

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

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## ABSTRACT

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

## OBJECTIVE

To explore the association between metacognitive skills and impostor phenomenon (IP) among university students.

## STUDY DESIGN

Quantitative Survey design

## PLACE AND DURATION OF STUDY

The study was conducted in three universities in Karachi, Pakistan, namely University of Karachi, NED University and Sir Syed University from July to September 2019.

## METHOD

The convenience 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 in Karachi, Pakistan. To assess the variables, Well's Metacognitive Beliefs Questionnaire<sup>3</sup> and Clance Impostor Phenomenon Scale<sup>4</sup> were 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 deduced 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

Adaptation, Psychological; impostor syndrome; Metacognition; Psychological Distress; Students; Universities; Young Adult.

## INTRODUCTION

Metacognitions are complex thinking processes describing an individual's awareness about cognitive processes about which one is mindful. The term metacognition was introduced by Flavell<sup>5</sup> 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.<sup>6</sup>

An individual's awareness about ideas and thoughts and understanding about the importance of these thoughts to guide their actions is called metacognitive knowledge. This knowledge can be implicit or explicit. Implicit metacognitive knowledge involves memory search, judgement, and heuristics that can be guided by the thinking process, but are not directly verbally penetrable, whereas explicit metacognitive knowledge can be conveyable, e.g., "worrying can cause heart failure," etc. Similarly, a person's views about their thoughts are called metacognitive beliefs that can be positive or negative. These beliefs lead to emotional coping responses. 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 beliefs about cognitions, for instance, having negative thoughts, is considered a mental illness; this probably results in anxiety with the experience of negative thoughts.<sup>7</sup> Therefore, metacognitive belief is considered to be an organiser of metacognitive knowledge, which can affect a person's emotional and coping responses.

Furthermore, metacognitive experiences are an individual's reactions and interpretations about transitory experiences or their belief system that directly affect their demeanour or coping mechanisms.<sup>8</sup> These experiences, such as worrying about worrying, can serve as a contributing factor to psychological issues, and efforts to suppress or divert distressing thoughts are known as metacognitive strategies. However, these strategies may not be helpful in reducing distress as they are unable to address the unhelpful metacognitive belief system, which is the primary source of psychological distress.<sup>7,8</sup> Recent literature emphasises exploring 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.<sup>9</sup> Cognitive attentional syndrome (CAS) is a selective attentional bias that limits cognitive functioning, and a person adopts protective thinking styles to overcome psychological distress and limit metacognitive regulation.<sup>7</sup>

Metacognitive theory and cognitive attentional syndrome are based on the self-regulatory model of executive functioning (S-REF model), which specifies three levels of cognitive functioning, including low-level processes, labelled cognitive styles, and metacognition. CAS occurs when cognitive activity is held between low-level processes and labelled cognitive styles, which further leads to psychological distress. Whereas the metacognition holds metacognitive knowledge and beliefs, which can be helpful for the person to evaluate cognitions and develop a realistic and long-term plan to deal with psychological distress.<sup>8,10</sup> Thus, scientific literature has strong evidence that highlights the role of CAS and metacognitive beliefs in the development of psychological distress.<sup>2,11,12</sup> It is further specified by the literature that metacognitive beliefs are associated with critical self-introspection that affects a person's self-esteem<sup>13</sup> and causes depression,<sup>14</sup> as well as anxiety.<sup>15</sup>

A 2017 study<sup>15</sup> conducted on university students 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 the impostor phenomenon. To define the impostor phenomenon, it has been described as a subjective feeling of intellectual phoniness and perceived fraudulence related to success and achievements.<sup>4,16</sup> The impostor phenomenon is not a clinical condition, albeit it is about a person's internal experiences in which cognitions and emotions are prominent,<sup>17</sup> however, one of the subclinical features that can cause clinically significant distress<sup>4</sup> and impacts on a person's psychosocial functioning.<sup>18</sup> Moreover, this connection was also studied and explored, showing that restructuring a person's belief systems and unhelpful cognitions related to self with therapeutic interventions can help to address impostor fears adequately.<sup>19</sup>

In connection to the impostor phenomenon, literature has also focused on and given attention to its prevalence in genders, and it has been stated in studies that originally impostor fears were observed in professional females.<sup>20</sup> However, recent literature reported contrary findings in terms of gender differences for the pervasiveness of the impostor phenomenon.<sup>21,22</sup>

Moreover, a 2015 research<sup>23</sup> put forward that the 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, the current study made a general hypothesis to explore the gender dynamics in Pakistani culture. Furthermore, as the existing literature review indicates, the impostor phenomenon has a subthreshold to cause hindrance in psychosocial development and functioning. Hence, investigation of cognitive features

of the impostor phenomenon would be helpful to alleviate distress associated with it. Therefore, the objective of the current study was to explore the predictive association between metacognitive beliefs and impostor phenomenon (IP) among university students and to explore the gender difference on the variable of impostor phenomenon. Hence, the 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 differences on the variable of impostor phenomenon among university students.

## METHOD

### Research Design

In the current study, a 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

A sample was recruited based on the following pre-established inclusion and exclusion criteria.

