

***Grit and Hope as Sequential Mediators in the Association Between  
Mindfulness and Flourishing***

Kelly Ka Lai Lam, University of Macau, Macau SAR

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**Abstract**

Flourishing was defined as living within an optimal range for positive psychological and social functioning (Fredrickson & Losada, 2005). Recently, it is believed that fostering flourishing can effectively prevent mental disorders. Empirical studies have also confirmed that individual mindfulness is related to flourishing. However, the internal mechanism of this link is relatively underexplored. This pilot study examined the association between mindfulness and flourishing using a serial mediation model that tested grit and hope as hypothesized mediators. A Chinese university student sample (N = 163, 68.10% female, Mean age = 20.52) responded to an online survey package containing Chinese-validated scales measuring mindfulness, grit, hope, flourishing, and demographic items. Hayes' (2013) SPSS macro PROCESS (Model 6) with 5,000 bias-corrected bootstraps with 95% confidence intervals was used to confirm the serial mediating effect. After controlling for demographic covariates, the results revealed that: (a) mindfulness, grit, hope, and flourishing were significantly and positively associated with each other; (b) grit and hope mediated the mindfulness-flourishing link in a sequential fashion; and (c) the indirect effect of serial manner ( $\beta = .12$ ) was significantly greater than the indirect effect through grit ( $\beta = .06$ ), and hope ( $\beta = -.02$ ). The current findings may provide some guidance for the intervention to promote flourishing among Chinese university students. In order to maximize the effect of mindfulness on flourishing, researchers and educators can integrate grit- and hope-related teaching plans into mindfulness intervention and further test this model with longitudinal designs.

Keywords: Mindfulness, Grit, Hope, Flourishing, Mediation

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## **Introduction**

One intense interest in the positive psychology field is to understand and promote human flourishing (Seligman & Csikszentmihalyi, 2000). VanderWeele (2017) defined flourishing in terms of complete human well-being, capturing an individual living within an optimal range of generativity, growth, and positive psychological and social functioning (Fredrickson & Losada, 2005). Several empirical studies have supported that flourishing individuals tended to have excellent mental and physical health, better resilience in the face of adversity, and more chances of having a successful career in the future than non-flourishers (Kobau et al., 2011; Seligman, 2011). Despite the desirable effect of flourishing on various psychological, social, and developmental outcomes at the individual level, recently, more and more studies have attempted to examine some personal factors that contribute to it, such as personality traits (i.e., Schotanus-Dijkstra et al., 2016). One of the distinct indicators of flourishing development is mindfulness (Galovan et al., 2022). However, the underlying mechanism explaining through what pathways mindfulness is related to flourishing is relatively underexplored. This study aims to fill in this gap.

### ***Mindfulness and Flourishing***

The concept of mindfulness is first originated by Kabat-Zinn (1994), which refers to individual awareness that emerges through conscious attention to the present moment, and non-judgmental attention to the unfolding of experience. Mindfulness has been found to improve a variety of desirable psychological outcomes in students, such as better subjective well-being and executive functioning, and a reduction of psychological distress and maladaptive behavior (Dunning et al., 2018). Further, several empirical studies have supported that mindfulness could lead to higher flourishing (i.e., Akin & Akin, 2015). For example, people with better mindfulness tended to have better gratitude, which further promoted their sense of flourishing (Rahe et al., 2022). In line with previous findings, I, therefore, proposed that mindfulness is positively associated with flourishing (*Hypothesis 1*).

### ***Grit as a Mediator***

The concept of grit is first originated by Duckworth and her colleagues (2007) and operationalized into two distinct facets: *Consistency of interest* refers to individual maintenance of commitment towards long-term goals without getting distracted by new goals, while *perseverance of effort* refers to individuals consistently work hard towards long-term goals over a period of time despite obstacles and failure (Duckworth et al., 2007). A longitudinal study by Raphiphatthana and others (2018) showed that university students' mindfulness (non-judging and acting with awareness) predicted an increase in grit, 4.5 months later. Additionally, Padhy and others (2021) found that grit was a significant predictor of flourishing. Therefore, I reasoned that individuals' mindfulness can foster more grit and further facilitate more flourishing (*Hypothesis 2*).

