



Citation: Naz, M., Asghar, A., Mujitaba, A., & Shakoor, S. (2026). Evaluating the Effectiveness of Metacognitive Techniques in Reducing Body Dissatisfaction Among Pakistani Young Adults: A Pilot Randomized Controlled Trial. *Regional Lens*, 5(1), 166–178. <https://doi.org/10.55737/rl.v5i1.26179>

Pages: 166–178 ▶ DOI: 10.55737/rl.v5i1.26179 ▶ Volume 5 ▶ Issue 1 (2026) ▶ © The Author(s) 2026

Evaluating the Effectiveness of Metacognitive Techniques in Reducing Body Dissatisfaction Among Pakistani Young Adults: A Pilot Randomized Controlled Trail

Manahil Naz ¹ Areeba Asghar ² Ather Mujitaba ^{3*} Seemab Shakoor ⁴

Corresponding Author: Ather Mujitaba (Email: ather.mujitaba@gift.edu.pk)

Abstract: Body dissatisfaction among young adults is related with poor mental health, low self-esteem and eating disorders. Factors include unrealistic beauty standards, psychological factors, and distorted body image beliefs. This pilot randomized controlled trial examined the efficacy of metacognitive intervention in reducing body dissatisfaction in Pakistani undergraduates. Initially, 16 participants (age 18-25) were recruited, but after 6 dropouts, the final sample included 10 participants who completed all four sessions. There were 5 participants randomly assigned to each the MCT and Control group. The MCT group received a metacognitive intervention over two weeks, including mindfulness grounding, self-monitoring, diffusion, and acceptance strategies, based on Wells' Metacognitive Model (2009). The Control group listened nature sounds without therapeutic input. Body dissatisfaction was measured pre- and post-intervention using the Body Cathexis Scale (BCS). Mann–Whitney U test was used to assess between-group difference, revealing no significant difference between pre-test scores ($U = 8.00, p = .346$), but significant improvement in post-test scores ($U = 0.00, p = .009$). A Wilcoxon Signed–Ranks was used to assess within-group differences that confirmed a significant pre-post-test difference ($Z = -2.06, P = .039$). The finding indicates that brief MCT can significantly decrease body dissatisfaction in young adults. Even with the limitation of small sample size and attrition, results show potential for affordable and sustainable mental health strategies. To validate additional studies with larger samples are suggested to assess long-term possessions.

Key Words: Metacognitive Intervention, Body Dissatisfaction, Body Cathexis Scale, Dropout Rate

Introduction

Body image dissatisfaction is a prevalent psychological issue that associate with unfavourable and upsetting evaluation of one's physical appearance, perceived inconsistency between the individual actual body image and their unrealistic body image standards (Cash & Szymanski, 2006). This difference frequently depending upon the internalization of unrealistic beauty standards set by society, constant experience to digitally modified, social comparison, idealized imageries disseminated through media platforms (Heider, 2018).

Body dissatisfaction is a global problem that impacts people of all ages, genders, and cultural backgrounds. Fears of regarding body shape, appearance and weight are becoming more prevalent among children and adolescent, frequently as a result of media feeding and societal norms. Boys are attentive on getting a more muscular build, while girls are more likely to feel ambitious to be thinner. These concerns are associated to mental health issues such anxiety,

¹ BS Clinical Psychology, Department of Humanities and Social Science, GIFT University, Gujranwala, Punjab, Pakistan. Email: 222520021@gift.edu.pk

² BS Clinical Psychology, Department of Humanities and Social Science, GIFT University, Gujranwala, Punjab, Pakistan. Email: 222520009@gift.edu.pk

³ Lecturer, Department of Humanities and Social Science, GIFT University, Gujranwala, Punjab, Pakistan. Email: ather.mujitaba@gift.edu.pk

⁴ BS Clinical Psychology, Department of Humanities and Social Science, GIFT University, Gujranwala, Punjab, Pakistan. Email: 222520033@gift.edu.pk

depression, and poor self-esteem and have a harmful effect on self-esteem (Liu et al., 2019; Knowles et al., 2015; Dondzilo & Basanovic, 2023). The problem is no longer restricted to a particular area but also impacting everyday functioning and effect mental health globally (Rashid et al., 2021). In Pakistan, Body dissatisfaction is become more noticeable, particularly in young people and women (Mehmood et al., 2022). Many people express doubt about their weight, looks, and ongoing body evaluation, especially students and teenagers (Abbasi et al., 2024). Social judgement and Cultural beauty morals further intensify these worries that leads to emotional distress, reduce confidence, and increase psychological stress (Zainab et al., 2023). Particularly women are experiencing higher level of dissatisfaction, which is sometimes caused by social pressures and inspection focused on beauty (Mehmood et al., 2022). Due to its high prevalence and the negative impact, it has on mental health as well as low self-esteem, anxiety, sadness, and a lower quality of life, body dissatisfaction has to be addressed immediately in Pakistan, particularly among university students. The significance of this research is further highlighted by the lack of culturally suitable, affordable psychiatric therapies (Butt, 2025).

Individuals experiencing body dissatisfaction frequently involve in maladaptive thinking patterns and actions, including excessive body evaluation, social extraction, constant comparisons with others, and repeated assurance-seeking concerning appearance (Fairburn et al., 2003; Shafran et al., 2004). These actions, over time, lead to low self-esteem, expressive distress, depression, social anxiety and, in severe cases, eating disorders (Stice et al., 2013). Body dissatisfaction can also be impacted by biological factors such as genetics, puberty- related hormonal changes, and intellect interaction (Klump et al., 2007). Alterations in body shape, BMI, and neurochemical imbalances may intensify self-consciousness, particularly when one's appearance does not correspond with societal standards (Neumark-Sztainer et al., 2006). Various psychological and social factors foster body dissatisfaction, with unrealistic beauty ideals, peer impact, family criticism, appearance-related mocking, and societal stress on physical appearance as an indicator of self-worth and social acceptance (Keery et al., 2004). In collectivist societies such as Pakistan, these consequences frequently exacerbate body image anxieties in teenagers and young adults, where social acceptability and family status are highly valued (Reddy & Crowther, 2007). Therefore, cultural norms have a notably influence on how people view their bodies and how body image issues develop (Grogan, 2006; Tiggemann & Slater, 2013).

