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Psychosocial and Clinical Determinants of Achievement Motivation in University Students: The Protective Role of Resilience and Metacognitive Awareness

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Abstract: *This research was designed to analyze the effect of resilience, depression, behavioural vs. emotional engagement and metacognitive awareness on the achievement motivation of university students. Past research has highlighted the predictive role of cognitive and mental capabilities on the academic achievement of students. A correlational research design was used for the study and 425 participants were selected through purposive sampling and had an almost similar gender distribution. Data collection was done through the Hamilton Depression Inventory, Metacognitive Awareness Scale, Brief Resilience Scale, Engagement Vs. Disaffection with Learning Questionnaire and achievement motivation scale. The results showed that female students exhibited higher scores on resilience, metacognitive awareness, behavioural and emotional engagement, and high orientation towards success and achievement in comparison to their male counterparts who scored high on depression and further showed poorer scores on resilience, metacognitive awareness, and behavioural and emotional engagement.*

Key Words: Resilience, Academic Achievement, Behavioral Engagement, Emotional Engagement, Dummy Coding

Introduction

College students face numerous challenges that can have a significant impact on their academic performance. These challenges may include time management, financial difficulties, mental health issues, and so on (Kotera et al., 2021). Therefore, it is important for college students to have the tools and resources to be resilient and able to cope with these issues in order to be successful in their studies (Akeman et al., 2020). Resilience is an important factor in determining academic achievement. It is

defined as the capacity to recover quickly from difficulties and handle stressful situations in an effective manner (Kim et al., 2021). Resilience has been studied in relation to academic achievement in a variety of contexts, including within the classroom, in school-wide initiatives, and in the broader educational system (Brewer et al., 2019). Researchers have established that there is a positive correlation between resilience and academic achievement (Wu et al., 2020). Resilient individuals are better able to cope with academic failure, deal with

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challenging tasks, and remain motivated to persist in their studies (Foster et al., 2020). Furthermore, resilient students are better able to regulate their emotions, manage stress, and build strong relationships with teachers and peers. These qualities can lead to improved cognitive abilities (Zulfiqar et al., 2022) and enhanced academic performance (Lyvers et al., 2020).

Research has shown that university students who demonstrate higher levels of achievement motivation have better academic outcomes and better mental health (Wu et al., 2020). Achievement motivation refers to the desire to accomplish a goal or achieve success (Trigueros et al., 2020). Achievement motivation is often associated with a person's level of resilience (Mostafa & Lim, 2020). Resilience is the ability to cope with and respond to challenging situations and adversity (De la Fuente et al., 2021).

Research suggests that university students who demonstrate higher levels of achievement motivation and resilience are able to deal with challenges and problems associated with academic life and its facets (Yu et al., 2019). Depression is another psychopathology which is believed to be fairly common among university students and is further identified as having a significant negative impact on their well-being (Ahmed et al., 2020). Research has shown that students reporting extensive levels of depression and associated psychopathologies are more likely to have difficulty managing the demands of university life (Concorada et al., 2019). Furthermore, depression can negatively affect academic performance, as students who experience depression are more likely to have difficulty concentrating, lack motivation, and feel overwhelmed (Wang et al., 2022). Finally, metacognition is another important determinant to assess and analyze when examining the well-being of university students. Metacognition is the ability to think about one's own thoughts, feelings, and behaviours (Banerjee et al., 2019).

One study conducted by Wigfield et al. (2021) examined the relationships between achievement motivation, behavioural and

emotional engagement, and metacognition and academic achievement among college students in Taiwan. The results also found the way university students with higher levels of achievement motivation, behavioural and emotional engagement, and metacognition had higher rates of academic achievement. In addition, the study found that students who had higher levels of achievement motivation, behavioural and emotional engagement, and metacognition were more likely to be engaged in the classroom and to have a positive attitude toward their studies. Another study conducted by Anjomshoa et al. (2020) assessed and reported the effects of achievement motivation, behavioural and emotional engagement, and metacognition on academic performance among college students in China. The results of their study identified how students with superior scores on achievement motivation, behavioural and emotional engagement, and metacognition had higher levels of academic performance. Additionally, the study found that students who had higher levels of achievement motivation, behavioural and emotional engagement as well as metacognition were found to be more involved and engaged in classroom settings as well as associated living conditions (Ali et al., 2022).