### ***Hope as a Mediator***

According to hope theory (Snyder et al., 1991), the concept of hope is defined as “*a cognitive set that is based on a reciprocally-derived sense of successful agency (goal-directed determination) and pathways (planning to meet goals)*” (p. 571). Accordingly, hope captured two distinct facets: *Agency thinking* refers to individuals' determination to initiate and sustain the goal-directed movement, while *pathway thinking* refers to an individual's perceived

ability to identify barriers and develop alternative pathways in order to circumvent obstacles. Recently, researchers identified that individuals' cognitive factors (i.e., awareness and belief) can be a significant mediator in the relationship between mindfulness and psychological well-being (i.e., Yousefi Afrashteh & Hasani, 2022). For example, Arslan and Asıcı (2022) found that university students' mindfulness influenced their psychological well-being indirectly through their beliefs in solving problems when they faced difficulties. Regarding the empirical support of the intercorrelations between mindfulness, hope, and flourishing, a longitudinal study by Satici and Satici (2022) showed that the predictive role of mindfulness on dispositional hope 3 months later in university students has been determined, while Belen and others (2020) found that students' dispositional hope significantly predicted their flourishing experience. Here, I proposed that hope can mediate the association between mindfulness and flourishing (*Hypothesis 3*).

### ***The Serial Mediating Roles of Grit and Hope***

Recent studies have confirmed the predictive role of grit on hope (i.e., Yang & Wu, 2021). For example, in a university student sample, participants with greater grit tended to report higher hope (Ekinici & Koç, 2022). Thus, I proposed that individuals' grit level is positively connected to hope, and these two mediators serially mediate the association between mindfulness and flourishing (*Hypothesis 4*).

### ***The Present Study***

To my knowledge, no research has investigated the proposed relationships. This study can contribute to the literature by elucidating the mechanism of the association between mindfulness and flourishing.

## **Method**

### ***Participants and Procedure***

Qualtrics was used to collect survey responses from students of a public university in Macau. All participants were informed explicitly of the research purpose, nature, and procedure. A total of 163 university students (Mean age = 20.52, SD = 2.92, 68.10% female) completed the online survey.

### ***Materials***

The Chinese version of all the measurements was adopted and all of them have been applied in the Chinese context with good reliability and validity.

Mindfulness was assessed with the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), covering 15 items to assess individual differences in the frequency of mindful states over time. A sample item was "*I could be experiencing some emotion and not be conscious of it until sometime later*". Each item was rated on a 6-point Likert scale (1 = almost never and 6 = almost always); higher average scores indicated higher levels of dispositional mindfulness. In the current sample, this scale showed good reliability (Cronbach's alpha = .89).

Grit was assessed with the Short Grit Scale (Grit-S; Duckworth & Quinn, 2009), covering 8 items to assess individuals' passion and sustaining effort toward long-term goals. Four negatively worded statements described one's consistency of interest (e.g., "*I often set a goal but later choose to pursue a different one*"), and four positively worded statements described one's perseverance of effort (e.g., "*I am a hard worker*"). Each item was rated on a 5-point Likert scale (1 = not like me at all and 5 = very much like me); higher average scores indicated higher levels of grit. This scale showed acceptable reliability (Cronbach's alpha = .71).

Hope was assessed with the Hope Scale (Snyder et al., 1991), covering 8 items to assess the respondent's level of hope. Four statements described agency thinking (e.g., "*My past experiences have prepared me well for my future*") and four statements described one's pathway thinking (e.g., "*I can think of many ways to get out of a jam*"). Each item was rated on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree); higher average scores indicated more hope. This scale showed good reliability (Cronbach's alpha = .85).