According to the theoretical framework body dissatisfaction is influenced by cognitive distortions and ingrained ideas about one own worth. Traditional cognitive theory, shed light how maladaptive self-evaluation and poor self-perception influenced by negative thought patterns, especially Beck's model (1976). But Wells' Metacognitive Model (2009) extended this viewpoint by emphasizing the thought engagement process rather than just the thought content. The model suggests that worries, rumination and intellectual bias are maintained by the process of psychological distress, which are constant by metacognitive beliefs that leads dissatisfaction and emotional stress. Therefore, rather than trying to directly alter the content of ideas, metacognitive intervention targets these underlying cognitive processes by decreasing excessive involvement with recurring thoughts and promoting flexibility in cognitive process. (Wells, 2009).

The current study examines the efficacy of metacognitive approaches as an intervention to decrease the impact of body dissatisfaction. Based on Wells' Metacognitive Model (2009), alter to change individual relationship with unpleasant thoughts instead of the ideas themselves. These approaches diminish the emotional effect of upsetting ideas about appearance and encourage flexibility in cognitive process. Metacognitive techniques include Cognitive Diffusion: Training individuals to view negative ideas about appearance as temporary mental events rather than unchangeable reality (Hayes et al., 1999). Acceptance means allowing people to live with negative views about their bodies without judgment, repression, or avoidance (Sandoz et al., 2013). Self-Awareness means helping individual to identify harmful automatic thought habits, including body checking or social comparison (Katy & Fleming, 2024). Critical Thinking refers to encouraging individuals to critically evaluate unrealistic societal beauty standards (Katy & Fleming, 2024). Problem-solving skills states to Training individuals with healthier coping strategies, counting self-compassion, positive self-talk, and interacting in actions that build self-esteem (Katy & Fleming, 2024).

Metacognitive interventions, such as technique employing diffusion, cognitive dissonance, and acceptance, have confirmed promising short-term effectiveness in improving emotional regulation and body image, particularly among



female undergraduates in Western settings. These approaches have demonstrated effectiveness in reducing body dissatisfaction by helping individuals alternate their relationship with negative thoughts (Mandavia et al., 2015). However, the complete application of metacognitive therapy (MCT) still largely unexplored, especially in non-clinical populations. In Pakistan, research on body dissatisfaction has mainly focused on prevalence-based or CBT-based methods, with no application of MCT. CBT needs an advanced level of therapist expertise and more difficult to access as compared to the more modern and easily adaptive MCT. This generates a significant gap in the literature, as no studies in Pakistan have explored MCT. Furthermore, Western studies on Body Dysmorphic Disorder that use MCT are normally directed in clinical settings and are not randomized controlled trials (RCTs) like many other studies revealed limitation such as limited cultural diversity, lack male participants, long-term follow-up, and large sample sizes, which lack the generalizability of discovery (Atkinson & Vade, 2012). To identifying these gaps there's essential need to Broaden demographic choice, employ structure experimental designs, and discover constant interventions across cultural and gender appearances. International research delivers strong indication for the efficacy of metacognitive approaches in decreasing the level body dissatisfaction.

There is only one study founded in which MCT is used, Haseeth et al. (2024) for body dysmorphic disorder in a consecutive case series, demonstrating the potential of MCT to address maladaptive metacognitive processes. But it was conducted among non-clinical population, and it lacks RCT data. On the other hand, there are some studies which worked with adults both male and female like a survey was conducted included 257 Australian adults with the Attentional Control Scale and body dissatisfaction questionnaires. They found low attentional control predicted vulnerability to thin-ideal media (Dondzilo & Basanovic, 2023).

Another survey was also performed of 563 Norwegian adults using the Metacognitions Questionnaire and well-being scales, applying structural equation modelling. Dysfunctional metacognitive beliefs predicted lower quality of life via cognitive attentional syndrome (Havnan et al., 2024). A cross-sectional study among Chinese university students (n=300–500) was conducted using the Cognitive Fusion Questionnaire and Body Image Scale; higher diffusion and flexibility predicted lower body dissatisfaction (Fang et al., 2022). Similarly, Jones longitudinally followed 250 U.S. adolescents over two years, observing rising body dissatisfaction with age, especially among girls but also present in boys (Jones, 1993). Another survey of 1,500 U.S. college students was conducted using the Body Image Questionnaire, finding high prevalence of body dissatisfaction related to internalization of beauty standards and high rates of dieting/exercise behaviors (Thompson et al., 1999).

While these studies, provide important correlation insight they did not involve psychological intervention. In contrast, Haseeth et al. (2024) conducted an intervention study using Metacognitive Therapy (MCT) for body dysmorphic disorder in a consecutive case series, demonstrating the potential of MCT to address maladaptive metacognitive processes. Despite of strong correlational studies 'evidence, yet specific MCT interventions are not conducted particularly in non-clinical populations or in the Pakistani context.

