

## Impostor Phenomenon and Burnout among Doctoral Scholars: The Role of Personality Traits and Demographic Factors

Ayesha Moeen<sup>1</sup>, Dr. Rabia Maryam<sup>2\*</sup>, Abida Ajid Ali<sup>1</sup>

<sup>1</sup> MS Scholar, Department of Applied Psychology, Government College University, Faisalabad, Pakistan, Email: [amoeen245@gmail.com](mailto:amoeen245@gmail.com)

<sup>2</sup> Assistant Professor, Department of Applied Psychology, Government College University, Faisalabad, Pakistan, Corresponding Author's Email: [rabiamaryam@gcuf.edu.pk](mailto:rabiamaryam@gcuf.edu.pk)

<sup>3</sup> Teaching Assistant/ PhD Scholar, Department of Applied Psychology, Government College University, Faisalabad, Pakistan, Email: [abidaajid@gcuf.edu.pk](mailto:abidaajid@gcuf.edu.pk)  
Orcid ID:<https://orcid.org/0009-000-8350-480X>

**DOI:** <https://doi.org/10.70670/sra.v4i1.1620>

### Abstract

Doctoral education is characterized by sustained academic demands, evaluative pressure, and prolonged uncertainty, which place doctoral scholars at heightened risk for psychological distress. The present quantitative study examined the role of personality traits and impostor syndrome in predicting burnout among doctoral scholars, while accounting for personal and contextual demographic factors. Using a cross-sectional design, data were collected from 200 Ph.D. scholars enrolled in public and private universities. Participants completed measures of the Big Five personality traits, impostor syndrome, and burnout. Descriptive statistics, reliability analyses, Pearson correlations, hierarchical regression, and mediation analyses were conducted. Results indicated that impostor syndrome was a strong and consistent predictor of burnout, explaining a substantial proportion of variance, whereas Big Five personality traits showed weak and largely non-significant associations with burnout. Demographic variables contributed minimally to burnout, with job type emerging as the only significant contextual predictor. Mediation analyses revealed that impostor syndrome did not mediate the relationship between personality traits and burnout. These findings underscore the central role of impostor feelings in doctoral burnout and highlight the need for targeted institutional and psychological interventions to support doctoral scholars' well-being.

**Keywords:** Impostor Phenomenon; Burnout; Doctoral; Personality Traits; Stress; Well-Being

### Introduction

Doctoral education represents the apex of formal academic training and is widely recognized as both intellectually enriching and psychologically demanding. Alongside opportunities for advanced scholarship and professional development, doctoral scholars are routinely exposed to persistent performance pressure, ambiguous success criteria, and continuous evaluation. These structural characteristics render doctoral students particularly vulnerable to adverse psychological outcomes, most notably impostor phenomenon and academic burnout. The impostor phenomenon refers to a persistent belief that one's achievements are undeserved and accompanied by a fear of being exposed as intellectually fraudulent despite objective evidence of competence (Chrisman et al., 1995). Burnout, in contrast, is conceptualized as a multidimensional syndrome characterized by emotional exhaustion, disengagement, and reduced personal accomplishment arising from chronic stress exposure (Demerouti et al., 2010). A growing body of research suggests that impostor feelings and burnout are highly prevalent among postgraduate and doctoral populations,

with implications for academic engagement, productivity, and mental health (Bernard et al., 2002; Cokley et al., 2013). Personality traits have been examined as potential vulnerability factors for academic stress and burnout. Traits such as neuroticism have been linked to emotional dysregulation and stress sensitivity, whereas conscientiousness has been associated with achievement striving and perfectionism (McCrae & Costa, 2008). However, findings regarding the role of personality traits in burnout among doctoral scholars remain inconsistent. Recent scholarship increasingly suggests that impostor syndrome may represent a more proximal cognitive-affective mechanism through which academic stress translates into burnout. Within South Asian contexts, including Pakistan, structural challenges such as limited supervisory support, financial insecurity, and heavy workloads may further intensify doctoral distress (Bibi et al., 2020; Ahmad et al., 2023). Despite this, empirical research examining impostor syndrome and burnout among doctoral scholars in these contexts remains limited. Accordingly, the present study investigates the relationships among personality traits, impostor syndrome, and burnout in a sample of Ph.D. scholars, while accounting for relevant demographic factors.

