

Metacognitive Beliefs and Anxiety among Young Adults

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ABSTRACT

This study aims to examine the relationship between metacognitive beliefs and anxiety among young adults and it also explores the gender differences in both these variables. Metacognitive theory suggests that beliefs about an individual's cognition plays a vital role in developing and maintaining anxiety. A quantitative research design was used and the sample consisted of 120 participants out of which 60 are females and 60 are males that are aged between 18-30 years. Data was collected using the Metacognitions Questionnaire (MCQ-30) and the Generalized Anxiety Disorder Scale (GAD-7). Pearson's product moment correlation and independent samples t-test were used for the statistical analysis. The results revealed a strong positive and statistically significant correlation between metacognitive beliefs and anxiety ($r=.753$, $p<.001$), indicating higher maladaptive beliefs are associated with higher levels of anxiety. Furthermore, no significant anxiety differences were found in anxiety ($p>.05$) or metacognitive beliefs ($p>.05$).

Keywords: *Metacognitive Beliefs, Anxiety, Metacognition, Young Adults*

Concept of Anxiety

Anxiety is a bodily response to stress, which helps our body to stay alert during situations which are challenging. It can have an impact on our daily life functioning when it becomes persistent, overwhelming, and disproportionate to the circumstances of our lives. Fear and anxiety are two different entities (Daniel-Watanabe, 2021). Fear is a response to danger that is immediate, automatic, for a very short period of time and a response catered to the present which triggers our body's fight or flight mode. On the other hand, anxiety is future oriented which is primarily focused on potential threats. Both of these are normal mechanisms of human survival but they could also become disorders if they are prolonged, more intense or disrupt daily life functioning.

Young adulthood is referred to as the developmental period from approximately 18 to 30 years of age, it is a phase that is marked by continuous cognitive, emotional, and social growth as individuals face transition out of adolescence and into more stable adult roles. This stage includes the completion of the education, start of careers, and developing long term relationships.

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Concept of Metacognition

Metacognition was a term coined by John Flavell in the mid 1970's which derives from the term meta memory, which was also coined by him. He viewed metacognition as the knowledge which learners have about the cognition of their own. It includes planning of how a task is approached, how we comprehend it and the evaluation of the process which is required to improve the efficiency of learning. It is divided into two components: Metacognitive Knowledge which is what one knows about their own learning and thinking whereas Metacognitive Regulation is having an active control of one's own thinking.

Metacognitive Beliefs

Metacognitive Beliefs are one's assumptions, knowledge, and beliefs about what they think about their own thinking and mental experiences other than what they thought about themselves, these beliefs influence how people monitor, modulate and interpret their own thoughts, which plays a vital role in mental health and psychological distress.

Metacognitive beliefs that are of two different types-

- **Positive metacognitive Beliefs-** These are the beliefs that one has about their cognitive strategies, like worry, rumination, etc. For instance, if a person believes that worrying helps them cope, then they would think that analysing problems will keep them safe as well.
- **Negative Metacognitive Beliefs-** These are the beliefs that are uncontrollable, dangerous. For instance, if a person thinks I cannot stop worrying, some thoughts make me lose my mind, and if I think too much, it must be true.

Wells Metacognitive Model of Anxiety

It was developed by Adrian Wells. It proposes that emotional disorders are always maintained by beliefs of individuals about thinking and the strategies they would use to control their thoughts, not by the content of the thoughts. The core assumption of this model is maintained by maladaptive thinking patterns which are called Cognitive Attention Syndrome. It is a style by which individual responses to negative thoughts. It may include worry, rumination, monitoring of threats, separation of thoughts, and avoidance behaviours.

The structure of this model is as follows-

- Trigger event
- Activation of positive metacognitive beliefs
- Cognitive attention syndrome
- Activation of negative metacognitive beliefs
- Maintenance of anxiety

The vicious cycle continues as the trigger turns the positive beliefs about worry to worry and then negative beliefs about worry to anxiety, and while controlling them, and increasing the anxiety.

Young adults experience this frequently because of academic performance, pressure, career, uncertainty, social comparison, or relationship stress. If their maladaptive metacognitive beliefs are strong, stresses like this repeatedly activate the CAS leading to persistent anxiety symptoms.

REVIEW OF LITERATURE

Fox et al. (2023) examined whether metacognitive biases in anxiety and depression are stable characteristics or dependent on current states, and whether metacognitive confidence changes with levels of symptoms. The findings indicate that individuals receiving interventions such as internet based CBT and antidepressant treatment showed an increase in the metacognitive confidence along with reductions in anxiety and depression, whereas very minimal changes were observed in the control group.

