

ORIGINAL ARTICLE:

**METACOGNITIVE BELIEFS AS DETERMINANT OF IMPOSTOR PHENOMENON
AMONG UNIVERSITY STUDENTS IN KARACHI, PAKISTAN**

HIRA MUKHTAR¹, NASREEN BANO², SALMAN SHAZAD³

^{1,2,3}Institute of Clinical Psychology, University of Karachi

CORRESPONDENCE: DR. SALMAN SHAZAD E-mail: shazad_icp@yahoo.com

Submitted: December 26, 2023

Accepted: September 27, 2024

ABSTRACT

OBJECTIVE: Purpose of current research is to explore the association between metacognitive skills and impostor phenomenon in university students.

BACKGROUND: Dysfunctional metacognitions include in the etiological factors of mental health problems [1]. Metacognitions have played a significant role in the maintenance and escalation of worry and anxiety [2]. Likewise, these metacognitions are highly connected with impostor phenomenon which is characterized by anxiety and worries related to self-doubt which lead further to individual's mental health difficulties and maladaptive coping mechanisms.

STUDY DESIGN

Quantitative Survey design

PLACE AND DURATION OF STUDY

Present study was conducted in Karachi, Pakistan from July- September, 2019.

SAMPLE AND METHOD: The convenient sampling technique was employed to recruit the sample of 199 (85 males & 114 females) university students, ages between 18 to 25 years (Mean=20.52, SD=1.52) from different Universities of Karachi, Pakistan.

MEASURES: To assess the variables Well's Metacognitive Beliefs Questionnaire [3] and Clance Impostor Phenomenon Scale [4] was used.

RESULTS: Findings indicated that metacognitive beliefs significantly predict impostor phenomenon ($R^2=.283$, $F=15.316$, $p<.01$) particularly "negative beliefs about uncontrollability and danger of worry" ($\beta=.215$, $t=2.60$, $P<0.05$), "Cognitive Control" ($\beta=.155$, $t=2.19$, $P<0.05$), and "need for control" ($\beta=.161$, $t=1.99$, $P<0.05$) significantly associated with impostor phenomenon.

CONCLUSION: This study deduce that metacognitive skills play significant role in the development of fear related to success and impostor syndrome which can further lead to towards psychological distress and maladaptive coping mechanisms particularly in university students. Considering the findings implications and future directions have been suggested.

KEYWORDS

Metacognitive skills, impostor phenomenon, mental health problems, University students.

INTRODUCTION

Metacognitions are complex thinking processes describing individual's awareness about cognitive processes about which one is mindful. The term metacognition was introduced by Flavell [5] in the field of cognitive and educational psychology and defined metacognitions as "one's knowledge concerning one's own cognitive processes and products, or anything related to them". Based on the contemporary model, metacognitions are interconnected with metacognitive factors including knowledge and beliefs, experiences, and strategies [6].

Individual's awareness about ideas and thoughts and understanding about importance of these thoughts to guide their actions is called as metacognitive knowledge. Metacognitive knowledge can be implicit and explicit. Implicit metacognitive knowledge involves memory search, judgement, heuristics that can be guided by thinking process but not directly verbally penetrable whereas, explicit metacognitive knowledge can conveyable e.g., "worrying can caused heart failure" etc. Similarly, person's views about his/her thoughts called metacognitive beliefs that can be positive or negative. These beliefs lead to emotional coping response for example, if a person holds positive metacognitive beliefs about his/her cognitive process that worrying can help to cope with problems, he/she may continue coping as it provides comfort in such circumstances. On the contrary a person with negative belief about cognitions for example having negative thoughts are considered mental sickness, this probably result in anxiety with the experience of negative thoughts [7]. Therefore, metacognitive belief is considered to be organizer of metacognitive knowledge which can affect person's emotional and coping responses.