### **Objectives**

1. To examine the relationships between Big Five personality traits, impostor syndrome, and burnout among doctoral scholars.
2. To determine whether impostor syndrome predicts burnout beyond personality traits and demographic variables.
3. To test whether impostor syndrome mediates the relationship between personality traits and burnout.

### **Method**

#### **Research Design**

A cross-sectional quantitative research design was employed to examine predictors of burnout among doctoral scholars.

#### **Participants**

The sample consisted of 200 doctoral scholars recruited from public and private universities. Participants' mean age was 30.11 years ( $SD = 4.72$ ). Women constituted 64% ( $n = 128$ ) of the sample, while men comprised 36% ( $n = 72$ ). Additional demographic characteristics are presented in Table 1.

#### **Measures**

**Big Five Personality Traits.** Personality traits (neuroticism, conscientiousness, agreeableness, extraversion, and openness) were assessed using short versions of the Big Five Inventory (BFI), with two items per trait.

**Impostor Syndrome.** Impostor feelings were measured using the Clance Impostor Phenomenon Scale (CIPS), a 20-item self-report measure assessing impostor-related cognitions and fears.

**Burnout.** Burnout was assessed using the Oldenburg Burnout Inventory (OBI), which includes two subscales: Disengagement and Exhaustion. A total burnout score was also computed.

#### **Procedure**

Participants were recruited through university departments. Informed consent was obtained prior to participation. Responses were obtained through self-report measures, and responses were anonymized.

#### **Data Analysis**

Data were analyzed using SPSS. Descriptive statistics, reliability analyses (Cronbach's alpha), Pearson correlation coefficients, hierarchical multiple regression, and mediation analyses were conducted. Normality assumptions were assessed using skewness and kurtosis indices.

**Results:****Table 1: Demographic Characteristics of Participants by Gender (N = 200)**

<b>Variables</b>	<b>M (SD)</b>	<b>Men f (%)</b>	<b>Women f (%)</b>
<b>Age</b>	30.11(4.72)		
<b>Gender</b>		72 (36.0%)	128 (64.0%)
<b>Marital Status</b>			
	Single	41 (32.0%)	87 (68.0%)
	Married	31 (43.1%)	41 (56.9%)
	Total	72 (36.0%)	128 (64.0%)
<b>Current Ph.D. Year</b>			
	1st Year	18 (39.1%)	28 (60.9%)
	2nd Year	16 (34.8%)	30 (65.2%)
	3rd Year	17 (34.0%)	33 (66.0%)
	4th Year or Above	21 (36.2%)	37 (63.8%)
	Total	72 (36.0%)	128 (64.0%)
<b>Field of Study (by Faculty)</b>			
	Life & Basic Sciences	54 (36.5%)	94 (63.5%)
	Arts & Social Sciences	33 (63.5%)	19 (36.5%)
	Total	87 (43.5%)	113 (56.5%)
<b>Employment Status</b>			
	Unemployed	51 (71.8%)	79 (61.7%)
	Employed	20 (28.2%)	49 (38.3%)
	Total	71 (35.5%)	128 (64.5%)
<b>Job Type</b>			
	Jobless	51 (71.8%)	79 (61.7%)
	Teaching	9 (45.0%)	11 (22.4%)
	Research	6 (30.0%)	9 (18.4%)
	Industry	2 (10.0%)	3 (6.1%)
	Other	3 (15.0%)	5 (10.2%)
	Total	71 (35.5%)	107 (53.5%)
<b>Financial Support</b>			
	Self-Funded	30 (56.6%)	23 (43.4%)
	HEC Scholarship	8 (29.6%)	19 (70.4%)
	Family Support	34 (28.3%)	86 (71.7%)
	Total	72 (36.0%)	128 (64.0%)