There are also some other cross-sectional studies on body image. Such studies are beneficial for describe prevalence and distributional phenomenon. Grogan's work who reviewed body image as a health perspectives, summarizing evidence that self-compassion and mindfulness-based techniques can buffer against body dissatisfaction. This study absences Randomized Control Trail (Grogan, 2006). And if we saw the study of Yablonska and Kacheniuk (2022) who studied young Ukrainian women using self-report surveys to explore how cognitive distortions affect body image perception. They found that distortions like catastrophizing and overgeneralization were strongly linked to negative body image. But their study was culture- specific and limited by its cross-sectional design (Yablonska & Kacheniuk, 2022). There is also a survey of 650 U.S. adults with the Body Appreciation Scale, showing that higher body appreciation correlated with lower dissatisfaction and healthier behaviors (Tylka & Wood-Barcalow, 2015). Although these studies although providing association-based findings, however they indicate a scarcity of empirical evidence on MCT for body satisfaction.

On the other hand, available literature further suggests that majority of work has been done using CBT and ACT with key emphasis on body image among females. For example, two pilot RCTs were conducted in Australia with

female undergraduates (Study 1: $n=20$, Study 2: $n=80$). They compared brief written vs. video-based acceptance interventions following induced body dissatisfaction, using visual analog scales (VAS), the PANAS, the Eating Disorder Inventory–BD, and emotion regulation measures. In another study Atkinson and Wade used an RCT among 100 U.S. female undergraduates exposed to body-dissatisfaction triggers and assigned to 5-minute interventions: control, rumination, acceptance, distraction, or dissonance (Atkinson & Wade, 2012). Similarly, 66 U.S. college women into acceptance-based, cognitive restructuring, or neutral groups after induced body dissatisfaction (Boyle et al., 2025). In the same way Sandoz et al. (2013) conducted a study using an Acceptance and Commitment Therapy (ACT)-based intervention aimed at improving body image flexibility among 162 female undergraduate students in the United States. The results showed significant improvements in body image flexibility and notable reductions in body dissatisfaction among the participants. An experimental study in Georgia, USA was also conducted with 114 female university students using rapid vocal repetition diffusion. They used self-report scales to assess negative body thoughts and emotional reactivity. The result was Diffusion significantly reduced emotional impact (Mandavia et al., 2015). These studies focused only on females and there were also lack of cultural representation in some studies which restricts the generalizability of the findings and also these studies were with ACT, but our main concern is MCT. there are some studies which are comparing CBT and ACT in this regard. First comes the study conducted to test the effectiveness of an ACT-based intervention targeting weight-related self-stigma among overweight and obese individuals (Lillis et al., 2009). Another study conducted a randomized controlled trial (RCT) comparing Acceptance and Commitment Therapy (ACT) with traditional Cognitive Behavioral Therapy (CBT) for the treatment of women experiencing disordered eating behaviors (Juarascio et al., 2010). Masuda and his colleagues explored the effectiveness of the ACT-based technique of cognitive diffusion in reducing body dissatisfaction (Masuda et al., 2010). Levin, Luoma, and Haeger conducted a comprehensive literature review on mindfulness and acceptance-based treatments for body image dissatisfaction. The review highlighted the effectiveness of various ACT techniques, such as cognitive diffusion, acceptance, and mindfulness, in reducing negative body image (Levin et al., 2015). So, the work with MCT is not present in these studies also.

In Pakistan, body dissatisfaction has been found especially among females, across various groups. According to the study a lot of individuals, including students and patients, suffer from negative body image, which frequently effect their sense of self and emotional mental health. Although, most research in this filed were observational in nature or not examines psychological causes or efficacy of interventional approaches. Small-scale study used Cognitive Behavioral Therapy showed promising result although did not embrace metacognitive techniques. SO, the findings of this study suggest a notably need for culturally applicable, evidence-based psychological interventions in Pakistan to addressing body dissatisfaction

Another Pakistani study was conducted on body dissatisfaction among 350 medical students at King Edward medical university. The study used self-report measures to gauge depression symptoms, social appearance distress, and dissatisfaction. The findings indicated that 34.7% of respondents were dissatisfied with their bodies, with females reporting significantly higher percentages (87.6%) than males (76.9%). The study was strictly observational in nature and did not examine cognitive processes or strategies to reduce unhappiness, making it applicable to the Pakistani setting (Butt, 2024). To measure the body dissatisfaction survey was conducted among female undergraduate student of Hazara, Pakistan. Identifying high dissatisfaction rates, highlighting notably body image fears among young Pakistani females. Yet didn't investigate psychological analysts such as cognitive distortions or metacognitive factors or not evaluate any intervention approaches to overcome dissatisfaction, exit a highlight gap (Khan et al., 2023). One more study in Pakistan evaluated the effectiveness of Cognitive Behavioral Therapy (CBT) that shown promising improvement in body dissatisfaction among 16 persons. The study comprised organized CBT sessions focusing on alternating thought and behavioral approaches. Results proved decreased level of dissatisfaction and improved body image. However, the small sample, use of CBT, and absence of metacognitive techniques highlight the need for more studies with the use of culturally applicable interventions (Ramzan & Siddiqui, 2021). A Pakistani cross-sectional study was conducted between 150 breast cancer patients to assess body dissatisfaction and self-esteem. Though, the study did not device any

techniques to address these issues, nor did it examined cognitive or metacognitive machineries underlying dissatisfaction (Ashfaq et al., 2025).

So, the foreign studies added experimental, cross sectional, observational and longitudinal studies but Pakistani studies include only Awareness based work including observational and survey-based studies. The CBT interventions and work on body dissatisfaction is done in both foreign and Pakistani studies, these interventions often require a lot of time, resources, and trained professionals, which can be challenging in a country like Pakistan with limited resources and a collectivist society in contrast, MCT is not found in both to reduce body dissatisfaction. Metacognitive techniques such as diffusion and acceptance are brief, cost-effective, and easily adaptable, making them more suitable for widespread use, especially among young people and university students. Although, no randomized parallel group designs or structure interventions have been directed in Pakistan to assess the effectiveness of metacognitive techniques in improving body dissatisfaction. Also, existing studies are excessively focused on female samples, overlooking male involvements with body dissatisfaction.

