The Relationship between Perfectionism and Perceived Stress among Undergraduates: The Role of Mindsets

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Abstract

Everywhere in the world, there is growing stress among undergraduates, Malaysia is no exception. The high level of perceived stress will badly affect every aspect of students' life. Previous studies have well-established the relationship between perfectionism and stress. Perfectionism is associated with mindset, meanwhile, mindset may also be capable of changing in response to stress, which indicates a potential mediating role of mindsets. Therefore, this study examined the relationship between the multidimensional perspective of perfectionism, perceived stress, and mindsets; mediation role of mindsets between perfectionism and perceived stress among the undergraduates from two public universities in Klang Valley, Malaysia. A total of 410 participants were involved in the current study. Data were analyzed through SPSS. Spearman correlation analysis indicates maladaptive perfectionism was significantly related to lower growth mindset and higher perceived stress, while adaptive perfectionism is related to higher growth mindset, and not significantly associated with perceived stress. Also, mediation analysis was done through PROCESS Macro in SPSS. It was inferred that the suppressing effect was found between adaptive perfectionism and perceived stress through growth mindset, which can be seen as mediation effect in a broad sense. Thus, it can be concluded that maladaptive perfectionists will suffer more stress and possess lower growth mindset, while adaptive perfectionists have more growth mindset and lower perceived stress.

Keywords: Correlation; Educational Psychology; Malaysia; Mediation; Suppressing effect

1.   Introduction

One of the most difficult days in a person's life is when they are an undergraduate (Ranita Manap, Sohana Abdul Hamid, & Ghani, 2015) because of the changes in education style, lifestyle, and social environment, undergraduates must achieve a certain level of academic achievement in order to graduate on time. Current Malaysian undergraduates are not excluded, the majority of them suffer from excessive stress, the current student generation is far more stressed and worried than previous generations

(Ramli, Alavi, Mehrinezhad, & Ahmadi, 2018). According to one study, the majority of Malaysian university students experience moderate stress (Ganesan, Talwar, Fauzan, & Oon, 2018). Self-evidently, stress can harm students to varying degrees. For example, stress can hinder one's ability to concentrate, problem-solve, make decisions, and other necessary abilities for students' learning (Yazdani, Rezaei, & Pahlavanzadeh, 2010), extreme levels of stress can decrease study effectiveness and hinder one's good academic performance (Alam & Halder, 2018; Khan, 2013) and cause anxiety, depression, suicidal ideation and hopelessness (Dixon, Rumford, Heppner, & Lips, 1992), self-hurt behaviors (Liu, 2018), bad sleep quality (Yan, Rongmao, Su, & Liu, 2018). Therefore, it is critical to detect and address high-level stress as soon as possible in order to reduce psychological morbidity and mitigate the negative consequences (Ranita Manap et al., 2015). Only by understanding the stress mechanism can we determine what measures should be taken to protect students from excessive stress. As a consequence, stress-related variables must be investigated.

The Diathesis-Stress Model provides a useful explanation for how affective and psychological responses to potential stressors occur when a person is vulnerable to a stressor (Monroe & Simons, 1991). Perfectionism is well-known to be associated with stress, and researchers have been interested in analysing personality traits as diatheses for few decades. Hewitt and Flett (2002) reported that perfectionism can be characterised as working within a diathesis-stress type framework; nevertheless, perfectionism was seen as a single-dimensional and maladjusted variable within the framework. Researchers now divide perfectionism into two types: maladaptive perfectionism and adaptive perfectionism. Maladaptive perfectionistic tendencies such as perfectionistic concerns and discrepancy have been repeatedly linked to different types of maladjustment (Chang, Watkins, & Banks, 2004; Hewitt & Flett, 2002; Rudolph, Flett, & Hewitt, 2007). Individuals with a high level of adaptive perfectionistic strivings, on the other hand, concentrate on rewards and commence performance in order to receive praise, and emotions of mastery and control will greatly benefit the individual (Burns, Dittmann, Nguyen, & Mitchelson, 2000). Although there is ample evidence that maladaptive perfectionism is significantly connected with stress (e.g., Slaney et al. 2001), the empirical support for a relation between adaptive perfectionism like perfectionistic strivings and stress is somewhat mixed (Achtziger & Bayer, 2013). Some researchers identified a negative correlation between perfectionistic strivings and stress (Stoeber & Rennert, 2008; Tashman, Tenenbaum, & Eklund, 2010), whereas others found no correlation between these two variables (Rice & Amy, 2010). Hence, whether adaptive perfectionism is negatively associated with perceived stress is still debatable; however, the current study would then continue to investigate the relationship between adaptive perfectionism and perceived stress; additionally, this would investigate the cognitive mechanism underlying the link between perfectionism and perceived stress. We can provide the appropriate intervention if we understand what conception drives perfectionists to become stressed.