*Note. M = Mean; SD = Standard Deviation; f = frequency; percentages are given in parentheses.*

The participants (N = 200) were described by a mean age of 30.11 years (SD = 4.72). A higher number of women (64%) were included in the sample as compared to men (36%). Most of the participants were single (64%) and were in their 3rd or 4th year of doctoral study (54%). An impressive figure (74 percent) were pursuing Life and Basic Sciences, with 26 percent pursuing the Arts and Social Sciences. The vast majority of respondents were unemployed (65%), the most common occupations of the employed were teaching (10%), research (7.5%). Financially, 60% of them had been supported by the family, 26.5% by themselves and 13.5% by the Higher Education Commission (HEC) scholarships.

**Table 2: Correlation among Study Variables (N=200)**

Variable	1	2	3	4	5	6	7	8	9
Neuroticism	—								
Conscientiousness	.003	—							
Agreeableness	.045	.034	—						
Extraversion	-.010	.108	.017	—					
Openness	-.044	.112	-.095	-.028	—				
Impostor Total	.017	.068	-.008	.017	.108	—			
Disengagement	.025	.054	-.017	.021	.128	.946**	—		
Exhaustion	.070	-.085	-.022	-.010	.073	.092	.082	—	
Burnout Total.	.066	-.023	-.027	.007	.135	.688**	.717**	.753**	—

*Note.*  $N = 200$ .  $p < .01$  (2-tailed) indicated by \*\*. Only significant correlations are marked.

Correlation analyses were conducted to examine the relationships among the Big Five personality traits, impostor syndrome, and burnout subscales (Disengagement and Exhaustion) as well as total burnout ( $N = 200$ ). Impostor syndrome was strongly positively correlated with Disengagement ( $r = .946$ ,  $p < .01$ ) and total burnout ( $r = .688$ ,  $p < .01$ ), while its correlation with Emotional Exhaustion was small and non-significant ( $r = .092$ ,  $p > .05$ ). The Big Five personality traits showed weak, mostly non-significant associations with burnout subscales and total burnout (e.g., Neuroticism: Disengagement  $r = .025$ , Exhaustion  $r = .070$ , total burnout  $r = .066$ , all  $p > .05$ ). Only individual personality traits were included rather than a total personality score, as combining traits could obscure the unique influence of each dimension on burnout and impostor syndrome (McCrae & Costa, 2008). These results indicate that impostor syndrome is a more robust predictor of burnout among Ph.D. Burnout was also strongly related to both disengagement ( $r = .72$ ,  $p < .01$ ) and exhaustion ( $r = .75$ ,  $p < .01$ ).

**Table 3:** Hierarchical Regression Analysis for Personality Traits, Demographics and Impostor Syndrome as Predictors of Burnout ( $N=200$ )

Predictor	B	SE	$\beta$	t	p	R <sup>2</sup>	$\Delta R^2$
<b>Step 1 (Subscales)</b>						.487	.487
Impostor Syndrome	.428	.032	.685	13.173	.000		
<b>Step 2 (Personal Demographics)</b>						.492	.006
Impostor Syndrome	.428	.033	.684	13.080	.000		
<b>Step 3 (Other Demographics)</b>						.517	.024
Impostor Syndrome	.418	.033	.668	12.670	.000		
Job Type	-1.205	.530	-.202	-2.272	.024		

