and “Difficulty in speaking when you are excited” (performance difficulty). The alpha coefficient of the HSCL-21 in a sample of outpatients ranged from .80 to .87 for the three subscales and .89 for the total scale (Deane et al., 1992). Similar alpha coefficients have been found in earlier studies with samples composed of students and nurses with alpha coefficients ranging from .75 to .86 for the subscales and .90 for the total scale (Green et al., 1988). The range of two-month test-retest coefficients for the HSCL-21 was between .55 and .63 (Deane et al., 1992). Satisfactory concurrent validity was also demonstrated. Correlations between HSCL-21 and the A-State and A-Trait scales on the State-Trait Anxiety Inventory Form Y (STAI-Y, Spielberger, 1983) were all moderate to strong and statistically significant (all $p < .001$), with marginally higher correlations with the A-Trait scale (Deane et al., 1992). Unfortunately, there is insufficient research on the psychometrics of the HSCL-21 in a Thai sample.
Procedure

Participants were recruited from various undergraduate courses and completed all of the measures at the time and date when they agreed to be involved. Participants received extra credit for their participation in this study. In addition to all of the self-administered, paper-and-pencil measures, as described in the Measures section, all participants completed an informed consent. In the informed consent, participants were notified that they could voluntarily withdraw from the study without prejudice, and that they could withdrawal by not finishing the questionnaires. Participants who were below the age of 18 were excluded from participation. This study was conducted with the approval of the Pacific University Institutional Review Board and the consent of the Office of Research at Assumption University in Thailand. The data collected was part of a larger study by the thesis advisor.

Design

This study used a between subjects design. Before the hypotheses were tested, Cronbach's alpha (Cronbach, 1951) was calculated to estimate the internal consistency for all of the scales. Descriptive statistics (i.e., means, standard deviations, skewness, and kurtosis) were also examined to assess for the normality of score distributions. All four hypotheses were examined using t-tests with a Bonferroni adjusted p-value of .006 (.05/9 t-tests). Effect sizes were also assessed using the d statistic and interpreted using the following conventions: small effect = .20, medium effect = .50, and large effect = .80 (Cohen, 1988).
RESULTS

Data screening

In order to test the univariate and multivariate assumptions, all of the variables were examined using SPSS 15.0 (SPSS Inc., 2006) prior to data analysis. Cases that exceeded 15% missing data were not included in the analysis, as recommended by Tabachnik and Fidell (2001). Multivariate outliers were also assessed through Mahalanobis distances with \( p < .001 \) used as a conservative standard (Tabachnik & Fidell, 2001). Three statistically significant cases were detected and subsequently deleted.

Distribution Characteristics and Descriptive Statistics

Cronbach alphas and skewness and kurtosis values, as well as their standard errors, are listed in Table 1. Based on these values it appears as though each of these variables approximates a normal distribution.
Table 1

*Cronbach Alphas, Skewness, and Kurtosis by Variable*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach Alphas</th>
<th>Skewness</th>
<th>SE</th>
<th>Kurtosis</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIMS observe</td>
<td>.79</td>
<td>-.04</td>
<td>.13</td>
<td>.58</td>
<td>.25</td>
</tr>
<tr>
<td>KIMS describe</td>
<td>.62</td>
<td>.27</td>
<td>.13</td>
<td>.63</td>
<td>.25</td>
</tr>
<tr>
<td>KIMS act with awareness</td>
<td>.71</td>
<td>.22</td>
<td>.13</td>
<td>.88</td>
<td>.25</td>
</tr>
<tr>
<td>KIMS accept without judgment</td>
<td>.85</td>
<td>.06</td>
<td>.13</td>
<td>.70</td>
<td>.25</td>
</tr>
<tr>
<td>CES-D</td>
<td>.89</td>
<td>.43</td>
<td>.13</td>
<td>-.45</td>
<td>.25</td>
</tr>
<tr>
<td>CCI</td>
<td>.90</td>
<td>.57</td>
<td>.13</td>
<td>-.60</td>
<td>.25</td>
</tr>
<tr>
<td>RSES</td>
<td>.82</td>
<td>.11</td>
<td>.13</td>
<td>-.26</td>
<td>.25</td>
</tr>
<tr>
<td>HSCL</td>
<td>.91</td>
<td>.27</td>
<td>.13</td>
<td>-.48</td>
<td>.25</td>
</tr>
<tr>
<td>MAAS</td>
<td>.85</td>
<td>-.11</td>
<td>.13</td>
<td>.07</td>
<td>.25</td>
</tr>
</tbody>
</table>

