



RESEARCH PAPER

Intricacies of Imposter Phenomenon, Mental Well-Being, Self-Compassion and Academic Integrity Interactions Among Students: Parallel Mediation Analysis

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ABSTRACT

The purpose of present research is to find out the intricacies of imposter phenomenon, mental well-being, self-compassion and academic integrity interactions among university students through parallel mediation analysis. Imposter phenomenon (IP) is described as inner speech that creates self-doubt about own competency and beliefs, mental well-being of students is another serious concern of higher education organizations, self-compassion interventions helps to lower IP. Present research has cross-sectional non-experimental research design. The method used for collecting data was a survey through in-person visits and Google Form. 227 students of BS (Hons) took part as a sample of the research study. Results revealed that self-compassion and academic integrity fully mediate the relationship between imposter phenomenon and mental well-being. Workshops and training may be arranged to deal with imposters' feelings. IP training may add discussion of contributors to IP in addition to strategies such as diffusion, mindfulness techniques, cognitive restructuring, and goal setting for dealing with impostor experiences.

Keywords: Academic Integrity, Imposter Phenomenon, Mental Well-Being, Parallel Mediation Analysis, Self-Compassion

Introduction

The Imposter phenomenon (IP) is described as inner speech that creates self-doubt about own competency and beliefs. University work environments can be susceptible to IP as science policy and higher educational institutions call for a competitive environment, incessant evaluation, excellence, and progress in academic pursuits. Due to this current situation, students experience uncertainty and scantiness during their studies (Nori&Vanttaja, 2022). Furthermore, Lister et al. (2023) did a literature review and explored that the mental well-being of students is another serious concern that higher education organizations are facing. Certain factors at university may affect students' well-being detrimentally. Universities can exacerbate or trigger mental health problems. At the same time, universities need to perform a proactive role in promoting well-being and preventing poor mental health. Research studies in IP are significant as it is pervasive in educational as well as various professional situations. IP construct is regardless of individual, demographics, or organization (Haar& de Jong, 2022).

The mental health of scholars is a focal point in the media, higher education institutions and literature discourse. Mental ill health is increasing among students. Students are facing more mental health problems as compared to the general populace (Hughes et al., 2018). IP students also display psychological distress and focus on the need to design successful IP intervention strategies (Maftai et al., 2021). Mental health has a significant and inverse relation to impostors (Cusack et al., 2013). IP has a link with low self-

esteem, depression, and anxiety. Besides, students at university are at risk of IP which proposes interventions to reduce IP and positively improve well-being (Pákozdy et al., 2023). Wang et al. (2019) also recommended IP interventions for enhancing students' mental health. IP can be a cause of deleterious psychological health resulting in anxiety, lower mental well-being, and depression. IP feelings are common among learners (Bravata et al., 2019) and have a strong connection with well-being and mental health of the academic population (Wang et al., 2019). Likewise, IP feelings have a long-lasting effect on academic and career pursuits (Neureiter&Traut-Mattausch, 2017). IP is a conviction about a self that accomplishment and success are fraud, despite objective achievement. Marginalized groups in academia faced widespread IP feelings resulting in mental health problems. University and college administrators must take measures to deal with IP as it has a negative association with self-esteem and mental health. Various studies indicated a negative relationship between IP and students' academic performance therefore, it is important to provide awareness and address IP feelings in academics (Ménard&Chittle, 2023).

Self-compassion in the interim can mitigate IP experiences, for example, incompetence feelings, fear of failure, and self-doubt. Moreover, self-compassion has an explicit positive bond to well-being (Batchelder,2020). Johnson and Plisco (2023) reported in their studies that support services can inform students about interventions of self-compassion to reduce IP which is associated with anxiety and depression among students. Furthermore, Cutri et al. (2021) said that academic misconduct is underpinned by the imposter phenomenon. Academic norm violations among students are serious (Cojocariu&Mareş, 2022) and cause societal damage which results in dishonest behaviors in other areas (Guerrero-Dib et al., 2020). Violation of actual or alleged academic integrity impacts mental well-being negatively (Eaton et al., 2023). Laka and Paska (2023) research also supported that academic integrity influences psychological well-being.