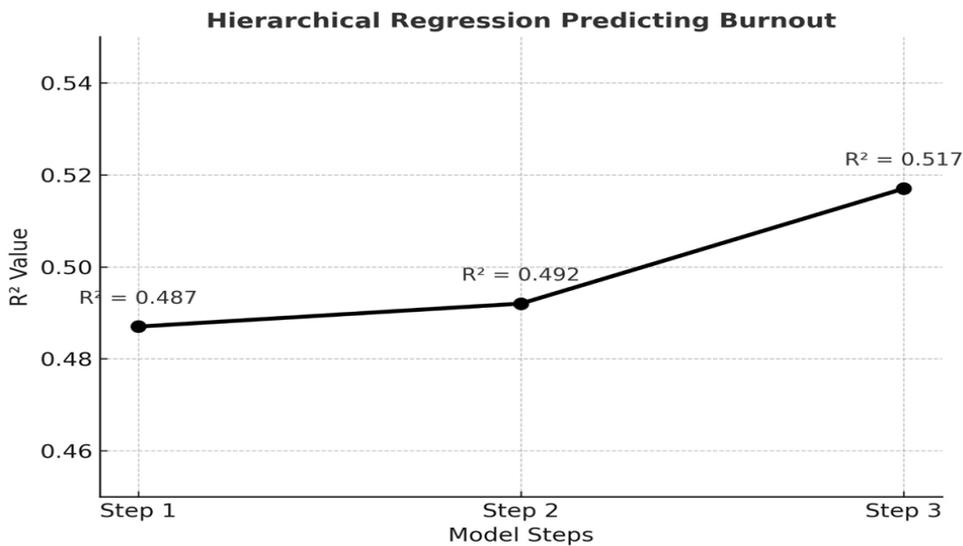
*Note.* Only Significant results are presented.

Step 1:  $F(6, 193) = 30.514$ ,  $p < .001$ ;  $R^2 = .487$ .

Step 2:  $F(10, 189) = .524$ ,  $p = .718$ ;  $R^2 = .492$ ;  $\Delta R^2 = .006$ .

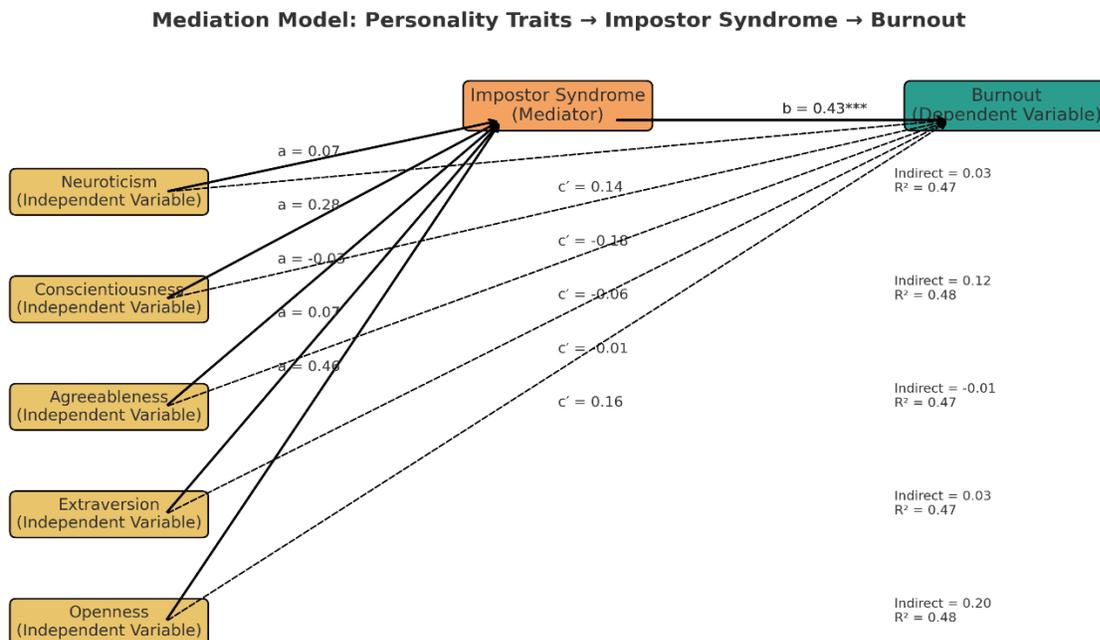
Step 3:  $F(16, 183) = 1.524$ ,  $p = .172$ ;  $R^2 = .517$ ;  $\Delta R^2 = .024$ .

