

Mindfulness, Psychological Well-Being, Emotion Regulation, and Creativity Among South-Asian Americans

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**Abstract**

Mindfulness, defined as the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience has been shown to have powerful cognitive benefits (Kabat-zinn, 2003). The present study explores the effects of mindfulness on psychological well-being as measured by perceived stress and depression, emotion regulation, and creative thinking among specifically South Asian Americans (Mean age 28.15; n= 46 male, 60 female). The data supports the prediction that higher levels of mindfulness will be correlated with higher levels of psychological well-being and emotion regulation via reappraisal. This population displayed no significant relationship with mindfulness and the suppressive emotion regulation strategy as well as between mindfulness and either creative fluency or flexibility. Self reported Mindfulness, as measured by mindfulness-loving kindness, demonstrates the same trends in correlation to other factors among a South Asian Population as it has in non-specific populations.

*Keywords:* Mindfulness, Depression, Perceived Stress, Emotion Regulation, Creativity, South Asian Americans

## **Mindfulness, Psychological Well-Being, Emotion Regulation, and Creativity Among South Asian Americans**

Mindfulness is defined as the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment (Kabat-zinn, 2003). It has been shown that mindfulness has incredibly powerful effects on the human brain and body in individuals who practice a lifetime of mindfulness including not only higher life satisfaction but also a significant decrease in pain sensitivity and the experience of analgesic effects (Grant & Rainville, 2009; Lykins & Baer, 2009). Despite the fact that mindfulness is an ancient practice, it is a brand new scientific field and has recently gained popularity over only the past 30 years (Bishop et al., 2004). Research has yet to explore how mindfulness affects the interrelation of various cognitive outcomes. Furthermore, since the vast majority of research on mindfulness has been undertaken almost exclusively with a White Western population, it is not yet known whether the results from previous studies can be generalized to people from other cultural traditions (Brown & Ryan, 2003; Garland, Gaylord, & Park, 2009; A. M. Grant, Langer, Falk, & Capodilupo, 2004; Grossman, Niemann, Schmidt, & Walach, 2004; Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010; Jha, Krompinger, & Baime, 2007; Kabat-Zinn, Lipworth, & Burney, 1985; Kabat-zinn, 1982; Shauna L. Shapiro, Astin, Bishop, & Cordova, 2005; Speca, Carlson, Goodey, & Angen, 2000). This study aims to address this gap in the literature by focusing on the interrelation of cognitive outcomes of mindfulness among South Asian Americans.

According to Buddhist psychology, mindfulness is awareness without judgment, attachment, or aversion and develops in four areas: (i) bodily phenomena, i.e. physical sensations

(ii) feelings that are not emotions but rather reactions to things which we classify as either ‘pleasant,’ ‘unpleasant,’ or ‘neutral,’ (iii) mental phenomena, and (iv) to observe whether the mental state is wholesome or unwholesome (Daya, 2000). The capacity to successfully develop mindfulness, specifically through various meditative techniques finds its roots in the Buddhist spiritual tradition and has been around for 2500 years (Khong, 2009; Shapiro et al., 2005; Thera, 2006). However, in spite of this long standing history, mindfulness has only recently become a topic of scientific inquiry (Hayes, Feldman, & Gables, 2004). The definition of mindfulness as used in research has evolved to slightly differ from the traditional definition; within the scientific community, it has typically been defined as paying attention on purpose, in the present moment, non-judgmentally to the unfolding of each experience (Kabat-zinn, 2003). Like mindfulness practices seen in Buddhist practices, modern, secular mindfulness also uses meditation as a tool to achieve a state of being rather than doing while embracing the key qualities of allowing, non-judging, willingness, gratitude, and kindness (Baer, Walsh, & Lykins, 2009; Bishop et al., 2004; Khong, 2009; Shapiro & Carlson, 2009).

Recent psychological research on mindfulness has shown that mindfulness is a significant predictor of a number of cognitive outcomes. In particular, mindfulness has been linked to psychological well-being, emotional regulation, and creativity.

