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Gratitude and athletes' life satisfaction:

The moderating role of mindfulness

Lung Hung Chen

National Taiwan Sport University

Chia-Huei Wu

London School of Economics and Political Science

Jen-Ho Chang

Academia Sinica

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Athletes' lives are demanding because of high training loads and tremendous pressure to win. As reported in previous studies, these demands lead to lower life satisfaction (Felton & Jowett, 2014). However, some athletes exhibit higher life satisfaction such that they enjoy their lives more than other athletes (Chen, Wu, & Chen, in press). To explain these individual differences Chen and his colleagues (Chen & Kee, 2008; Chen & Wu, 2014) focused on the concept of gratitude orientation, which is a "general tendency to recognize and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains" (McCullough, Emmons, & Tsang, 2002, p. 112), and found that this dispositional orientation is positively related to life satisfaction among athletes, which is consistent with findings in other populations (e.g., Chan, 2012; Tsang, Carpenter, Roberts, Frisch, & Carlisle, 2014; Wood, Joseph, & Maltby, 2008). Therefore, these findings suggest that an individual high in gratitude may be more satisfied with her/his life.

Despite these observations, whether gratitude always evokes greater life satisfaction remains unclear. According to Lambie and Marcel's (2002) theory of emotion awareness, gratitude leads to greater life satisfaction only when an individual is aware of her/his gratitude state because an individual is more likely to exhibit prototypical thoughts and actions elicited by specific inner states when s/he is aware of such states. From this perspective, gratitude may not always lead to greater life satisfaction. Rather, greater awareness of one's inner state may be the key to evoking the positive function of gratitude to enhance life satisfaction. To examine this notion, we propose that mindfulness is a moderator that determines the effect of gratitude on life satisfaction. Because mindfulness refers to the awareness of one's internal mind and the external world without mental judgments (Brown, Ryan, & Creswell, 2007; Williams & Kabat-Zinn, 2011), it can be a catalyst for the expression of the effects of individuals' inner orientations (Carlson, 2013).

Based on the above reasoning, we propose that those who are higher in mindfulness

are more likely to transfer their gratitude orientation into higher life satisfaction than those who are low in mindfulness. We therefore expect that the positive association between gratitude and life satisfaction will be stronger among those who are high in mindfulness than those who are low in mindfulness counterparts.

Gratitude and Athletes' Life Satisfaction

Traditionally, the primary aim of sport psychologists has been to help athletes reach their optimal mental condition to win their competitions. In past decades, therefore, the focus has been placed on how to improve athletes' performances rather than increasing their well-being (Chen, Chang, & Chang, 2015; Reinboth & Duda, 2006). However, well-being may be the foundation of optimal human performance. Without possessing well-being, athletes/individuals may not have the opportunity to reach their peak (Ryan & Deci, 2001). This perspective has been particularly emphasized since the emergence of the positive psychology movement (Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001). Following this movement, gratitude began to receive attention in sports psychology because of its relevance in the context of sports. For instance, Carl Lewis, the former Olympic champion, recalled that gratitude strengthened his mental preparation and was a part of his competition repertoire (Lewis & Marx, 1990).

More importantly, gratitude has consistently been linked to well-being indicators that contribute to people's success (Lyubomirsky, King, & Diener, 2005), such as life satisfaction (e.g., Chan, 2012; Tsang et al., 2014; Wood et al., 2008), which refers to a conscious cognitive judgment of life as a whole, in which individuals compare their life circumstances with a self-imposed standard (Diener, Emmons, Larsen, & Griffin, 1985). The positive association between gratitude and life satisfaction may result from a broaden-and-build mechanism (Fredrickson, 1998, 2001) that is elicited by gratitude; i.e., gratitude may broaden an individual's awareness of positivity and trigger actions that aid the accumulation of

additional resources for achieving life goals (Fredrickson, 2004). Cognitively, gratitude leads an individual to see even little things in life as gifts without taking advantages for granted. Thus, gratitude repeatedly reminds one of the positive aspects of life and prevents an individual from habituating to positive life circumstances (McCullough, Kilpatrick, Emmons, & Larson, 2001). Behaviorally, gratitude can trigger an individual's prosocial behavior to reciprocate toward those who have provided support and help, which then strengthens the chain of upstream reciprocity that enables an individual to receive high qualities and quantities of support from others (Bartlett & DeSteno, 2006; Chang, Lin, & Chen, 2012), and to accumulate additional resources for achieving life goals.

