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Mindfulness, psychological well-being and psychological distress in adolescents: Assessing the mediating variables and mechanisms of autonomy and self-regulation

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Abstract

This study investigated the relationship of mindfulness with psychological well-being and psychological distress and assessed the role of self-regulation and autonomy as mediating variables and mechanisms of mindfulness. Participants were 717 students (Mean age = 17/3 yr., SD = 0/56) completed the Philadelphia Mindfulness Scale (PHLMS; Cardaciotto et al., 2008), the Self-Regulation Inventory (SRI -25; Ibanez et al., 2008), the Mental Health Inventory (MHI-28; Besharat, 2009) and the Autonomy Scale (AS; Parto, 2010). Mindfulness was negatively and highly correlated with psychological distress and was positively and highly correlated with psychological well-being. Autonomy was mediated relationships of mindfulness with psychological well-being and psychological distress, whereas, self-regulation was mediated only the relationship between mindfulness and psychological well-being. The findings provided evidence for the mediating mechanisms through which autonomy and self-regulation mediated the relationship between mindfulness with psychological well-being and psychological distress.

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1. Introduction

Mindfulness as focusing attention on the present, purposefully and non-judgmentally, originates from Buddhism (Kabat-Zinn, 2003). In psychology and psychotherapy, mindfulness is used to alleviate different suffers and ailments of humankind. Bishop et al. (2004, p. 234) proposed that mindfulness is “a process of regulating attention in order to bring a quality of non-elaborative awareness to current experience and a quality of relating to one’s experience within an orientation of curiosity, experiential openness, and acceptance”. Mindfulness is characterized by pre-conceptual awareness, purposeful control of attention, non-judgmentally acceptance of experience and present-focused orientation (Brown, Ryan, & Creswell 2007). Mindfulness requires self-regulation and focusing the attention on the present (Bishop et al., 2004). This awareness and attention requires that the individual experience immediately. Harmony and compassion with the present experience is realized by processing internal and external data in an unbiased and undistorted manner (Brown & Ryan, 2004). The past three decades have witnessed a surge of popular and academic interest in the psychological benefits of mindfulness. Mindfulness may be important in less avoidant coping (Baer et al., 2006), evaluating prospective opportunities in a non-

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threatening way (Weinstein et al., 2009) and in disengaging individuals from automatic, thoughts, habits, and unhealthy behavior patterns and fostering self-endorsed behavioral regulation (Ryan & Deci, 2000). Research on mindfulness has increased significantly (Brown et al., 2007). A recent meta-analysis of the mindfulness research literature reported robust effect sizes for the impact of mindfulness training on anxiety and depression (Hofmann et al., 2010). The ability to regulate negative emotions, non-attachment and rumination were mediating in the relationship between mindfulness and two aspects of mental health, psychological distress and psychological well-being (Coffey & Hartman, 2010). Mindfulness has been conceptualized as promoting the well-being of individuals; in particular, mindfulness directly nurtures the well-being experience through providing richness and it indirectly does so through facilitating self-regulating health behavior which includes increased attention to and acceptance of individual needs and values and a higher capacity to behave consistency with those needs and values (Brown & Ryan, 2003; Brown et al., 2007). The results of studies show that mindfulness may directly, and also through mediating variables, reduce depression, stress and aggression and increase psychological well-being (Marlatt, 2002). In addition, studies on non-clinical populations show that mindfulness increases self-compassion, positive affection, well-being and quality of life and reduces negative emotions, rumination, stress symptoms, anxiety, somatization, aggression and avoidance behavior (Shapiro et al., 2008). Moreover, mindfulness may increase health and emotional tolerance for negative emotions and stressors (Baer, 2003; Breslin, Zack, & McMain, 2002; Kabat-Zinn, 2003).

Evidence-based models concerning the mechanisms of action underlying mindfulness are in the nascent stage of development (Bishop et al., 2004). Mechanisms involved in mindfulness are still unknown and various variables may be researched in this area (Brown & Ryan, 2003; Shapiro et al., 2006). Cognitive theorists have emphasized on the potential advantage of understanding these mechanisms not only for the development of clinical psychology knowledge, but also for maximizing the likely treatment benefits of mindfulness-based clinical interventions (Hayes & Wilson, 2003; Kabat-Zinn, 2003; Teasdale, Segal, & Williams, 2003). Preliminary evidences show that one of the most important mechanisms could be self-regulation (Shapiro et al., 2006) and emotion regulation. Self-regulation is the attempt to change the thoughts, emotions, impulses, desires, behaviors and processes related to attention. Another likely mechanism of mindfulness on well-being is autonomy (Brown & Ryan, 2003) and clarification of values (Shapiro et al., 2006). As defined by Ryan & Deci (2000), autonomy is referred to volition, to having the experience of choice, to endorsing one's actions at the highest level of reflection and awareness. Autonomy, as the main and core characteristic of health functioning, is an essential requirement and has a strong association with psychological well-being (Ryan, & Deci, 2000, 2006). The present study attempts to explain the influencing mechanisms of mindfulness on psychological well-being and psychological distress, specifically in the non-clinical adolescent population. The goal of the present research has received inadequate attention by the researchers in the recent years. Therefore, the authors attempt to assess the mediating variables and mechanisms of autonomy and self-regulation in mindfulness influencing on psychological well-being and psychological distress. The research hypotheses assumed include: 1) Mindfulness has a positive correlation with the psychological well-being and a negative correlation with psychological distress; and 2) Through self-regulation and autonomy, mindfulness have a significant effect on the psychological well-being and psychological distress.