### **Previous Research on the Emotional Benefits of Mindfulness**

When assessing the relationship between mindfulness and well-being, there has been shown a relationship between individuals with higher levels of mindfulness and a number of mental health benefits, including higher positive affect, lower negative affect, alleviate depressive symptoms, induce a reduction of posttraumatic stress disorder symptoms, possessing a lower pain sensitivity, and even experience analgesic effects during mindful states (Brown &

Ryan, 2003; Gordon, Staples, Blyta, & Bytyqi, 2004; Grant & Rainville, 2009; Grossman et al., 2004; Sephton et al., 2007). Studies additionally suggest that sufficient mindfulness practice may protect against functional mental impairments associated with high-stress contexts and may in turn improve attention-related behavioral responses by enhancing the functioning of specific subcomponents of attention (Jha et al., 2007). Practice in mindful-meditation has been shown to not only benefit higher-order functions, but also serve to physically alter both brain activity and structure such as increasing gray matter etc. (Luders, Toga, Lepore, & Gaser, 2009)

Recent clinical research has also examined the relationship between emotion regulation and mindfulness. *Emotion Regulation* is defined as requiring the activation of a goal to up- or down- regulate either the magnitude or duration of the emotional response (Gross, Sheppes, & Urry, 2011). Studies have demonstrated that mindfulness can lead to an increase in the experiencing of positive emotion as well as influence how emotionally ambiguous information is processed, regulated, and represented in conscious awareness (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008). Furthermore, meditators are more aware of subtle emotional feelings and possess “greater emotional clarity” (Nielsen & Kaszniak, 2006). Higher levels of mindfulness are also negatively correlated to negative emotion regulation strategies (i.e. experiential avoidance, thought suppression, rumination, worry, and spread of negative even to a negative sense of self, overgeneralization) while positively correlated to positive emotion regulation strategies (i.e. clarity of feelings, better ability to repair one’s mood, and cognitive flexibility and positive reappraisal ability) (Garland et al., 2009; Hayes et al., 2004; Troy, Shallcross, Davis, & Mauss, 2012).

Finally, it has been claimed that mindfulness can be used as a way to increase creativity. Specifically, mindfulness is theorized to induce a state of calmness and experiential acceptance

where individuals are more receptive to creative ideas and thereby develop the ability to engage in these ideas in a more efficient and vibrant way (Block-lerner, Salters-Pedneault, & Tull, 2005; Bochun, 2011). Historically, the Greeks believed that *psyche*, or the inner individual, was the source of creativity and that if engaged in practices leading to optimum levels of relaxation (i.e. meditation) that individual would be able to unlock ones own creative muse (Fisher, 2006).

There is certain empirical evidence to support this. Meditation practices have been shown to create the state of mind needed for intuitive flow, engagement, and non-conceptual awareness which provides the optimal environment for creative development as well as insight problem solving (Hirst, 2003; Nakamura & Csikszentmihalyi, 2002; Ostafin & Kassman, 2012). Mindful manipulations, such as mindfulness interventions and guided meditations, have been shown to have a powerful effect on creativity and vice versa; creative endeavors, such as engaging in the creation of visual art where it is necessary to look at the chosen object from multiple perspectives, have been shown to increase an individual's mindfulness to their environment (Grant et al., 2004; Langer & Moldoveanu, 2000).

Creativity, as a variable, has been argued to be too difficult to measure, but an effective assessment that accounts for the multiple facets of creativity allows this factor to be analyzed (Treffinger, 2009). Though most creativity literature lacks a singular and explicit definition, divergent thinking tasks- specifically "unusual uses" tasks- tend to demonstrate abilities believed to be most relevant for creative thinking and have been found to be better correlated with real-life evidence for creative behavior such as gaining patents, producing novels or plays, starting businesses, etc. (Gilhooly, Fioratou, Anthony, & Wynn, 2007; Guilford, 1967; Makel & Plucker, 2006; Simonton, 2012). Moreover, specific characteristics within divergent thinking account for novelty, appropriateness, and impact (Guilford, 1967; Piffer, 2012). Unlike many of the research

on mindfulness and creativity, the current study uniquely focuses on everyday creativity, like divergent thinking, that may potentially be a higher utility and more valuable asset than Creative pursuits (i.e. fine art and music). Also, unlike many previous studies assessing mindfulness and creativity, this study aims to explore creativity in relation to inherent trait mindfulness as opposed to an induced mindfulness manipulation or intervention.

There is a gap in the literature when assessing both everyday, divergent thinking creativity as well as the relationship of mindfulness and it's various cognitive outcomes on the South Asian American population. Most studies tend to focus on mindfulness and each individual cognitive outcome without accounting for their relationship to each other. Furthermore, most mindfulness studies focus on a largely White Western population yet fails to account the minority experience.

### **Extending Mindfulness Research Beyond White Samples**

As mentioned above, the overwhelming majority of modern scientific research on mindfulness has focused on white Western samples. However, using such a homogenous sample might be limiting our knowledge of how mindfulness relates to cognitive outcomes. For instance, there is reason to believe that Asian Americans have different subjective experiences than White Americans. Asian-Americans, are considered to be *model-minorities* and therefore potentially have a very different experience with psychological well-being, emotion regulation, and creativity than the majority population (Fazio, Joe-Laidler, Moloney, & Hunt, 2010; Ibrahim, Ohnishi, & Sandhu, 1997; Kao, 1995; Mahalingam & Leu, 2005).