*Note.* KIMS observe = Kentucky Inventory of Mindfulness Skills – observe factor, KIMS describe = Kentucky Inventory of Mindfulness Skills – describe factor, KIMS act with awareness = Kentucky Inventory of Mindfulness Skills – act with awareness factor, KIMS accept without judgment = Kentucky Inventory of Mindfulness Skills – accept without judgment factor, CES-D = Center for Epidemiological Studies Depression Scale, CCI = Crandell Cognitions Inventory, RSES = Rosenberg Self-Esteem Scale, HSCL = Hopkins Symptom Checklist, MAAS = Mindful Attention Awareness Scale.
Primary Analyses

Independent samples t-tests were performed to compare mean scores on the dependent variables KIMS (observe, describe, act with awareness, accept without judgment), MAAS, CES-D, CCI, HSCL-21, and RSES for the independent variable current meditation (yes or no). In the sample, 55 participants endorsed a current meditation practice and 330 participants reported no current meditation practice. Table 2 displays the mean, standard deviation, t-values, degrees of freedom, p-values, and d-values for all dependent variables. Results for the KIMS observe factor suggested there was a statistically significant difference for those who meditated from those who did not (t = 3.741, p < .0001), with meditators scoring higher on this factor. The effect size (d = .59) was also in the medium range. However, as shown in Table 2, none of the other t-tests were significant at p < .006. Although the results revealed that there were not any statistically significant differences between groups (with the exception of the KIMS observe factor), all of the means were in the expected direction (with the exception of KIMS act with awareness). Moreover, although the differences were statistically non-significant, the effect sizes for the mean differences on KIMS describe and act with awareness, CES-D, and RSES were in the small range.
Table 2

*Independent Samples t-tests*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Meditators</th>
<th>Non-Meditators</th>
<th>( M )</th>
<th>SD</th>
<th>( M )</th>
<th>SD</th>
<th>( t )</th>
<th>( df )</th>
<th>( \alpha )</th>
<th>( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIMS observe</td>
<td></td>
<td></td>
<td>40.44</td>
<td>5.54</td>
<td>36.85</td>
<td>6.59</td>
<td>3.74</td>
<td>375</td>
<td>&lt;.001</td>
<td>.59</td>
</tr>
<tr>
<td>KIMS describe</td>
<td></td>
<td></td>
<td>27.22</td>
<td>4.03</td>
<td>26.09</td>
<td>3.73</td>
<td>1.99</td>
<td>375</td>
<td>.047</td>
<td>.29</td>
</tr>
<tr>
<td>KIMS act with awareness</td>
<td></td>
<td></td>
<td>32.77</td>
<td>5.18</td>
<td>31.29</td>
<td>4.55</td>
<td>2.18</td>
<td>375</td>
<td>.030</td>
<td>.30</td>
</tr>
<tr>
<td>KIMS accept without judgment</td>
<td></td>
<td></td>
<td>25.26</td>
<td>4.38</td>
<td>26.35</td>
<td>4.63</td>
<td>-1.64</td>
<td>375</td>
<td>.103</td>
<td>.24</td>
</tr>
<tr>
<td>CES-D</td>
<td></td>
<td></td>
<td>14.85</td>
<td>8.22</td>
<td>17.00</td>
<td>9.29</td>
<td>-1.55</td>
<td>371</td>
<td>.121</td>
<td>.25</td>
</tr>
<tr>
<td>CCI</td>
<td></td>
<td></td>
<td>66.24</td>
<td>22.79</td>
<td>67.82</td>
<td>23.50</td>
<td>-0.33</td>
<td>371</td>
<td>.747</td>
<td>.07</td>
</tr>
<tr>
<td>RSES</td>
<td></td>
<td></td>
<td>20.64</td>
<td>5.07</td>
<td>19.15</td>
<td>4.64</td>
<td>2.12</td>
<td>367</td>
<td>.035</td>
<td>.31</td>
</tr>
<tr>
<td>HSCL-21</td>
<td></td>
<td></td>
<td>42.86</td>
<td>10.26</td>
<td>43.81</td>
<td>10.57</td>
<td>-0.58</td>
<td>369</td>
<td>.564</td>
<td>.09</td>
</tr>
<tr>
<td>MAAS</td>
<td></td>
<td></td>
<td>3.89</td>
<td>0.84</td>
<td>3.82</td>
<td>0.69</td>
<td>0.58</td>
<td>369</td>
<td>.559</td>
<td>.09</td>
</tr>
</tbody>
</table>