The Moderating Role of Mindfulness

However, gratitude may not always enhance life satisfaction because an individual may exhibit prototypical thoughts and actions that are elicited by specific emotional states when they are not aware of such emotional states (Lambie & Marcel, 2002). Corresponding with this idea, previous research on attitude studies indicated that individuals' intentions relate to their actual behaviors only mildly and even inconsistently (Glasman & Albarracin, 2006), but the degree of attitude-to-behavior strength depended on the individuals' levels of conscious awareness of their internal attitudes. More specifically, individuals' actual behaviors may not be influenced by their automatic tendencies because their awareness of internal states did not activate completely (Bargh & Chartrand, 1999). To evoke the broaden-and-build mechanism, an individual should have an integrative awareness of her/his gratitude state to act on, thereby fostering well-being (Lambie, 2007). Following this idea, we propose that mindfulness will moderate the association between gratitude and life satisfaction. Mindfulness, a concept deriving from Buddhists that emphasizes full awareness of the present moment with a non-judgment orientation, has already received significant consideration in mainstream psychology (Good et al., in press ; Keng, Smoski, & Robins,

2011; Lomas, Ivtzan, & Fu, 2015). The idea of mindfulness is valued by sports psychologists because awareness of one's internal mind and the external world without mental judgment enhances athletes' performance and well-being (Birrer, Röthlin, & Morgan, 2012; Gardner & Moore, 2004, 2012). For example, mindful athletes have a higher flow state (Kee & Wang, 2008) and sports confidence (Kaufman, Glass, & Arnkoff, 2009) but lower burnout (Jouper & Gustafsson, 2013), which highlights its importance in the sports world.

We rely on Lambie's (2007) theoretical framework of emotional awareness to underpin the moderating effect of mindfulness. Lambie (2007) proposed a concept involving levels of emotional awareness to explain individual differences in the awareness of emotion. At level zero, there is no evidence of bodily reactions, cognitive biases, or verbal reports that are indicative of emotion. For example, people who have suffered from brain impairment or disease can be completely unaware of their emotions (Campanella, Shallice, Ius, Fabbro, & Skrap, 2014; Dolcos & Denkova, 2014). This level is termed the no emotion state. Level one describes people who have emotion states but have no awareness of those states because they are unable to attend to their emotional states. Finally, level two describes people who attend to an emotion state and categorize it as emotion. At this level, people exhibit deliberative behavior.

According to this framework, we reasoned that mindfulness enables individuals to promote their emotion awareness to level two. Although both gratitude and mindfulness require certain levels of awareness, the awareness of being grateful is not exactly the same as that which the concept of mindfulness aims to describe. By definition, mindfulness is a non-judgmental awareness of present-moment experience that leads individuals to fully embrace their feelings and emotions as if they have been awarded (Chambers, Gullone, & Allen, 2009). As indicated by Carlson (2013), because the core elements of mindfulness include the full awareness of the inner self with broad and distant perspectives, mindfulness

can play a key role in leading individuals to “see themselves as they really are”. In his view, mindful awareness enables a person to achieve a detached model of focal attention, which is a sense of a perceptually distinct object being observed. In this detached model, the person will act as a third party who objectively observes her/his thoughts, desires, actions, and feelings. This de-centering effect represents a deeper reflective conscious awareness that links thoughts and actions, thus allowing the person to focus on his mind and behavior and subsequently decide whether to act consistently (Bernstein et al., 2015), which may help individuals foster well-being by allowing them to shield their gratitude feelings from other attitudes.

Empirically, Chatzisarantis and Hagger (2007) reported that mindfulness can moderate the relationship between an individual’s internal intentions and external behaviors such that internal intentions and external behaviors are significantly associated among those high in mindfulness but not for those low in mindfulness. Additionally, Koole, Govorun, Cheng, and Gallucci (2009) divided mindfulness into the internal implicit attitude and the external explicit attitude domains. These authors found that people who engaged in mindful interventions exhibited a strong correlation between their implicit self-esteem and explicit self-esteem, whereas implicit self-esteem and explicit self-esteem were not related among those in the control group. These findings suggest that mindful awareness can fully connect and activate an individual’s inner state and lead to the successful outward expression of this inner state and thus enhance the consistency between an individual’s inner orientation and external tendency.