This may be particularly true for South Asian Americans. South Asian Americans' traditional spiritual and religious beliefs tend to be aligned with a fatalistic philosophy of life strongly related to the concept of *karma*, found in Buddhist and Hindu religious dogma



(Bhattacharya, 2004). Though South Asian Americans theoretically buy into the “American Dream” when in the United States, they find themselves in the unique position of accessing their South Asian culture and heritage when exposed to the westernized secular concept of mindfulness (Ibrahim et al., 1997). Moreover, given that over 3.4 million South Asians live in the United States and that the South Asian community grew over 81% in the past decade, it is important that we better understand how the same psychological constructs could be differently affecting South Asians’ cognitive outcomes (Strengthening South Asian Communities in America & Asian American Federation, 2012).

### **Mindfulness, Psychological Well-being, Emotion Regulation, and Creativity among South Asian American Populations**

There is some research to suggest that South Asians’ experiences with our constructs may be subjectively different. For instance, in regards to psychological well-being, minority populations, especially Asian Americans, tend to feel higher perceived stress than their peers in the United States (Wei, Ku, Russell, Mallinckrodt, & Liao, 2008). Furthermore, individuals with South Asian heritage living in the United States tend to find themselves undergoing huge amounts of acculturation stress leading to the potential loss of supportive networks, mental health disorders, substance abuse, etc. (Bhattacharya, 2004; Fazio et al., 2010). Minority populations tend to also experience a stigma within their community when faced with depression and other negative affect (Bhattacharya, 2004; Fazio et al., 2010; Wei et al., 2008). A strong relationship with mindfulness may reverse the negative stigma and lower psychological well-being seen in minority populations.

Research also suggests that South Asian Americans might use different strategies to regulate their emotions. Emotion regulation is divided into two distinctive strategies: reappraisal

and suppression. Reappraisal is defined as cognitively re-formulating a situation in order to minimize its emotional impact whereas suppression is defined as the process of managing emotion through the inhibition of expression (Gross, 2013). When assessing emotion strategies, minority populations within the United States tend to use the suppressive strategy more than reappraisal (Gross & John, 2003). Though minority populations, including South Asian Americans, tend to use suppressive emotion regulation strategies, it has been revealed that the negative effects associated with these strategies are mediated by cultural norms (Butler et al., 2007). South Asian Americans possessing more mindfulness characteristics may potentially offset the cultural tendency to use a more suppressive strategy when regulating emotion.

Finally, although there has been research assessing a cultural effect on creativity, the South Asian population has been substantially overlooked (Makel & Plucker, 2006; Smallbone, Bertotti, & Ekanem, 2005). When assessing creativity and innovation among Asian immigrants living in a major metropolitan city, it was shown that this population actually makes a significant contribution to creative sectors (Smallbone et al., 2005). Conversely, previous studies suggest that certain cultural identities may moderate thinking schemas that may prevent risk taking, variability in what is allowed from others, and in turn, divergent creativity (Lewis & Lovatt, 2013; Richards, 2001). The direct relationship between trait-mindfulness and divergent production among minority populations, and specifically South Asian Americans has yet to be explored.

In sum, the current literature has shown that there is research linking mindfulness, psychological well-being, emotion regulation, and creativity. However, it has overlooked the cultural context of specific populations as well as the interrelationship between the different variables. The current study addresses this gap by assessing mindfulness, psychological well-

being, emotion regulation, and every day divergent thinking creativity specifically within the South Asian-American population. We turn to the study now.

**Hypothesis 1A:** Within the South-Asian American population, there will be a negative relationship between mindfulness and depression.

**Hypothesis 1B:** Within the South-Asian American population, there will be a negative relationship between mindfulness and perceived stress.

**Hypothesis 2A:** Within the South-Asian American population, there will be a positive relationship between mindfulness and emotional reappraisal.

**Hypothesis 2B:** Within the South-Asian American population, there will be a negative relationship between mindfulness and emotional suppression.

**Hypothesis 3A:** Within the South-Asian American population, there will be a positive relationship between mindfulness and creativity as measured by *fluency*.

**Hypothesis 3B:** Within the South-Asian American population, there will be a positive relationship between mindfulness and creativity as measured by *flexibility*.

### **Method**

Data was collected via online surveys using Qualtrics. Participants were recruited through snowball sampling, flyers, and online social networking.