When considering the mechanism of stress, we can look to the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984). Stress focuses on environmental interaction that a person considers important for his or her welfare but also that the

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requirements tax or exceed available coping resources (Lazarus, 1991). According to this concept, two components are essential mediators in the person-environment transaction process: cognitive assessment and coping. Appraisal, i.e., individuals' assessment of the relevance of what is occurring to their well-being, and coping, i.e., individuals' attempts in perception and behaviour to address particular requirements (Lazarus, 1991). Thus, the Transactional Theory of Stress and Coping grounds the relationship between cognitive factors and perceived stress. First, it highlights the central role of the individuals' cognitive responses in exacerbating or attenuating the stress response. Second, believing that one's coping resources are adequate could efficiently reduce or eliminate the stressor by changing one's cognitive appraisal of it or by conducting direct behaviour patterns (Lazarus & Folkman, 1984).

According to the Self-Implicit Theories of Intelligence (C. S Dweck, 2000), mindset is a cognitive factor that influences one's perception of the malleability of their ability or intelligence. Dweck proposed that students may have one of two implicit assumptions about the essence of their abilities or intelligence, entity theory views their abilities as a fixed trait, if not invariant or even genetically determined, individuals with this conviction are entity theorists. Individuals who believe their abilities are malleable and modifiable, according to incremental theory, are incremental theorists (Dweck, 1999). Dweck later expanded the concept of Self-Implicit Theories of Intelligence as "mindsets" in her later work (Dweck, 2006). For those who have a fixed mindset, failure has been changed from an action (I failed) to an identity (I am a failure), they have ruminated over their troubles and setbacks, primarily tormenting themselves with the concept that the setbacks aimed they were incapable or worthless, and they are always in threat of being evaluated by a failure (Dweck, 2006). Regardless of how intelligent or skilled they are, this worldview appears to deprive people of coping resources (Dweck, 2006). Dweck (2006) also claimed that students with a fixed mindset are more likely to be depressed. According to some research, fixed mindsets predict future psychological problems (Schroder, Callahan, Gornik, & Moser, 2019). In contrast, we can infer that a growth mindset broadens coping resources and reduces stress by believing that abilities can be cultivated and coping resources are sufficient. Dweck (2006) also asserted that the growth mindset will aid in the treatment of depression. Cultivating a growth mindset is a good way to improve mental health, including anxiety reduction (Yeager et al., 2016), More recently, a study found that a growth mindset is positively related to happiness and self-esteem and negatively related to stress (Kyoung Hwang & Lee, 2018). Although few studies have directly demonstrated the relationship between mindsets and stress, the literature mentioned above suggests that mindsets may influence an individual's perception of stress by influencing the appraisal process and coping resources, because fixed mindset and growth mindset have different attitudes toward the obstacle, and failure (Dweck, 2006). Growth mindsets could be a possible cognitive factor that appraises the situation more positively and perceives more coping resources; however, the current study hypothesised that growth mindset is negatively correlated with perceived stress.

Meanwhile, researchers discovered connections between perfectionism and mindsets. Entity beliefs were found to be positively related to maladaptive perfectionism (Shih,

2011). Among Chinese gifted students, unhealthy perfectionists scored significantly higher on fixed mindset than healthy perfectionists and non-perfectionists (Chan, 2012). Furthermore, a positive relationship between fixed mindset and evaluative concerns (maladaptive perfectionism) was discovered (Mofield & Parker Peters, 2018). On the contrary, a study of Taiwanese adolescents found that adaptive perfectionism was significantly linked to incremental beliefs (Shih, 2011). Similarly, healthy perfectionists scored significantly higher on Growth Mindset than non-perfectionists according to Chan (2012). According to Mofield and Parker Peters (2018), encouraging a growth mindset can promote healthy strivings for high standards of quality.