Based on the above reasoning and previous findings, we expected that athletes high in mindfulness would be more likely to be aware of their gratitude states at level two and thus would be more likely to transform their inner states into reflective consciousness and deliberate actions via the broaden-and-build mechanism of gratitude to enhance their life

satisfaction. In contrast, we expected that athletes low in mindfulness would be less likely to be aware of their gratitude states at level two and thus would be less likely to evoke the broaden-and-build mechanism of gratitude to enhance their life satisfaction. In other words, we suggest that mindfulness will moderate the association between athletes' gratitude and life satisfaction.

Method

Participants and procedure

The participants were 190 collegiate athletes (male = 98) from Taiwan with a mean age of 21.26 years ($SD = 1.87$) who were involved in diverse sports majors (e.g., taekwondo, volleyball, track and field, handball, soccer, softball, table tennis, basketball, and tennis). The participants trained approximately five times per week; 50% competed at the international level, 22.3% competed at the national level, and 27.7% played at the regional level. Athletes read and signed the informed consent form approved by the Institutional Review Board, which indicated the participants' ethical rights. Only voluntary athletes were included in this study. Athlete confidentiality and anonymity were assured and self-report questionnaires were then administered to the athletes in a quiet classroom setting. One research assistant served as the survey administrator and answered any questions raised by the participants. The participants returned the completed questionnaires to the administrator in provided envelopes.

Dispositional gratitude. McCullough et al. (2002) developed the Gratitude Questionnaire (GQ) to assess individuals' dispositional gratitude. The original GQ has six items, and its reliability and validity have been established. In the current study, the GQ-Taiwan version (GQ-T) was used to assess dispositional gratitude (Chen, Chen, Kee, & Tsai, 2009). The GQ-T contains only five items because one of the GQ items was dropped due to non-significant factor loading. Additionally, the GQ-T is positively related to happiness, optimism, agreeableness, and extraversion but negatively correlated with

neuroticism, and these correlations support its validity. The GQ-T has been widely used in Taiwanese (Chen, Chen, & Tsai, 2012; Loo, Tsai, Raylu, & Oei, 2014), and athlete samples (Chen, 2013; Chen & Kee, 2008; Chen & Wu, 2014). The participants indicated their responses on a 6-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (6).

Mindfulness Awareness Attention Scale (MAAS). The MAAS consists of 15 items that assess mindfulness disposition (Brown & Ryan, 2003). The items comprise statements about everyday experiences that gauge the frequency of receptive awareness of and attention to present-moment events and experience. Previous work suggests that this single factor scale has acceptable validity and reliability (alpha coefficients above .80) for assessments of mindfulness disposition (Brown & Ryan, 2003). The Chinese translation of the MAAS has also exhibited the same single-factor structure and is also positively correlated with well-being indices and negatively correlated with depression (Chang, Huang, & Lin, 2015; Chang, Lin, & Huang, 2011). The participants indicated their responses on a 6-point Likert scale that ranged from *almost always* (1) to *almost never* (6). Higher mean scores derived from all 15 items corresponded to stronger mindfulness dispositions.

Satisfaction with Life Scale. The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is a self-reported measure of global life satisfaction with 5 items. The gender and time invariance of the Satisfaction with Life Scale-Taiwan has been demonstrated and supports its validity and reliability (Wu, Chen, & Tsai, 2009b; Wu & Yao, 2006). Additionally, the SWLS-Taiwan version has been found to correlate with appropriate criterion measures (see Chen, Ye, Chen, & Tung, 2010; Lin, 2013; Wu, Chen, & Tsai, 2009a). The participants indicated their responses on a 6-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (6).

Results

Table 1 presents the correlations for the research variables. As expected, we found

gratitude was positively correlated with life satisfaction ($r = .18, p < .05$) and mindfulness ($r = .16, p < .05$). Additionally, mindfulness and gratitude were not significantly correlated ($r = .12, ns$). We conducted a series of regression analyses to examine the moderating effect of mindfulness. Table 2 presents the results of these analyses.