Nordahl et al. (2023) investigated the relation among dysfunctional metacognitive beliefs, maladaptive metacognitive strategies, and anxiety symptoms. The findings indicated that dysfunctional metacognitive beliefs predicted anxiety over time, with maladaptive strategies partially mediating this relationship. The study further demonstrated that specific components of metacognition play a consistent role in the development and maintenance of anxiety.

Mitsea et al. (2022) examined the effectiveness of mindfulness based interventions in reducing anxiety and enhancing well-being, with a focus on metacognitive processes. The findings suggested that mindfulness practices were associated with reduced stress-related physiological responses and improved emotional regulation. The study also highlighted that mindfulness can function as a form of metacognitive training, enabling individuals to better regulate cognitive and emotional processes.

Sato (2022) explored the role of metacognition in self-regulated learning and academic performance. The findings indicated that metacognitive processes are crucial for effective learning, as they enhance self-regulation, strategic thinking, and cognitive control. The study emphasized the importance of integrating metacognitive approaches in both research and educational practices.

Research gap

As it can be perceived after reviewing, a lot of research shows that metacognitive beliefs have a crucial role in the developing and maintaining the anxiety. Previous studies have mainly emphasized clinical groups, disorder specific cohorts, or wide adult age brackets. Moreover, the connection between metacognitive beliefs and anxiety in this age group is still insufficiently examined. While the gender disparities in anxiety are well researched, there is very little research that has been made to explore the gender differences in both anxiety and metacognitive beliefs among young adults while also exploring their relationship. Therefore, there is a requirement for the research that specially examines the relation between metacognitive beliefs and anxiety among adults which are aged between 18 to 30 years, while also exploring potential gender differences in anxiety and metacognitive beliefs within this group. Addressing the gap like this may contribute to a much more focused understanding of anxiety during the emerging and young adulthood and may have some implications for early identification and intervention.

Rationale

The increasing prevalence of anxiety among young adults highlights the need to understand the underlying cognitive processes contributing to the development of the same. Metacognitive beliefs play a crucial role in shaping how individuals respond to their thoughts, which may influence anxiety levels. Despite the growing research, limited studies have examined this relationship within the context of young adults. Therefore, the present

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study aims to explore the association between metacognitive beliefs and anxiety, which may contribute to better understanding and development of effective psychological interventions.

Objectives

- To find out the relation between the metacognitive beliefs and anxiety among young adults aged between 18 to 30 years
- To assess gender differences in anxiety levels and metacognitive beliefs in males and females.

Hypothesis

- **H1:** There will be a significant relation between metacognitive beliefs and anxiety among young adults.
- **H2:** There will be a significant gender difference in anxiety levels among males and females.
- **H3:** There will be a significant gender difference in metacognitive beliefs among male and female young adults.

METHODOLOGY

Research design

This study uses a quantitative cross-sectional research design. A correlational design was used to examine the relationship between metacognitive beliefs and anxiety. Furthermore, a comparative design was used to assess gender differences in anxiety and metacognitive beliefs.

Participants

The sample consists of 120 participants out of which 60 were male and 60 are female.

Instruments

- **Metacognitions Questionnaire-30:** The Metacognitions Questionnaire 30 (MCQ-30), developed by Adrian Wells and Sam Cartwright-Hatton (2004), is a 30-item self-report instrument designed to assess individual differences in metacognitive beliefs. The scale measures five dimensions: positive beliefs about worry, negative beliefs concerning the uncontrollability and danger of worry, cognitive confidence, need to control thoughts, and cognitive self-consciousness. The MCQ-30 has demonstrated good internal consistency and validity across clinical and non-clinical populations and is widely used in research examining anxiety and related emotional disorders.
- **Generalized Anxiety Disorder Scale:** The Generalized Anxiety Disorder 7 (GAD-7), developed by Robert L. Spitzer, Kurt Kroenke, Janet B. W. Williams, and Bernd Löwe (2006), is a 7-item self-report questionnaire used to assess the severity of generalized anxiety symptoms over the past two weeks. The GAD-7 has demonstrated strong reliability, good construct validity, and is widely used in both clinical practice and research settings to screen for and measure anxiety symptoms.