*Note.* KIMS observe = Kentucky Inventory of Mindfulness Skills – observe factor, KIMS describe = Kentucky Inventory of Mindfulness Skills – describe factor, KIMS act with awareness = Kentucky Inventory of Mindfulness Skills – act with awareness factor, KIMS accept without judgment = Kentucky Inventory of Mindfulness Skills – accept without judgment factor, CES-D = Center for Epidemiological Studies Depression Scale, CCI = Crandell Cognitions Inventory, RSES = Rosenberg Self-Esteem Scale, HSCL = Hopkins Symptom Checklist, MAAS = Mindful Attention Awareness Scale.
Post Hoc Results

Following questions established by Brown and Ryan (2003) to assess characteristics of meditation practice, participants who endorsed meditation were also asked how long they have been meditating, the amount of time spent per day meditating, and to what extent they carry their meditation practice into their daily life. These items were measured on a 7-point Likert-type scale (1 = Not at all and 7 = Always). In line with Brown and Ryan (2003), correlations between these variables with the two meditation measures, the KIMS and the MAAS, were assessed. The results are displayed in Table 3. Within the active meditation sample, the amount of time spent practicing meditation per day was significantly correlated with two KIMS factors: acting with awareness ($r = .37, p < .005$) and accepting without judgment ($r = .37, p < .05$). All other results were non-significant at $p < .05$. The MAAS was not correlated with any of the three meditation questions at $p < .05$. The KIMS interfactor correlations and correlations with the MAAS were also assessed. Five significant factor correlations were found: observe with describe ($r = .37, p < .005$), act with awareness with accept without judgment ($r = .52, p < .005$), MAAS with describe ($r = .28, p < .05$), MAAS with act with awareness ($r = .54, p < .005$), and MAAS with accept without judgment ($r = .44, p < .005$).
Table 3

Pearson-Product Correlations for Meditators

<table>
<thead>
<tr>
<th>Variables</th>
<th>Years meditating minutes into meditating daily life</th>
<th>KIMS observe</th>
<th>KIMS describe</th>
<th>KIMS act with awareness</th>
<th>KIMS accept without judgment</th>
<th>MAAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>meditating</td>
<td>-.16</td>
<td>-</td>
<td></td>
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<td></td>
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<td>Daily minutes</td>
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<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>meditating</td>
<td>- .03</td>
<td>-.04</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried into</td>
<td>.12</td>
<td>-.03</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>daily life</td>
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<td>-.18</td>
<td>-.04</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KIMS</td>
<td>.07</td>
<td>-.08</td>
<td>-.01</td>
<td>.37**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>observe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KIMS</td>
<td></td>
<td>-.08</td>
<td>-.01</td>
<td>.37**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>describe</td>
<td></td>
<td></td>
<td>-.04</td>
<td>.11</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>KIMS act</td>
<td>.16</td>
<td>.37**</td>
<td>-.04</td>
<td>.11</td>
<td>.24</td>
<td>-</td>
</tr>
<tr>
<td>with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KIMS accept</td>
<td>-.07</td>
<td>.37**</td>
<td>-.02</td>
<td>-.23</td>
<td>-.03</td>
<td>.52**</td>
</tr>
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<td>without judgment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAAS</td>
<td>-.00</td>
<td>.11</td>
<td>-.04</td>
<td>.06</td>
<td>.28*</td>
<td>.54**</td>
</tr>
</tbody>
</table>
DISCUSSION

The objective of this thesis was to test several hypotheses regarding the potential influence of meditation on distress and health related variables among college students in Thailand. Specifically, the hypotheses were that meditators would have lower levels of depression and general distress, and higher levels of mindfulness and self-esteem than non-meditators. These hypotheses were based on the limited extant literature assessing these relationships in Thai samples.

