

***Relationships among Rumination, Mindfulness, Acceptance and Depression
in Thai University Students***

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Abstract

In Thailand, depressions and suicide attempts has been increasingly founded in Thai university students. Many causes are indicated such as interpersonal problems, stress from study and intrapersonal thinking styles. However, there are some protective factors in human characteristics which could be protective factors for the incidence of psychological problems. This study aimed to explore the relationships that rumination, mindfulness and acceptance had with depression. Data were collected via questionnaire from two hundred and twenty-five undergraduate students and analyzed using multiple regression analysis. Results indicated that all of these variables significantly predicted depression with the overall model fit (R^2) being 0.34. The rumination was significantly associated with depression ($B = .142, p < .05$). Other protective factors, mindfulness and acceptance, were also significant predictors ($B = -.195, p < .05; B = .397, p < .001$ respectively)

Keywords: Mindfulness, Rumination, Acceptance and Depression

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Introduction

Depression was recognized as one of the most global public health concerns causing serious problems in every aspect of people's lives across the world (WHO, 2012). In 2001 WHO expected that in 2020 depressive symptom could be the second major issues in public health domain. Likewise, mental health issues including depression and anxiety are also significant problem found among many university students causing both academic and personal problems (Mackenzie, Wiegel, Mundt et al., 2011; Blanco et al., 2008). Moreover, there are an increasingly prevalence of depression and suicidal ideation on universities' students (Eisenberg, Gollust, Golberstein & Hefner, 2007). As in Thailand, the department of mental health reported that approximately 33% of Thai adolescents aged between 10- 19 year-old were at risk to become depressed (Department of Mental Health, 2017).

The situational causes of depression in college students were identified including grade problems, interpersonal relationships, and financial issues. The feeling of hopelessness, loneliness and helplessness were found to be the contributing factors in college students (Furr, Westefeld, McConnell, & Jerkins, 2001). In Thai University especially with higher competition, students might experience mental health problems because of conflicts with family, friends and partners, financial issues and academic problems (Assawarungnirun & Wangwiwatjarern , 1993; Rukkhajeekul, 2013)

However, situations were not often the cause of mental health issues but the way people perceive or think about significantly influence or determine our emotional and behavioral consequences (Center for Clinical Intervention, 2008)

Rumination was defined by Nolen-Hoeksema, Wico & Lyubomirsky (2008) as the process of perseverative thinking about or focusing on the owner's feelings or problems' causes or consequences, not the specific thought. Literature review in rumination reported that it is one of the factors that had unique relationship with distress especially depression (Nolen-Hoeksema et al., 2008). This common style of thinking was a response to stressor or problem in people' s lives that could take part in making thinking more pessimistic about past, present or the future.(Watkins, 2010; Morrison & O'Connor, 2005). Besides, when people spend times on rumination, it could impair the active problem solving (Cribb, Moulds, & Carter, 2006) Besides, It can deteriorate the ruminator' social support which eventually worsen the depression. In college students, high rumination was also found to be the predictor of depression since entering to college (Nolen-Hoeksema & Morrow, 1991) and the prediction of the onset of depression in even healthy teenagers (Wilkinson, Croudace & Goodyer, 2013).

When people experienced painful and uncomfortable their private experiences for instance thoughts, feelings, sensations, and memories, they often have a proclivity to avoid or disconnect these inner experiences. This phenomenon is called experiential avoidance (Hayes, Strosahl, Wilson et al., 1996).The outcome of denying unpleasant emotions or cognition is the internal conflicts or stagnation within the self (Crane, 2009). Moreover, when people change the pattern and frequency of these unpleasant experiences by control or suppression which can paradoxically increase the emotions or thoughts. Researchers also found that higher levels of experiential avoidance were

correlated with higher level of psychological issues such as depression, anxiety, and fear and negatively correlated with quality of life (Hayes, Strosahl, Wilson et al., 2004)

