Review Article

Factors Affecting the Mindfulness among Undergraduate Students of Faculty of Education in a Public University

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Abstract

This study aimed to investigate the effect of attachment, self-consciousness, and religious orientation on the mindfulness of Buddhist student teachers. A total of 347 participants were asked to complete a set of questionnaires. The results indicated significant correlations between the independent variables and each mindfulness component (awareness, r = -0.15 to 0.38; acceptance, r = -0.11 to -0.33), except for religious orientation. Private self-consciousness had the highest correlation with and significantly predicted mindfulness, by joining attachment avoidance in prediction 16% of variance of awareness (p < .001), and together with the attachment anxiety accounted for 15% of variance of acceptance (p < .001). The findings can be used as basic information to enhance mindfulness among the student teachers.

Keywords: mindfulness; attachment; self-consciousness; religious orientation; education.

Introduction

Numerous empirical studies from the past forty years since Kabat-Zinn adapted the principle of traditional mindfulness practice for use as an alternative medicine have showed the importance of being mindful regularly as a proper way to lead a life. Emotional and cognitive development was manifest benefit according to neurological research. Mindfulness resulted in visible change to the conditions of the brain areas, including activation of the prefrontal cortex related to cognition and emotional and behavioral regulation, an increase in the concentration of gray matter in the hippocampus related to memory, and a decrease of amygdala activity related to negative emotion (Creswell et al., 2007; HÖlzel et al., 2011). Apart from medicine, there is now also a practical application of mindfulness in a wide range of contexts, specifically education. There have been studies on the results of dispositional mindfulness and mindfulness meditation programs for teachers, which obviously helped to increase their emotional regulation, perceived self-efficacy, and sleep quality and duration, while also decreasing stress, burnout, and worrying about work at home. Additionally, it promoted class management and relationship quality with students, regardless of the students who had challenging behavior (Crain et al., 2017; Emerson et al., 2017; Flook et al., 2013; Jennings, 2015). In other words, mindfulness allowed teachers to live and work happily with good physical and mental health. However, it would be better to prepare student teachers for professional difficulties in advance.

Although the term mindfulness seems intangible, it was defined rather practically as being aware of experiences happening physically or mentally at a present moment, with non-judgement and seeing things as they are, no matter what kinds of experience, just recognize; bare attention (Kabat-Zinn, 2003; Tumtong, 2007). Nowadays, researchers still have different views on the structure of mindfulness and assess individual mindfulness through different measures, such as a unidimensional (e.g., the Mindfulness Attention Awareness Scale (MAAS); Brown and Ryan, 2003), multidimensional (e.g., the Five Facet Mindfulness Questionnaire (FFMQ); Baer et al., 2006), and bidimensional measures (e.g., the Philadelphia Mindfulness Scale (PHLMS); Cardaciotto et al., 2008). However, all of the measures have at least one subscale that relates to a person's awareness at the present time. The foundation for being mindful according to the view of religion and psychology and previous research has highlighted emotional acceptance as a key mechanism to benefiting from mindfulness (Teper & Inzlicht, 2013). This corresponds with Bishop et al. (2004) who divided mindfulness into two core characteristics. The first one being the self-regulation of attention; being aware of current experiences and observing changes of both sensations and feelings or thoughts. The second element relates to approaching experience with curiosity, being open-minded, and accepting. It is obvious that mindfulness actually is an ability and quality that is inherent in everyone, so another way of enhancing undergraduates' mindfulness besides encouraging mindfulness practice is to answer a meaningful question: "What are the factors affecting the levels of mindfulness that vary from person to person". A small number of studies on this topic have been seen today, particularly in Thai persons who have been brought up in a Buddhist surrounding who probably had great opportunity for learning and honing mindfulness. After reviewing literature, we focused on studying psychological factors: attachment, self-consciousness and religious orientation to see whether they have effect on mindfulness or not and how.

