

# The conditional process model of mindfulness and emotion regulation: An empirical test



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## ABSTRACT

**Background:** The conditional process model (CPM) of mindfulness and emotion regulation posits that specific mediators and moderators link these constructs to mental health outcomes. The current study empirically examined the central tenets of the CPM, which posit that nonreactivity moderates the indirect effect of observation on symptoms of emotional disorders through cognitive emotion regulation strategies.

**Methods:** A clinical sample (n=1667) of individuals from Japan completed a battery of self-report instruments. Several path analyses were conducted to determine whether cognitive emotion regulation strategies mediate the relationship between observation and symptoms of individual emotional disorders, and to determine whether nonreactivity moderated these indirect effects.

**Results:** Results provided support the CPM. Specifically, nonreactivity moderated the indirect effect of observation on symptoms through reappraisal, but it did not moderate the indirect effect of observation on symptoms through suppression.

**Limitations:** Causal interpretations are limited, and cultural considerations must be acknowledged given the Japanese sample

**Conclusions:** These results underscore the potential importance of nonreactivity and emotion regulation as targets for interventions.

## 1. Introduction

Recent years have witnessed novel conceptualizations of anxiety and depression, which consider contextual and mechanistic factors that maintain clinical levels of psychopathology (Hofmann, 2014; Kashdan et al., 2014). Of note, there has been increasing interest in comprehending emotional disorders in the context of mindfulness and emotion regulation (Desrosiers et al., 2014; Desrosiers et al., 2013). Mindfulness refers to the ‘the act of paying attention, on purpose, in the present moment, non-judgmentally’ (Kabat-Zinn, 1990, p. 4). Derived from several Buddhist traditions, mindfulness entails the cultivation of greater levels of present moment awareness by engaging in exercises that facilitate focused attention and open monitoring (Lutz et al., 2008). These traditional conceptualizations of mindfulness are consistent with the two-component definition of mindfulness, which involves attending to one’s immediate experience and adopting a present-moment orientation characterized by acceptance and openness (Bishop et al., 2004). The canonical definition of emotion regulation emphasizes the ‘processes by which individuals influence which emo-

tions they have, when they have them, and how they experience and express them’ (Gross, 1998, p. 275). Adaptive forms of emotion regulation promote appropriate behavioral responses to environmental demands by modulating rather than eliminating affective experiences (Roemer, Williams, & Rollins, 2015).

Research on these two constructs has been developing in parallel, which has prompted recent efforts to formulate integrated accounts of mindfulness and emotion regulation (cf. Roemer et al., 2015; Chambers et al., 2009). Specifically, Roemer et al. (2015) postulate an association between mindfulness and adaptive emotion regulation, and note that mindfulness practice might precede healthy emotion regulation abilities. Likewise, Chambers et al., (2009) theorize that mindfulness and emotion regulation are robustly related, and regard mindfulness as a specific type of cognitive reappraisal. Although extant theories of mindfulness and emotion regulation underscore the fact that they are in some way associated (Chiesa et al., 2013; Teper et al., 2013; Garland et al., 2015; Hayes and Feldman, 2004; Roemer, Williams, & Rollins, 2015; Chambers et al., 2009), very little research has been devoted to both the mechanisms and contextual factors that

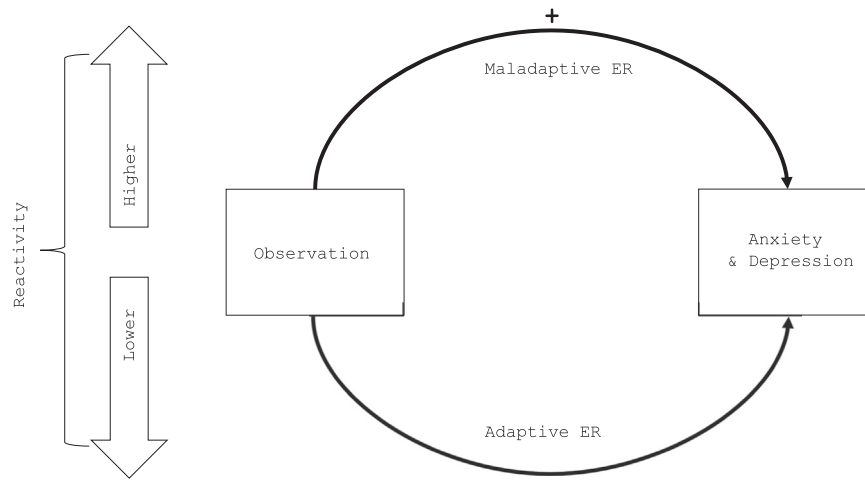
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**Fig. 1.** Conditional Process Model. *Note:* The conditional process model posits that observation leads to either increased or decreased symptoms of emotional disorders depending on one’s level of reactivity to emotions. Specifically, observation should predict greater use of adaptive emotion regulation and fewer symptoms with lower levels of reactivity, whereas observation should result in greater use of maladaptive emotion regulation and elevated symptom with higher levels of reactivity. ER = emotion regulation.