In order to deal with experiential avoidance effectively, modern cognitive behavior therapies nowadays such as Acceptance and commitment therapy (ACT) are more interested in considering negative affect as the important part of experience (Neimeyer, 1993) and accepting them even these may seem painful instead of controlling (Crane, 2009). Acceptance thoughts and emotions could be associated with mindfulness which rooted from Buddhism about the awareness and unconditional acceptance of present moment experiences (Kabat Zinn, 2003)

Disseminated to both eastern and western psychology, a concept of mindfulness consisted of two enhanced state of attention and awareness in here-and-now or present-moment experiences (Brown & Ryan, 2003). Normally, people' mind can absorb in the past, worry and fantasize about the future or ruminate which divide our attention or awareness in present. (Deyo, Wilson, Ong, & Koopman, 2009) Training mindfulness with using five senses to observe and aware the flow of thoughts and mind without rejecting or holding it (Bauer-Wu, 2011). This can gently bring our mind back and help people being aware and be awake fully to their here-and-now lives. (Deyo et al, 2009)

Mindfulness has been utilized in plethora of health researches and training especially in cognitive behavior therapy. A systematic review informed that mindfulness had association with not only psychological disorders including depression and anxiety but also health issues (Park, Reilly-Spong & Gross, 2013) In Thai adolescents, mindfulness had negative correlation with psychological distress (depression, anxiety, stress) and also regret (Pattananarongkorn, Padungsatayawong, Cherdchochart, Jarukasemthavee & Pisitsungkagarn, 2014; Chulpaiboon, Srisawad, Limsakdakul & Taephant, 2016)

In Thailand there are a few researches that explore the relationship of depression and other aforementioned variables separately (e.g., mindfulness, rumination) (Pattananarongkorn, et al., 2014; Chulpaiboon, et al., 2016). In order to provide a wider picture of depression issues in Thai college students, the current research aim to initially examine the relationship of rumination, experiential avoidance/acceptance, mindfulness and depression. Accordingly, the main hypothesis examined whether the rumination, mindfulness and experiential avoidance/acceptance would predict depression.

Methodology

Participants and Procedures

Participants were two hundred twenty five undergraduate students who were informed of confidentiality and voluntary took part in this study. The age of participants ranged from 18 to 25 year-old with the mean age of 20.63 ($SD = 1.13$). Of these participants, one hundred forty five were female (64.4%) and eighty (35.6 %) were male students which were all recruited from Thai public university in Bangkok Metropolitan Area. After voluntary participation, a package of measures including demographical data,

rumination, mindfulness, experiential avoidance and depression were completed (duration about 15 minutes) and then collected for further statistical analyses.

Instruments

Depression. The Depression Anxiety Stress Scale (DASS-42; Lovibond & Lovibond, 1995) is a 42-item self-reports which measure the negative emotional states of depression, anxiety and stress. In this study, only 14 items from depression subscale were solely used to assess level of hopelessness, devaluation of life lack of interest, inertia etc. Respondents indicated on a Likert scale from 0 (never) to 3 (almost always) the degree to which they experienced these depressed mood over the previous week. Depression subscale had demonstrated excellent internal consistency across (Cronbach's $\alpha = .91$; Lovibond & Lovibond, 1995) In Thailand, DASS-42 was translated in Thai and used in both clinical and nonclinical populations with good internal consistency in depression subscales ($\alpha = .89$) (Webster, Hawley, & Lopez, 2013).

Rumination. The Rumination-Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999) was assessed the increased attention of ourselves motivated by threats perceptions, losses or unfairness to the self. There are 2 subscales in RRQ including rumination and reflection. Only rumination subscale was used in this study which consists of 12 items rated the degree of agreement from 1 (strongly disagree) to 5 (Strongly agree) (e.g. "Sometimes it is hard for me to shut off thoughts about myself."). This scale yielded good internal consistency (Cronbach's $\alpha = .88$) with adequate convergent validity (Deyo, Wilson, Ong, & Koopman, 2009).