### **Participants and Procedure**

The data consisted responses from participants of South Asian descent living in the United States. The mean age of participants is 28.15 years old ( $SD= 14.51$ ). Of the participants, 42.6% are male ( $n= 46$ ), and 55.6% are female ( $n= 60$ ). **Measures.** Measured variables are described below in the survey are presented in the order they appeared in the online Qualtrics survey website.

***Demographic Questionnaire.*** The demographic questionnaire asks respondents to report on their race, age, gender, income level for the past year (2013), country of residence, number of years living in the United States, and immigration status.

***Creativity: Alternative Uses Task.*** Developed by Guilford (1967), the Alternative Uses Task is used to assess creativity in individuals. The task requires participants to list as many possible uses for a common household item (e.g. brick, paperclip, plastic bag, etc.) In this study, the participant will be asked to consider a brick, 30 slots, and a suggested 3 minutes to read the instructions and complete the task. Scoring is comprised of two components: *fluency*, and *flexibility*. When using the Alternative Uses Task to assess creativity, the most commonly used and objective measures are *fluency* and *flexibility* and are measured as follows: *fluency* is the total number of categories where as *flexibility* is the number of different categories the participant is able to include within their responses (Drapeau & DeBrule, 2013; Gilhooly et al., 2007; Lewis & Lovatt, 2013). Flexibility categories – as chosen by the researcher—for a brick are: construction, pavement, weapon, destruction, art/decoration, fix things, weight, entertainment, furniture, heat, tools, and miscellaneous.

***Mindfulness: Mindful, Loving, Kindness (MLK) Scale.*** Developed by Mahalingam (Mahalingam, 2012), the MLK scale is a 27-item measure designed to assess self-compassion and interpersonal compassion. After reading the instructions, participants respond to all 27-items on a 5-point Likert-type response scale (1=*Strongly disagree*, 5=*Strongly agree*). A higher score indicates more positive self- and interpersonal- compassion with a possible range of 27- 135. Items include “I accept my own shortcomings,” and “I am not envious of other people’s successes.” Item 17, “I am anxious when I deal with the pressures associated with the disadvantages that come with some of my identities” is reverse coded. Within this sample, the

internal consistency as assessed by Cronbach's alpha indicates an acceptable level of internal consistency at  $\alpha = .92$ .

***Emotion Regulation Questionnaire (ERQ)***. Developed by Gross & John (2003), the emotion regulation scale is a 10-item measure designed to assess emotion reappraisal and emotion suppression. Emotion reappraisal consists of a 6-item sub-scale and emotion suppression consists of a 4-item sub-scale. After reading the instructions, participants respond to all 10-items on a 7-point Likert-type response scale (1=*Strongly disagree*, 7=*Strongly agree*). For emotion reappraisal, a higher score indicates a greater ability to engage in reappraisal with a possible range of 6 to 42. Items include "When I want to feel more positive emotion, I change the way I'm thinking" and "When I want to feel more positive emotion (such as joy or amusement) I change what I'm thinking about." For emotion suppression, a higher score indicates a greater ability to engage in suppression with a possible range of 4 to 24. Items include "I control my emotions by not expressing them" and "When I am feeling negative emotions, I make sure not to express them." Within this sample, the internal consistency as assessed by Cronbach's alpha indicates an acceptable level of internal consistency at  $\alpha = .81$  for emotion reappraisal and  $\alpha = .82$  for emotion suppression.

***Perceived Stress Scale (PSS)***. Developed by Cohen, Kamarck, & Mermelstein (1983), the perceived stress scale is a uni-dimensional 14-item measure designed to assess the degree to which life events are deemed to be stressful. After reading the instructions, participants respond to all 10-items on a 5-point Likert-type response scale (1=*Never*, 5=*Very often*) based on reflecting on the past month. After reverse-coding 4 of the 10 items, a higher score indicates experiencing more stress from life events with a possible range of 1 to 50. Items include "In the last month, how often have you felt nervous or 'stressed'?" and "In the last month, how often

have you felt difficulties were piling up.” Within this sample, the internal consistency as assessed by Cronbach’s alpha indicates an acceptable level of internal consistency at  $\alpha = .83$ .

**Emotional Health.** Developed by Radloff, emotional health is measured with the Center for Epidemiological Studies – Depression (CES-D) scale (Radloff & Locke, 1986). The CES-D scale is a uni-dimensional 20-item measure designed to assess depressive affect, positive affect, somatic signs, and interpersonal distress. After reading the instructions, participants respond to all 20-items on a 4-point Likert-type response scale (1=*Rarely or none of the time (less than once a day)*, 4=*Most or all of the time (five or seven times a day)*) based on reflecting on the past week. After reverse-coding 4 of the 20-items, a higher score indicates more symptoms of depression with a possible range of 20 to 80. Items include “I did not feel like eating; my appetite was poor” and “I felt depressed.” Within this sample, the internal consistency as assessed by Cronbach’s alpha indicates an acceptable level at  $\alpha = .89$ .