Furthermore, metacognitive experiences are person's reaction and interpretations about transitory experiences or their belief system which directly affected on their demeanour or coping mechanisms [8], for example, worrying about worry is an example of metacognitive experiences which can be working as maintaining factor of psychological problems. Moreover, metacognitive strategies are those endeavours which facilitate cognitive or emotional regulation by supressing or distracting the distressing thoughts. However, these strategies can't be helpful in reducing distress as these are unable to address unhelpful metacognitive belief system which is primary source of psychological distress [8, 7]. Recent literature is emphasizing more on to explore the etiological part of metacognitive beliefs in the development of mental health difficulties and concluded that cognitive attentional syndrome is an important etiological factor in the development of psychological problems [9]. Cognitive attentional syndrome (CAS) is a selective attentional bias which limits cognitive functioning and person adopts protective thinking styles to overcome psychological distress and limits metacognitive regulation [7].

Metacognitive theory and cognitive attentional syndrome is based on self-regulatory model of executive functioning model (S-REF model) which specifies three levels of cognitive functioning including low level process, labelled cognitive style and meta system. CAS occurs when cognitive activity held between low level process and labelled cognitive style which further leads to psychological distress. Whereas meta system holds metacognitive knowledge and beliefs which can be helpful for the person to evaluate cognitions and develop realistic and long-term plan to deal with psychological distress [10, 8]. Thus scientific literature has a strong evidence that

highlights the role of CAS and metacognitive beliefs in the development of psychological distress [2, 11, 12]. It is further specified by the literature that metacognitive beliefs are associated with critical self-introspection affects person's self-esteem [13] and caused depression [14], Anxiety [15].

In 2017, a study [15] was conducted on university students which explored a strong predictive association between metacognitive beliefs and fear of success. This fear of success and anxiety is one of the important features of impostor phenomenon. To define Impostor phenomenon it has been described as subjective feeling of intellectual phoniness and perceived fraudulence related to success and achievements [4]. Impostor phenomenon is not a clinical condition, albeit it is about person's internal experiences in which cognitions and emotions are prominent [17], however, one of subclinical features which can cause clinically significant distress [4] and impacts on person's psycho-social functioning [18]. Moreover this connection was also studied and explored that restructuring person's belief systems and unhelpful cognitions related to self with therapeutic interventions can help to address impostor fears adequately [19].

In connection to impostor phenomenon literature also has focused and given attention to its prevalence in genders and it has been stated in studies that originally impostor fears were observed in professional females [20]. However, recent literature reported contrary findings in terms of gender differences for pervasiveness of impostor phenomenon [21, 22]. Moreover, studies [23] put forward that, impostor phenomenon is prevalent in both genders and usually 70% of individuals experience impostor fears once in a lifetime. However, in this regard, cultural and contextual factors are significant and considerable. Considering the fact, current study made general hypothesis to explore the gender dynamics in Pakistani culture. Furthermore, as existing literature review indicates that, impostor phenomenon has sub threshold to cause hindrance in psycho-social development and functioning. Hence, investigation of cognitive features of impostor phenomenon would be helpful to alleviate distress associated with it. Therefore, the objective of current study was to explore the predictive association between metacognitive beliefs and impostor phenomenon among university students and to explore the gender difference on the variable of impostor phenomenon. Hence current study aimed to check the following hypotheses

1. The metacognitive beliefs (i.e., positive beliefs about worry, negative beliefs about uncontrollability and danger of worry, cognitive confidence, need for control and cognitive self-consciousness) would predict the impostor phenomenon among University students.
2. There would be gender difference on the variable of impostor phenomenon among university students.

METHOD

Research Design

In current study quantitative survey method was used, to explore the predictive association between metacognitive beliefs and impostor phenomenon among university students and to see the gender difference on the variable of impostor phenomenon.

Participants

Sample comprised of 199 participants (85 males, 114 females) age ranges between 18 to 25 years, the mean age was 20.52 years ($SD \pm 1.52$) recruited from Universities of Karachi-Pakistan. Sample size of the study was calculated by using G-power 3.1 (i.e., Minimum Sample Size: 107; Critical F: 3.08; Alpha: 0.05; Actual Power: 0.95). Sample was recruited based on the following pre-established inclusion and exclusion criteria.