Attachment

Parent–infant interaction through emotional expression and behavior can affect the way individuals perceive themselves and others, either positively or negatively, influencing thoughts and behaviors on having relationships in adulthood, along with personality development, coping (Bowlby, 1988; Mikulincer & Florian, 1998), and so mindfulness. Different levels of mindfulness between individuals probably comes from experiences in early childhood and attachment. Pepping and Duvenage (2016) found that parental warmth enabled individuals to have a low attachment anxiety and avoidance and high levels of mindfulness, but parental rejection enabled individuals to have a high attachment anxiety and avoidance and low levels of mindfulness. Without anxiety of abandonment or intimacy, persons having a secure attachment openly express their thoughts and feelings and they can open fully and accept things. These characteristics further detach awareness of what happens in the present moment, for both positive and negative experiences, which is fundamental to mindfulness. With respect to attachment insecurity, negative views of themselves

and/or others and emotion regulation difficulties are an obstacle to being mindful (Pepping et al., 2013); persons with a high attachment anxiety feel worthless, fear rejection and abandonment, and demand response and attention from attached person. Furthermore, persons having a high attachment avoidance try to prevent themselves from disappointment by avoiding closeness to others, control themselves considerably, and try to depend on themselves at all times (Bartholomew & Horowitz, 1991). The systematic review and meta-analysis found a negative relationship between adult attachment anxiety and avoidance and mindfulness scores (r = -.36 and r = -.28; Stevenson et al., 2017). The anxiety dimension negatively related to mindfulness elements measured by multidimensional measures, especially non-judgement, which had the maximum correlation coefficient but where observing was found to be non-significant. The avoidance dimension related to all subscales, although, the relation of avoidance to observing was the smallest effect size. However, there have been no studies conducted in Thailand these days. The effect size of attachment on mindfulness tends to be influenced by different social and cultural contexts, experiences in mindfulness meditation included. One research found that attachment anxiety and avoidance described the variance of the total scores of undergraduates' mindfulness by 18.8 percent in a group of non-meditators and by 43.3 percent in a group of students who specified that they had mindfulness meditation at least once a week (Pepping et al., 2014).

Self-consciousness

Self-awareness is a basic attribute of mindfulness as well as a trait called self-consciousness, which is characterized by a predisposition to focus attention towards the inner experience, behavior, or physical appearance of oneself. According to Fenigstein et al. (1975) self-consciousness consists of three aspects: The first two are processes through which persons have self-focus, namely private self-consciousness, which refers to being aware of one's own thoughts, feelings, motivations, behaviors, including having self-reflectiveness, and public self-consciousness, pertaining to being aware of oneself as a part of a society and giving importance to their image for public appearance. The last aspect, social anxiety, refers to feeling uncomfortable with public appearance or interactions with other people, which is in response to the above-mentioned processes. Given the characteristics of self-consciousness, it can be both a supportive factor and obstacle of mindfulness. On the one hand, if individuals have a disposition to focus on their intrinsic experiences, they have a sensitivity to being aware of what is happening at the present time in daily life. On the other hand, if a person is preoccupied, constantly examines and reviews behaviors, imagines oneself, and is anxious of assessment from others, it can cause a person to not be as aware of the present moment as they should be, criticize themselves, and feel frustrated (Brown & Ryan, 2003). Previous research has found that private and public self-consciousness is positively related to observing, but negatively related to the non-judgment of inner experience measured by the FFMQ (Evans et al., 2009), and social anxiety had a negative relationship with mindfulness as measured by the MAAS (Beitel et al., 2005). The present study expanded these findings through regression analysis. Additionally, since self-consciousness is associated with two subscales of the FFMQ (i.e., observing and non-judgment) in the opposite direction, we employed the PHLMS, which is designed to assess the elements of mindfulness based on the two-component concept, i.e., awareness and acceptance and having no correlation between two subscales, it benefits assessing each of the subscales independently (Cardaciotto et al., 2008).