The evidence has also established how students exhibiting superior degrees of metacognition are better able to manage the demands of university life, as they are better able to reflect on their own thoughts and behaviours and make informed decisions (Kazmi et al., 2021). It has also been identified that metacognition and resilience can lead to protective influences on the mental health of students (Martinez et al., 2019). Overall, the literature suggests that achievement motivation, resilience, depression, and metacognition are important factors to explore when analyzing the contributing and sustaining factors linked with the well-being of university students. Higher levels of achievement motivation and resilience can help students cope with the challenges of university life, while higher levels of depression can negatively affect cognitive performance (Kazmi et al., 2021), academic performance and overall well-

being. Finally, metacognition can help students better manage the demands of university life (Binali et al., [2021](#)).

Purpose of the Study

However, it is unclear whether students belonging to developing countries have the required cognitive capabilities associated with showing higher levels of achievement motivation. It is also unclear how emotional engagement in comparison to behavioural engagement is beneficial for students in Pakistani university settings and how it impacts their achievement motivation there is also a gap in the literature examining the impact of culture and context on the academic achievement of students. Moreover, there is limited literature on this area in Pakistan documenting the role of depression and emotional engagement in impacting the relationship between resilience, behavioural engagement and achievement motivation.

Significance of the Study

Research suggests that university students face many challenges, such as academic stress, social pressures, and financial difficulties, which can negatively affect their academic performance, mental health, and overall well-being (Kirby & Thomas, 2018; Onwuegbuzie & Wilson, 2018). By examining the relationship between achievement motivation, resilience, depression, and metacognition, this review seeks to determine how these factors may affect university students and their ability to cope with the challenges of university life.

Objectives of the Study

- To assess the role of resilience, behavioural and emotional engagement and depression in impacting the achievement motivation of university students.
- To assess gender differences among university students on resilience, behavioural engagement, emotional engagement, depression and achievement motivation.

- To assess the conditional indirect effect of metacognitive awareness on the association among resilience, depression and achievement motivation.

Hypotheses

- Resilience, depression, behavioural engagement, emotional engagement, depression, metacognitive awareness and academic achievement would be significantly associated with one another
- Female students would exhibit higher scores on resilience, metacognitive awareness, behavioural, and achievement motivation along with lower scores on depression
- Resilience, depression, behavioural engagement, emotional engagement, depression and metacognitive awareness would predict achievement motivation

Methods

Participants

For the purpose of examining the correlation among resilience, metacognitive awareness, behavioural engagement, emotional engagement, depression and achievement motivation. A purposive sampling approach was used in the selection of 425 university students in the age range of 18 to 30 years of age out of which 200 were male and 225 were female. The sample size was deemed sufficient as per G power analysis with 95 % confidence intervals to achieve a sufficient effect size.

Instruments

Hamilton Depression Inventory

The Hamilton Depression Inventory (HDI) is a psychological assessment tool used to measure the severity of depression in individuals. Developed in 1960 by Dr Max Hamilton, the HDI consists of a series of questions about a person's feelings and behaviour over the past week, with each question corresponding to a score of 0–2 or 0–4, depending on the severity of the symptom (Bagby et al., [2004](#)). The scores are then tallied up and used to assess the level of depression. The HDI is widely used in both

clinical and research settings and is considered a reliable and valid measure of depression (Williams et al., 2008).

Brief Resilience Scale

The (BRS) is marked for being a self-report measure which focuses on and assesses an individual's capacity to deal with and exhibit recovery from stressful events and conditions in life (Smith et al., 2008). The scale encompasses six items which have been validated to measure the capabilities of individuals to be able to “bounce back” from difficult experiences. Each item is rated on a Likert scale which is marked for having five levels ranging from “strongly disagree” to “strongly agree”. The higher the scores of the participants, the higher the resilience that these individuals can exhibit across different conditions as well as during challenging circumstances (Kyriazos et al., 2018).