Inclusion/ Exclusion Criteria:

- Participants with education level of at least intermediate were included in the study.
- Participants with the age bracket of 18 to 25 years were included and participants with age below 18 and above 25 years were excluded from the study.
- Participants with history of any medical, neurological and psychiatric illness were excluded.
- Participants with any kind of physical disability were also excluded as it can lead psychological distress due to special needs and dependency towards others.
- Only those participants were included who agreed and willing to participate voluntarily.

Measures

Inform Consent:

The consent form comprised of the research objectives, nature, confidentiality, right of participation in the study, and right to withdraw from the study.

Demographic Form

The demographic form assessed demographic attributes of sample included age, gender, and academic status of the participants. It also has focused on the demographic characteristic related to inclusion and exclusion criteria of the study.

Metacognitive Questionnaire (MCQ-30)

Metacognitive questionnaire (MCQ-30) short version is developed by Wells and Cartwright [3]. It is four point likert-type scale with a response type from “do not agree” (1) to “agree very much” (4). MCQ-30 comprises on 30 items which further divided into five subscales of six items named “positive belief about worry, Negative Beliefs About Uncontrollability and Danger of worry, cognitive confidence, need for control, and Cognitive Self-Consciousness” MCQ-30 provides five distinctive scores of subscales and overall scale composite score which ranging between 6 to 36. Further, calculated reliability of overall MCQ-30 is 0.86 Cronbach alpha whereas, subscales reliability ranging between 60 to 0.8 Cronbach alpha.

Clance Impostor Phenomenon Scale (CIPS)

Clance Impostor Phenomenon Scale, quantitative measure developed by Clance [4]. It is five points likert type rating scale, ranging between “not true” (1) to “very true” (5), comprises total 22 items. CIPS provides range of score from 22 to 100, participants who scored 40 or below interpreted as with “few features of impostor phenomenon” whereas, participants who scored between 41 to 60 interpreted as mild, 61 to 80 interpreted as moderate, and 81 and above interpreted as with severe or with intense experiences of impostor phenomenon. For current study CIPS calculated reliability is 0.85 Cronbach alpha.

Procedure

To carry out this study first permissions were taken from the authors scales used in the study through email. Then, the material and study proposal review and was approved by the Departmental Research Committee and Ethical Review Board (ERB) of the Institute of Clinical

Psychology. Then to execute the study concerned authorities of universities were contacted for the permission to administer the study protocols with the students of the particular university. Permission was sought through a proper letter describing the nature and purpose of the study. After formal permission, a formal written consent was duly signed by the participants who were willing to be part of the study. Consented participants were then administered with the research measures including demographic form followed by Metacognitive Questionnaire and Clance impostor phenomenon scale. After administration of the of research measures participants concerns related to research were addressed. Moreover, researcher also listened the concerns of the students who wanted to share related to anxiety or any other psychological distress and helped the participants to approach appropriate mental health facilities as per need.

RESULTS

For the statistical analysis of the data descriptive statistics (mean, standard deviation), independent t-test, and multi-linear regression analysis were employed. All the computations were performed on Statistical Package for Social Sciences, version 22 (SPSS-22).

Table 1 and 2 show demographic details of the participants.