Experiential Avoidance/ Acceptance. Acceptance was measured by the Acceptance and Action Questionnaire-II (AAQ-II; Bond, Hayes, Baer et al., 2011) which was the developed version of AAQ-I (Hayes, Strosahl, Wilson et al., 2004). Generated by ACT therapist, this 7-item with each item has 7 Likert scale measures experiential avoidance or psychological inflexibility which are clarified as the avoidance or control of thoughts and feelings which prevent people to pursue their goals or values (e.g. Worries get in the way of my success / Emotions cause problems in my life) Higher scores indicates higher level of psychological inflexibility or lower in psychological flexibility. Good internal consistency was found with Cronbach's α is .84 and the test-retest reliability is also good with .79 over 12 month (Bond et al, 2011)

Mindfulness. The Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Butenmuller, Klienkecht, & Schmidt, 2006) measured participants' personal experiences of mindfulness (e.g. "I am open to the experience of the present moment"). The form consists of 14 items rated from 1 (rarely) to 4 (Almost always). After recoding reversed items, the total of mindfulness score was summed and then averaged. FMI short form possess good Internal consistency ($\alpha = .86$)

Results

Statistical Analysis

SPSS for Windows was used to analyze Means (M), standard deviations (SD) and alpha coefficients for all four questionnaire measures. Correlational analyses were

also conducted to explore the association between experiential avoidance/acceptance, rumination, mindfulness and depression (Table1). In addition, multiple regression (MRA) was then performed to explore the prediction of depression by mindfulness, experiential avoidance and mindfulness.

Table 1. Mean, standard deviation, alpha coefficients and correlations between Mindfulness, Experiential avoidance, Mindfulness and Depression measures (N = 225)

	<i>M</i>	<i>SD</i>	1	2	3	4
1. FMI	41.33	5.63	(.76)	-	-	-
2. RRS	39.42	8.91	-.339	(.88)	-	-
3. AAQ-II	27.95	9.41	-.435**	.545**	(.85)	-
4. DASS-42 (Depression)	12.34	8.85	-.356**	.415**	.554**	(.92)

Note: FMI = Freiburg Mindfulness Inventory, RRS = Ruminative Response Scale
 AAQ-II = the Acceptance and Action Questionnaire-II,
 DASS-42 = Depression Anxiety Stress Scale, ** $p < .01$

As shown in Table 1, mindfulness was found to have negative correlation with experiential avoidance and rumination significantly ($p < .01$). Also, rumination scores were statistically correlated with experiential avoidance ($p < .01$). For depression, scores were statistically significant negatively with mindfulness ($r = -.356, p < .01$) and positively with experiential avoidance/acceptance ($r = .554, p < .01$) and rumination ($r = .415, p < .01$)

To carry out multiple regression appropriately, multicollinearity was checked. As in table 2, the correlational coefficients between all predictor variables were not higher than .90. Also, all tolerance values were greater than .1 and variance inflation factor (VIF) did not exceed 10 (Hair, Black, Babin, & Anderson, 2010). Hence, multiple regression was calculated to predict depression as the dependent variable based on rumination, mindfulness and experiential avoidance as illustrated in Table 2.

Table 2. Coefficients variables to predict depression resulting from multiple regression

	<i>T</i>	Unstandardized Coefficients		Standardized coefficients
		<i>B</i>	<i>SE</i>	β
Constant	.687	3.7	5.39	
Mindfulness (FMI)	-2.02*	-.195	.096	-.124
Rumination (RRS)	2.17*	.142	.065	.143
Experiential avoidance /Acceptance (AAQ-II)	6.13***	.397	.065	.422
R^2		.337		
Adjusted R^2		.328		