### ***Data Analysis Procedures***

The creativity data was first coded assessing for fluency and flexibility. Qualitative creativity coding was completed by hand and then transferred onto Microsoft Excel and then transferred to SPSS for further analysis. Fluency was coded by counting the total number of responses produced by an individual. Flexibility was coded by assessing the total number of categories the responses fell under. The twelve categories were: *construction, pavement, weapon, art/decoration, fix things, weight, entertainment, furniture, heat, tools, and miscellaneous*. Correlations were used to assess the relationships among the main continuous variables of interest. These analyses demonstrate the relationships between mindfulness, loving kindness (MLK), emotional regulation (ERQ), creativity, emotional health, and perceived stress.

## **Results**

*Mindfulness, Loving Kindness Effects on Psychological Well-Being.* A correlation was used to assess the relationship between mindfulness, loving kindness (MLK) and perceived stress.

Perceived stress was negatively correlated with MLK,  $r = -.38, p = .001$ . Depression was also negatively correlated with MLK,  $r = -.41, p = .001$ . In sum, individuals who demonstrated higher levels of MLK also demonstrated lower levels of perceived stress and depression. Hence, both parts of Hypothesis 1 were supported by the data.

*Mindfulness, Loving Kindness Effects on Emotion Regulation.* A correlation was used to assess the relationship between mindfulness, loving kindness and the two factors of emotion regulation: reappraisal and suppression. Though Emotion Regulation- Reappraisal was strongly positively correlated with mindfulness, loving kindness,  $r = .54, p < .001$ , there was no correlation between Emotion Regulation- Suppression and mindfulness, loving kindness. Hence, Hypothesis 2 was partially supported by the data.

*Mindfulness, Loving Kindness Effects on Creativity.* A correlation was used to assess the relationship between mindfulness, loving kindness and creativity. Creativity was analyzed for fluency and flexibility. Though each measure was highly correlated with each other  $r = .87, p = 0.00$ , there was no significant relationship between any measure of creativity and mindfulness. Hypothesis 3 was not supported.

*Intercorrelations between Variables.* A correlation was used to assess the relationship between both parts of emotion regulation (reappraisal and suppression). There was a positive correlation between emotion regulation- reappraisal and emotion regulation- suppression,  $r = .29, p < .05$ . A correlation was used to assess the relationship between both parts of emotion regulation- reappraisal and depression. There was a negative correlation between emotion regulation- reappraisal and depression,  $r = -.54, p < .001$ . A correlation was used to assess the relationship

between both parts of emotion regulation- reappraisal and perceived stress. There was a negative correlation between emotion regulation- reappraisal and perceived stress,  $r = -.492, p = .000$ . A correlation was used to assess the relationship between depression and perceived stress. There was a positive correlation between depression and perceived stress,  $r = .67, p = .000$ .

### **Discussion**

In this study, it was found that among the South Asian American population, mindfulness was positively correlated with psychological well-being, and the reappraisal strategy of emotion regulation though there was no demonstrated relationship between mindfulness and the suppressive strategy of emotion regulation or creativity. South Asian Americans find themselves in a unique position to be both highly mindful and not mindful at all yet within this study, self reported mindfulness, as measured by mindfulness-loving kindness, demonstrates the same trends in correlation to other factors among a South Asian Population as it has in non-specific populations. The data supports the prediction that higher levels of mindfulness will be correlated with higher levels of psychological well-being. There is a link between mindfulness and psychological well being as seen by the negative correlation between mindfulness and perceived stress and the negative correlation between mindfulness and depression. This finding suggests that South-Asian Americans have no difference in the benefits of mindfulness on well being than seen in general populations.

The data partially supported the predictions on the relationship between mindfulness and emotion regulation. Though there was a significant positive relationship between mindfulness and emotion regulation via reappraisal, this population displayed no significant relationship between mindfulness and the suppressive emotion regulation strategy. The lack of relationship between emotion regulation via suppression and mindfulness could potentially be explained by



the mediating effects of cultural identity on the negative affect of suppression as shown previously in the existing literature.

There were no significant correlations between mindfulness and any of the measures of creativity. Though there were no significant correlations, subjects did tend to use culturally specific terms in the alternative uses task (i.e. hommam, puja, etc.). The lack of relationship between variables could indicate that they are either unrelated variables or that other assessments of creativity should be used. Results in a larger sample may potentially differ.