This highlights the need for culturally sensitive and evidence-based recommendations for practical and accessible psychological interventions to promote positive body image and psychological well-being among Pakistani youth. That's why this study is mainly focusing on reducing body dissatisfaction by using MCT techniques. Because above mentioned gaps indicate that while international evidence supports the use of metacognitive techniques, there remains a lack of experimental research, particularly in non-Western, collectivist societies.

Methods

Study Design

This study used a Randomized Parallel Group design to evaluate the effectiveness MCT in reducing body dissatisfaction among Pakistani young adults.

Objective

1. To assess the effectiveness of metacognitive techniques (self-monitoring, mindfulness, cognitive diffusion and acceptance) in reducing body dissatisfaction.
2. To evaluate pre- and post-intervention body dissatisfaction levels in both MCT and Control group using the Body Cathexis Scale (BCS), to determine the specific impact of Metacognitive intervention.

Hypothesis

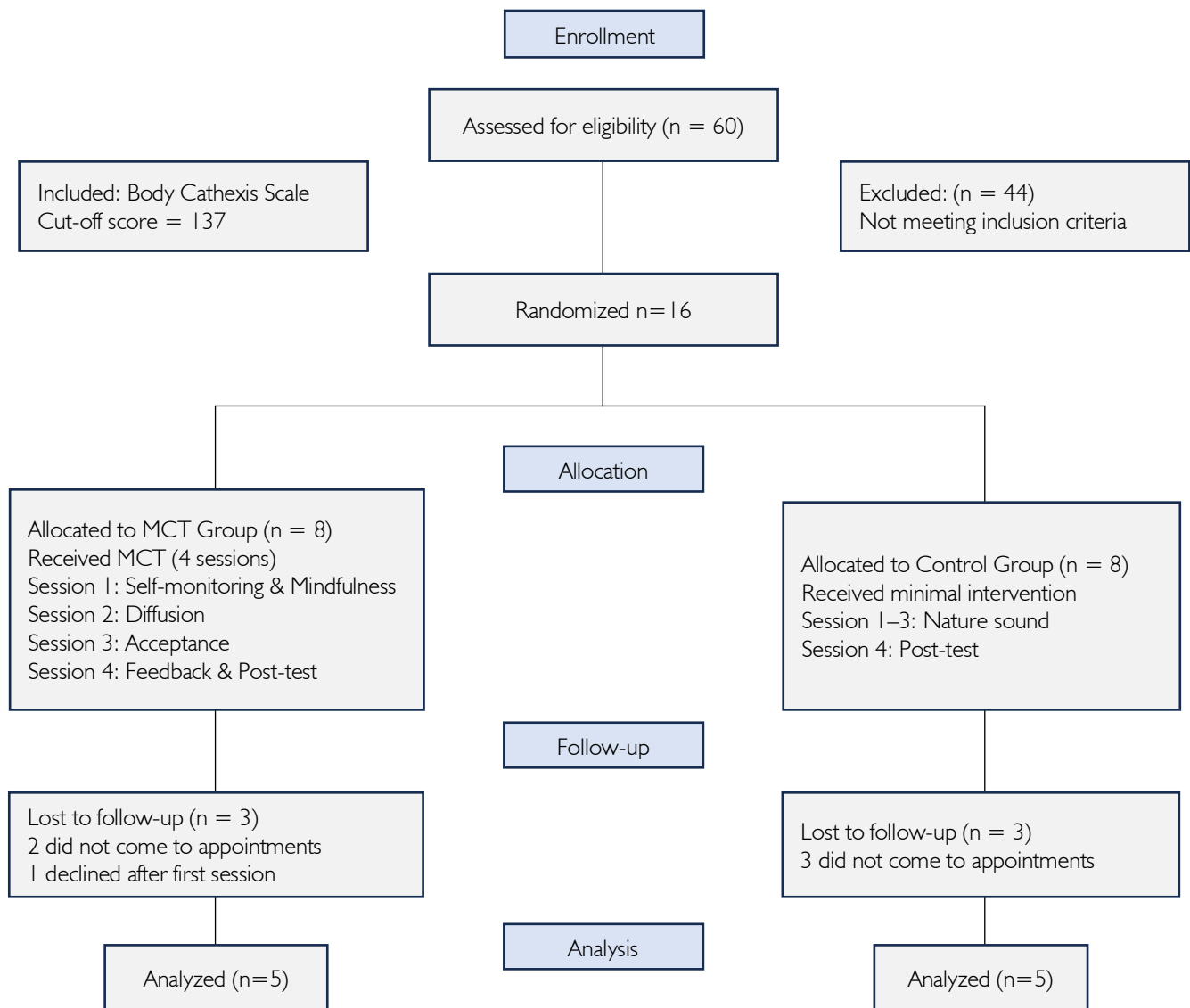
1. Meta-cognitive therapy group will show a larger reduction in body dissatisfaction at post assessment than the control group.
2. Withing-group comparisons will show higher magnitude of pre to post assessment change in body dissatisfaction in the meta-cognitive therapy group as compared to control group.