Note: * $p < .05$, *** $p < .001$

A significant regression equation was found ($F(3, 21) = 37.49, p < .001$) and the result of the regression indicated the three predictor explained 33.7 % of the variance ($R^2 = .337$) As shown in Table 2, It was found that the mindfulness negatively predicted depressive tendencies ($\beta = -.124, p < .05$). Also, rumination ($\beta = .143, p < .05$) and

experiential avoidance were significant predictors of depression in which experiential avoidance or AAQ-II made the most contribution significantly compared with other predictors ($\beta = .422, p < .001$) Thus, the college students' predicted depression scores are equal to $3.7 + .397$ (Experiential avoidance) $+ .142$ (Rumination) $- .194$ (Mindfulness)

Discussion

The objective of this study was to initially examine the association between mindfulness, experiential avoidance/acceptance, rumination and depression in Thai college students. Result was found that college students who possessed a high level of rumination also had tendencies to avoid or control their emotions and with lower level of mindfulness. As hypothesized, these 3 variables including mindfulness, rumination and experiential avoidance/acceptance can predict students' depressed mood.

Similarly with previous findings which indicated that ruminative thought predicted depression (Nolen-Hoeksema & Marrow, 1991) It could be explained that rumination induce more negative thought about the past, the present, or the future which may exacerbate depression (Nolen-Hoeksema & Morrow, 1991. Even though, they could create good solutions when encountered with problems in life, ruminators were less confident and likelihood to implement their actions plans (Nolen-Hoeksema, Wisco & Lyubomirsky, 2008).

Also, there is association between rumination and avoidance which only few study explore relationships. Only a study by Cribb et al (2006) supported and explained that rumination might serve as the emotional avoidance. When people ruminated about the causes and consequences of problems, their emotional responses were then not activated. As expected college students who had tendency to ruminate also reported high depressed moods. (Cribb et al, 2006)

Second, the predictor of depressive moods discussed in this study was mindfulness. The finding was consistent with previous evidences that psychological distress could be treated through mindfulness training (Park, Reilly-Spong and Gross, 2013). Pattananarongkorn, et al. (2014) indicated that those who were less mindful tend to had high psychological distress. Though the mechanisms beneath the benefits of mindfulness still not fully explained, the plausible explanation was that this training could reduce rumination process (Kiken & Shook, 2014; Deyo, Wilson, Ong et al., 2009) Hence, the mindfulness was found having negative correlation with rumination in the present study.

Besides, acceptance which is the opposite of avoidance was defined as the willingness to experience and refuse to change or control unwanted private events (Crane, 2009). It might relate to one of the mindfulness components which were the acceptance of present-moment experiences without judgements even it was painful (Kabat-Zin, 2003) It might be explained in this study that those who were mindful, have accepted more about their here and now experiences.

Another interesting and the most contributed predictor, experiential avoidance was found to have association with depression and other quality of life which was coherent with research from Hayes, Strosahl, Wilson et al.(2004). However, theories

that could explain the mechanism of these relationships remain speculative. Cribb et al. (2006) suggested that encountering with the feelings or emotions could help emotional processing effectively but avoidance might hinder its process. In addition, that avoiding the unwanted internal events (thoughts, feelings, etc.) could enhance people's distress ironically (Bond, et al., 2011).

The practical implications from the findings could be used in prevention or intervention with college students. Intervention dealing with depression among Thai students should address the importance of acceptance rather than altering or avoiding about their inner experiences.

Limitations

Limitation of this current study was the use correlational design which only explains relationships among mindfulness, rumination, experiential acceptance and depression. Besides, other situational variables including monetary issues or interpersonal relationships were not assessed to predict depression in Thai college students. Clearly, the future research could benefit from combining situational and internal factors to see the broader view of depression in Thai university students.

Though with this limitation, these findings could shed light on better understanding about the links between rumination, mindfulness, experiential avoidance and depressed moods in Thai university contexts. This finding could contribute to the body of research about depression in Thai university students. Specifically, acceptance/ experiential avoidance which have received little attention in the context of depression should be prioritizing.

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