### **Limitations and Future Directions**

Limitations of the study included having both a very small as well as very specific sample set. With a larger sample population, many limitations in the statistical analysis of the results could have been avoided. Another drawback was the limited assessments of creativity that were used. It is possible that other kinds of creativity (convergent, artistic, etc.) may show relationships where divergent creativity did not.

This study served to whet the appetite into the understanding of the linkages between mindfulness and outcome factors such as psychological well being, emotion regulation, and creativity as well as into the importance of the context and identity of the population studied. In the future, several avenues should be pursued including acquiring a larger sample size, assessing both gender and generational differences, exploring creativity and the variations of creativity further, and finally performing a comparative assessment between different populations. The study of mindfulness and its accompanying cognitive factors, both benefits and drawbacks, and the specific relationships and nuances that are found within particular populations, is a new and exciting field that will certainly yield more novel and noteworthy results in the years to come.

### References

- Baer, R., Walsh, E., & Lykins, E. (2009). Assessment of mindfulness. In F. Didonna (Ed.), *Clinical handbook of mindfulness* (pp. 153–168). Springer New York. Retrieved from [http://link.springer.com/chapter/10.1007/978-0-387-09593-6\\_10](http://link.springer.com/chapter/10.1007/978-0-387-09593-6_10)
- Bhattacharya, G. (2004). Health care seeking for HIV/AIDS among South Asians in the United States. *Health & Social Work, 29*(2), 106–115. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15156843>
- Bishop, S., Lau, M., Shapiro, S., Carlson, L., Anderson, N., Carmody, J., ... Devins, G. (2004). Mindfulness: A proposed operational definition. *Science and Practice, 11*(3), 230–241. doi:10.1093/clipsy/bph077
- Block-lerner, J., Salters-Pedneault, K., & Tull, M. T. (2005). Assessing mindfulness and experiential acceptance attempts to capture inherently elusive phenomena. In S. M. Orsillo & L. Roemer (Eds.), *Acceptance and Mindfulness-Based Approaches to Anxiety: Conceptualization and Treatment* (pp. 71–99). New York: Springer Science+Business Media, LLC. doi:10.1007/0-387-25989-9\_3
- Bochun, P. (2011, December). Mindfulness and creativity. *Canadian Teacher Magazine, 8–9*.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822–848. doi:10.1037/0022-3514.84.4.822
- Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: are the social consequences of emotion suppression culture-specific? *Emotion, 7*(1), 30–48. doi:10.1037/1528-3542.7.1.30

- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385–396. doi:10.2307/2136404
- Daya, R. (2000). Buddhist psychology, a theory of change processes : Implications for counsellors. *International Journal for the Advancement of Counselling, 22*, 257–271.
- Drapeau, C. W., & DeBrule, D. S. (2013). The Relationship of Hypomania, Creativity, and Suicidal Ideation in Undergraduates. *Creativity Research Journal, 25*(1), 75–79. doi:10.1080/10400419.2013.752231
- Fazio, A., Joe-Laidler, K., Moloney, M., & Hunt, G. (2010). Gender, sexuality, and ethnicity as factors of club-drug use among Asian Americans. *Journal of Drug Issues, 40*(2), 405–432. doi:10.1177/002204261004000207
- Fisher, R. (2006). Still thinking: The case for meditation with children. *Thinking Skills and Creativity, 1*, 146–151. doi:10.1016/j.tsc.2006.06.004
- Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology, 95*(5), 1045–62. doi:10.1037/a0013262
- Garland, E., Gaylord, S., & Park, J. (2009). The role of mindfulness in positive reappraisal. *Explore (New York, N.Y.), 5*(1), 37–44. doi:10.1016/j.explore.2008.10.001
- Gilhooly, K. J., Fioratou, E., Anthony, S. H., & Wynn, V. (2007). Divergent thinking: strategies and executive involvement in generating novel uses for familiar objects. *British Journal of Psychology, 98*(4), 611–25. doi:10.1348/096317907X173421
- Gordon, J. S., Staples, J. K., Blyta, A., & Bytyqi, M. (2004). Treatment of posttraumatic stress disorder in postwar Kosovo high school students using mind-body skills groups: a pilot

study. *Journal of Traumatic Stress*, 17(2), 143–7.

doi:10.1023/B:JOTS.0000022620.13209.a0

Grant, A. M., Langer, E. J., Falk, E., & Capodilupo, C. (2004). Mindful creativity: Drawing to draw distinctions. *Creativity Research Journal*, 16(2-3), 261–265.