#### Inclusion/Exclusion Criteria:

- Participants with an education of at least intermediate level (12 years) of education were included.
- Participants with the age bracket of 18 to 25 years were included, and participants with ages below 18 and above 25 years were excluded.
- Participants with history of any medical, neurological, or psychiatric illness were excluded.
- Participants with any kind of physical disability were also excluded, as it can lead to psychological distress due to special needs and dependency towards others.
- Only those participants were included who agreed and were willing to participate voluntarily.

### Measures

**Informed Consent:** The consent form is 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 the sample, including age, gender, and academic status of the participants. It also has focused on the demographic characteristics related to inclusion and exclusion criteria of the study.

**Metacognitive Questionnaire-30 (MCQ-30):<sup>3</sup>** It is a short version developed by Wells and Cartwright, with a four-point Likert-type scale with a response type from "do not agree" (1) to "agree very much" (4). MCQ-30 comprises of 30 items, which are 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, ranging between 6 and 36. Further, the calculated reliability of overall MCQ-30 is 0.86 Cronbach's alpha, whereas subscales' reliability ranges between 60 and 0.8 Cronbach's alpha.

**Clance Impostor Phenomenon Scale (CIPS):**<sup>4</sup> It is a quantitative measure developed by Clance, with a five-point Likert-type rating scale, ranging between "not true" (1) to "very true" (5), comprises total 22 items. CIPS provides a range of scores from 22 to 100; participants who scored 40 or below were interpreted as having "few features of impostor phenomenon," whereas participants who scored between 41 and 60 were interpreted as mild, 61 to 80 were interpreted as moderate, and 81 and above were interpreted as having severe or intense experiences of impostor phenomenon. For the current study, CIPS calculated reliability is 0.85 Cronbach's alpha.

### Procedure

To carry out this study, permissions were sought through email from the authors of the scales. Then, the material and study proposal were reviewed and approved by the Departmental Research Committee and Ethical Review Board (ERB) of the Institute of Clinical Psychology (NO: ICP1(101)/5799). To execute the study, concerned authorities of the University of Karachi, NED University and Sir Syed University were contacted for 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 the research measures, including the demographic form followed by the Metacognitive Questionnaire and the Clance impostor phenomenon scale. After administration of the research measures, participant concerns related to research were addressed. Moreover, the researcher also listened to 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

Sample comprised of 199 participants (85 males, 114 females) whose age ranges were between 18 and 25 years; the mean age was 20.52 years (SD ± 1.52) recruited from Universities of Karachi-Pakistan. The 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).

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).

Tables 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	
	M	SD	M	SD	M	SD
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	%
<b>Birth order</b>	
First	49.4
Middle	50.6
<b>Family Structure</b>	
Nuclear	61.4
Joint	38.6

Table 3 illustrates 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 indicates that one unit change in positive beliefs about worry accounts for .046 unit increase; negative beliefs about uncontrollability and danger of worry account 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

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  $p < .001$ . 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).

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 an individual thinks and perceives about the environment. Because cognitive notions and belief systems influence affects, behaviour, and coping strategies and sometimes mask their inherent potentials and skills. The metacognitive skills and beliefs system provides an etiological understanding about psychological distress and maintenance of counterproductive coping styles. Therefore, the assumption of this study was to explore the role of metacognitive beliefs and their association with impostor phenomenon. Findings show metacognitive skills account for 28% variance in the score of the impostor phenomenon (Table 3). These findings of the study are supported by the literature that metacognitive beliefs are significant predictors of fear related to success and self-efficacy.<sup>16,24</sup> Further analysis of characteristics of the impostor phenomenon highlighted that procrastination, perfectionism, anxiety, and worry are significantly associated with metacognitive beliefs.<sup>25,26</sup>

The coefficient summary of analysis (Table 3) indicates that metacognitive beliefs of "negative beliefs about uncontrollability and danger of worry," "cognitive confidence," and "need for control" have significant positive associations with the impostor phenomenon; however, metacognitive beliefs of "positive belief about worry" and "cognitive self-consciousness" show positive but insignificant associations with IP. These findings can be explained as individuals with impostor fear the acquiring of negative metacognitive beliefs about their cognitive process, which are manifested as psychological distress (e.g., anxiety and worry, etc.), and they engage in unhelpful coping strategies, e.g., procrastination or over-involvement in tasks, because of their inflexible metacognitive beliefs to control possible failure or get control over the situation. Previous research<sup>27</sup> is 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. Findings of another significant study conducted on young adults focused metacognitive beliefs are associated with cognitive perseverance and mental health problems. It was further explored that negative metacognitive beliefs are the strongest predictor of perfectionism and lead towards psychological distress.<sup>28</sup>

In relevance to gender differences on the variable of impostor phenomenon, findings of the current study (Table 4) show insignificant gender differences in the impostor phenomenon among university students. Findings indicate that the prevalence of the impostor phenomenon is the same for both genders, which is consistent with findings of previous studies.<sup>29,30</sup> Findings of recent archival research also emphasised that the 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.<sup>31</sup>

## CONCLUSION

The findings of the current study highlighted the role of metacognitive beliefs related to impostor phenomena. It is also evident that negative preservative thinking styles and beliefs make the impostor cycle more vicious and distressing. The prevalence of the impostor phenomenon is the same among both male and female university students. These findings are crucial to develop 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. Such findings are also helpful in the provision of awareness programs for university students to get insight into 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 the study is that it comprises a sample of only university students, and a very specific age group which make it less generalisable. Implementation with different populations and 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.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## DISCLOSURE

None

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None

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