Flourishing was assessed with the Flourishing Scale (Diener et al., 2009), covering 8 items to assess individuals' self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. A sample item was "*I actively contribute to the happiness and well-being of others*". Each item was rated on a 7-point Likert scale (1 = strongly disagree and 7 = strongly agree); higher average scores indicated a person with many psychological resources and strengths. In the current sample, this scale showed good reliability (Cronbach's alpha = .89).

### ***Statistical Analyses***

IBM SPSS Statistics 24 was used to calculate the descriptive statistics and correlations of tested variables. Amos 24.0.0 was used to analyze the hypothesized path model. Further, we used Hayes' (2013) SPSS macro PROCESS (Model 6) with 5,000 bias-corrected bootstraps to examine the indirect effect of life satisfaction and perceived distress individually and sequentially.

## **Results**

### ***Preliminary Analyses***

As shown in Table 1, the main variables were significantly and positively correlated with one another. Age was significantly associated with mindfulness and hope, while gender was non-significantly associated with the main variables.

	1	2	3	4	Gender	Age
1. Mindfulness	-				.06	.20*
2. Grit	.36***	-			-.03	.10
3. Hope	.20*	.54***	-		-.03	.20*
4. Flourishing	.23**	.50***	.69***	-	.04	.08
Mean	3.78	3.01	3.34	4.89	.68	20.52
Standard Deviation	.82	.52	.57	1.01	.47	2.92

Table 1: Mean, Standard Deviations, and Bivariate Correlations among Variables (N = 163)  
 Note: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

### Test of the Mediation Model

As shown in Figure 2, mindfulness had a significantly positive effect on grit, grit had a significantly positive effect on hope, and both grit and hope had significant effects on flourishing. Mindfulness had a significant total effect on flourishing ( $\beta = .36, p < .05$ ). When controlling for the effect of grit and hope, the direct effect of mindfulness on flourishing remained non-significant ( $\beta = .06, p = n.s.$ ). The association between mindfulness and flourishing is fully mediated by higher levels of grit and hope.

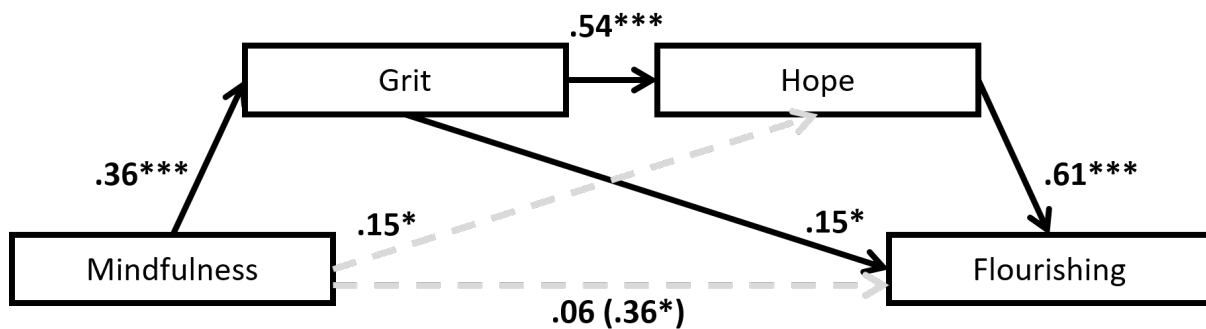


Figure 1: The Hypothesized Mediation Model

Note. The effects were reported in standardized values. Controlling for age and gender. Solid lines indicated significant paths. The total effect of mindfulness on flourishing was shown in parenthesis. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

Based on the results of bootstrapping (see Table 2), grit significantly mediated the association between mindfulness and flourishing ( $\beta = .06, 95\% \text{ CI } [-.104, .088]$ ), while hope showed a non-significant mediating effect ( $\beta = -.02, 95\% \text{ CI } [.104, .257]$ ). The results also supported the serial mediating effect ( $\beta = .12, 95\% \text{ CI } [.061, .177]$ ). We then conducted comparisons among the indirect effects to test whether they exerted equal impacts on the association between mindfulness and flourishing. The results indicated that the indirect effect of serial manner was significantly greater than the indirect effect through grit or hope ( $z = 1.29, p < .10$ ; a 90% confidence interval was used in small sample size).