doi:10.1080/10400419.2004.9651457

Grant, J. A., & Rainville, P. (2009). Pain sensitivity and analgesic effects of mindful states in Zen meditators: a cross-sectional study. *Psychosomatic Medicine*, 71(1), 106–14.

doi:10.1097/PSY.0b013e31818f52ee

Gross, J. J. (2013). Emotion regulation: taking stock and moving forward. *Emotion*, 13(3), 359–65. doi:10.1037/a0032135

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362. doi:10.1037/0022-3514.85.2.348

Gross, J. J., Sheppes, G., & Urry, H. L. (2011). Cognition and emotion lecture at the 2010 SPSP emotion preconference. *Cognition & Emotion*, 25(5), 765–81.

doi:10.1080/02699931.2011.555753

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits. A meta-analysis. *Journal of Psychosomatic Research*, 57(1), 35–43. doi:10.1016/S0022-3999(03)00573-7

Guilford, J. P. (1967). Creativity Yesterday, Today, and Tomorrow. *The Journal of Creative Behavior*, 1(1), 3–14. doi:10.1002/j.2162-6057.1967.tb00002.x

- Hayes, A. M., Feldman, G., & Gables, C. (2004). Clarifying the Construct of Mindfulness in the Context of Emotion Regulation and the Process of Change in Therapy. *Clinical Psychology: Science and Practice, 11*(3), 255–262. doi:10.1093/clipsy/bph080
- Hirst, I. S. (2003). Perspectives of mindfulness. *Journal of Psychiatric and Mental Health Nursing, 10*(3), 359–66. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12755922>
- Ibrahim, F., Ohnishi, H., & Sandhu, D. S. (1997). Asian American identity development : A culture specific model for South Asian Americans. *Journal of Multicultural Counseling and Development, 25*(January), 34–50. doi:10.1002/j.2161-1912.1997.tb00314.x
- Jha, A. P., Krompinger, J., & Baime, M. J. (2007). Mindfulness training modifies subsystems of attention. *Cognitive, Affective & Behavioral Neuroscience, 7*(2), 109–19. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17672382>
- Jha, A. P., Stanley, E. A., Kiyonaga, A., Wong, L., & Gelfand, L. (2010). Examining the protective effects of mindfulness training on working memory capacity and affective experience. *Emotion, 10*(1), 54–64. doi:10.1037/a0018438
- Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation : Results. *General Hospital Psychiatry, 4*(1), 33–47. Retrieved from [http://dx.doi.org/10.1016/0163-8343\(82\)90026-3](http://dx.doi.org/10.1016/0163-8343(82)90026-3)
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context : Past , present , and future. *Clinical Psychology: Science and Practice, 10*(2), 144–156. doi:10.1093/clipsy/bpg016
- Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8*(2), 163–90. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/3897551>

- Kao, G. (1995). Asian Americans as model minorities? A look at their academic performance. *Journal of Education, 103*(2), 121–159. doi: 10.1086/444094
- Khong, B. S. L. (2009). Expanding the understanding of mindfulness: seeing the tree and the forest. *Humanistic Psychologist, 37*(2), 117–136. doi:10.1080/08873260902892006
- Langer, E. J., & Moldoveanu, M. (2000). The construct of mindfulness. *Journal of Social Issues, 56*(1), 1–9. doi:10.1111/0022-4537.00148
- Lewis, C., & Lovatt, P. J. (2013). Breaking away from set patterns of thinking: Improvisation and divergent thinking. *Thinking Skills and Creativity, 9*, 46–58.  
doi:10.1016/j.tsc.2013.03.001
- Luders, E., Toga, A. W., Lepore, N., & Gaser, C. (2009). The underlying anatomical correlates of long-term meditation: Larger hippocampal and frontal volumes of gray matter. *NeuroImage, 45*(3), 672–678. doi:10.1016/j.neuroimage.2008.12.061
- Lykins, E. L. B., & Baer, R. a. (2009). Psychological functioning in a sample of long-term practitioners of mindfulness meditation. *Journal of Cognitive Psychotherapy, 23*(3), 226–241. doi:10.1891/0889-8391.23.3.226
- Mahalingam, R. (2012). *Mindfulness, Loving Kindness Scale*. Unpublished manuscript, Department of Psychology, University of Michigan, Ann Arbor, United States.
- Mahalingam, R., & Leu, J. (2005). Culture, essentialism, immigration and representations of gender. *Theory & Psychology, 15*(6), 839–860. doi:10.1177/0959354305059335
- Makel, M. C., & Plucker, J. A. (2006). Creativity. In *The Cambridge Handbook of Creativity* (pp. 247–270). Cambridge University Press.
- 1Nakamura, J., & Csikszentmihalyi, M. (2002). The Concept of Flow. In C. R. Snyder (Ed.), *Handbook of Positive Psychology* (pp. 89–105). Oxford University Press.