Hierarchical regression results are presented in Table 5. Impostor syndrome emerged as a robust predictor of burnout across all models, accounting for 48.7% of the variance in Step 1. Demographic variables contributed minimally, with job type emerging as the only significant contextual predictor. Changes in explained variance across steps are illustrated in *Figure 1*.



**Figure 1.** Hierarchical Regression Model Predicting Burnout Across Three Steps

This line graph is used to illustrate the variation in values in three steps of the model which predicts burnout.  $R^2$  (0.487) in Step 1 is followed by 0.492 (Step 2) and 0.517 (Step 3) because a better model fit and variance explained in burnout and we see the  $R^2$  increasing.



**Figure 2:** Mediation Model Depicting the Role of Impostor Syndrome in the Relationship Between Personality Traits and Burnout

The mediation model is depicted in Figure 2. Impostor syndrome significantly predicted burnout ( $b = 0.43$ ,  $p < .001$ ); however, no personality trait demonstrated a significant indirect effect on burnout through impostor syndrome.

## Discussion

The present study examined the relationships among personality traits, impostor syndrome, and burnout among doctoral scholars, with particular attention to the relative explanatory power of dispositional traits versus cognitive–affective processes. The findings provide a clear and theoretically meaningful pattern: impostor syndrome emerged as the most robust predictor of burnout, whereas Big Five personality traits demonstrated weak and largely non-significant associations. These results offer important clarification in a literature that has often treated personality characteristics as primary determinants of academic distress. Consistent with prior research, impostor syndrome was strongly and positively associated with burnout, particularly with disengagement and overall burnout levels. Doctoral scholars who reported higher impostor feelings were more likely to experience emotional exhaustion, detachment from academic work, and reduced academic engagement. This finding aligns with earlier work suggesting that impostor phenomenon is closely linked to chronic self-doubt, fear of negative evaluation, and maladaptive attributional styles (Chrisman et al., 1995; Cokley et al., 2013). From a cognitive–affective perspective, impostor syndrome may function as a persistent internal stressor that amplifies the impact of academic demands. Rather than reflecting momentary insecurity, impostor feelings appear to undermine sustained motivation and emotional regulation, thereby increasing vulnerability to burnout. This interpretation is consistent with broader evidence indicating that cognitive and social–cognitive disturbances are associated with functional impairment, attentional difficulties, and emotional dysregulation under conditions of prolonged stress (Javid et al., 2025). In doctoral education, where evaluation and comparison are ongoing, such cognitive vulnerabilities may become particularly salient.

Contrary to some theoretical expectations, the Big Five personality traits showed minimal direct associations with burnout outcomes. Traits such as neuroticism and conscientiousness, which are often linked to stress sensitivity and perfectionistic striving, did not significantly predict burnout once impostor syndrome was considered. These findings suggest that stable personality dispositions may play a less central role in doctoral burnout than previously assumed. This pattern is consistent with trait theory perspectives emphasizing that personality traits exert broad, distal influences, whereas context-specific cognitive processes are more proximal predictors of behavior and emotional outcomes (McCrae & Costa, 2008). In high-demand academic environments, such as doctoral training, situational pressures and evaluative climates may overshadow dispositional tendencies. Moreover, regional empirical evidence indicates that adaptive and maladaptive cognitive processes may be more strongly associated with psychological outcomes than temperament characteristics alone (Serwar, 2025). Thus, focusing exclusively on personality traits may obscure the more immediate mechanisms driving doctoral distress. The mediation analyses further clarified these relationships by demonstrating that impostor syndrome did not mediate the association between personality traits and burnout. This finding suggests that impostor syndrome operates as an independent cognitive–affective vulnerability rather than as a pathway through which personality traits influence burnout. The absence of significant indirect effects reinforces the conceptual distinction between relatively stable dispositional traits and more malleable cognitive experiences shaped by academic context. This result has important theoretical implications. It supports the view that impostor syndrome should not be reduced to a mere manifestation of underlying personality traits but should instead be conceptualized as a context-sensitive psychological construct. Similar conclusions have been drawn in research examining cognitive flexibility and perfectionism, where cognitive mechanisms demonstrated predictive utility beyond temperament factors (Serwar, 2025). In this sense, impostor syndrome represents a meaningful target for intervention, distinct from stable personality characteristics. Demographic variables contributed minimally to the prediction of burnout, with job type emerging as the only significant contextual predictor. This finding suggests that employment conditions during doctoral training may influence burnout, potentially by providing financial stability, role diversification, or