**Table 1**  
Correlations and descriptive statistics.

	Mean	SD	1.	2.	3.	4.	5.	6.	7.
1. Observation	20.53	6.06							
2. Nonreaction	17.60	4.86	0.34**						
3. Reappraisal	23.35	7.08	0.09**	0.45**					
4. Suppression	15.50	5.02	0.10**	0.21**	0.46**				
5. MDD Sx	10.42	7.74	0.30**	-0.21**	-0.32**	0.01			
6. GAD Sx	7.97	6.32	0.32**	-0.24**	-0.35**	-0.05**	0.84**		
7. OCD Sx	40.18	14.95	0.38**	-0.11**	-0.20**	0.03	0.58**	0.63**	
8. SAD Sx	39.28	10.93	0.17**	-0.29**	-0.25**	0.01	0.43**	0.46**	0.35**

*Note:* All p-values were submitted to false discovery rate correction. Values are for the entire sample. SD = Standard Deviation; Sx = symptoms; \*p < 0.05; \*\* p < 0.01.

account for their relationship to mental health outcomes. Mechanisms specific to mindfulness interventions have been examined, including emotion regulation strategies (i.e., worry and rumination), compassion, and trait mindfulness (Gu et al., 2015; Kuyken et al., 2010). Indeed, some integrative theories posit that processes such as executive control or cognitive reappraisal constitute possible mechanisms underlying the relationship between these two constructs (Teper et al., 2013; Garland et al., 2015), yet very little attention is given to the potential moderators that influence mechanistic processes.

One such model that does consider both mediators and moderators simultaneously is the conditional process model (CPM) of mindfulness and emotion regulation (Klemanski and Curtiss, 2016; Desrosiers et al., 2014) (Fig. 1). A distinctive feature of the CPM is that it appreciates the nuanced complexity of the relationship between these multifactorial constructs and mental health outcomes. Although treatment outcome research generally suggests that mindfulness based interventions contribute to symptom remission (Hofmann et al., 2010), psychometric research has revealed conflicting results as to whether all aspects of mindfulness are associated with lower levels of psychopathology (Harnett et al., 2016). Specifically, the role of *observation* (i.e., an individual component of mindfulness that reflects basic attentional processes) has undergone much controversy, as divergent results indicate that it predicts both decreases and increases in symptoms of emotional disorders (Curtiss and Klemanski, 2014a; Neale-Lorello and Haaga, 2015). The CPM was proposed in an effort to reconcile this ostensible discrepancy in the literature. Contemporary theories of mindfulness regard observation as one of the most fundamental processes that influence emotion awareness, generation, and regulation (Klemanski and Curtiss, 2016; Kabat-Zinn, 1990). Consistent with prior research and other prominent models (Roemer

et al., 2015; Chambers et al., 2009), the CPM hypothesizes that observation conveys its effect on emotional distress by way of cognitive emotion regulation mechanisms. Additionally, it stipulates that *non-reactivity* (i.e., refraining from responding to emotions or thoughts in a reactive manner) constitutes an important contextual factor that determines whether observation will be conducive to emotional well-being. Specifically, the CPM predicts that nonreactivity influences the indirect effect of observation on symptoms by augmenting adaptive emotion regulation strategies (e.g., reappraisal) and dampening maladaptive strategies (e.g., suppression), which accords with prior research (Desrosiers et al., 2014). Thus, the principle objective of the CPM is to elucidate the conditions under which mindfulness exerts a salutary influence on mental health, as well as the processes by which it does so.

Although one previous study provided empirical support for the CPM of mindfulness and emotion regulation (Desrosiers et al., 2014), it confined its investigation to broad pathological constructs (i.e., overall anxiety and depression) and did not consider the mechanistic role of suppression. Findings from Desrosiers et al. (2014) indicated that observation was associated with high levels of reappraisal and lower levels of rumination and worry among individuals with higher levels of nonreactivity. Furthermore, nonreactivity moderated the indirect effect of observation on depression through rumination and reappraisal, whereas it moderated the indirect effect of observation on anxiety through worry and rumination. These results provide evidence that nonreactive observation is associated with reduced worry and rumination, which both reflect forms of repetitive negative thinking (McEvoy et al., 2010). However, it remains unknown whether nonreactivity would moderate the association between observation and suppression, which involves attempts to inhibit unwanted thoughts or outward displays of affect (Nixon et al., 2008). Therefore, the current study

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