The results revealed that having a current meditation practice was not related to a higher score on any of the KIMS factors, with the exception of observe. This suggests that, among those in this sample, meditators pay more attention to both internal stimuli, such as bodily sensations, emotions, and cognitions, and external stimuli, including sounds and smells compared to non-meditators. The results also indicated that having a current meditation practice was unrelated to MAAS scores. Overall, these results suggest that mindfulness and meditation practice were unrelated. These results are incongruent with Brown and Ryan's (2003) finding that established Zen Buddhist meditators scored higher on the MAAS than non-meditators. However, in line with these results, MacKillop...

Note. KIMS observe = Kentucky Inventory of Mindfulness Skills – observe factor, KIMS describe = Kentucky Inventory of Mindfulness Skills – describe factor, KIMS act with awareness = Kentucky Inventory of Mindfulness Skills – act with awareness factor, KIMS accept without judgment = Kentucky Inventory of Mindfulness Skills – accept without judgment factor, MAAS = Mindful Attention Awareness Scale

*p < .05. **p < .005.
and Anderson (2007) also found no differences on the MAAS between meditators and non-meditators in an American college student sample.

There were also no significant differences between meditators and non-meditators in depression as measured by the CES-D. Similarly, there were no differences between meditators and non-meditators in depressive cognitions as measured by the CCI. These findings suggest that among participants in this sample, current meditation practice is not related to lower depressive symptoms and cognitions. The results found with both measures of depression in the present study are in contrast to prior findings. Several studies have been conducted among Thai samples indicating that meditation can be beneficial for decreasing depressive levels (Disayavanish & Disayavanish, 2007; Santivong, 2007; Lowsaternkit, 2006). Additional research is needed to indicate how advantageous meditation can be in terms of treating depression.

The results also indicated that self-esteem was not significantly influenced by meditation. Changes in RSES scores did not yield significant differences between those who meditate and those who do not. While little prior research has been conducted comparing self-esteem with meditation, the few studies in Thailand have yielded significant results (Emavardhana & Tori, 1997; Thananart, Tori, & Emavardhana, 2000). Again, further investigation is needed to establish the relationship between these two variables.

The last variable to be compared by meditation condition was general distress. The findings indicated that there were no significant differences between meditators and non-meditators, as measured by the HSCL-21. While general distress is broadly defined, there is growing evidence that meditation can decrease the degree of general distress on
the body in a Thai population (Charutsilp, 2001; Udomsinka, 1998; Sudsuang, Chentanez, & Veluvan, 1990). As with the other variables, meditation and its involvement with general distress is an area for further exploration. Overall, the results described above were fairly surprising, given prior findings on meditation’s effectiveness at enhancing health and reducing distress. As indicated, additional research with these variables is needed in order to have a better understanding of how much impact meditation can have.

Post hoc analyses were also conducted to explore the relationship between duration and frequency of meditation practice, and extent to which it is carried out into everyday life as well as KIMS factors and MAAS scores among meditators. The amount of time spent meditating per day was significantly related to two of the KIMS factors: acting with awareness and accepting without judgment. These results indicate that with extended daily meditation practice, meditators can increase their ability to engage in behaviors with undivided attention. These individuals are on “auto pilot” less often and are in greater contact with the present moment. For those meditators who spend more time practicing per day also have a greater ability to refrain from labeling experiences good/bad or right/wrong. They are more skillful in allowing both wanted and unwanted experiences to exist without trying to avoid, escape, or alter them.

MAAS scores were also not significantly related to the meditation variables. These results differ from Brown and Ryan’s (2003) results in which they found that the MAAS was significantly correlated with both the extent to which individuals found their meditative practice was carried over into daily life and number of years spent practicing. One possible explanation for the current findings could be based upon the specific
sample. In Brown and Ryan’s study, the participants within the sample were experienced meditators who had been meditating for both many more years and spent more time per day meditating than the participants within the current sample. This discrepancy in experience could have impacted the results. Also, within the current study reliance was placed upon self-report regarding meditation practice. The lack of any external validity indicates that an aggrandizement of reporting was possible.