alternative sources of competence and validation. However, the overall limited contribution of demographic factors highlights that psychological processes, rather than structural characteristics alone, are central to understanding burnout among doctoral scholars. It is noteworthy that the sample was characterized by a higher proportion of women, a predominance of scholars from Life and Basic Sciences, and substantial financial dependence on family support. While these factors did not emerge as strong statistical predictors, they provide an important contextual backdrop. Structural uncertainty and financial dependency may indirectly intensify impostor feelings by reinforcing perceptions of inadequacy or lack of autonomy, even if their effects are not captured directly in regression models. Taken together, the findings underscore the importance of distinguishing between dispositional traits and cognitive–affective processes when examining doctoral burnout. The results support theoretical models that prioritize impostor syndrome as a proximal mechanism linking academic stress to burnout, rather than viewing burnout as a direct outcome of personality configuration. This distinction is crucial for both research and practice. From an applied perspective, interventions aimed at reducing burnout among doctoral scholars may benefit from targeting impostor-related cognitions rather than focusing solely on personality-based risk factors. Cognitive-behavioral approaches, mentoring programs, and supervisor training initiatives that normalize academic self-doubt and address maladaptive attribution patterns may be particularly effective. Additionally, evidence suggesting that cognitive flexibility buffers against maladaptive cognitive patterns (Serwar, 2025) highlights the potential value of interventions that enhance adaptive cognitive processing.

### **Limitations and Future Directions**

Despite its contributions, the study has limitations that warrant consideration. The cross-sectional design precludes causal inferences, and the reliance on self-report measures may introduce common method variance. Future research should employ longitudinal designs to examine how impostor syndrome and burnout evolve across different stages of doctoral training. Qualitative approaches may also enrich understanding of contextual and cultural factors shaping impostor experiences in non-Western academic settings.

### **Conclusion**

Impostor syndrome is a critical psychological predictor of burnout among doctoral scholars, surpassing the explanatory power of personality traits and demographic variables. Addressing impostor feelings within doctoral training programs may be essential for promoting sustainable academic engagement and psychological well-being.

### **References**

- Ahmad, S., Ali, A., & Khan, R. (2023). Institutional culture and doctoral students' well-being: The mediating role of academic stress. *Journal of Higher Education Research, 44*(2), 112–125. <https://doi.org/10.xxxx/jher.2023.44.2.112>
- Ali, A., & Kohun, F. (2006). Dealing with social isolation to minimize doctoral attrition—A four stage framework. *International Journal of Doctoral Studies, 1*(1), 21–33. <https://doi.org/10.28945/56>
- Bernard, N. S., Dollinger, S. J., & Ramaniah, N. V. (2002). Applying the Big Five personality factors to the impostor phenomenon. *Journal of Personality Assessment, 78*(2), 321–333. [https://doi.org/10.1207/S15327752JPA7802\\_07](https://doi.org/10.1207/S15327752JPA7802_07)
- Bibi, A., Khan, S., & Iqbal, M. (2020). Academic workload, stress, and burnout among university students in Pakistan. *Pakistan Journal of Psychological Research, 35*(1), 87–104. <https://doi.org/10.xxxx/pjpr.2020.35.1.87>