Participants

Undergraduate students aged 18 to 25 years were selected because this developmental stage shows excessive emotional vulnerability related to the body-image concern and dissatisfaction (Arnett, 2000). A total of 16 students were met basic criteria and approached; moreover, due to attrition, the final sample consist of 10 participants, with five randomly allocated to the MCT group in which both male and female participants were included 60% and 40% respectively and five were allocated to Control Group included male and female participants 40% and 60% respectively. Purposive sampling was used to ensure retravel of individuals who scored above the cut-off score of 137 on BCS, specifically exhibiting body dissatisfaction which is appropriate in RCTs when a target condition must be confirmed before randomization (Palinkas et al., 2015). Body dissatisfaction was assessed using the Body Cathexis Scale (Secord & Jourard, 1953). Inclusion criteria were: age 18–25, undergraduate enrollment, BCS-identified body dissatisfaction, willingness to attend sessions, and provision of informed consent. Exclusion criteria included current therapy, severe

mental illness, use of cognition-altering medication, and anticipated absence from more than one session. All procedures have followed ethical guidelines of

CONSORT Diagram



Measures

The Body Cathexis Scale (BCS) determines the body image satisfaction on the degree of a person's satisfaction or dissatisfaction with various parts and functions of their body (Secord & Jourard, 1953). This version of 46 items includes more specific parts and functions of body providing a broader test of body satisfaction. It holds the original structure and purpose. Each item is rated on a 5-point Likert scale (1=strongly dissatisfied to 5=strongly satisfied) with possible total scores ranging from 46 to 230. According to the scoring interpretation, 138 is the cut-off score. Individuals who scored below 138 are satisfied and who are above 138 were showing body dissatisfaction.

Intervention Group

MCT Group

Participants randomly assigned to the MCT group received a structured four-session intervention designed to reduce body dissatisfaction. In the first session self-monitoring and mindfulness were emphasized to identify personal triggers of body dissatisfaction and increase awareness of negative automatic thoughts. Mindfulness exercises were introduced

to reduce rumination and enhance present- moment awareness and homework was assigned to the participants to monitor daily body- related thoughts and practiced brief mindfulness during moments of emotional distress (Katyal & Flaming, 2024). In second session participants were taught cognitive diffusion strategies to detach from negative body- related thoughts and view them as temporary mental events rather than facts. Exercises such as cloud- imagery visualization were used to help reduce cognitive fusion—a technique often used in acceptance- and mindfulness-based therapies for body image issues and homework was given to the Participants to practiced diffusion techniques whenever intrusive thoughts appeared, using cloud- imagery visualization (Haseeth et al., 2024). Third session was focused on acceptance of body-related experiences, shifting attention from appearance to bodily functionality, and cultivating gratitude toward one's body. This approach is consistent with acceptance-based and mindfulness-informed interventions shown to improve body satisfaction and reduce negative body image and homework was given to the participants to identify positive aspects of their bodies daily to reinforce body appreciation (Keng et al., 2011). In last session participants were reviewed their progress, reflected on changes in cognitive and emotional patterns, and discussed which techniques felt most helpful. The Body Cathexis Scale (BCS) post-test was administered at the end of this session (Secord & Jourard, 1953).

Control Group

Participants who were assigned to the Control group completed their four sessions in two weeks, each session lasting 25 minutes. In contrast to MCT group, they did not receive any intervention. In each session, participants just listened to ASMR calming nature sounds for maximum 25 minutes. There were no cognitive or behavioral strategies provided, and no homework was given. This relaxation-only control condition was included to control the nonspecific effects of time, attention, and relaxation, allowing recognition of any observed changes in body satisfaction specifically to the MCT components rather than general relaxation effects.

Procedure

This study was approved by the Institutional Review Board of the GIFT University of Gujranwala Pakistan, and after ethical approval the study was conducted to evaluate the decrease in body dissatisfaction by the intervention across two weeks, consisting four sessions, each of 25 minutes maximum. The control condition group didn't receive any intervention. However, they participated in general activities such as nature sound listening. In contrast, the MCT group received structured interventions. Session 1 was of pretesting, the therapeutic techniques, and self-monitoring and mindfulness trainings. Session 2 included the diffusion technique, while Session 3 involved the acceptance technique. Finally, in session 4 post-testing was done to assess the impact of the intervention. As in data cleaning, out of the original 16 participants, 3 participants from each group did not complete the intervention and were therefore excluded from the final analysis. Moreover, because each group include fewer than 10 participants, nonparametric statistics were used for hypotheses testing for instance the Mann-Whitney test and the Wilcoxon test to compare outcomes between the control and MCT group. All analysis were performed using SPSS (version 19).

Ethical Considerations

This study was conducted by the approval from the institutional ethics committee. All participants provided informed consent, and their participation was completely voluntary, that they had right to withdraw at any time without results. No identifying information was collected, and all responses were remained confidential, secured in password-protected files under the accessibility of only researcher and supervisor. Participants may skip any question that causes discomfort, and the study poses minimal risk, limited to mild emotional discomfort related to body image items. All collected data was used solely for academic and research purposes, and the questionnaire was remained respectful, appropriate, and culturally sensitive. All procedures strictly followed APA guidelines.

Results

The two tests within and in between of Wilcoxon Signed Rank Test and Mann Whitney U Test respectively, which were used showed the significant result indicating that Metacognitive Techniques are effective in reducing Body Dissatisfaction.



Table 1

Mann Whitney U test Used to Compare Ranks between MCT and Control Group

BCS	Group	N	Mean Rank	Sum of ranks	U	Z	P
Pre-Test	MCT	5	6.40	32	8	-0.943	.346
	Control	5	4.60	23			
Post-Test	MCT	5	8.00	20	0.00	-2.611	.009**
	Control	5	3.00	15			

Note. ** $P < 0.01$

The results for the pre-test showed no statistically significant difference between the two groups ($U = 8.00, Z = -0.943, p = .346$), indicating that both groups were comparable before the intervention. This comparability is essential, as it confirms that any post intervention difference can be attributed to the treatment itself. However, post-test results revealed a statistically significant improvement in BCS scores for the MCT group compared to the Control group ($U = 0.00, Z = -2.611, p = .009$). This shows that the MCT intervention gives greater improvement in body dissatisfaction, highlighting the effectiveness of the intervention. So, these findings underscore that, although both groups started from same levels, but the MCT intervention was effective in producing meaningful positive change in the MCT group.