Literature Review

Imposter Phenomenon and Mental Wellbeing

Clance and Imes (1978) explained IP as feelings of fraud and doubt about academic success. According to Rohrmann et al. (2016) imposters people associate their success with external factors, for example fortune and are more prone to stress and anxiety. Wang et al. (2019) proposed that IP interventions may be designed for imposter students to improve their mental health conditions. Kenneally et al. (2023) did a study on pharmacy students and reported a higher level of IP which can be reduced with intervention with the intent of improving mental wellbeing. Kananifar et al. (2015) study results showed that a positive significant relation is present among imposter phenomenon and mental health. Franklin (2022) explained that people are undergoing imposter feelings, but the majority are not talking about these feelings resulting in health issues at work. Franklin further reported that females ratio suffering from IP is higher as compared to males. Millennials are facing IP more as compared to other age categories.

Bravata et al. (2020) peer-reviewed study results showed that IP experiences are present in various sets of populations e.g., gender, ethnic groups and are the reason for negative experiences in academics as well as professionals. Haar and de Jong (2022) in their article highlighted that IP researchers also have to pay attention beyond the context of the individual as this area is still ignored. Moreover, it is also associated with negative outcomes of well-being like burnout, anxiety and stress. They stated that 39.7% of people were experiencing frequent imposter issues. Moreover, job depression and anxiety are positively associated with IP. Another research study done by Wolfe (2021) also emphasized that IP is positively linked with anxiety and male college pupils are facing more consequences of imposters than female college students. Based on this evidence, the present research hypothesized the interaction among IP and well-being (Haar& de Jong, 2022).

Ho1: Imposter phenomenon has a significant influence on the students' mental well-being.

Imposter Phenomenon and Self-Compassion

Liu et al (2023) stated that self-compassion interventions help lower IP and distress. Liu did experimental research on college students about the intervention of self-compassion and found that it helps lower IP as well as non-adaptive perfectionism. Self-compassion is to be kind to oneself when suffering from pain. It can be due to failures, personal faults, or life trials. Neff (2023a) presents a theoretical pattern of self-compassion which is based on six elements: overidentification, increased self-kindness, mindfulness, isolation, reduced self-judgment and common humanity.

Tigranyan et al. (2021) studied IP interactions with self-compassion, perfectionistic cognitions, self-esteem, depression, achievement motives, anxiety and self-efficacy among counseling and clinical doctoral scholars of psychology. Most noticeable study outcome was that eighty-eight percent of doctoral students reported moderate IP feelings. IP correlation was significantly positive with self-compassion, anxiety, perfectionistic cognitions and depression while a negative significant correlation was found beside achievement motives. While further research studies in this field will help to understand the consequences of IP on students. Clinical supervisors and faculty can adopt supportive strategies to support pupils in diminishing IP feelings and boosting confidence and competence. Research study of Johnson and Plisco (2023) studied connection among IP, connectedness, mental health and self-compassion among undergraduate black female students. Young adults also go through the phase of IP where stress and self-compassion play their role as these three constructs have a connection with each other. Stress and self-compassion influence the IP (Khurana & Sinha, 2023). Another study on undergraduate first-year students confirms that self-compassion and IP are inversely related (Patzaket al., 2017). Self-compassionate individuals possess a kind attitude towards all while those who have a lower level of self-compassion are much more likely to show an imbalance attitude in relations (Neff, 2003b).

According to Neff (2023a), self-compassion research findings indicate that it is a constructive approach to handle distressful thinking and feelings that engender well-being both mental as well as physical. There are research studies that dismiss generic myths regarding self-compassion which show it as selfish, weak, self-indulgent, or weakened motive. Some interventions can help to improve self-compassion like mindful self-compassion and compassion-focused therapy (Neff, 2023a).