Previous research found pairwise correlations between perfectionism, mindsets, and perceived stress, but none of the studies combined these three variables. As a result, the current study sought to determine not only the direct relationship between perfectionism, mindsets, and perceived stress, but also the extent to which mindsets may mediate the relationship between perfectionism and perceived stress. According to the literature review, mindset can be viewed as a protective factor that helps students overcome challenges (Blackwell, Trzesniewski, & Dweck, 2007), and it may also be capable of changing in response to stress (Babaturk, 2019). In addition, previous research has shed light on the relationship between perfectionism and stress, as well as the interaction of a third variable that may share some constructs with mindsets. For example, the study discovered that fear of negative evaluation accounts for mediating the direct relationship between maladaptive perfectionism and perceived stress (Shafique et al., 2017). One of the characteristics of fixed mindset is the fear of negative evaluation. Dweck once explained in her book that fixed mindset people avoid criticism and failure (Dweck, 2006). As a result, the relationship between perfectionism and perceived stress may be mediated by mindset.

In the current study, the following hypothesis was developed based on research gaps:

1.Adaptive perfectionism significantly predicts perceived stress among Malaysian undergraduate students in Klang Valley.

2.There is a significant relationship between growth mindset (incremental beliefs) and perceived stress among Malaysian undergraduate students in Klang Valley.

3.Growth mindset (Incremental beliefs) significantly mediates the maladaptive perfectionism and perceived stress among Malaysian undergraduate students in Klang Valley.

4.Growth mindset (Incremental beliefs) significantly mediates the adaptive perfectionism and perceived stress among Malaysian undergraduate students in Klang Valley.

2.   Method

2.1   Participants and Procedure

The current study included 410 participants (107 males and 303 females, M= 20.32, SD=1.42) ranging in age from 18 to 25. The researcher chose two public universities in

Klang Valley and used convenience sampling within each. The author obtained permission from the appropriate authorities, and all participants, including the pilot test participants were discovered online as a result of the COVID-19 outbreak. Participants took part in the study by filling out online questionnaires via campus google email. The online form included a studied description, a detailed consent form, and a survey consisting of the Demographic Survey, Revised Almost Perfect Scale, Revised Implicit Theories of Intelligence Scale, and Perceived Stress Scale. The participants gave their full consent to participate in the study.

2.2   Measure

2.2.1   Perceived Stress Scale

The Perceived Stress Scale is widely used to assess stress among undergraduates in Malaysia and around the world (Khodarahimi, Hashim, & Mohd-Zaharim, 2016; Shafique, Gul, & Raseed, 2017; Wynn, 2017). The scale with 10 items assesses individuals' perceptions of their stress levels. Participants were asked to rate themselves on a five-point Likert scale ranging from 0 (never) to 4 (very often). The composite scores range from 0 to 40, with higher composite values indicating a greater level of perceived stress. Items 4, 5, 7, and 8 are coded backward.

The scale has a sound validity and reliable Cronbach Alpha range of 0.78-0.91, together with test-retest reliability coefficients ranges of 0.55-0.85 (Sheldon Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). The scale has been frequently utilised in studies on stress and health status among undergraduates (Pau & Croucher, 2003; Pollard & Bates, 2004). In a Malaysian study, the convergent validity (average variance extracted (AVE)) was 0.69, the construct reliability (CR) was 0.81, and Cronbach's alpha was 0.76 (Abdollahi et al., 2016).