The Metacognitive Awareness Scale

The Metacognitive Awareness Scale (MAS) is a psychological test used to measure metacognitive awareness, which is the ability to be aware of and reflect on one's own cognitive processes (Schraw & Dennison, 1994). The MAS consists of 40 items that measure four dimensions of metacognitive awareness: self-reflection, self-monitoring, self-evaluation, and self-regulation. The five-point rating system is used for responding to each item of the questionnaire (1, strongly disagree; 5, strongly agree) and the scores for each dimension are summed up to generate a total score for each dimension and an overall score for metacognitive awareness. The MAS has been used in research in various fields, such as psychology, education, and medicine, and has been determined as being valid and reliable. In addition, the cross-cultural consistency of the scale has been established effectively (Tavakoli et al., 2012).

University Student Engagement Inventory

The University Student Engagement Inventory is a survey designed to measure student

engagement at the university level. It assesses student engagement in terms of both academic and non-academic activities and includes questions related to student satisfaction, sense of belonging, and motivation (Maroco et al., 2016). The survey includes items that measure students' involvement in specific academic and non-academic activities, such as their involvement in extracurricular activities, their relationship with faculty members, their utilization of campus resources, and their engagement in community service. The survey also includes items that measure students' perceptions of their educational environment, such as the quality of instruction and student support. The survey is designed to provide universities with a comprehensive view of student engagement and can be used as a tool for assessing and improving student engagement (Raza et al., 2022). The University Student Engagement Inventory has been found to have good reliability (Nia et al., 2022).

Achievement Motivation Scale

The Achievement Motives Scale (AMS) is a psychometric assessment designed to measure an individual's achievement motivation (Lynn, 1969). It is based on the belief that individuals are motivated to achieve by different needs, such as the need for approval, the need for power, or the need for success. The scale consists of 20 items and is administered by asking respondents to rate the degree to which they agree or disagree with each statement. The AMS has been widely used in research and is widely accepted as a reliable measure of achievement motivation. The reliability of the scale is .82.

Statistical Analysis

SPSS 21.0 was used to analyze the data. Pearson Product Moment Correlation, Independent Sample t-test, Stepwise Regression and Moderated Mediation Analysis were used to assess the predictive associations and mean differences among the study variables. Dummy coding was used with reference groups with regard to gender, resilience, depression, metacognitive

awareness, behavioural engagement and emotional engagement.

Procedure

The ethical approach and permission for the research were sought through the Department BOS. Moreover, an ethical approach in accordance with the domains of the Declaration of Helsinki had been attained through the Institutional Ethics Review of Government College University, Lahore. Data collection was done online through Google Forms. The link to the questionnaire was shared via social media

apps including WhatsApp and Facebook. The emphasis was on distributing the link to as many students as possible who were asked to share the link with their friends. Informed consent was sought from the participants. Participants were also assured that their data would be kept confidential. A total of 425 participants completed the online forms. Following data collection, data analyses were done using the aforementioned statistical interventions. It is also critical to note that though a large sample had been attained, it was still not representative due to a lack of probability sampling.

Results

Table 1

Psychometric Properties of the Constructs Used.

Variables	M	SD	α	No of items
Depression	41.06	7.15	.88	24
Resilience	22.50	11.23	.89	6
Achiev.Motivation	17.43	6.69	.81	30
BehaviEngage.	33.52	9.31	.91	15
Emot.Enga	39.34	10.21	.91	15
Metacog.Awareness	75.22	16.43	.88	40

Note: PWB=psychological wellbeing, α = Reliability coefficient

Reliability analysis showed that behavioural and engagement subscales showed the highest levels of reliability followed by scores on

resilience, metacognitive awareness, depression and achievement motivation scale.

Table 2

Associations among Depression, Resilience, Metacognitive Awareness, Behavioral Engagement, Emotional Engagement and Achievement Motivation.

Constructs	I	II	III	IV	V	VI
I Depression	-	-.58**	-.47**	-.42**	-.39**	-.32**
II Resilience		-	.55**	.51**	.44**	.31**
III Meta. Awareness			-	.39**	.32**	.42**
IV Behavior.Eng.				-	.31**	.34**
V Emotion.Eng					-	.44**
VI Achiev.Mot						-

*Note: ** $p < .01$, * $p < .05$, behavior.eng=behavioral engagement, emotion.eng=emotional engagement, achiev.mot=achievement motivation.*