- Nielsen, L., & Kaszniak, A. W. (2006). Awareness of subtle emotional feelings: a comparison of long-term meditators and nonmeditators. *Emotion, 6*(3), 392–405. doi:10.1037/1528-3542.6.3.392
- Ostafin, B. D., & Kassman, K. T. (2012). Stepping out of history: mindfulness improves insight problem solving. *Consciousness and Cognition, 21*(2), 1031–6. doi:10.1016/j.concog.2012.02.014
- Piffer, D. (2012). Can creativity be measured? An attempt to clarify the notion of creativity and general directions for future research. *Thinking Skills and Creativity, 7*(3), 258–264. doi:10.1016/j.tsc.2012.04.009
- Radloff, L. S., & Locke, B. Z. (1986). The community mental health assessment survey and the CES-D scale. *Community Surveys of Psychiatric Disorders, 4*, 177–88.
- Richards, R. (2001). Millennium as Opportunity : Chaos, Creativity, and Guilford's Structure of Intellect Model. *Creativity Research Journal, 13*(3-4), 249–265. doi:10.1207/S15326934CRJ1334
- Sephton, S. E., Salmon, P., Weissbecker, I., Ulmer, C., Floyd, A., Hoover, K., & Studts, J. L. (2007). Mindfulness meditation alleviates depressive symptoms in women with fibromyalgia: results of a randomized clinical trial. *Arthritis and Rheumatism, 57*(1), 77–85. doi:10.1002/art.22478
- Shapiro, S. L., Astin, J. A., Bishop, S. R., & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial. *International Journal of Stress Management, 12*(2), 164–176. doi:10.1037/1072-5245.12.2.164

- Shapiro, S. L., & Carlson, L. E. (2009). *The Art and Science of Mindfulness: Integrating Mindfulness into Psychology and the Helping Professions*. Washington DC: American Psychological Association. doi:10.1037/11885-000
- Simonton, D. K. (2012). Teaching Creativity: Current Findings, Trends, and Controversies in the Psychology of Creativity. *Teaching of Psychology, 39*(3), 217–222.  
doi:10.1177/0098628312450444
- Smallbone, D., Bertotti, M., & Ekanem, I. (2005). Diversification in ethnic minority business: The case of Asians in London's creative industries. *Journal of Small Business and Enterprise Development, 12*(1), 41–56. doi:10.1108/14626000510579635
- Specia, M., Carlson, L. E., Goodey, E., & Angen, M. (2000). A randomized, wait-list controlled clinical trial: the effect of a mindfulness meditation-based stress reduction program on mood and symptoms of stress in cancer outpatients. *Psychosomatic Medicine, 62*(5), 613–22. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11020090>
- Strengthening Asian American Communities in America, & Asian American Foundation. (2012). *A Demographic Snapshot of South Asians in the United States*.
- Thera, N. (2006). The power of mindfulness: An inquiry into the scope of bare attention and the principal sources of its strength. *The Wheel Publication, 122*(121), 1–34.
- Treffinger, D. J. (2009). Myth 5: Creativity is too difficult to measure. *Gifted Child Quarterly, 53*(4), 245–247. doi:10.1177/0016986209346829
- Troy, A. S., Shallcross, A. J., Davis, T. S., & Mauss, I. B. (2012). History of mindfulness-based cognitive therapy is associated with increased cognitive reappraisal ability. *Mindfulness*. doi:10.1007/s12671-012-0114-5



Wei, M., Ku, T. Y., Russell, D. W., Mallinckrodt, B., & Liao, K. Y.-H. (2008). Moderating effects of three coping strategies and self-esteem on perceived discrimination and depressive symptoms: A minority stress model for Asian international students. *Journal of Counseling Psychology, 55*(4), 451–62. doi:10.1037/a0012511

Table 1.

*relations Among Study Variables*

	Mindfulness & Loving Kindness	Depression	Perceived Stress	ERQ Reappraisal	ERQ Suppression	Fluency Creativity	Flexibility Creativity
Mindfulness & Loving Kindness	—						
Depression	-.41**	—					
Perceived Stress	-.38**	.67**	—				
ERQ Reappraisal	.54**	-.52**	-.49**	—			
ERQ Suppression	-.01	-.02	.04	.29*	—		
Fluency Creativity	.15	.00	.11	.18	-.18	—	
Flexibility Creativity	.09	.15	.17	.13	-.10	.873**	—

0.05 level; \*\*  $p < 0.01$  level