In Model 1, we used the two control variables of gender and age to predict life satisfaction, and neither variable was found to be significant. The results indicated that gender ($b = -.10, ns$) and age ($b = .01, ns$) failed to significantly predict life satisfaction. In Model 2, we added gratitude and mindfulness and found that gratitude approached significance ($b = .21, p < .10$), but mindfulness did not ($b = .11, ns$). In Model 3, we further included the interaction term between gratitude and mindfulness, which explained an additional 2% of the variance in life satisfaction. The interaction term was significant ($b = .16, p < .05$). Based on the suggestion of Aiken and West (1996), one standard deviation above and below the mean gratitude and mindfulness values was used to indicate higher and lower gratitude and mindfulness levels. The interaction is portrayed in Figure 1.

To further understand the interaction effect, we conducted simple slope analyses (Dawson & Richter, 2006). The results revealed that the relationship between gratitude and life satisfaction was positive at higher levels of mindfulness (one standard deviation above the mean; $b = .38, p < .01$), whereas there was no relationship at lower levels of mindfulness (one standard deviation below the mean; $b = .09, ns$). These findings support our hypothesis that the relationship between gratitude and life satisfaction is strengthened by the presence of high mindfulness. In contrast, gratitude did not exert any effect on the athletes' life satisfaction when mindfulness was low. In addition, we used Preacher, Curran, and Bauer's (2006) simple slope analysis procedure to identify the region of significance, which estimated the levels of mindfulness at which the association between life satisfaction and gratitude will become significantly positive. As shown in Figure 2, when mindfulness (standardized) was

higher than $-.33$, the association between life satisfaction and gratitude became significantly positive, and the association became stronger as mindfulness became higher than the mean. These findings support our hypothesis that the relationship between gratitude and life satisfaction is strengthened when the athletes possess high levels of mindful attention toward their emotions.

Discussion

Drawing on the theory of emotion awareness, we proposed that mindfulness will moderate the association between gratitude and life satisfaction. Supporting this view, we found that gratitude was positively related to the athletes' life satisfaction only among those with high levels of mindfulness. Our investigation provides several contributions to gratitude research.

The Role of Gratitude in Sport

The current findings regarding the relationship between gratitude and life satisfaction corresponded to those of previous studies that have been conducted across life domains (Froh, Bono, & Emmons, 2010; Froh, Emmons, Card, Bono, & Wilson, 2011; Tsang et al., 2014), including sport and have suggested that gratitude is a critical factor that associated with athletes' life satisfaction (Chen & Kee, 2008; Chen, Kee, & Chen, 2015). In other words, the current results are consistent with the notion based on broaden-and-build theory (Fredrickson, 1998, 2001) that grateful athletes broaden their attention to see the little things as gifts, which in turn triggers prosocial behavior that accumulates cognitive and interpersonal resources to achieve life goals.

Although we focus on gratitude in this study, we encourage scholars to investigate additional positive traits, emotions, and experiences that may contribute to athletes' well-being. For example, harmonious passion has been found to be positively related to task-oriented coping, which in turn is related to goal attainment (Schellenberg, Gaudreau, &

Crocker, 2013). Additionally, mindfulness has been found to help athletes to “get into the zone” (Kee & Wang, 2008). In this regard, optimal psychological functioning will help athletes to be faster and stronger and reach higher levels.

The Moderating Role of Mindfulness on Gratitude

The present study revealed the moderating effect of mindfulness on the influence of gratitude on life satisfaction and provides several new insights at both the theoretical and practical levels. First, we introduced the use of emotion awareness to understand the association between gratitude on life satisfaction. Beyond the conventional perspective that treats gratitude as a positive emotion and proceeds to theorizing about its effects on other psychological outcomes, we highlighted a need to account for the role of emotional awareness in shaping the effect of gratitude. By focusing specifically on mindfulness as a moderator, we provided a more specific foundation for understanding individual differences in life satisfaction between athletes.