Ho-2: Self-compassion lowers the impact of the imposter phenomenon among students.

Imposter Phenomenon and Academic Integrity

According to Bretag (2016) the term integrity matters as there is a need for a deeper understanding of the concept of integrity. Academic integrity notion is complicated and intricate and there is a need to define the concept of integrity. The International Center for Academic Integrity (2014) explains concept of integrity in academia as an ethical code that requires five central moral principles such as respect, responsibility, trust, honesty, and fairness in the academic world and researchers are expected to show their commitment to these values. Both faculty and study work together to develop culture of academic integrity (AI). Students' participation in managing and initiating their personal AI is crucial for reducing breaches of AI which in turns will be helpful for enhanced institutional reputes (Richards et al., 2016). In recent times higher education has been concerned about issues of credibility and AI as these are matters of enforcement and surveillance. Academics are more dependent on software which are helpful for text-matching like Turnitin (Dawson, 2021). In fact, failure to follow these socially and contextually fabricated procedures of AI which are known as academic dishonesty or misconduct can be a cause of critical results for learners.

Dawson (2021) is of the view that all these approaches are more focused on detection instead of motivating students to maintain academic integrity. Fraudulent feelings promote mimic practices among students such as research misconduct, academic corruption, and textual plagiarism. Academia practices create an atmosphere of thriving failure which leadsto unintended academic fraudulence (Cutriet al., 2021). The imposter phenomenon is a feeling of fraud where individuals perceive their achievements as undeserving regardless of evidence contrary to fact (Clance&Imes, 1978). IP is a collection of feelings, thoughts and behaviors that is the result of misinterpretation of the individual self about achievement as a fraud despite actual efforts (Kearns, 2015).Research conducted on doctoral students reported that most Ph.D. students are experiencing IP (Van de Velde et al., 2019). Beginner academics mostly suffercontinualdoubt in their accomplishment due tothe imposter phenomenon that is associatedwith identity crises (Wilson &Cutri, 2019). One of the causes of academic misconduct among doctoral studies is due to two main significant factors such as cultural differences andthe imposter phenomenon. Academic institutions need to consider the IP to prevent unintended academic wrongful conduct. There is a need for practical strategies to promote academic integrity culture to flourish. Imposters' feelings are the cause of academic dishonesty, textual plagiarism and research misconduct (Cutri et al., 2021).

Ho3: Imposter phenomenon has a negativeassociation with academic integrity among students.

Self-compassion and Wellbeing

Psychological and cognitive well-being both are strongly linked with self-compassion. Self-compassion promotes cognitive and emotional mindset that helps to reduce negative experiences. Self-compassion is not only helpful in replacing negative thoughts but also promotes positive attitude. Self-compassion is the cause of psychological benefits. Self-compassion and mindfulness are similar and distinctive in many respects and are important to developing well-being and emotional resilience (Neff &Dahm, 2015). Self-compassion is associated with mental health (Ehret et al., 2015; Kotera et al., 2018). Moreover, association exists among constructs of motivation, engagement, well-being and self-compassion (Kotera& Ting, 2021). Self-compassion and depression are negatively correlated (Muris et al., 2016). Further, correlation is present among self-compassion, resilience, subjective happiness, meaning in life, and psychological well-being (Sotiropoulou et al., 2023). Mindfulness as well as self-compassion are connected to well-being (McKay & Walker, 2021).

Ho4: Self-compassion has a positive impact on the mental well-being of students.

Academic Integrity and Mental Wellbeing

Academic integrity needs more attention in the present technology-driven era which is the cause of challenges. There is a need for measures to reduce academic dishonesty in this era of the digital age (Cojocariu& Mares, 2022). Lynch et al. (2021) define AI as a moral code built on trust, honesty, fairness and respect while academic dishonesty is a violation of AI codes. Academic integrity influences psychological well-being. Students with higher mental well-being also show high academic integrity. Low academic integrity also decreases mental well-being (Laka&Paska, 2023). Positive mental healthis a combination of emotional, social and psychological well-being (Westerhof& Keyes, 2010). Literature gaps existregarding the impact of academic integrity on the mental well-being of students. There is a need to consider the mental well-being of students while considering academic integrity (Eaton et al., 2023). During COVID-19 research study Eaton and Turner (2020) reported that mental health was inversely related to AI.