Table 1
Summary of Descriptive Statistics For the Gender and Age of The Study Sample

| Variable | Males N=85 | | Females N=114 | | Total N=199 | |
|----------|---------------|-----------|------------------|-----------|----------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Age | 20.988 | 1.419 | 20.160 | 1.486 | 20.52 | 1.529 |

Table 2
Demographic Characteristics of Participants Related to Birth Order and Family Structure of the Study Sample

| Variables | % |
|-------------------------|------|
| Birth order | |
| First | 49.4 |
| Middle | 50.6 |
| Family Structure | |
| Nuclear | 61.4 |
| Joint | 38.6 |

Table 3 illustrate the findings of multi-linear regression analysis, the study model indicates 28% variance overall in impostor phenomenon due to metacognitive beliefs $R^2 = .283$, $F = 15.316$, $p < .01$). Furthermore, coefficient of multi-linear regression analysis (beta values) of metacognitive skills indicate that one unit change in positive beliefs about worry accounts for .046 unit increase; negative beliefs about uncontrollability and danger of worry accounts for .215 unit increase; cognitive confidence accounts for .155 unit increase; need for control accounts for .161 unit increase, and cognitive self-consciousness accounts for .141 unit increase on the level of impostor phenomenon.

Table 3

Multi-Linear Regression Analysis: Predicting Impostor Phenomenon from Metacognitive Beliefs Positive Beliefs About Worry (POS), Negative Beliefs About Uncontrollability and Danger Of Worry (NEG), Cognitive Confidence (CC), Need For Control (NC), And Cognitive Self-Consciousness (CSC).

| Predictor variable | B | Beta | t | Sig. |
|--------------------|------|------|-------|-------|
| POS | .136 | .046 | .651 | .516 |
| NEG | .613 | .215 | 2.604 | .010* |
| CC | .508 | .155 | 2.195 | .029* |
| NC | .558 | .161 | 1.990 | .048* |
| CSC | .451 | .141 | 1.873 | .063 |

Note: $R^2 = .283$ for Model $p < .001$.

Furthermore, Table 4 shows the insignificant gender difference on the impostor phenomenon.

Table 4

Summary of Independent sample t-test showing gender difference on the variable of Impostor Phenomenon (IP).

| Variable | N | M | SD | Df | T | Sig. |
|-----------|-----|--------|--------|-----|-------|------|
| IP | | | | | | |
| Male | 85 | 61.459 | 11.279 | 198 | -.931 | .070 |
| Female | 114 | 63.157 | 13.735 | | | |

Note: (IP) Impostor Phenomenon.

DISCUSSION

Initiation and maintenance of emotional distress can be associated with the way individual thinks and perceives about the environment. Because cognitive notions and belief system influences affects, behaviour, and coping strategies and sometimes masque their inherit potentials and skills. In this regard metacognitive skills and beliefs system provide etiological understanding about psychological distress and maintenance of counterproductive coping styles. Therefore, assumption of this study was to explore the role of metacognitive beliefs and its association with impostor phenomenon. Findings indicate that, metacognitive skills account for 28% variance in the score of impostor phenomenon (Table 3). These findings of the study are getting support from the literature and research evidences that, metacognitive beliefs are significant predictor of fear related to success and self-efficacy [16, 24]. Further analysis of characteristics of impostor

phenomenon highlighted that procrastination, perfectionism; anxiety and worry are significantly associated with metacognitive beliefs [25, 26].

More-over, coefficient summary of analysis (Table 3) indicates that metacognitive beliefs of “negative beliefs about uncontrollability and danger of worry”, “cognitive confidence”, “need for control” have significant positive association with impostor phenomenon, however, metacognitive belief of “positive belief about worry” and “cognitive self-consciousness” show positive but insignificant association with impostor phenomenon. These findings can be explained or describe that individuals with impostor fears are mainly acquiring negative metacognitive beliefs about their cognitive process which is manifested in form of psychological distress (e.g., anxiety and worry etc.) and they tend to involve in unhelpful coping strategies e.g., procrastination or over-involvement in task because of their inflexible metacognitive beliefs to control possible failure or getting control over the situation. Previous researches [27] are also in line with the current findings and found that, metacognitive belief of cognitive control, uncontrollability of danger and need for control are positively associated with negative affect and inability to focus on task because of unrelated thoughts. Moreover, findings of another significant study conducted on young adults directed that metacognitive beliefs are associated with cognitive perseverance and mental health problems. It was further explored and stated that negative metacognitive beliefs are strongest predictor of perfectionism, and leads towards psychological distress [28].