Compared with athletes low in mindfulness, the effect of gratitude on athletes' life satisfaction was stronger when athletes were high in mindfulness. As McNulty and Fincham (2012) state, positive psychologists need to move beyond examining the main effects of traits and processes that may, on average, promote well-being and investigate the factors that determine when, for whom, and to what extent those factors are associated with well-being. Failing to do so will result in an incomplete understanding of well-being that may have harmful implications (p. 106). Because previous research on gratitude and well-being has focused heavily on the main effects (Wood, Froh, & Geraghty, 2010) and ignored the possibility of a boundary effect of gratitude on well-being, the present study fills a gap by illustrating the importance of mindful awareness by shaping the association between gratitude and athletes' life satisfaction.

Additionally, our findings extend the scope of mindfulness in sports form motor

behavior (Chong, Kee, & Chaturvedi, 2015; Kee, Chaturvedi, Wang, & Chen, 2013; Kee, Chatzisarantis, Kong, Chow, & Chen, 2012; Kee & Liu, 2011) and attitude research domains (Chatzisarantis & Hagger, 2007; Koole et al., 2009) into the intrapersonal social cognitive realm of well-being studies. Specifically, mindfulness can not only induce intra-individual congruency in terms of attributes, such as attitude, toward the self and intention-behavior consistency but also extend this congruency effect that induces inner grateful states to external contexts and subsequently successfully activate its positive effect on life satisfaction. In addition, our findings work in concert with previous studies that indicated the beneficial effects of mindfulness on well-being across special populations, such as body dissatisfaction in women (Albertson, Neff, & Dill-Shackleford, 2015) and parents of children with autism (Neff & Faso, 2015).

Our findings provide practical implications for gratitude interventions. In a recent review by Lyubomirsky and Layous (2013), the authors observed unstable effects of gratitude interventions on the enhancement of well-being. This instability highlights the important potential that the moderation processes might have on the effects of gratitude on well-being. Based on the present findings, we suggest that gratitude intervention, similar to writing a gratitude journal, (Kaczmarek et al., 2015) should include some components of mindfulness, such as self-compassion writing (Mosewich, Crocker, Kowalski, & DeLongis, 2013), because it may increase the effects on athletes' well-being. In other words, gratitude practices can be integrated with mindful awareness components to significantly increase the effects of gratitude; however, this hypothesis requires further investigation.

Limitations and future directions

Despite the general pattern that mindfulness beneficially moderated the relationship between gratitude and life satisfaction that was observed in this study, several weaknesses in our study underscore the importance of future investigation. As mentioned previously, the

first limitation is related to causality because the present study did not manipulate the participants' levels of mindfulness or gratitude (Hagger & Chatzisarantis, 2009; Yen, 2014). Further studies could compare individuals who have received mindfulness training and gratitude practice with those who have not to test the causal links between mindfulness, gratitude, and life satisfaction. In addition to the constraints imposed by the lack of experimental intervention, the present study relied on self-reported measurements from the athlete participants. Further studies could include participants with different demographic characteristics and outcomes to test the moderating effect of mindfulness on gratitude with respect to other positive psychological functions. Finally, we did not empirically test the proposed broaden-and-build mechanism behind the association between gratitude and life satisfaction, which should be examined in future studies.

In summary, although the cross-sectional nature of the present study precludes causal inferences, our findings dovetail with an emerging literature that has revealed that a complete understanding of the effects of gratitude on life satisfaction requires more than an understanding of only the overall levels of gratitude. We have highlighted the important potential role of mindfulness in facilitating the positive effects of gratitude on life satisfaction. Further research regarding the integration of gratitude with mindfulness may open significant new avenues for the enhancement of well-being and provide new mechanisms for optimal self-regulation.

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Table 1

Correlation Matrix of Research Constructs

	<i>M</i>	<i>SD</i>	α	1	2	3	4
1. Gender	--	--	--				
2. Age	21.26	1.87	--	-.09			
3. Gratitude	5.96	0.93	.82	.11	-.02		
4. Mindfulness	4.77	0.74	.86	-.04	.12	.16*	
5. Life satisfaction	4.18	1.11	.83	-.08	.01	.18*	.12

* $p < .05$

Table 2

Results of Hierarchical Regression in Predicting Life Satisfaction

	M1	M2	M3
Constant	4.20	4.21	4.18
Gender	-.10	-.12	-.12
Age	.01	-.01	-.01
Gratitude		.21†	.25**
Mindfulness		.11	.11
Gratitude x Mindfulness			.16*
R^2	.01	.06	.08
F	.72	2.96*	3.34**
ΔR^2		.05	.03
ΔF		5.16**	4.63*

† $p < .10$; * $p < .05$; ** $p < .01$

Note: Unstandardized regression coefficients are reported.