Ho5: Academic integrity is inversely related to mental well-being of students.

According to Batchelder (2020), IP is feelings of fraudulence and self-doubt that higher achievers develop. IP results in negative outcomes such as lower psychological health, depression, lower well-being, and anxiety. However, there is also a need for more research studies that help in understanding the resilience of imposters. Moreover, factors contributing to mitigating the experiences faced by imposters are another important area that should be considered. Self-compassion helps in developing resilience in times when students have feelings of anxiety and psychological stress. Batchelder (2020) study conducted on doctoral students reported that IP association with anxiety and depression is positive and the association between IP and well-being is negative. Moreover, self-compassion did not moderate the IP and well-being relationship but worked as a mediator. Literature also supports that IP is related to academic integrity (Cutri et al., 2021) and mental well-being (Haar& de Jong, 2022; Kananifar et al., 2015).

Ho6: Self-compassion worked as a mediator between IP and mental well-being interaction.

Ho7: Academic integrity worked as a mediator between IP and mental well-being interaction.

Material and Methods

Present research followed the cross-sectional non-experimental research design. The method used for collecting data was a survey. Data was collected through in-person visits and Google Form. There were four variables in the study. Imposter phenomenon as the independent variable while mental well-being was taken as a dependent variable and self-compassion, and academic integrity were acted as mediators.

Sample Size

Students from two government sector universities in Islamabad were selected as the study population. After data screening, ultimately, 227 students of BS (Hons) contributed as a sample of the research study, out of which 27.8% were male students while 72.2 % were female students. The age group of students ranged from 19 to 22 years. A random sampling technique was used for choosing the sample size. The initial paragraph of the questionnaire contained information about informed consent of participation in the survey and ensured the confidentiality of students' responses.

Instruments

The imposter phenomenon was evaluated through IP ClanceScale (Clance, 1986). IP scale contained 20 items for measuring IP characteristics. Warwick-Edinburgh Mental Well-Being Scale was used for evaluating the mental well-being of students which contained 14 statements of hedonic as well as eudaimonic traits comprising positive affect, positive functioning and interpersonal relationships. Neff's Scale of Self-Compassion (Short form) consisted of 12 items used for assessing self-compassion. Self-compassion scale items assessed self-kindness, common humanity, self-judgment, mindfulness, isolation, and over-identified (Raes et al., 2010). An academic integrity survey developed by Texas Tech Univ. (2014) was used for evaluating AI which consisted of 10 statements.

The present research used convergent as well as discriminant validity to evaluate cogency. Factor loading was used to measure convergent validity (Awang, 2012; Hair et al., 2010). Optimal loading above 0.60 for items was considered acceptable. According to Awang (2012), loading above .60 for established products is adequate. Similarly, average variance explained (AVE) above 0.50 and composite reliability (CR) above 0.60 for each variable was considered acceptable. Fornell&Larcker criterion was used for calculating the discriminant validity of all variables according to which, discriminant validity can be established when the extracted square root of average variance (AV) of a construct is greater than the

correlation values of construct/s (Fornell&Larcker, 1981). The factor loading, AVE and CR, and Cronbach's Alpha reliability are specified in Table 2 while discriminant validity was given in Table 3.