The assumptions for conducting a correlation analysis were performed and all criteria were met. Normality checks were performed to

assess whether the data were normally distributed. The findings showed that depression had a significant as well as

predictive and negative association with resilience ($r=-.58^{**}$, $p < .01$), metacognitive awareness ($r=-.47^{**}$, $p < .01$), varying degrees of behavioural engagement ($r=-.42^{**}$, $p < .01$), a predictive negative association with emotional engagement ($r=-.39^{**}$, $p < .01$) and a predictive and negative association with achievement motivation ($r=-.32^{**}$, $p < .01$). Resilience had a significant positive association with metacognitive awareness ($r=.55^{**}$, $p <$

$.01$), a predictive and positive association behavioural engagement ($r=.51^{**}$, $p < .01$) as well as a predictive and positive association with emotional engagement ($r=.44^{**}$, $p < .01$) and achievement motivation ($r=.31^{**}$, $p < .01$). Moreover, metacognitive awareness was significantly and positively associated with behavioural engagement, emotional engagement and achievement motivation.

Table 3

Regression of Associations of Depression, Resilience, Metacognitive Awareness, Behavioral Engagement, and Emotional Engagement with regard to Achievement Motivation.

Variables	Hope for Success			Fear of Failure			Achievement Motivation Total		
	R ²	ΔR ²	β [95 % CI]	R ²	ΔR ²	β (95 % CI)	R ²	ΔR ²	β (95 % CI)
Gender									
Male	.01	.01	-.11* [-.465, -1.91]	.00	.00	.01* [-1.48, -.68]	.00	.00	.03* [-1.32, -.41]
Female			Reference			Reference			Reference
Resilience									
Low	.01	.01	-.10* [-.565, -1.91]	.00	.00	.01 [-1.28, .68]	.00	.00	-.03* [-1.52, .43]
High			Reference			Reference			Reference
Depression									
Low	.01	.01	-.13* [-.423, -1.32]	.00	.00	.04 [-1.14, .53]	.00	.00	-.03* [-1.33, .31]
High			Reference			Reference			Reference
Metacognitive Awareness									
Low	.01	.01	-.10* [-.565, -1.91]	.00	.00	.07* [1.38, .02]	.00	.00	-.08* [1.62, .05]
High			Reference			Reference			Reference
Behavioural Engagement									
Low	.01	.01	-.10* [-.565, -1.91]	.00	.00	.01* [-1.38, -.68]	.00	.00	-.03* [-1.62, -.45]
High			Reference			Reference			Reference

	Hope for Success		Fear of Failure		Achievement Motivation Total	
Emotional Engagement			.13* [-			
Low	.01	.01	.3,23, -	.00	.00	.03* [-
			1.45]			1.31, -.33]
High			Reference			Reference

Table 3 revealed that there were strong associations between demographic variables, social support and grit with physical health status among cardiac patients. Female participants had significantly higher scores on hope for success ($\beta = .11, p < .05$) and overall achievement motivation with males exhibiting lower scores on these constructs. Moreover, students scoring low on resilience had lower hope for success ($\beta = -.10, p < .05$), high fear of failure ($\beta = .01, p < .05$) and lower achievement motivation ($\beta = -.03, p < .05$). Lower scores on depression were associated with low hope for success, high fear of failure and an overall low achievement motivation. Similarly, students scoring low on metacognitive awareness had lower scores on hope for success, higher scores on fear of failure and overall low achievement motivation. It was also found that students scoring low on behavioural and emotional engagement had higher scores on fear of failure and low scores on hope for success and overall low achievement motivation. Thus, being a female, having higher levels of resilience, metacognitive awareness, and being behaviourally and emotionally engaged in studies is associated with high hope for success and a high overall achievement motivation.

Discussion

Assessing the predictive impact of depression, resilience, metacognitive awareness, and behavioural and emotional engagement on the achievement of university students was a core aim of this study. Moreover, the emphasis was on assessing whether students in developing countries such as Pakistan have the required cognitive and emotional capabilities and strengths associated with showing high

achievement motivation. The findings of the present study provided numerous insights with regard to the impact of the aforementioned constructs on achievement motivation.