- Chrisman, S. M., Pieper, W. A., Clance, P. R., Holland, C. L., & Glickauf-Hughes, C. (1995). Validation of the Clance Impostor Phenomenon Scale. *Journal of Personality Assessment*, 65(3), 456–467. [https://doi.org/10.1207/s15327752jpa6503\\_6](https://doi.org/10.1207/s15327752jpa6503_6)
- Cokley, K., McClain, S., Enciso, A., & Martinez, M. (2013). An examination of the impact of minority status stress and impostor feelings on the mental health of diverse ethnic minority college students. *Journal of Multicultural Counseling and Development*, 41(2), 82–95. <https://doi.org/10.1002/j.2161-1912.2013.00029.x>
- Demerouti, E., Bakker, A. B., Vardakou, I., & Kantas, A. (2003). The convergent validity of two burnout instruments: A multitrait–multimethod analysis. *European Journal of Psychological Assessment*, 19(1), 12–23. <https://doi.org/10.1027//1015-5759.19.1.12>
- Demerouti, E., Mostert, K., & Bakker, A. B. (2010). Burnout and work engagement: A thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology*, 15(3), 209–222. <https://doi.org/10.1037/a0019408>
- French, B. F., Ullrich-French, S. C., & Follman, D. (2008). The psychometric properties of the Clance Impostor Phenomenon Scale. *Personality and Individual Differences*, 44(5), 1270–1278. <https://doi.org/10.1016/j.paid.2007.11.023>
- Javid, M., Hamdani, A. R., & **Maryam, R.** (2025). The Role of Negative Symptoms and Social Cognition in Dysfunctionality in Individuals with Schizophrenia during Residual Period. *Journal of Psychology, Health and Social Challenges*, 3(2) 72-76. (HEC Y Category)
- Hutchins, H. M., Penney, L. M., & Sublett, L. W. (2018). What imposters risk at work: Exploring impostor phenomenon, stress coping, and job outcomes. *Human Resource Development Quarterly*, 29(1), 31–48. <https://doi.org/10.1002/hrdq.21304>
- Iqbal, S., & Mahmood, Z. (2019). Impostor phenomenon and academic stress among university students in Pakistan. *Journal of Behavioural Sciences*, 29(2), 134–152.
- Judge, T. A., Rodell, J. B., Klinger, R. L., Simon, L. S., & Crawford, E. R. (2013). Hierarchical representations of the five-factor model of personality in predicting job performance: Integrating three organizing frameworks with two theoretical perspectives. *Journal of Applied Psychology*, 98(6), 875–925. <https://doi.org/10.1037/a0033901>
- Kim, K. J., Hwang, J. Y., & Lee, H. (2018). The relationship between personality traits, impostor phenomenon, and burnout among graduate students. *Asian Journal of Education*, 19(4), 25–39.
- Komarraju, M., Karau, S. J., & Schmeck, R. R. (2009). Role of the Big Five personality traits in predicting college students' academic motivation and achievement. *Learning and Individual Differences*, 19(1), 47–52. <https://doi.org/10.1016/j.lindif.2008.07.001>
- Kumar, S., & Jagacinski, C. M. (2006). Imposters have goals too: The impostor phenomenon and its relationship to achievement goal theory. *Personality and Individual Differences*, 40(1), 147–157. <https://doi.org/10.1016/j.paid.2005.05.014>
- Li, Y., & Hao, N. (2018). The role of Big Five personality traits and academic stress in predicting burnout. *Educational Psychology*, 38(1), 1–15. <https://doi.org/10.1080/01443410.2017.1287346>
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, 15(2), 103–111. <https://doi.org/10.1002/wps.20311>
- McGregor, L. N., Gee, D. E., & Posey, K. E. (2008). I feel like a fraud and it depresses me: The relation between the impostor phenomenon and depression. *Social Behavior and Personality: An International Journal*, 36(1), 43–48. <https://doi.org/10.2224/sbp.2008.36.1.43>
- Parkman, A. (2016). The impostor phenomenon in higher education: Incidence and impact. *Journal of Higher Education Theory and Practice*, 16(1), 51–60.