Religious orientation

Besides, mindfulness is an important teaching in Buddhism, and so one question that should be studied is how individuals are motivated to get close to religions. Allport and Ross (1967) divided an individual's religious orientation into two kinds, as religious orientation from extrinsic motivations and intrinsic motivations. The main idea is that the first group "utilizes" religion to serve their goals, with the person valuing religion as an instrument or benefit for many aspects, especially for basic needs, such as stability and security, building social relationships, consolation in troublesome situations, and distraction. The second group "lives" with religion, namely their ultimate goal is religion bringing about regular practices in accordance with religious teachings more frequently than people in the first group. The individual motivation to attend religion is based on giving value and meaning to religion and the affect different religious behaviors tend to have on mindfulness. Despite the fact that mindfulness meditation tends towards religious practice, Pepping et al. (2016) found that participants with experience of mindfulness meditation most likely commenced and continued mindfulness meditation to relieve emotional stress and develop self-regulation. Only a minority of participants reported that their mindfulness meditation was for spiritual or religious reasons. Nevertheless, researchers have suggested that this is perhaps an effect from western culture where the focus is on using mindfulness in clinical practice rather than for spiritual purposes. Therefore, a study on religious factors affecting mindfulness among Buddhists would probably result in different outcomes. Contrary to this hypothesis, Kaewpornsawan et al. (2012) did not find that Buddhist activity factors, such as practicing and worshiping and behaviors–opinions towards mindfulness, were related to mindfulness in Thai early adolescents. However, the researchers studied mindfulness as coping, which is different from the present study. Therefore, we still believed that mindfulness more likely tends to have an effect from religious orientation.

This study

The present study aimed to investigate the influences of attachment (i.e., anxiety and avoidance), self-consciousness (i.e., private, public, and social anxiety), and religious orientation (i.e., intrinsic and extrinsic) on awareness and acceptance among a sample of Thai Buddhist student teachers. We were very determined to answer the questions: Did the seven independent variables predict the mindfulness? Second, how they had effect on awareness and acceptance? Our hypotheses were consistent with previous findings that attachment anxiety would have no relation to awareness, while it would have a negative effect on acceptance. Attachment avoidance would have a negative effect on the two elements of mindfulness. Each of the self-consciousness subscales would positively relate to awareness but negatively relate to acceptance, except for social anxiety, which would negatively relate to awareness. Although both intrinsic and extrinsic causes for attending religion may affect mindfulness, individuals with extrinsic motivation use religion to eliminate anxiety but do not learn or actually take the religious teachings into their minds, according to Allport and Ross (1967). Therefore, we hypothesized that extrinsic motivations would negatively relate to awareness and acceptance, and in contrast, intrinsic motivations would have a positive relation with both elements. Lastly, stepwise regression would serve to find the best predictors.

Method and Materials

The cross-sectional descriptive method was used to explore psychological factors which affected individual differences in mindfulness.

Participants

The research participants included 347 undergraduates of the Faculty of Education at a public university in Thailand who registered

for the 1st semester of the academic year 2018, were Buddhists, and agreed to participate in this research. The number of participants conformed to the calculated sample size, and furthermore, participants were systematically chosen for representing the research's population in some characteristics, i.e., gender and major by proportional stratified random sampling. From the general information, 255 (73.49%) were females and 92 (26.51%) were males. Most participants were in a Teaching Chinese as a Foreign Language program (14.41%), first years accounted for 34.01%, followed by the second years (28.24%), third years (19.31%), and fourth years (18.44%). Unfortunately, the fifth-year undergraduates practiced teaching outside of the university, and so we could not collect data from them. In terms of experience practicing mindfulness, almost half of the participants (45.82%) reported that they had practiced mindfulness but had not practiced it for a long time, followed by participants who currently practiced mindfulness (39.47%), but of which the majority practiced less than weekly (15.85%) and a small minority of who reported daily practice (4.03%). Participants who had experience practicing mindfulness reported a predominantly mindfulness practicing method of sitting meditation (50.34%). The remaining participants indicated no prior experience in practicing mindfulness (14.70%) (See Table 1)