Table 2

Wilcoxon Signed-Ranks Test for Pre-Test and Post-Test Scores of MCT and Control group.

Domain	Ranks	N	Mean ranks	Sum of ranks	Z	P
MCT group	Negative Ranks	0	0.00	0.00	-2.060	.039*
	Positive Ranks	5	3.00	15.00		
	Ties	0	-	-		
Control group	Negative Ranks	0	0.00	0.00	0.000	1.000
	Positive Ranks	0	0.00	0.00		
	Ties	5				

Note. * $P < 0.05$

The Wilcoxon Signed-Rank Test indicated a significant difference between the scores of pre-tests and post-test in the MCT group. MCT group showed improvement (*Positive Ranks = 5, Negative Ranks = 0*) Meanwhile in the Control group, there were no positive or negative ranks, that means no participant showed improvement or decline. All scores were same from pre-test to post-test (*Ties = 5*). The result shows that MCT group is statistically significant ($Z = -2.060, p = .039^*$) showing that intervention has led to a meaningful increase in scores from pre-test to post-test and Control group result has showed no significant results ($Z = .000, p = 1.000$). The results indicate that the MCT group improved significantly after interventions, while the Control group showed no change. This suggests that the intervention had a positive and effective impact.

Discussion

The current study was conducted to examine the effectiveness of a Meta Cognitive interventions in reducing body dissatisfaction among undergraduate students. Despite the small final sample size ($N = 10$), research revealed a significant improvement in body dissatisfaction among non-clinical participants in the MCT group compared to the Control group. They were assessed with Body Cathexis Scale (BCS) by pre and post-test. The results are aligned with previous research suggesting that MCT and its sub techniques such as metacognitive acceptance and diffusion are effective in improving body image and can affectively use in body dysmorphic situations among clinical population (Atkinson & Wade, 2012; Mandavia, 2015; Haseth et al., 2024).

An explanation for the observed improvement could be that the intervention helped participants in developing greater cognitive flexibility and reduced the thoughts of unrealistic body standards. This is supported by the work of Watson (2022), who found that positive body image is strongly connected to self-esteem and psychological well-being in Ukrainian students. In the similar way, Dondzilo and Basanovic (2023) highlighted that attentional control plays a vital role in reducing the impact of body dissatisfaction.

Although the results of this study show the short-term efficacy of the intervention, the generalizability is limited due to the small and non-diverse sample. Furthermore, Participants dropout after the first session could also affected the finding and decreased the power of statistics. However, the results of this pilot study provide support for the use of culturally appropriate psychological treatment in addressing body image concern in young adults.

These findings recommended future research with larger or more diverse samples and longer follow-up times. It would also be beneficial to examine the underling change in mechanisms such as modifications in cognitive fusion, body-related thought patterns, or intellectual bias.

Conclusion

The purpose of current pilot study was to assess the efficacy of a Meta Cognitive intervention in decreased undergraduate students body dissatisfaction. Finding of this study showed that the participants in MCT group who taken all the session of intervention had improvements in body satisfaction level as compared to the control group. Despite the limited generalizability, small sample size, the study identifying the Metacognitive intervention (MCT) was effective in addressing body dissatisfaction. The result of this study was aligned with previous literature explaining the role of psychological flexibility and metacognitive acceptance and cognitive diffusion in promoting a healthier body image. To validate and broaden this research, larger, more diverse sample sizes and long-term follow-up are vital.