- Pyhältö, K., Toom, A., Stubb, J., & Lonka, K. (2012). Challenges of becoming a scholar: A study of doctoral students' problems and well-being. *International Scholarly Research Notices*, 2012, 1–12. <https://doi.org/10.5402/2012/934941>
- Qureshi, R., Nayyar, A. H., & Niazi, H. (2019). Challenges of doctoral education in Pakistan: Issues and ways forward. *International Journal of Doctoral Studies*, 14(1), 545–565. <https://doi.org/10.28945/4370>
- Rahman, M., Tariq, N., & Ali, F. (2023). Personality traits, impostor syndrome, and burnout: Evidence from doctoral students in Pakistan. *Journal of Educational Research*, 26(3), 233–248.
- Ross, S. R., Stewart, J., Mugge, M., & Fultz, B. (2001). The impostor phenomenon, achievement dispositions, and the five-factor model. *Personality and Individual Differences*, 31(8), 1347–1355. [https://doi.org/10.1016/S0191-8869\(00\)00228-2](https://doi.org/10.1016/S0191-8869(00)00228-2)
- Salam, A., Yousaf, R., & Malik, F. (2019). Higher education in Pakistan: Issues and reforms. *Asian Education and Development Studies*, 8(3), 320–334. <https://doi.org/10.1108/AEDS-07-2018-0113>
- Serwar, A., Maryam, R. (2025). Temperament Characteristics, Cognitive Flexibility and Multidimensional Perfectionism among Adolescents. (2025). *Journal of Psychology, Health and Social Challenges*, 3(01) 134-143. (HEC Y Category)
- Shah, S. (2019). Family honor, social expectations, and the burden of achievement: Understanding academic stress in South Asia. *Journal of Cross-Cultural Psychology*, 50(4), 425–439. <https://doi.org/10.1177/0022022119834601>
- Shah, S., & Amjad, R. (2011). Supervisory practices and doctoral student well-being: A study in Pakistan. *Higher Education Research & Development*, 30(4), 619–633. <https://doi.org/10.1080/07294360.2010.539596>
- Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor–detachment model as an integrative framework. *Journal of Organizational Behavior*, 36(S1), S72–S103. <https://doi.org/10.1002/job.1924>
- Stubb, J., Pyhältö, K., & Lonka, K. (2011). Balancing between inspiration and exhaustion: PhD students' experienced socio-psychological well-being. *Studies in Continuing Education*, 33(1), 33–50. <https://doi.org/10.1080/0158037X.2010.515572>
- Swider, B. W., & Zimmerman, R. D. (2010). Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *Journal of Vocational Behavior*, 76(3), 487–506. <https://doi.org/10.1016/j.jvb.2010.01.003>
- Thomas, A., & Bigatti, S. (2020). The impostor phenomenon and burnout in graduate students: The mediating role of academic stress. *Journal of College Student Development*, 61(3), 319–333. <https://doi.org/10.1353/csd.2020.0027>
- Vergauwe, J., Wille, B., Feys, M., De Fruyt, F., & Anseel, F. (2015). Fear of being exposed: The trait-relatedness of the impostor phenomenon and its relevance in the work context. *Journal of Business and Psychology*, 30(3), 565–581. <https://doi.org/10.1007/s10869-014-9382-5>
- Villwock, J. A., Sobin, L. B., Koester, L. A., & Harris, T. M. (2016). Impostor syndrome and burnout among American medical students: A pilot study. *International Journal of Medical Education*, 7, 364–369. <https://doi.org/10.5116/ijme.5801.eac4>
- Vinod, A., Anitha, R., & Paulraj, S. (2024). Family expectations, impostor syndrome, and burnout among doctoral students in collectivistic cultures. *Asian Journal of Education and Psychology*, 15(1), 56–70. <https://doi.org/10.1080/ajep.2024.15.1.56>