2. Method

2.1. Participant

Participants were 717 high risk students (Sex= Men. Mean age = 17.30 yr., SD = .56) of inner city schools. After identifying the educational districts, the final sample was selected from public high schools in Tehran.

2.2. Measures

The Philadelphia Mindfulness Scale (PHLMS)-PHLMS (Cardaciotto et al., 2008) is designed to measure the two key components of mindfulness, i.e. focused awareness of the present moment and acceptance. This test comprises the two subscales of awareness and acceptance each with 10 items. After discarding five malfunctioning items (four in the acceptance subscale and one in the awareness subscale), the authors used a final 15-item scale to measure the mindfulness construct on a five-point Likert scale (1-not at all, 2-less, 3- sometimes, 4-rather more than usual, 5- always). Adequate psychometric properties of English (e.g., Cardaciotto et al., 2008) and Farsi (Parto, 2010) versions of the scale have been reported.

The Autonomy Scale (AS)-The Autonomy Scale (AS; Parto, 2010) is a combination of the autonomy subscale (32 items) from the Adolescent Self-Determining Inventory (ASDI; Wehmeyer & Lopez, 2003) and autonomy subscale (7 items) of Basic Psychological Needs Inventory (BPNI; Deci & Ryan, 2000). After discarding malfunctioning items, the authors used a final 19-item scale to measure the mindfulness construct on a five-point Likert scale (ranging from 0 to 4).

The Self-Regulation Inventory- The Self-Regulation Inventory (SRI -25; Ibanez et al., 2008) consists of 25-items that measures self-regulation in five components of positive actions, controllability, expression of feelings and needs, assertiveness and well-being seeking on a five-point Likert scale (ranging from 1 to 5).

The Mental Health Inventory (MHI-28)-The Mental Health Inventory (MHI-28; Besharat, 2009) is the shortened form of the 34-item Mental Health Inventory (Veit & Ware,1983) that consisted of 28-item scale which measures psychological well-being (14 items) and psychological distress (14 items) on a five-point Likert scale (ranging from 1 to 5). Adequate psychometric properties of English and Farsi (Besharat, 2009) versions of the scale have been reported.

3. Results

All descriptive analyses were conducted in SPSS Version 15 and path analyses were conducted in path analysis of LISREL.

Table 1. Descriptive statistics, Cronbach’s alpha and variables between correlations

variables	Cronbach’s alpha	Mean	SD	1	2	3	4	5
1. Mindfulness	.69	33.37	7.99	1				
2. Self-regulation	.74	86.41	11.14	.27	1			
3. Autonomy	.71	58.15	9.80	.24	.29	1		
4. Psychological well- being	.89	50.69	10.84	.26	.31	.34	1	
5. Psychological distress	.83	37.76	12.68	-.22	-.15	-.29	-.48	1

All correlations were significant at p=.01 or less.

The present model is designed to assess the structural relationships between mindfulness, self-regulation, autonomy, psychological well-being and psychological distress among at-risk adolescents. Figure 1 shows the standard coefficients (β) for direct and indirect paths.

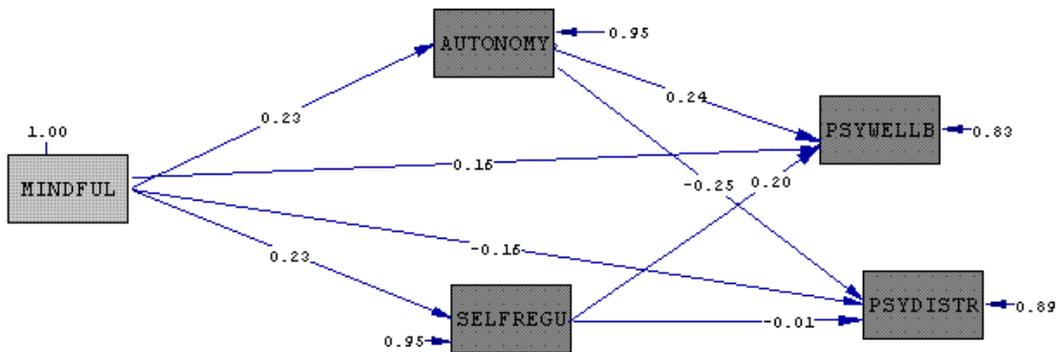


Figure 1. Standard coefficients of direct and indirect paths for the effect of mindfulness (mindful) on psychological well-being (PSYWELLB) and psychological distress (PSYDISTR) mediated by self-regulation (SELFREGU) and autonomy