Procedure

The goal of the study was explained to the participants prior to data collection, and they were given the assurance that their answers would remain private. Every participant gave their informed consent. They were assured that there were no right or wrong answers and

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instructed to answer truthfully. A total of about eight minutes were needed to finish both questions. Following completion, participants received gratitude for their involvement.

Variables

- Independent Variable is the Metacognitive Beliefs
- Dependent Variable is Anxiety
- Grouping Variable is Gender

Statistical Analysis

The data were analysed using jamovi. Descriptive statistics, including mean and standard deviation, were computed for all variables. A Pearson product–moment correlation analysis was conducted to examine the relationship between metacognitive beliefs and anxiety. Independent samples t-tests were performed to assess gender differences in anxiety and metacognitive beliefs. Statistical significance was set at $p < .05$. Assumptions of normality and homogeneity of variance were checked prior to analysis. The results were presented in tabular form, with corresponding values of correlation coefficients, t-statistics, degrees of freedom, and p-values.

RESULTS AND DISCUSSION

Results

Table No.1 Descriptive statistics of the variables by Gender

Variables	Gender	N	Mean	SD
Anxiety	Male	60	8.68	5.36
	Female	60	7.63	5.83
Metacognitive Beliefs	Male	60	71.8	17.6
	Female	60	71.5	19.0

Table No.1, presents the descriptive statistics of anxiety and metacognitive beliefs by gender, the mean anxiety score is a bit higher in males compared to females. Moreover, metacognitive belief scores were almost similar in both the genders. Standard deviations are indicative of moderate variability in both the groups.

Table No.2 Correlation between Metacognitive Beliefs and Anxiety

Variable 1	Variable 2	r	df	p
Metacognitive Beliefs	Anxiety	.753	118	<.001

Table No.2, indicates that there is a strong positive correlation between Metacognitive Beliefs and Anxiety ($r=.753$, $p<.001$). It suggests that higher metacognitive beliefs are significantly associated with levels of anxiety among young adults.

Table No. 3 Gender Differences (Independent Sample t-test)

Variables	Mean (females)	Mean (males)	t	df	p
Anxiety	8.68	7.63	1.03	118	.307
Metacognitive Beliefs	71.8	71.5	0.07	118	.944

Table No. 3, represents the Gender Differences for Metacognitive Beliefs and Anxiety. The difference in anxiety scores is insignificant ($t=1.03$, $p=.307$), similarly there is no significant gender differences was found in metacognitive beliefs ($t=1.03$, $p=.944$). these finding clearly

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suggests that there are no gender differences in metacognitive beliefs and anxiety in this sample of 120 participants.

Discussion

This research aims to find the relationship between metacognitive beliefs and anxiety among young adults that are aged between 18 to 30 years. It also aims to explore the gender differences and anxiety and metacognitive beliefs. A sample of 120 participants was used by a cross-sectional method out of which 60 were males and 60 were females. The independent variable is the Metacognitive Beliefs, the dependent variable is Anxiety and the grouping variable is Gender.

This research uses a correlation research design to examine the association between the two variables, metacognitive beliefs and anxiety. Conversely, the independent sample t-test were used to compare males and females, for gender differences in anxiety and metacognitive beliefs. Hypothesis 1 was supported, as the results revealed a strong positive and statistically significant correlation between metacognitive beliefs and anxiety among young adults ($r = .753, p < .001$). Hypothesis 2 was not supported, as the independent samples t-test showed no statistically significant gender difference in anxiety levels ($t = 1.03, p = .307$). Hypothesis 3 was also not supported, as no statistically significant gender difference was found in metacognitive beliefs ($p = .944$).

The study found a strong positive and significant correlation between meta cognitive beliefs and anxiety, which means that individuals who have high adaptive beliefs tend to report higher symptoms of anxiety. It suggests that dysfunctional beliefs about our cognition are closely associated with emotional distress. This correlation ($r = .753, p < .001$) indicates that metacognitive beliefs play a significant role in influencing anxiety.