2.2.2   Revised Almost Perfect Scale

APS-R adopted in this study was edited based on the interviews of perfectionists among university students (Slaney, Rice, Mobley, Trippi, & Ashby, 2001). It contains the core characters of perfectionism and predicts perfectionism with both adaptive aspects and maladaptive aspects. The Revised Almost Perfect Scale (APS-R) contains 19 items and three sub-scales in the current study, including High Standard (7 items) and Discrepancy (12 items). Items 1, 3, 5, 8, 10, 14, 18 are classified as sub-scale High Standard, while items 2, 4, 6, 7, 9, 11, 12, 13, 15, 16, 17, 19 are classified as Discrepancy. The option "strongly disagree" represents 1 and the option "strongly agree" represents 7. The higher the score on the sub-scale, the greater the tendency in that domain. Based on past research, the Order subscale was not employed in this study because it does not consider to be a core aspect of perfectionism (Rice & Ashby, 2007; Stoeber & Otto, 2006).

APS-R has strong validity when compared to other perfectionism scales (Slaney et al., 2001). Convergent Validity (AVE) and Construct Reliability (CR) were shown to be good among Malaysian undergraduates (Abdollahi, Hosseinian, & Asmundson, 2018).

2.2.3   Revised Implicit Theories of Intelligence Scale

The Revised Implicit Theories of Intelligence Scale (De Castella & Byrne, 2015) was used to assess the mindsets in the present study, it was divided into two sub-scales: Entity Self-Beliefs Subscale and Incremental Self-Beliefs Subscale. Each sub-scale has four items. The eight items each feature a first-person claim regarding the extent to which perceived intellect is fixed or flexible, and attempts were made to ensure that items remained closely matched with the originals in relation to the most recent version (De Castella & Byrne, 2015). Participants were asked to rate how strongly they agree (1) or disagree (6) with declarations about the malleability of intelligence and abilities using a six-point Likert scale. In the current study, all the scores of entity beliefs subscale were reversed and add up with the sum score of the Incremental Self-Beliefs subscale, the total score was the final Incremental Self-Beliefs score. The scale had internal consistency, good construct validity, and good discriminate validity, just like the original scale (De Castella & Byrne, 2015).

3. Results

The Statistical Package for Social Sciences (SPSS) version 24 was used by the researchers to analyse the results.

3.1 Descriptive statistics

Table 1 includes descriptive statistics such as means, standard deviations, Skewness, Kurtosis correlations, and reliabilities.

Table 1:Descriptive statistics between measures (Perceived Stress Scale, Revised Almost Perfect Scale: High Standards, Discrepancy, and Revised Implicit Theories of Intelligence Scale) (N = 410)

		PS	HS	Ds	IB
1	Perceived Stress(PS)	α=0.842			
2	High Standards(HS)	.061	α=0.775		
3	Discrepancy(Ds)	.502**	.267**	α=0.923	
4	Incremental Belief(IB)	-.211**	.255**	-.311**	α=0.897
	Mean	19.2	37.9	51.3	20
	SD	6.3	6.5	15.0	3.4
	Skewness	.091	-.305	.029	-.72
	Kurtosis	-.507	-.554	-.532	.065

*Note. **p<.01.*

Kurtosis and skewness between -1 and 1 are thought to be ideal in psychological research for normal distribution, according to George and Mallery (2010). As a result, the data were considered normally distributed. All of the focal statistics had high reliability, with Alpha reliability coefficients ranging from 0.775 to 0.923. As can be seen from the results, as expected, Discrepancy was positively correlated with perceived stress(r=.502,p<.01), the high standard had no significant relationship with perceived stress(r=.061,p=.221), thus, hypothesis one "Adaptive perfectionism significantly predicts perceived stress" was rejected. Because incremental belief was

negatively correlated with perceived stress(r=-2.11, P<.01), hypothesis two "There is a significant relationship between growth mindset (incremental beliefs) and perceived stress" was approved. Two perfectionism subscales were positively correlated with each other (r=.267, P<.01). Meanwhile, incremental beliefs were positively related to a high standard (r=.255 P<.01) and negatively related to discrepancy (r=-.311, P<.01).