A path analysis tested the research hypotheses and results supported this hypothesis. As it can be seen, there is a direct relationship between mindfulness and autonomy and, autonomy was mediated on the relationship between mindfulness and psychological well-being $\{\beta=.23, t=6.44 \& \beta=.24, t=6.96\}$ and psychological distress $\{\beta=.23, t=6.44 \& \beta= -.25, t= -6.80\}$. In addition, there is a significant relationship between mindfulness and self-regulation and there is a relationship between self-regulation and psychological well-being. There is not a significant relationship between self-regulation and psychological distress $\{\beta= -.01, t= -.20\}$. Thus, self-regulation was only mediated on the relationship between mindfulness and psychological well-being $\{\beta=.23, t=6.36 \& \beta=.20, t=5.70\}$. Mindfulness has a direct effect on psychological well-being and psychological distress. Overall, the present model

explains 19% of the variance in psychological well-being and 11% of the variance in psychological distress among at risk high school students.

4. Discussion

The results of the present study are consistent with those showing a negative correlation between dispositional mindfulness and psychological distress involve depression and anxiety (Baer et al., 2006; Coffey & Hartman, 2008, 2010; Giluk, 2009) and by mediating the emotion regulation and non-attachment (Coffey & Hartman, 2008). Mindfulness reduces perceived stress, negative affect, trait - state anxiety and rumination and significantly increases self-compassion and positive affect (Shapiro et al., 2008). In addition, mindfulness and autonomy can increase emotional, psychological and social well-being (Ryan, & Deci, 2000, 2006).

Experiential avoidance and unwillingness to gain experience is related to different types of psychological pathology. Recent research results support the hypothesis that mindfulness directly counters escape or experiential avoidance. Through nurturing nonjudgmental acceptance of thoughts and emotions of the present and moment, mindfulness limits the attempt to avoid internal and external experiences (Teasdale, Segal, & Williams, 2003; Shapiro et al., 2006). Through reducing reflective rumination, avoidance, perfectionism and maladaptive self-guides (Williams, 2008), and improving the certain cognitive executive function (Chambers, Lo, & Allen, 2008) and helping the individual to recognition of disturbing thoughts which are not always an exact representation of the reality, mindfulness improves the emotional regulation of an individual. The interactive effects of these processes expand the individual's potential for self-regulation (Shapiro et al., 2008) and provide the opportunity for redirection of attention from depressive and anxious rumination to the present moment (Teasdale et al., 2003). Through practicing present moment awareness skills, the individual tries to gain insight into the thought patterns, emotions and interaction with others and to choose the beneficial purposeful responses instead of automatically, habitual and unconscious procedures reacting to (Teasdale et al., 2003). Harmony and compassion with the present experience allows the individual to management the situational requirements through adaptive responses instead of automatically, habitual and unpremeditated reactions (Bishop et al., 2004).

The act and practice of mindfulness may help individuals decrease their emotional reactivity and use their body as a support and a primary warning measure for recognition and refining of emotional and cognitive reactions. Through improving executive cognition, especially attention control, mindfulness may account for psychological well-being. In other words, it improves psychological well-being by promotion of cognitive processes, such as attention control (including enhancing the self-regulatory capacity, start, maintenance, concentration and internal and external attention shift), reducing rumination and improving mindful awareness, emotion, executive cognition and working memory (Chambers et al., 2008). Reflective and obsessive sensitivity to psychological, bodily and environmental signs -the key components of mindfulness- are fundamental for the functioning of healthy processes of self-regulation. Cybernetic theories, in fact, assume that attention is a key to communication (interaction) processes and control which underlies the behavior regulation (Brown & Ryan, 2003).

According to self-determination theory, autonomous individuals enjoy a high awareness about their motives and emotions, and regulate their behaviors by their power of choice and freedom. Developed and deliberate awareness can be valuable in facilitating the choice of behaviors that are consistent with individual needs, values and interests (Brown & Ryan, 2003; Ryan, & Deci, 2000, 2001, 2006). In contrast, automatic or controlled processing often precludes considerations of options that would be more consistent with the needs and values of the individual (Ryan & Deci, 2000; Ryan, Kuhl, & Deci, 1997). In this sense, mindfulness may facilitate well-being through self-regulated activity and satisfaction of one the basic psychological needs, i.e. the need for autonomy. In addition to the clarification of individual values, awareness and mindful attention may facilitate attention to prompts arising from the basic needs and the individual may regulate his behaviors in a way that fulfils these needs (Brown & Ryan, 2003). Awareness facilitates attention to emotions originating from basic needs by which an individual may regulate their behavior (Brown & Ryan, 2003). Mindfulness and mindful acts lead to more balanced emotional states through developing strong integrative neuron networks (Ryback, 2006).

As a protective factor and a powerful supporter in the developing, strengthening and boosting of other protective factors (including self-regulation, autonomy, health and well-being) and weakening of risk factors (including psychological distress and negative affects and emotions), mindfulness can play a significant role in building healthy and decreasing vulnerability among adolescents.

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