Results and Discussion

Table 1
Descriptive Analysis

	Mean Stat.	SD Stat.	Skewness values	Kurtosis values
			Statistic (S. E)	Statistic (S.E)
Imposter Phenomenon	2.79	.903	.075(.159)	-1.05(.318)
Mental Wellbeing	2.99	.971	.288(.159)	-.736(.318)
Self-Compassion	2.64	.836	.194(.159)	-.439(.318)
Academic Integrity	3.73	.717	-.755(.159)	.376(.318)

Table 1 is regarding descriptive analysis of constructs imposter phenomenon, mental well-being, self-compassion, and academic integrity. Skewness and kurtosis values are considered excellent when these are between the range of ± 1.0 for psychometric purposes. However, values within the range of ± 2.0 is acceptable (George & Mallery, 2022). Skewness values and Kurtosis values of all variables of the current study are excellent as these are within the range of ± 1.0 except for the IPM Kurtosis value which is acceptable with a range of ± 2.0 .

Table 2
Factor Loading, AVE, CR and Reliability of All Research Variables

	Factor Loading Range	AVE	Composite Reliability	Reliability
1 Imposter Phenomenon	.618-.861	.517	.955	.959
2 Mental Wellbeing	.714-.876	.674	.966	.963
3 Self-Compassion	.605-.872	.574	.941	.918
4 Academic Integrity	.741-.861	.671	.953	.893

SPSS and Macro PROCESS were used for data analysis. Measurement Model includes Cronbach's Alpha reliability, discriminant validity, and convergent validity. The reliability values were above 0.90 which shows excellent reliability (Taber, 2017). CR values were above 0.60 and AVE values were above 0.51 which are acceptable values (Fornell&Larcker, 1981).

Table 3
Discriminant Validity and Correlation among Research Variables

	1	2	3	4
1 Imposter Phenomenon	.719			
2 Mental Wellbeing	-.416**	.820		
3 Self-Compassion	-.536**	.663**	.757	
4 Academic Integrity	-.559**	.422**	.458**	.819

Results showed that the imposter phenomenon has a negative relationship with mental well-being ($r = -.416^{**}$), self-compassion ($r = -.536^{**}$), and academic integrity ($r = -.559^{**}$). This indicated that an increase in the level of imposters among students can lower the levels of mental well-being, self-compassion, and academic integrity.

Table 4
Standardized and non-standardized regression weights

	Unstandardize d Coefficients (B)	S. E	Standardized Coefficients (Beta)	t	Hypothesis
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IP →MWB	-.447	.064	-.416	-6.943**	H1: Accepted
IP →SC	-.496	.051	-.536	-9.650**	H2: Accepted
IP →AI	-.444	.043	-.559	-10.23**	H3: Accepted
SC→MWB	.770	.057	.663	13.471**	H4: Accepted
AI→MWB	.572	.081	.422	7.084**	H5: Accepted

Results of regression showed that the imposter phenomenon (IP) has significant but negative effects on mental well-being ($B=-.447, p<.001$) self-compassion ($B=-.496, p<.001$) and academic integrity ($B=-.444, p<.001$). Moreover, effects of self-compassion ($B=-.770, p<.001$) and academic integrity ($B=-.572, p<.001$) on mental wellbeing were significant and positive.

Table 5
Parallel Mediation Analysis

	Effect	se	t	p	LLCI	ULCI
Total Effect of IP on MWB	-.446	.064	-6.94	< .001	-.573	-.320
Direct Effect of IP on MWB	-.023	.068	-.350	>.05	-.158	.110
Indirect Effect(s)	Effect	BootSE			BootLLCI	BootULCI
IP→SC→MWB	-.338	.048			-.437	-.246
IP→AI→MW	-.084	.039			-.165	-.011
IP→SC,AI →MWB	-.422	.058			-.542	-.310

Results of the total effect describe that IP significantly impacts MWB $b= -.446, p<.001$. However, the results of the direct effect of IP on MWB are not significant due to mediators SC and AI $b=-.023, p>.05$. The significant (negative) mediating effect of SC(Effect= $-.338, p<.001$) and AI (Effect= $-.084, p<.01$) on IP-MWB was found. The total indirect effect of SC and AI was significant and negative(Effect= $-.422, p<.001$).It states that SC and AI fully mediate the relationship between imposter phenomenon and mental well-being.