Figure 1: The proposed mediation model between Discrepancy (Ds), Incremental Beliefs (IB) and Perceived Stress (PS)
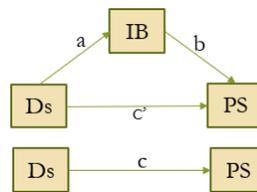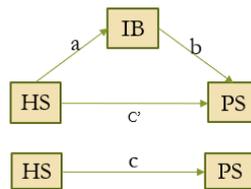

Figure 2: The proposed mediation model between High Standards (HS), Incremental Beliefs (IB) and Perceived Stress (PS)

To validate the last two hypothesis, multiple regression and Bootstrapping technique and macro put forth by Preacher and Hayes (2004) were adopted to evaluate each component of the proposed mediation models: independent variable, maladaptive perfectionism(discrepancy), or adaptive perfectionism(high standard); mediator, growth mindset (incremental belief); dependent variables, perceived stress, after controlling for potential covariates such as age and gender. The overall effect of maladaptive perfectionism on perceived stress was substantial (c path; B = .2095, P<0.001) in Figure1, maladaptive perfectionism on growth mindset was significant (a path; B=-.16) and growth mindset on perceived stress were insignificant (b path; B=-.0455, P=0.2171). according to Wen and Ye (2014), a bootstrap analysis should be further used to check the proposed mediation. The mediation analysis failed to verify the mediating role of growth mindsets (incremental belief) in the link between maladaptive perfectionism and perceived stress (a * b path; B = 0.01, 95% CI = from -.0044 to .0200), CI included absolute zero, therefore, hypothesis three "Growth mindset (Incremental beliefs) significantly mediates the maladaptive perfectionism and perceived stress" was rejected. In Figure 2, the total effect of adaptive perfectionism on perceived stress was insignificant (c path; B = .0587, P=.2154), the effect of adaptive perfectionism (high standard) on growth mindsets (incremental belief) is significant (a path, B=.2990, P<.001), the effect of growth mindsets (incremental belief) on perceived stress was significant (b path; B=-.1944, P<0.001). Since both the "a path" and the "b path" were significant, mediation analyses were performed with the bootstrapping

approach and bias-corrected CI. The mediation analysis confirmed the mediating effect of development mindsets (incremental belief) in the relationship between adaptive perfectionism and perceived stress (a * b path; B = -.0581, 95% CI = from -.0978 to -.0276), hypothesis four "Growth mindset (Incremental beliefs) significantly mediates the adaptive perfectionism and perceived stress" was approved. However, the value of the indirect effect was negative while the value of the direct effect was positive, indicating that the effects are suppressing (MacKinnon, 2008; Wen & Ye, 2014). The suppression of effects is seen as a mediation effect in a broad sense (Wen & Ye, 2014).

Table 2: Bootstrap Tests for Statistical Significance of Indirect Effects (N=410)

X	M	Y	X on M (a)	M on Y (b)	Total effect (c)	Indirect Effect (a*b)	Direct Effect (c')	lower	Upper
Ds	IB	PS	-.1574***	-.0455	.2095***	.0072	.2023***	-.0044	.0200
HS	IB	PS	.2990***	-.1944***	.0587	-.0581	.1168*	-.0978	-.0276

Note. ***p<.001. *p<.05

4. Discussion

The mean of perceived stress revealed that most university students are under moderate stress, with an average score of 19.2. The average value for perceived stress in this sample was somewhat higher than in a study conducted by Ganasegeran et al. (2012) among Malaysian medical students (M = 18.9). The results show that high standards have no significant relationship with perceived stress, which confirms the findings of Rice and Amy's (2010) research. However, the result contradicts the finding that high standards have a negative weak relationship with perceived stress (Achtziger & Bayer, 2013). As a consequence, adaptive and maladaptive perfectionism have different correlations with stress. As predicted, the discrepancy was strongly and positively connected with perceived stress, which is consistent with many previous investigations (e.g., Rice and Van Arsdale 2010). Both subscales of perfectionism were associated favorably with each other. Moreover, maladaptive perfectionism (discrepancy) was considerably and positively connected with growth mindset (incremental belief), while adaptive perfectionism (high standard) was considerably and adversely connected with growth mentality, this finding was consistent with earlier research (Mofield & Parker Peters, 2018; Chan, 2012). It could be stated as perfectionistic concerns and discrepancies are characterised by repeatedly (and unavoidable) thoughts on mistakes and thoughts of perfection(Flett & Hewitt, 2002; Rudolph et al., 2007). Students with high levels of discrepancy may also struggle with controlling their stream of thought (Achtziger, 2013). Our results support the hypothesis that self-theories (entity/fixed vs. incremental/growth) are related to motivation toward different types of perfectionism, which can support practitioners guide students toward healthy achievement strivings. The negative relationship between growth mindsets and perceived stress is consistent with Dweck's hypothesis that a fixed mindset deprives people of coping resources (Dweck, 2006). Students with a fixed mindset have higher levels of fixed mindsets that predict future psychological problems (Schroder et al., 2019), mindsets can predict students' psychological well-being (Dweck, 2006).