Furthermore in relevance to gender differences on the variable of impostor phenomenon findings of the current study (Table 4) shows insignificant gender difference in impostor phenomenon among university students. Findings indicate that prevalence of impostor phenomenon is same in both genders, which is consistent with findings of previous studies [29, 30]. Furthermore, findings of recent archival research also emphasized that impostor phenomenon is prevalent in both genders beyond the age cohort and impostor fears are also associated with psychological distress as well as deteriorated work performance [31].

In conclusion, the findings of current study highlighted the role of metacognitive beliefs related to impostor phenomenon. It is also evident that negative preservative thinking styles and beliefs make impostor cycle more vicious and distressing. Furthermore, the prevalence of impostor phenomenon is same among both male and female university students. These findings are crucial in terms of developing insight regarding cognitive etiological perspectives of impostor phenomenon which is helpful to develop clinical and therapeutic guidelines for mental health practitioners to develop therapeutic interventions and alleviate distress associated with impostor fears. More-over such findings are also helpful in the provision of awareness programs for university students to get insight about the thinking patterns as phoniness and its impact on their health and performance so that they can be more inclined to approach specific facilities. The major limitation of study its sample of only university students and a very specific age group make it less generalizable. Implementation with different population, age groups and addition of variables about the dynamics of metacognitive beliefs and impostor phenomenon can strengthen the study and make the findings more rigorous.

REFERENCES

1. Cotter J, Yung AR, Carney R, Drake RJ. Metacognitive beliefs in the at-risk mental state: a systematic review and meta-analysis. *Behaviour Research and Therapy*. 2017 Mar 1;90:25-31.
2. Spada MM, Mohiyeddini C, Wells A. Measuring metacognitions associated with emotional distress: Factor structure and predictive validity of the metacognitions questionnaire 30. *Personality and Individual differences*. 2008 Aug 1;45(3):238-42.

3. Wells A, Cartwright-Hatton S. A short form of the metacognitions questionnaire: properties of the MCQ-30. *Behaviour research and therapy*. 2004 Apr 1;42(4):385-96.
4. Clance PR. The impostor phenomenon: Overcoming the fear that haunts your success. (No Title). 1985 Apr.
- Flavell JH. Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American psychologist*. 1979 Oct;34(10):906.
5. Flavell JH. Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American psychologist*. 1979 Oct;34(10):906.
6. Wells A. *Metacognitive therapy for anxiety and depression*. Guilford press; 2011 Mar 14.
7. Jans V, Leclercq D. Metacognitive realism: a cognitive style or a learning strategy?. *Educational Psychology*. 1997 Jan 1;17(1-2):101-10.
8. Wells A. *Emotional disorders and metacognition: Innovative cognitive therapy*. John Wiley & Sons; 2002 Sep 27.
9. Fergus TA, Valentiner DP, McGrath PB, Gier-Lonsway S, Jencius S. The cognitive attentional syndrome: examining relations with mood and anxiety symptoms and distinctiveness from psychological inflexibility in a clinical sample. *Psychiatry research*. 2013 Nov 30;210(1):215-9.
10. Wells A, Matthews G. Modelling cognition in emotional disorder: The S-REF model. *Behaviour research and therapy*. 1996 Nov 1;34(11-12):881-8.
11. Fergus TA, Bardeen JR, Orcutt HK. Attentional control moderates the relationship between activation of the cognitive attentional syndrome and symptoms of psychopathology. *Personality and Individual Differences*. 2012 Aug 1;53(3):213-7.
12. Salmani B, Hasani J. Cognitive attentional syndrome (cas) & cognitive emotion regulation strategies: Transdiagnostic processes or diagnostic based on mood & anxiety disorders. *Journal of Clinical Psychology*. 2013 Sep 23;53(3):91-104.
13. Kolubinski DC, Nikčević AV, Lawrence JA, Spada MM. The role of metacognition in self-critical rumination: An investigation in individuals presenting with low self-esteem. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*. 2016 Mar;34:73-85.
14. McEvoy PM, Mahoney A, Perini SJ, Kingsep P. Changes in post-event processing and metacognitions during cognitive behavioral group therapy for social phobia. *Journal of Anxiety Disorders*. 2009 Jun 1;23(5):617-23.
15. Akkuş K, Yılmaz AE. The role of metacognitions on the relationship between adult attachment and mood symptoms in individuals with obesity. *Journal of Clinical Psychology in Medical Settings*. 2021 Jun;28(2):239-51.
16. Ashrafifard S, Mafakheri A. Investigating the relationship between attribution styles and metacognitive skills with fear of success among students. *Iranian Journal of Psychiatry and Behavioral Sciences*. 2017 Jun 30;11(2).
17. Vergauwe J, Wille B, Feys M, De Fruyt F, Anseel F. Fear of being exposed: The trait-relatedness of the impostor phenomenon and its relevance in the work context. *Journal of Business and Psychology*. 2015 Sep;30:565-81.
18. Neureiter M, Traut-Mattausch E. An inner barrier to career development: Preconditions of the impostor phenomenon and consequences for career development. *Frontiers in psychology*. 2016 Feb 4;7:173631.