References

- Abbasi, M. M. H., Khan, F., & Khan, M. (2024). Effects of negative body images on social media among youth in Pakistan. (2024). *Pakistan Social Sciences Review*, 8(1). [https://doi.org/10.35484/pssr.2024\(8-i\)30](https://doi.org/10.35484/pssr.2024(8-i)30)
- Arnett J. J. (2000). Emerging adulthood. A theory of development from the late teens through the twenties. *The American psychologist*, 55(5), 469–480. <https://doi.org/10.1037//0003-066X.55.5.469>
- Ashfaq, M., Shahzadi, K., Zia, I., Ilyas, Z., & Bano, S. (2025). A Cross-Sectional Study of Body Image Dissatisfaction and Self-Esteem Among Breast Cancer Patients in Rawalpindi/Islamabad. *Pakistan Journal of Humanities and Social Sciences*, 13(1), 262-271. <https://doi.org/10.52131/pjhss.2025.v13i1.2707>
- Atkinson, M. J., & Wade, T. D. (2012). Impact of metacognitive acceptance on body dissatisfaction and negative affect: Engagement and efficacy. *Journal of Consulting and Clinical Psychology*, 80(3), 416–425. <https://doi.org/10.1037/a0028263>
- Beck, A. T. (1976). *Cognitive therapy and emotional disorders*. International Universities Press.
- Boyle, S., Dorfan, N., & Sepehry, A. A. (2025). Acceptance and commitment therapy for body dissatisfaction: A systematic review and meta-analysis. *Journal of Clinical Psychology*, 81(11), 1031–1045. <https://doi.org/10.1002/jclp.70021>
- Butt, A. I. (2025). *Influence of body image perceptions on life satisfaction and emotional well-being among Undergraduate students of Lahore, Pakistan: A survey-based study* (Doctoral dissertation, Department of Sociology, Forman Christian College (A Chartered University)).
- Cash, T. F. (2012). Cognitive-behavioral perspectives on body image. In T. F. Cash (Ed.), *Encyclopedia of body image and human appearance* (Vol. 1, pp. 334–342). Academic Press.
- Cash, T. F., & Szymanski, M. (2006). Development and validation of the Body Image Disturbance Questionnaire. *Journal of Psychosomatic Research*, 60(4), 507–515. https://doi.org/10.1207/s15327752jpa6403_6
- Dondzilo, L., & Basanovic, J. (2023). Body dissatisfaction and selective attention to thin-ideal bodies: The moderating role of attentional control. *Body Image*, 46, 235–242. <https://doi.org/10.1016/j.bodyim.2023.08.001>
- Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: a "transdiagnostic" theory and treatment. *Behaviour research and therapy*, 41(5), 509–528. [https://doi.org/10.1016/s0005-7967\(02\)00088-8](https://doi.org/10.1016/s0005-7967(02)00088-8)
- Fang, S., Ding, D., Ji, P., et al. (2022). Cognitive defusion and psychological flexibility predict negative body image in Chinese students. *Body Image*, 42, 146–153. <https://doi.org/10.3390/ijerph192416519>
- Grogan, S. (2006). Body image and health: Contemporary perspectives. *Journal of health psychology*, 11(4), 523–530. <https://doi.org/10.1177/1359105306065013>
- Haseth, S., Grøtte, T., Hunstad, E., Güzey, I. C., & Solem, S. (2024). Metacognitive therapy for body dysmorphic disorder: A consecutive case series. *Journal of Cognitive Psychotherapy*, 39(1), 5–21. <https://doi.org/10.1891/JCP-2023-0014>
- Havnen, A., Anyan, F., & Nordahl, H. (2024). Metacognitive strategies mediate the association between metacognitive beliefs and perceived quality of life. *Scandinavian Journal of Psychology*, 65(4), 656–664. <https://doi.org/10.1111/sjop.13015>
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. Guilford Press.
- Heider, N., Spruyt, A., & De Houwer, J. (2018). Body dissatisfaction revisited: On the importance of implicit beliefs about actual and ideal body image. *Psychologica Belgica*, 57(4), 158. <https://doi.org/10.5334/pb.362>
- Jones, D. C. (1993). Body image among adolescent girls and boys: A longitudinal study. *Journal of Research on Adolescence*, 3(4), 509–534. <https://doi.org/10.1037/0012-1649.40.5.823>
- Juarascio, A. S., Forman, E. M., & Herbert, J. D. (2010). Acceptance and commitment therapy versus cognitive therapy for the treatment of comorbid eating pathology. *Behavior modification*, 34(2), 175–190. <https://doi.org/10.1177/0145445510363472>

- Katyal, S., & Fleming, S. M. (2024). The future of metacognition research: Balancing construct breadth with measurement rigor. *Cortex; a journal devoted to the study of the nervous system and behavior*, *171*, 223–234. <https://doi.org/10.1016/j.cortex.2023.11.002>
- Keery, H., van den Berg, P., & Thompson, J. K. (2004). An evaluation of the Tripartite Influence Model of body dissatisfaction and eating disturbance with adolescent girls. *Body image*, *1*(3), 237–251. <https://doi.org/10.1016/j.bodyim.2004.03.001>
- Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: a review of empirical studies. *Clinical psychology review*, *31*(6), 1041–1056. <https://doi.org/10.1016/j.cpr.2011.04.006>
- Khan, R. J. ., Bibi, H. ., Naz, S. ., & Afsar, F. K. . (2023). Body Surveillance and Body Dissatisfaction among Pakistani Young Females: Social Comparison as Moderator. *Human Nature Journal of Social Sciences*, *4*(1), 16–26. <https://doi.org/10.71016/hnjss/nc0e0c32>
- Klump, K. L., Burt, S. A., McGue, M., & Iacono, W. G. (2007). Changes in genetic and environmental influences on disordered eating across adolescence: a longitudinal twin study. *Archives of general psychiatry*, *64*(12), 1409–1415. <https://doi.org/10.1001/archpsyc.64.12.1409>
- Knowles, G., Ling, F. C. M., Thomas, G. N., Adab, P., & McManus, A. M. (2015). Body size dissatisfaction among young Chinese children in Hong Kong: a cross-sectional study. *Public Health Nutrition*, *18*(6), 1067–1074. <https://doi.org/10.1017/S1368980014000810>
- Levin, M. E., MacLane, C., Daflos, S., Seeley, J. R., Hayes, S. C., Biglan, A., & Pistoello, J. (2014). Examining psychological inflexibility as a transdiagnostic process across psychological disorders. *Journal of contextual behavioral science*, *3*(3), 155–163. <https://doi.org/10.1016/j.jcbs.2014.06.003>
- Lillis, J., Hayes, S. C., Bunting, K., & Masuda, A. (2009). Teaching acceptance and mindfulness to improve the lives of the obese: a preliminary test of a theoretical model. *Annals of Behavioral Medicine*, *37*(1), 58–69. <https://doi.org/10.1007/s12160-009-9083-x>
- Liu, W., Lin, R., Guo, C., Xiong, L., Chen, S., & Liu, W. (2019). Prevalence of body dissatisfaction and its effects on health-related quality of life among primary school students in Guangzhou, China. *BMC Public Health*, *19*(1), 213. <https://doi.org/10.1186/s12889-019-6519-5>
- Mandavia, A., Gragnani, A., & Mancini, F. (2015). The application of a cognitive diffusion technique to negative body image thoughts: A preliminary analogue investigation. *Journal of Cognitive Psychotherapy*, *29*(3), 211–224. <https://doi.org/10.1016/j.jcbs.2015.02.003>
- Margolis, S. E., & Orsillo, S. M. (2016). Acceptance and commitment therapy for body dissatisfaction: A brief intervention for college women. *International Journal of Eating Disorders*, *49*(4), 373–382. <https://doi.org/10.1002/eat.22477>
- Masuda, A., Twohig, M. P., Stormo, A. R., Feinstein, A. B., Chou, Y. Y., & Wendell, J. W. (2010). The effects of cognitive defusion and thought distraction on emotional discomfort and believability of negative self-referential thoughts. *Journal of Behavior Therapy and Experimental Psychiatry*, *41*(1), 11–17. <https://doi.org/10.1016/j.jbtep.2009.08.006>
- Mehmood, T., Raza, S., Naeem, M. H., Mohammad, A., & Fatima, N. (2023). Perceived sociocultural pressure and body dissatisfaction among female university students. *Journal of Health and Rehabilitation Research*, *3*(2), 908–920. <https://doi.org/10.61919/jhrr.v3i2.269>
- Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social and Personality Psychology Compass*, *5*(1), 1–12. <https://doi.org/10.1111/j.1751-9004.2010.00330.x>
- Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviors in adolescent females and males. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*, *39*(2), 244–251. <https://doi.org/10.1016/j.jadohealth.2005.12.001>
- Normann, N., & Morina, N. (2018). The Efficacy of Metacognitive Therapy: A Systematic Review and Meta-Analysis. *Frontiers in psychology*, *9*, 2211. <https://doi.org/10.3389/fpsyg.2018.02211>

- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and policy in mental health*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Ramzan, I. & Barerah Siddiqui. (2021). The Effectiveness of Cognitive Behavioral Therapy for Managing Body Image Dissatisfaction. *PJPPRP*, 12(2). <https://doi.org/10.62663/pjpprp.v12i2.41>
- Rashid, Z., Arzeen, N., & Shah, M. (2021). Body image and psychological distress among university students. *Journal of Postgraduate Medical Institute*, 35(3), 181–184. <https://doi.org/10.54079/jpmi.35.3.2695>
- Reddy, S. D., & Crowther, J. H. (2007). Teasing, acculturation, and cultural conflict: psychosocial correlates of body image and eating attitudes among South Asian women. *Cultural diversity & ethnic minority psychology*, 13(1), 45–53. <https://doi.org/10.1037/1099-9809.13.1.45>
- Sandoz, E. K., Wilson, K. G., & Merwin, R. M. (2013). Assessment of body image flexibility: The Body Image Acceptance and Action Questionnaire. *Journal of Contextual Behavioral Science*, 2(1–2), 39–48. <https://doi.org/10.1016/j.jcbs.2013.03.002>
- Secord, P. F., & Jourard, S. M. (1953). The appraisal of body-cathexis: Body-cathexis and the self. *Journal of Consulting Psychology*, 17(5), 343–347. <https://doi.org/10.1037/h0060689>
- Shafran, R., Fairburn, C. G., Robinson, P., & Lask, B. (2004). Body checking and its avoidance in eating disorders. *The International journal of eating disorders*, 35(1), 93–101. <https://doi.org/10.1002/eat.10228>
- Stice, E., Rohde, P., & Shaw, H. (2012). *The body project: A dissonance-based eating disorder prevention intervention*. Oxford University Press.
- Tajbakhsh, R., Haddadi, S., & Zeighami Mohammadi, S. (2023). Effect of metacognitive therapy and acceptance and commitment therapy on body image concerns of female hemodialysis patients. *Jundishapur Journal of Chronic Disease Care*, 12(3). <https://doi.org/10.5812/jjcdc-135680>
- Thompson, J. K., Heinberg, L. J., Altabe, M. N., & Tantleef-Dunn, S. (1999). Theory assessment, and treatment of body image disturbance. *Thomson JK, Heinberg LJ, Altabe MN, Tantleef-Dunn. Exacting beauty: theory, assessment, and treatment of body image disturbance*. Washington, DC: American Psychological Association, 10312-000.
- Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, 46(6), 630–633. <https://doi.org/10.1002/eat.22141>
- Tylka, T. L., & Wood-Barcalow, N. L. (2015). The Body Appreciation Scale-2: item refinement and psychometric evaluation. *Body image*, 12, 53–67. <https://doi.org/10.1016/j.bodyim.2014.09.006>
- Watson, R. (2022). Appearance-focused Social Media Use, Unrealistic Beauty Ideals, and Body Image Dissatisfaction. *Journal of Research in Gender Studies*, 12(1), 114–129. <https://doi.org/10.22381/JRGS12120228>
- Weis, J. F., Krach, S., Paulus, F. M., & Stolz, D. S. (2025). Self-compassion is linked to positive affect and buffers declines in self-esteem in low performers. *bioRxiv*, 2025-11. <https://doi.org/10.1101/2025.11.11.687618>
- Wells, A. (2009). *Metacognitive therapy for anxiety and depression*. New York: Guilford Press.
- Yablonska, T., & Kacheniuk, A. (2022). The Role of Cognitive Distortions in Young Women's Body Image Perception. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 8(4), 33–42. [https://doi.org/10.52534/msu-pp.8\(4\).2022.33-42](https://doi.org/10.52534/msu-pp.8(4).2022.33-42)
- Zainab, W., Ahmed, S., Kumar, A., & Ali, S. (2023). The effect of body dissatisfaction on disordered eating attitudes: The mediating role of negative affects in adolescents. *Journal of Pakistan Psychiatric Society*, 20(02). <https://doi.org/10.63050/jpps.20.02.272>