In the mediation analysis, the total effect of maladaptive perfectionism and perceived stress was reduced when growth mindsets were included; however, the indirect effect of growth mindsets was too weak and proved to be insignificant through Bootstrap analysis; if the total effect is very substantial (e.g. p<.001), even a well-measured mediator and a rationally high intervention process could give rise to claims of only partial mediation (Rucker, Preacher, Tormala, & Petty, 2011), the total effects or direct effect may be too strong and covered the mediation effect.

The current study found that growth mindsets mediated the relationship between adaptive perfectionism and perceived stress. Surprisingly, there is no relationship between adaptive perfectionism and perceived stress without the indirect effect of fixed mindset; however, the relationship between adaptive perfectionism, growth mindset, and perceived stress can be accounted for by the Transaction Theory of Stress and Coping. The concepts of cognitive appraisal (i.e., primary appraisal and secondary appraisal) were proposed by Lazarus and Folkman (1984) to clarify individual differences in trying to cope with traumatic events and their relationship to individuals' well-being and functioning. An adaptive perfectionist tends to adopt a growth mindset, which could involve the primary and secondary appraisal which interprets events positively and thus reduces stress. Furthermore, it should be noted that the total effect of stress perception and adaptive perfectionism is insignificant. When the total effect is insignificant, the independent variable's direct and mediated effects on the dependent variable have opposite signs, indicating that it suppresses the effects (Wen & Ye, 2014; MacKinnon, 2008). Previous researchers have described the situation as inconsistent mediation or effect suppression (Wen & Ye, 2014; MacKinnon, 2008). Even if the relationship between the independent and dependent variables is insignificant, mediation exists. Under the mediation structure, one kind of model is inconsistent mediation or suppression effect (Wen & Ye, 2014). It can be plausibly argued that the effect of adaptive perfectionism on growth mindsets and the effect of growth mindsets on perceived stress may cancel each other out, resulting in a total effect of adaptive perfectionism on stress to insignificant. Thus, the effect of adaptive perfectionism on perceived stress may be suppressed by the growth mindset; adaptive perfectionists can predict less perceived stress only when adaptive perfectionist equipped with growth mindsets; this could be explained by previous studies that growth mindset is always considered as a tool to manage psychological outcomes (Aaron & Dora, 2015; Chan, 2012; Lee & Jang, 2020).

The current study has some limitations that should be mentioned. First, because this study was only conducted among undergraduate students at two public universities, it may not be generalisable to a larger undergraduate population in Malaysia. As a result, generalising these findings to the larger student population should be done with caution. Second, because self-report measurement has limitations, researchers may examine different data collection methods in the future, including interviews. Future researchers would benefit from an in-depth interview to acquire important information drawn from students' experiences and descriptions. Therefore, more qualitative or mixed research could be conducted.

Regardless of the limitations, the critical implications must be addressed. First, most undergraduates are still in a pervasive stressful mood, all sectors of society must pay attention to the issue. Second, the relationship between perfectionism and mindset, as well as the relationship between perfectionism and stress, indicate that the distinction between adaptive and maladaptive perfectionism may be associated with the perceived malleability of our ability and stress level. Understanding the variations between forms of perfectionism may aid in identifying the signs and symptoms of maladaptive and adaptive perfectionism, for individuals with higher perceived stress, the discrepancy may be an underlying factor to be concerned about. Furthermore, encouraging students to develop adaptive perfectionistic traits through healthy motivation. Third, when an adaptive perfectionist has a growth mindset, their attitudes and values may support students to remove perceived stress. Growth mindset interventions may be used to improve psychological well-being and prevent students from experiencing high perceived stress.

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