Post hoc analyses also revealed that various KIMS factors correlated with one another and with the MAAS. Within the KIMS factors, observe correlated strongly with describe as well as act with awareness and accept without judgment. These results are congruent with prior findings among an American sample (Baer et al., 2004). The fact that these factors (or skills) are significantly correlated indicates that they are distinct from each other yet are related to the general construct of mindfulness. There were also several significant correlations between KIMS factors and MAAS scores. The MAAS correlated with describe, act with awareness, and accept without judgment. These results replicate Baer et al.’s findings within an American sample. Also, these results add further credence to the congruence between these two measures.

Although the post hoc analyses uncovered a number of significant correlations between meditation practice factors and KIMS and MAAS scores, most of the hypotheses were non-significant and did not replicate prior findings in the literature. There are a number of possible explanations for these results. First, all of the measures given to the participants in Thailand were normed on American populations. Some of the scales are relatively new and have not yet been normed on a Thai population. These measures include the MAAS, the KIMS, and the HSCL-21. Therefore the validity of these
measures among a Thai sample has yet to be determined. Establishing a norm within a particular population is important because if one does not exist, any sample will not be as interpretable due to the lack of comparative data. The rest of the scales used in this study, conversely, have been used among a Thai population. These include the CCI, the CES-D, and the RSES. Charoensuk (2007) reported the reliability for these three scales in a Thai adolescent sample. All three scales demonstrated adequate reliability and validity. This means that when the scales were transferred to a population different from the one in which the scales were normed, their psychometric properties remained consistent.

Another possible explanation as to why there were so few significant differences between meditators and non-meditators is the way in which meditation practice was measured. As mentioned, participants reported either their experience or lack of experience with meditation through self-report. This potentially introduces a great deal of error due to the lack of external validity. Also, the type of meditation was not ascertained. Mixing various approaches to meditation could have confounded the results. A last possible explanation is the influence of mindfulness on Thai society in general. Given the high percentage of Theravāda Buddhists in Thailand, the levels of mindfulness inherent in the society could be so high that meditation does not produce significant improvements. Therefore it is possible that a ceiling effect occurred.

There were also various limitations to the current research. One limitation included the small sample size of meditators, with only 55 participants endorsing current meditation practice in a sample size of 385. Another limitation included the lack of description within meditation practice. Specifically, the type of meditation was not obtained. The possible variance within practice could have impacted the results. Also, as
discussed, the data was obtained using self-report measures. Because no cross-validation existed, the participant's responses could not have been entirely accurate. In addition, another limitation was from the type of sample. Because the sample was from a college population as opposed to a clinical population, the depression rates were likely low. This low probability could have affected the results of meditation's impact on depression. Due to the data's limitations, generalization of the results towards other populations should be tentatively made.

Overall, the results suggest that follow-up studies might be fruitful. Redefining the sample groups to include frequency of meditation practice could produce more valid findings. It is possible that more experienced meditators differ from inexperienced meditators in the variables, thereby yielding significant differences from those who do not meditate. Another direction for future research could include comparing various types of meditation and their effects on the variables from this study. Also, norming both mindfulness measures (i.e., the MAAS and the KIMS) in Thai populations would prompt more attention by researchers to design additional studies of mindfulness in that population.

The results obtained from this thesis revealed that meditation practice impacts the way in which meditators observe the world. Meditators appeared to pay increased attention to both internal and external stimuli compared to non-meditators. Also, the amount of time spent in daily meditation seemed to affect their level of awareness while engaging in various behaviors. For those who meditated more per day, the results indicated that they were more likely to act with increased awareness and undivided attention. Time spent in daily meditation seemed to also affect the meditators' ability to
refrain from judging experiences as often and allow experiences to unfold without resisting them. The overall obtained outcomes were not as consistent with prior studies, yielding fewer significant results than in the past. The results do indicate, however, that the need for further studies in the investigated areas is warranted.
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