	Standardized Beta $\beta$	Standard Error $SE$	Bootstrapping Confidence Intervals	
			Lower	Upper
Total Effect	.27	.10	.074	.456
Total Indirect Effect	.16	.06	.035	.273
1				
Mindfulness → Grit → Flourishing	.06	.03	.003	.124
Mindfulness → Hope → Flourishing	-.02	.05	-.104	.088
Mindfulness → Grit → Hope → Flourishing	.12	.03	.061	.177

Table 2: Results of the Mediating Effects  
(5,000 bias-corrected bootstraps 95% confidence intervals)

*Note:* Controlling for age and gender.

## Discussion

Empirical studies have consistently shown significant associations between mindfulness and flourishing; however, little is known about the mechanism. Taking a convenience Chinese student sample, the current study extended the literature by demonstrating the role of grit and hope in mediating the mindfulness-flourishing link both, respectively, and through a sequential mediating pathway.

Unexpectedly, we found that mindfulness was non-significantly associated with flourishing (not support of  $H_1$ ). Although previous studies have suggested that mindfulness acts as an important predictor of flourishing (i.e., Rahe et al., 2022), we found that the association between mindfulness and flourishing is not always straightforward and can even be linked indirectly through grit and hope.

In support of  $H_2$ , we found that grit significantly mediated the mindfulness-flourishing link. This aligned with previous findings that grit was a significant mediator between dispositional factors (i.e., gratitude) and subjective well-being (Oriol et al., 2020).

Unexpectedly, we found a non-significant specific indirect effect of mindfulness on flourishing only through hope (not support of  $H_3$ ). This finding implied that increased mindfulness does not necessarily create better hope, unless it is achieved through increased grit.

In support of  $H_4$ , we found evidence in favor of hypothesized indirect effect: mindfulness → grit → hope → flourishing. This indirect effect of serial manner (grit→hope) was significantly greater than the indirect effect through grit or hope. However, more studies are warranted to replicate this finding and to further investigate how and why grit and hope influence the mindfulness-flourishing link in a serial manner.

## **Limitations and Future Work**

This study has three limitations. First, this pilot study used a cross-sectional design with a small sample size, and the findings failed to suggest causality among the tested variables. Further experimental research is recommended to examine possible causal relationships. Second, the data were self-reported, which may include social desirability bias. Future studies may need to include multiple data sources (i.e., parental reports) in order to control the above-mentioned bias. Third, the current findings were drawn from a Chinese university student sample, which cannot be generalized to other non-Chinese populations or religions. More cross-cultural research on this topic in large non-Chinese populations is recommended.

## **Conclusion**

This study identified the association between mindfulness and flourishing was fully mediated by grit and hope in a serial manner. That is, mindfulness influenced flourishing through first grit, and then hope. Importantly, a growing body of evidence suggests that both grit and hope are learnable and malleable and they can be developed through practice (Alan et al., 2019). In order to maximize the effect of mindfulness on students' flourishing, researchers and educators can integrate grit- and hope-related teaching plans into mindfulness intervention. For example, educators can implement the Mindfulness-Based Flourishing Program (MBFP) in schools by teaching students to set and achieve their long-term goals, and strengthening positive goal-directed thoughts and personal capacities for attaining long-term goals. Further experimental and longitudinal research on this trend is also recommended.

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**Contact email:** [KaLaiLam@um.edu.mo](mailto:KaLaiLam@um.edu.mo)