Conclusion

The present research followed a cross-sectional research design to identify the intricacies of imposter phenomenon, mental well-being, self-compassion and academic integrity interactions among university students through parallel mediation analysis. Imposters develop self-doubt feelings as they fear being exposed as fraudsters. IP is associated with lower self-esteem and depression. Students in higher educational institutions are at risk of IP (Pákozdy et al., 2023). In the present research work, IP relationship was found to be negative with mental well-being, self-compassion, and academic integrity among university students. This indicated that increased imposters among students can lower the levels of mental well-being, self-compassion, and academic integrity.Present study findings also indicated that self-compassion and academic integrity fully mediate the relationship between imposter phenomenon and mental well-being.Research findings of Johnson and Plisco (2023) also confirmed the results of the present research that a connection exists among IP feelings, depression, self-compassion, and stress indicators. Findings showed that self-compassion brings a change in the mental health of students.

Rosenthal et al. (2021) in their study claimed that IP was also common among medical students, and it enhanced in the next year of studies. Additionally, IP lowers the level of self-compassion, sociability, and self-esteem and increases neuroticism and anxiety. The results of Neff's (2003) research study are consistent with present research. Self-compassion is being understood and kind to self in times of failure or discomfort instead of being critical to self where an individual perceives experiences in a larger context of experience instead of perceiving them as isolating. Self-compassionate people thoughtfully

hold painful feelings. Self-compassion results in better mental health in addition to life satisfaction and helps in lowering anxiety and depression (Neff, 2003). IP is adversely associated with academic performance, mental health and self-esteem thus, IP interventions are required to assist learners in their academic activities. Workshops with a special focus on IP may be designed to address the demands of groups or fields, with follow-up to determine the persistent influence of IP interventions (Ménard&Chittle, 2023).

Cai et al (2023) research study results match with present research but the difference exists in the target population. The current study was carried out on students at the university whereas Cai et al (2023) carried out their research on the comparison of self-compassion among autistic and allistic adults through mixed-methods research. Self-compassion level was lower among Autistic participants as compared to allistic adults. Additionally, both groups with higher levels of self-compassion reported less depression signs and better well-being and (Cai et al.,2023). Ferrari et al. (2022) study additionally explained that the self-compassion construct benefits the mental health of females as compared to males. Another research conducted by Cutri et al. (2021) also supported the results of current research investigation. Cutri et al. (2021) did a study on academic integrity and imposter phenomenon among doctoral students and explored that academic misconduct in doctoral students is reinforced by imposter phenomenon in addition to cultural differences. According to Weziak-Bialowolska et al. (2021), psychological characteristics like character strength play a promising role in improving well-being and lowering the probability of depression. Furthermore, a positive link is present among character strengths, mental health, physical health and fitness. However, additional research evidences are needed at a large-scale level through epidemiological data to explore the role of integrity and honesty in determining health concerns as it is still an unexplored area.