This finding is consistent with previous research as well as it was reported in a study that maladaptive meta cognitive beliefs have been a significant predictor of anxiety symptoms in both clinical and non-clinical populations (Adrian Wells, Cartwright-Hatton, 2004). Similarly, it was also found that negative beliefs about uncontrollability of thoughts are strongly associated with high anxiety levels (Spada, 2008). According to the Metacognitive Model, which was given by Adrian Wells, anxiety is maintained by beliefs about thinking rather than the content of our thoughts. Some beliefs which are maladaptive in nature, like the idea that worry is uncontrollable, always amplify our anxiety. The CAS cognitive attention syndrome model also explains how worry, threat and rumination maintain our anxiety. And if we attempt to control our thoughts or suppress them, we may increase our anxiety levels. The positive beliefs about worry, reinforces repetitive, thinking patterns which sustains, emotional distress. Cognitive confidence can heighten our self-doubt, and uncertainty, which further increases anxiety. Cognitive self-consciousness makes a person aware of their thinking, which also helps to intensify anxiety symptoms. In the cognitive theory, given by Aaron Beck, the distorted thinking patterns like over generalisation, black, or white thinking, or catastrophizing contributes to anxiety. While metacognitive theory proves this further by highlighting that beliefs about one thinking, maintain the anxiety, even when the content or our thoughts change. Therefore, anxiety is influenced by cognition and metacognitive beliefs. The period of young adulthood, which is marked by identity formation, academic pressure, the pressure to earn, uncertainty about the career, and major life transitions. These factors play a role to increase rumination, worry and once chances to be vulnerable to anxiety. Individuals who have adaptive metacognitive beliefs are affected

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more than the others during these transitions and changes. High social pressure and comparison triggered these dysfunctional thoughts more.

Thus, these findings also strengthen the arguments that beliefs about thinking have an important role to play in maintaining anxiety. This correlation suggests that our thinking is not only associated with anxiety but also has a vulnerability, which in young adults could be academic pressure, stress about future, career.

On the other hand, while finding the gender differences in anxiety, there is ($t = 1.03$, $p = .307$), no significant difference which was found in the anxiety levels of males and females. But the mean anxiety scores were a bit higher among females, but the difference is not significant. This shows that anxiety levels are comparable between males and females in this research sample. This may be the cause because nowadays, males, and females. In this age group experience, similar academic, social occupational pressure during young adulthood. Studies done previously also suggest that gender differences subside in young adults samples. This may be the case because of the changing social norms and increased gender equality which reduces traditional emotional expression of differences, the awareness of mental health in today's time and willingness to report anxiety across both the genders in these 120 participants. Other factors like family expectations, culture, societal expectations, also influence anxiety reporting in both the genders. Thus, we can say that gender is not a main factor that influences anxiety among young adults in this sample. In today's time other factors and stressors are more crucial than gender in determining anxiety levels.

Gender differences in metacognitive beliefs are also not significant ($t = 0.0699$, $p = .944$). Both males and females have showed very similar levels of my adaptive meta cognitive patterns which shows that it does not influence gender in younger adults. Among these 120 participants. Studies done previously also demonstrate the same patterns of minimal gender differences in the overall scores, it also suggests that these beliefs work similarly in this age group across the genders (Hjemdal, 2013).

Cognitive beliefs are developed through cognitive learning and social experiences in both genders, so cognitive abilities operate in a same way. In this age group education, societal experiences, developmental experiences mould the patterns of thinking.

In conclusion, this study confirms a very strong relationship between metacognitive beliefs and anxiety. Gender is not a significant influence in both anxiety levels and metacognitive beliefs. The age group of 18 to 30 years is a very crucial period where male adaptive thought patterns may interfere and worse emotional distress of an individual. Therefore, these findings suggest the same and interventions like meta, cognitive therapy and cognitive therapy could be used.

CONCLUSION

The metacognitive beliefs have a significant role in influencing the anxiety in young adults. People who hold on these maladaptive beliefs about their cognitions are more prone to have these symptoms of anxiety. Gender is not a significant influence on anxiety and metacognitive beliefs in this sample of 120 participants. These findings also reinforce the needs to target metacognitive beliefs in therapeutic interventions which could help to reduce anxiety by changing dysfunctional beliefs. Overall, these findings reveal that the need to understand how individuals relate to their own cognition to better address the symptoms of anxiety.

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Limitations of the study

- A very small sample was used, which limits generalization.
- The sample size was of only young adults, so findings are only related to that age group.
- Data collection that was done using the self-report questionnaires which one may fill incorrectly due to societal pressure or fear of judgement.
- This study did not examine specific components of the metacognitive beliefs
- Variables like culture and socioeconomic factors were not explored

Suggestions for future researchers

- Studies in future could have a more diverse and a large sample
- Comparative studies of different age group can provide better results
- Future researches could explore the subscales of metacognition
- They could use other factors like coping mechanisms, stress, rumination, or resilience.

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Conflict of Interest

The author(s) declared no conflict of interest.

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