Table 1. Characteristics of study population

Characteristics	Total 347 (100%)	
	n	%
1. Sex		
Male	92	26.51
Female	255	73.49
2. College years		
First-year	118	34.01
Second-year	98	28.24
Third-year	67	19.31
Fourth-year	64	18.44
3. Subject field		
Thai language	25	7.20
English language	23	6.63
Social studies	30	8.65
Early childhood education	16	4.61
Elementary education	30	8.65
Teaching Chinese as a Foreign Language	50	14.41
Mathematics	40	11.53
Lifelong education	26	7.49
Educational technology	44	12.68
Psychology	27	7.78
Sports science	36	10.37
4. Experience of practicing mindfulness		
Currently practiced mindfulness		
Daily practice	14	4.03
2 - 6 times/week	20	5.76
1 time/week	48	13.83
Less than weekly	55	15.85
Had practiced mindfulness, but had not practiced it for a long time	159	45.82
No prior experience in practicing mindfulness	51	14.70
4.1 Mindfulness practicing method*		
Sitting meditation	149	50.34
Walking meditation	104	35.14
Mindful breathing	35	11.82
Yoga	18	6.08
Others	38	12.84
* participants can answer more than 1 method or not specify their method of practicing mindfulness		

Procedure

After the permission letter for research data collection was approved by the dean of the Faculty of Education of a public university, the researcher contacted and made appointments with lecturers for collecting data in the sample of undergraduates after class between October and November 2018. Undergraduates were provided with information about the research project, participant protection information was included, and were asked for their participation after allowing them time to read and inquire before signing the informed consent documents. Then, participants completed the questionnaires and returned them to the researcher.

Measures

Mindfulness was measured with the Philadelphia Mindfulness Scale Thai version (PHLMS-TH) which Silpakit et al., 2011, translated from the PHLMS of Cardaciotto et al. (2008). The PHLMS consists of two subscales: Awareness, e.g., "I am aware of what thoughts are passing through my mind" and Acceptance, e.g., "I try to distract myself when I feel unpleasant emotion". There are 10 items per subscale rated on a 5-point Likert–type scale ranging from 1 (never) to 5 (very often). Each subscale was calculated and analyzed independently; a higher total score on the awareness subscale indicates a higher awareness level, whereas all acceptance items must be reversed scored before totaling and a higher score on the acceptance subscale indicates a higher acceptance level. The reliability coefficient alphas in this study were 0.73 and 0.77 respectively.

Attachment was measured with the Experiences in Close Relationships-Revised questionnaire (ECR-R) developed by Fraley et al. (2000) (Krawcomsri, 2002). This ECR-R is a 36 item self-reported measure of two attachment dimension subscales, namely attachment anxiety, e.g., "I worry that my partner doesn't like me" and attachment avoidance, e.g., "I don't express my feelings to my partner". Each item is responded on a 7-point Likert–type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Having low scores for both anxiety and avoidance indicates secure attachment, whereas having a high anxiety and/or avoidance indicates insecure attachment. The reliability coefficient alphas were 0.89 and 0.86, respectively.

Self-consciousness was measured with the Self-Consciousness Scale (SCS) (Yuvapurna, 2001; Fenigstein et al., 1975). The 23 item questionnaire consists of three subscales: private self-consciousness, e.g., "I am always trying to figure myself out", public self-consciousness, e.g., "I am concerned about my style of doing things", and social anxiety, e.g., "It takes me time to overcome my shyness in new situation". Each item was rated on 5-point Likert-type scale ranging from 0 (extremely uncharacteristic) to 4 (extremely characteristic). There were coefficient alphas at 0.81, 0.69, and 0.82, respectively, and the total was 0.84.