To assess the hypothesis regarding significant associations among resilience, depression, metacognitive awareness, and behavioural and emotional engagement, the results offered confirmation of the hypothesis. These findings are in line with the hypothesized associations thus showing how important it is to enhance resilience and behavioural and emotional engagement along with metacognitive awareness. Research has shown that resilience and metacognitive awareness can both play an important role in the achievement motivation of students (Park & Kim, 2022). It is important for students to develop resilience in order to be able to cope with the challenges of school and learning as shown in the relevant research. However, a disruptive and negative impact of depression has been established in the literature with regard to impacting achievement motivation. Generally, the literature has found that depression is associated with lower levels of achievement motivation and vice versa (Binali et al., 2021). For example, studies have shown that depressed individuals are less likely to pursue goals or engage in activities that involve risk-taking or hard work (Martinez et al., 2021). Furthermore, depressed individuals may have difficulty setting and maintaining goals, and may lack the energy or motivation to accomplish tasks. Additionally, research has suggested that depressed individuals may have difficulty focusing on long-term goals, due to their tendency to ruminate on negative thoughts and experiences.

It was also hypothesized that male students would score high on resilience, metacognitive awareness, and behavioural and emotional engagement while exhibiting lower scores on depression. These associations were affirmed in the relevant literature. Research has shown that resilience is a critical factor in college success, as it helps students handle stress and stay motivated. Gender differences with regard to resilience, metacognition, and emotional and behavioural engagement in university students have been studied extensively in recent years. Research indicates that, on average, females are more resilient than males, and that males tend to exhibit poorer metacognitive skills and behavioural and emotional engagement in college (Wigfield et al., 2021). Females tend to be more resilient than males in university settings, meaning they are better able to cope with difficult situations and rebound quickly (Ahmed et al., 2020). Resilience is a critical factor in college success, as it helps students handle stress and stay motivated. Studies have also shown that females have stronger metacognitive skills than their male counterparts, meaning they are better able to manage and direct their own learning (De la Fuente et al., 2021). In terms of behavioural and emotional engagement in university settings, females tend to be more engaged than males. Studies have demonstrated that women are more likely to participate in class, form study groups, and seek out help from professors when needed. They are also more likely to engage in activities that contribute to their overall college experience, such as attending student activities and forming meaningful relationships with peers and faculty (Wu et al., 2020). Overall, gender differences in terms of resilience, metacognition, and emotional and behavioural engagement in university students suggest that females may have an advantage over males.

Limitations

The study had a number of limitations, especially with regard to the potential of oversampling as data was collected online through university students belonging to one university. It is therefore possible that most of

the students sampled belonged to only one university. Secondly, unequal representation of gender might have inflated the effect sizes identified in the study. Moreover, self-report questionnaires were used to assess the current emotional and cognitive standing of participants on resilience, metacognitive awareness, and behavioural and emotional engagement. Self-reported data can be skewed by bias and may not accurately represent a student's true experience. Additionally, self-reported data may not capture the full range of experiences of gender differences in university students. Despite these limitations, however, the current study adds to our understanding regarding the predictive effect of gender along with resilience, metacognitive awareness, and behavioural and emotional engagement on achievement motivation.

Implications

- The study establishes the need of enhancing resilience, metacognitive awareness, and behavioural and emotional engagement as mechanisms for enhancing achievement motivation.
- The research suggests that providing students with the opportunity to build resilience skills can help them better cope with stress and other difficult situations. Student support services should include programs and activities that empower students to build and strengthen their resilience. This could include providing access to mental health services, providing academic and career guidance, and offering stress management workshops.
- The research indicates that metacognitive strategies can be used to help students develop their capacity for critical thinking and problem-solving. Student support services should provide opportunities for students to learn and practice metacognitive strategies, such as self-reflection and goal-setting.
- The research suggests that emotional engagement can be an important factor in student well-being and academic success. Student support services should provide students with the opportunity to

explore and discuss their emotions in a supportive environment. This could include workshops on emotional regulation, peer support groups, and counselling services.

Conclusion

In conclusion, it has been identified that female students tend to score high on resilience, metacognitive awareness, and behavioural and emotional engagement which in turn impacts their achievement motivation. It has also been

determined that resilience, metacognitive awareness, and behavioural and emotional engagement have a positive predictive impact on achievement motivation. The study also adds to our understanding regarding the need of providing specialized learning interventions aimed at enhancing resilience and metacognitive awareness along with the need of revamping the curriculum to enhance the level of behavioural and emotional engagement of university students.

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