19. Zanchetta M, Junker S, Wolf AM, Traut-Mattausch E. "Overcoming the fear that haunts your success"—the effectiveness of interventions for reducing the impostor phenomenon. *Frontiers in psychology*. 2020 May 15;11:503448.
20. Clance PR, Imes SA. The impostor phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, research & practice*. 1978;15(3):241.
21. Li S, Hughes JL, Thu SM. The Links Between Parenting Styles and Impostor Phenomenon. *Psi chi journal of psychological research*. 2014 Jun 1;19(2).
22. Blondeau LA, Awad GH. The relation of the impostor phenomenon to future intentions of mathematics-related school and work. *Journal of Career Development*. 2018 Jun;45(3):253-67.
23. Gravois J. You're Not Fooling Anyone. *Chronicle of Higher Education*. 2007 Nov 9;54(11).
24. Tavakolizadeh J, Tabari J, Akbari A. Academic self-efficacy: predictive role of attachment styles and meta-cognitive skills. *Procedia-Social and behavioral sciences*. 2015 Jan 16;171:113-20.
25. de Jong-Meyer R, Beck B, Riede K. Relationships between rumination, worry, intolerance of uncertainty and metacognitive beliefs. *Personality and Individual Differences*. 2009 Mar 1;46(4):547-51.
26. Abu-al-Qasimi, A., Ahmadi, M., & Kiyamersi, A. The relationship of metacognition and perfectionism with psychological consequences in the addicts. *Journal of Research in Behavioural Sciences*. 2007 Aug 10;5(2):73-9.
27. Carciofo R, Song N, Du F, Wang MM, Zhang K. Metacognitive beliefs mediate the relationship between mind wandering and negative affect. *Personality and Individual Differences*. 2017 Mar 1;107:78-87.
28. Kannis-Dymand L, Hughes E, Mulgrew K, Carter JD, Love S. Examining the roles of metacognitive beliefs and maladaptive aspects of perfectionism in depression and anxiety. *Behavioural and Cognitive Psychotherapy*. 2020 Jul;48(4):442-53.
29. Rackley KR. Examining the role of impostor phenomenon in the college experience. The University of Texas at Austin; 2018.
30. Rohrmann S, Bechtoldt MN, Leonhardt M. Validation of the impostor phenomenon among managers. *Frontiers in psychology*. 2016 Jun 2;7:189700.
31. Bravata DM, Watts SA, Keefer AL, Madhusudhan DK, Taylor KT, Clark DM, Nelson RS, Cokley KO, Hagg

AUTHOR(S) CONTRIBUTION