Religious orientation was measured with the Religious Orientation Scale (Kunapornsujarit, 2012) developed from Allport and Ross's concept (1967) and Gorsuch and McPherson's Intrinsic/Extrinsic Scale–Revised; I/E Revised (1989) and then adjusted the items to have neutral context; suitable for use in any religion and for Thai people. A 20 item measure use a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) by keeping the original dimensions: Intrinsic such as, "I practice the religion regularly" and Extrinsic such as, "I practice religion to obtain holy things' support when I have problem". However, the two dimensions are not in opposition of each other. A person could have a form of particular religious orientation with a high score on either dimension, or have two forms high, or even be without two forms. There were coefficient alphas at 0.94 and 0.90, respectively.

Data Analyses

For all steps of the analyses we applied the IBM Statistical Package for the Social Sciences (SPSS; version 21): Percentage frequency distribution of demographic data and descriptive statistics for research variables. In terms of testing hypotheses, the relationships between independent variables and each mindfulness subscale were analyzed by Pearson's product, moment correlation coefficient and analyzing factors affecting awareness and acceptance by stepwise multiple regression. The correlation coefficient ranges among the independent variables indicated that the analyses had no multicollinearity, which is multiple linear regression assumption.

Results

Descriptive statistics consisted of means, standard deviations, and correlation coefficients for the nine variables: The two attachment dimensions; three self-consciousness subscales; two religious orientation poles; and two key components of mindfulness, awareness and acceptance, are shown in Table 2. The results indicated small to moderate significant correlations between almost all of the independent variables and each of the mindfulness components. The two dimensions of attachment were negatively related to each element of mindfulness. The attachment anxiety dimension was significantly and negatively associated with acceptance (r = -0.26, p < .001). The attachment avoidance dimension was significantly and negatively associated with awareness (r = -0.15, p < .01). Most of the self-consciousness subscales were significantly and positively associated with awareness, except for social anxiety (private-awareness, r = 0.38, p < .001; public-awareness, r = 0.29, p < .001), and as expected, all three self-consciousness subscales were significantly and negatively associated with acceptance (range r = -0.11 to -0.33). Contradictory to the hypothesis, this research did not find any significant correlation between both intrinsic and extrinsic religious orientations and awareness and acceptance.

In stepwise regression analyses, the results showed that private self-consciousness and attachment anxiety and avoidance were capable of predicting mindfulness. Especially private self-consciousness, which was a key factor that influenced both mindfulness subscales. Private self-consciousness and attachment avoidance were significantly predictive of awareness, which accounted for 16% of the variance (p < .001). Private self-consciousness was the factor that had the strongest influence on awareness (β = 0.38, p <.001), followed by attachment avoidance (β = - 0.14, p <.01) (see Table 3). While private self-consciousness and attachment anxiety were significantly predictive of acceptance, which accounted for 15% of the variance (p < .001). Private self-consciousness was the factor that had the strongest influence on acceptance as well (β = - 0.29, p <.001), followed by attachment anxiety (β = - 0.22, p <.01) (see Table 3).

Discussion

The analysis results partially confirmed our hypotheses since it showed that the dimensions of attachment and self-consciousness were related to mindfulness components, but the relationship between religious orientation, both for intrinsic and extrinsic motivations, and the elements of mindfulness was not found. Stepwise multiple regression analysis found that factors that could mutually predict mindfulness in terms of awareness were private self-consciousness and attachment avoidance. Factors that could mutually predict acceptance were private self-consciousness and attachment anxiety.

Private self-consciousness was the factor that influenced awareness and acceptance the most, but in different directions. It can be described that the basics of mindfulness is paying attention, observing objects that occur physically or mentally. Although awareness based on the meaning of mindfulness emphasizes being aware of the present moments experience straightforwardly, without being preoccupied with the past and imagining oneself in the future, there is a connection