Figure Captions

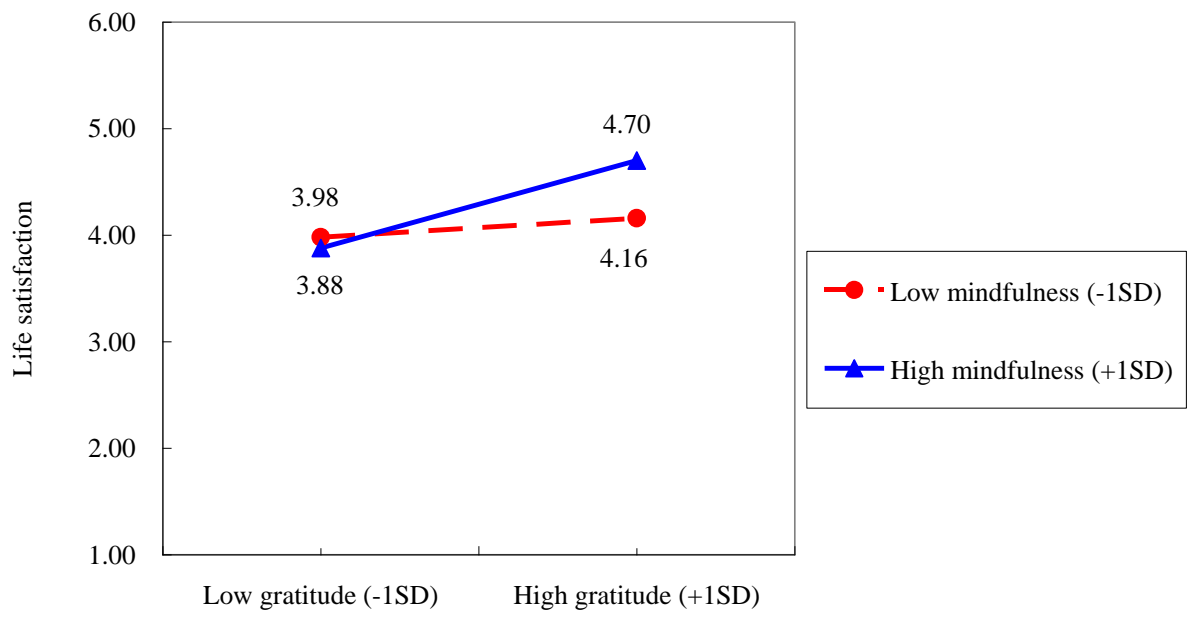
Figure 1

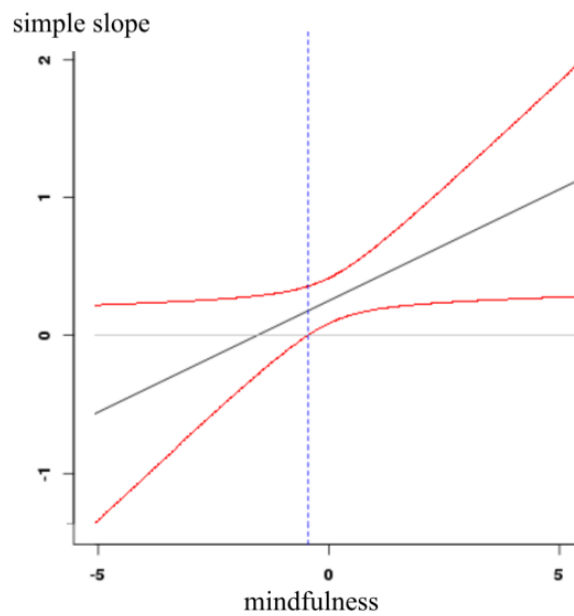
Simple regression lines predicting life satisfaction

Figure 2

Simple slope of gratitude predicting life satisfaction as a function of mindfulness

(standardized)





Note: The estimated simple slope is significantly positive when the value of mindfulness (standardized) was greater than -0.33 (the right dotted vertical line)