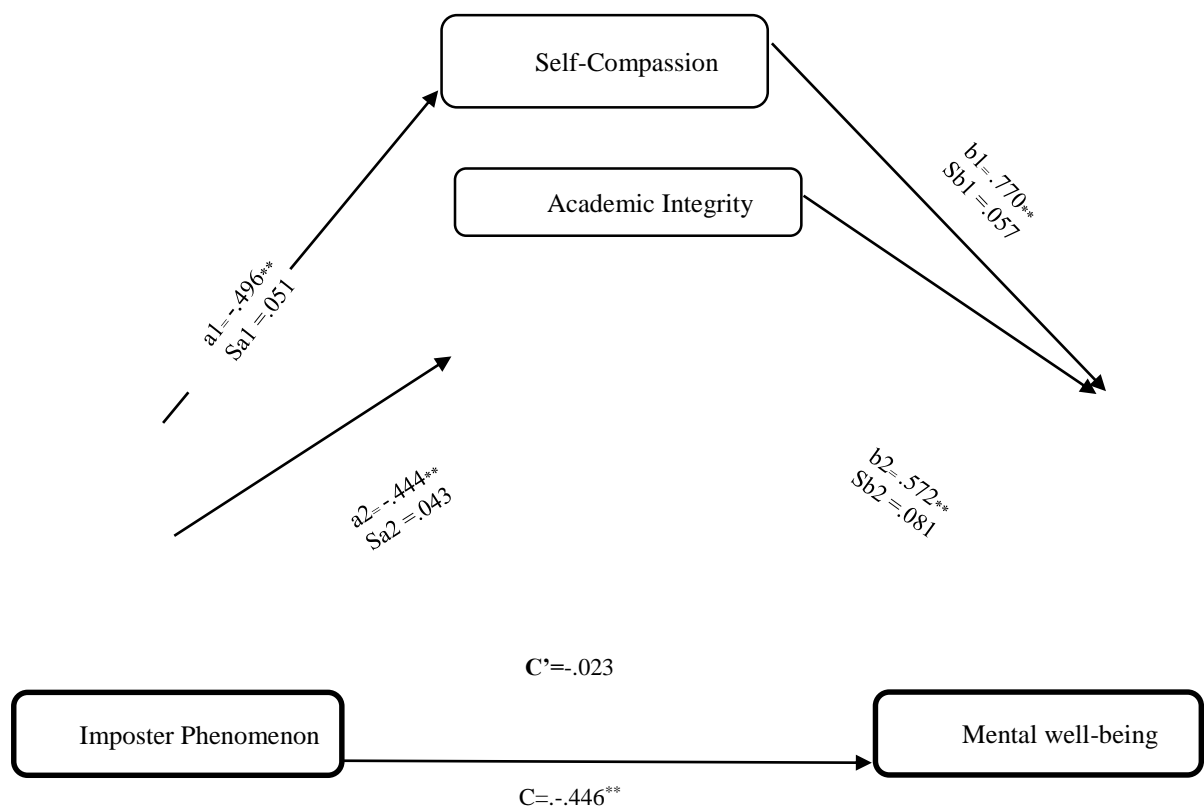


Figure 1 Parallel Mediating Role of Self-Compassion and Academic Integrity in Relationship Between Imposter Phenomenon and Mental Well-Being

Implications and Limitations

The findings of the present study have both practical as well as theoretical implications. Results will contribute to the existent body of literature as the current study also analyzed the parallel mediating role of self-compassion and academic integrity in the relationship between imposter phenomenon, and mental well-being. IP interventions are required to cope with IP feelings.

IP intervention includes promoting responsiveness and regularizing IP feelings through orientation and seminars. Earlier IP intervention can help to reduce mental health problems and adverse changes to career and education plans (Ménard & Chittle, 2023). Moreover, the academics' role in responding to the mental and psychological health problems of pupils is now inevitable, however, supportive cultures and structures are required to do so. Universities have to support academics in promoting the mental well-being of students by providing opportunities to them such as learning, discussion and training (Hughes, et al., 2018). In this regard, practitioners and policymakers may focus more on character strengths such as integrity and honesty to encourage healthy longevity and limit the risks of physical as well as mental disorders (Weziak-Bialowolska et al., 2021). Workshops and training may be arranged to deal with imposters' feelings. IP training may add discussion of contributors to IP in addition to strategies such as diffusion, mindfulness techniques, cognitive restructuring, and goal setting for dealing with impostor experiences. Professionals who are dealing with the mental well-being problems of students should examine IP experiences when working with extremely vulnerable groups. Clinicians who are dealing with IP also have to design interventions to address distress, self-esteem, depression, anxiety and perfectionism. University personnel responsible for developing IP interventions are required to discuss other IP-related constructs (Ménard & Chittle, 2023). Present research has certain limitations such as quantitative research paradigm which limits the freedom of students' responses. In addition to this, longitudinal study may be conducted on present study variables for a deep understanding of interactions among imposter phenomenon, mental well-being, self-compassion and academic integrity.

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