Table 2. Means, standard deviations and correlations among research variables

Variable	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Attachment anxiety	57.18	17.17	1								
(2) Attachment avoidance	52.71	14.08	.41***	1							
(3) Private self-consciousness	26.75	5.36	.16**	-.03	1						
(4) Public self-consciousness	19.65	3.87	.27***	-.06	.53***	1					
(5) Social anxiety	15.33	4.69	.26***	.23***	.15**	.34***	1				
(6) Intrinsic	28.82	8.10	.00	-.05	.18**	.05	.00	1			
(7) Extrinsic	26.33	8.45	.21***	.04	.04	.16**	.10	.55***	1		
(8) Awareness	35.92	4.83	.01	-.15**	.38***	.29***	-.02	.06	-.06	1	
(9) Acceptance	25.94	5.48	-.26***	-.01	-.33***	-.27***	-.11*	-.01	-.04	-.33***	1

*p <.05; **p < .01; ***p < .001*

Table 3 Regression analysis for awareness predictors and acceptance predictors

Variable	B	SE	β	t	p-value
Awareness predictors					
Private self-consciousness	.34	.04	.38	7.68***	< .001
Attachment avoidance	-.05	.02	-.14	-2.73**	.007
*Constant = 29.21 R =.41 R² = .16 Adjusted R² = .160 F = 33.84**** ** p < .01, *** p < .001*					
Variable	B	SE	β	t	p-value
Acceptance predictors					
Private self-consciousness	-.30	.05	-.29	-5.80***	< .001
Attachment anxiety	-.07	.02	-.22	-4.28***	< .001
*Constant = 37.86 R =.39 R2 = .15, Adjusted R2 = .147 F = 30.81**** *** p < .001*					

with private self-consciousness, which is a trait of self-focused attention, especially experienced within individual minds (Scheier & Carver, 1985). Therefore, individuals high in private self-consciousness tend to have higher levels of awareness and can better describe their emotional state and changes in their body than individuals low in private self-consciousness. Nevertheless, individuals high in private self-consciousness have a tendency to reject or judge unwanted experiences in a negative way (Harrington et al., 2014), and also tend to be more effected and respond to stimulants, leading to an increase and decrease of behavior that depends on levels of emotional severity, i.e., when being provoked. Individuals with a high private self-consciousness are more aggressive than individuals with a low private self-consciousness, since they are more aware of their negative emotions (Scheier, 1976). With regards to public self-consciousness, the results corresponded to previous findings. Although persons high in public self-consciousness are not more aware of their inner feelings than persons low in public self-consciousness, this form of self-focus can make acceptance more difficult. This study did not find any relationship between social anxiety and awareness, however, a negative relationship with acceptance was found. Fenigstein et al. (1975) described that when persons focus on themselves, they perhaps discover something that makes them anxious with themselves. Meanwhile, self-awareness from another's point of view enables individuals to have the tendency to assess themselves and have anxiety, similarly to this study that found a positive relationship between the self-consciousness subscales, especially for public self-consciousness and social anxiety. However, awareness is not necessary linked with social anxiety at all times. Namely, individuals can pay attention to themselves without being worried if they can accept everything they see and let the thoughts or emotions that happened gradually reduce naturally.

In reference to attachment, the results were consistent with previous findings. Attachment was another factor that predicted mindfulness with a statistical significance (Shaver et al., 2007). Attachment anxiety had a negative effect on acceptance and attachment avoidance had a negative effect on awareness. This reflects that an insecure attachment, no matter what characteristic it is (highly anxious and/or avoidant), has a definitively negative effect on mindfulness. Individuals with attachment anxiety are preoccupied with relationships and are hyper-vigilant when confronting problems, especially signals which indicate rejection and abandonment. They have emotional reactivity, self-critical rumination, express suffering immensely, and try to change ongoing experience, increasing negative emotion and reducing resilience (Caldwell & Shaver, 2012, 2013; Wei et al., 2005). The analyses also supported our hypothesis by finding no relationship between attachment anxiety and awareness. Although individuals with attachment anxiety are sensitive to stimulation that causes them to be aware of their emotion and feel abruptly, they often look for signals indicating relationship problems and are more preoccupied with negative experiences. This is different form awareness in terms of mindfulness. With regards to attachment avoidance, which predicted awareness with a statistical significance, the results were consistent with a study by Mallinckrodt and Wei (2005), which described that when individuals tried to avoid being close to others so that they would not be frustrated by relationship situations, they also avoided observing their thoughts and feelings. The use of suppression as a defense mechanism due to distrust and their requirement to keep a distance from others effects their ability for self-awareness and self-reflection and reduces their ability to understand and describe intrinsic experiences (Caldwell & Shaver, 2013; Macaulay et al., 2015). However, the results showed contrary findings, with no significant relationship between attachment avoidance and acceptance being found. It is probable that they respond to problems by reducing their own feelings; deactivating, similar to acceptance, i.e. not being

preoccupied with thoughts, feelings, and not expanding ongoing intrinsic experiences. However, if individuals confront tense situations or have cognitive load, there is a tendency that negative experience, which individuals try to eliminate from their awareness, will rebound and have an effect on their emotional peace (Mikulincer et al., 2004).

Religious orientation, interestingly enough, did not associate with elements of mindfulness in this sample of Buddhists who were more likely accustomed to mindfulness teachings. It can be assumed that mindfulness is an existing ability found in individuals and that tends to be affected by childhood experiences and personality, including practice. Individuals can practice mindfulness according to their religious principles or without relation to religion by being aware or paying attention to every moment while they are doing routine activities in daily life through their senses. Besides, religious orientation, especially from intrinsic motivation, perhaps positively relates to mindfulness since it is motivation for leaning, understanding, and practicing according to religious teachings. However, religious teachings do not specify only the use of mindfulness and although mindfulness can be developed through practice, this research found that the participants who had experience practicing mindfulness most likely specified their method as sitting meditation, rather than a tendency towards religious methods. The causes for mindfulness meditation were more consistent with the study in a western country (Pepping et al., 2016) that found the reasons for the research participants mindfulness meditation were more likely related to self-regulation or other, non-religious, reasons, i.e., to control emotions when problems arise, before examinations or studying to have more concentration, before going to bed for calming down their mind, attending dharma camps with schools, and practicing dharma with families, etc. Additionally, this research studied undergraduates, most of whom had no current mindfulness practice. There might be a difference from those who keep practicing mindfulness and whose motivation for mindfulness practice depends on their experience in mindfulness practice enabling individuals to change from reasons of self-regulation to religion (Shapiro, 1992).

Limitations and Future Research

The present study was a cross-sectional analysis which collected data from a specific sample at a particular time. This design may not provide clear conclusion about cause-and-effect correlation, and care must be taken if applying to other populations. Moreover, measuring with self-reporting is rather subjective, and so participants' understanding of the items and their answers may not correspond with the measures' concepts. It was also found that the coefficient of determination was relatively low. Therefore, further studies might examine other psychological factors and expand this research finding by executing longitudinal or experimental research. Besides, without a correlation between religious orientation and mindfulness among the Buddhists, the results may have been affected by one of the characteristics of the participants being that they were undergraduate students who did not have that much experience and frequency in mindfulness meditation. Another observation point was that the awareness subscale was negatively related to the acceptance subscale. Collecting data from a sample of meditators might provide interesting information.

Conclusion

Even with small effect sizes, the study suggested that private self-consciousness was conducive to awareness, but the participants had a tendency to judge experience that is opposite of acceptance. Therefore, the way to promote mindfulness should encourage student teachers to practice awareness and acceptance simultaneously. The findings also suggested that the attachment, in each dimension had

a negative effect on the mindfulness differently. This can be the basic information to improve dispositional mindfulness; individuals who had a high attachment anxiety tended to receive more benefits from the acceptance practice while attachment avoidance persons tended to get more benefit from increasing awareness. Moreover, this study was specific to Buddhist, but without correlation between religious orientation and mindfulness, suggested that mindfulness itself likely to be personality and practice.

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Declaration of interest statement

No potential conflict of interest was reported by the authors.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Siriraj Institutional Review Board, Faculty of Medicine Siriraj Hospital, Mahidol University and with the 1964 Helsinki declaration and its later amendments. Informed consent was obtained from all individual participants included in the study.

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