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Effectiveness of Acceptance and Commitment Therapy on Cognitive Fusion and Social Anxiety in Women with Generalized Anxiety Disorder

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ABSTRACT

Objective: The purpose of this study was to determine the effectiveness of Acceptance and Commitment Therapy (ACT) on cognitive fusion and social anxiety in women suffering from generalized anxiety disorder.

Methods: This study was an applied, quasi-experimental design with pre-test, post-test, and follow-up, including a control group. The population consisted of all women with generalized anxiety disorder who attended counseling centers in Sari city. The sample included 30 women with generalized anxiety disorder, selected via convenience sampling and randomly assigned to two groups: the experimental group receiving ACT for social anxiety disorder (Hayes, 2012) and a wait-list control group. Data were collected using the Social Anxiety Questionnaire (Watson & Friend, 1969) and the Cognitive Fusion Questionnaire (Gillanders, 2014). Data were analyzed using repeated measures ANOVA with SPSS-26 software.

Findings: The results showed significant differences between the ACT treatment group and the control group. ACT was effective in reducing cognitive fusion ($F = 15.25$, $p < .001$) and social anxiety ($F = 38.86$, $p < .001$) in women with generalized anxiety disorder ($p < .001$).

Conclusion: Therefore, it can be concluded that Acceptance and Commitment Therapy may serve as an effective intervention method for improving cognitive fusion and social anxiety in women with generalized anxiety disorder.

Keywords: *Acceptance and Commitment Therapy, Cognitive Fusion, Social Anxiety, Generalized Anxiety Disorder*

1. Introduction

Anxiety is a generally distressing, vague, and highly unpleasant emotion of worry, which is accompanied by one or more physical sensations such as shortness of breath and heart palpitations (Egbe et al., 2023). While it is believed that a minimal amount of anxiety is necessary for daily life, excessive anxiety can cause serious damage to physical and mental health, social relationships, profession, and education, depriving an individual of an acceptable quality of health in life (Kim et al., 2022). Among the most common anxiety disorders is social anxiety disorder, which

is the fourth most common mental disorder and often debilitating (Keskin et al., 2023). This mental disorder is associated with significant emotional turmoil and functional impairment in work and social areas (Coyle et al., 2022). Despite the apparent efficacy of cognitive-behavioral therapy in treating social anxiety disorder, many individuals do not respond to this type of treatment and show residual symptoms and relapse after treatment (Fawwaz et al., 2022). This disorder is considerably influenced by an unsafe environment among mental disorders (Ran et al., 2022). Social anxiety is a specific and constant fear of being embarrassed or negatively evaluated in social situations or when performing activities in the presence of others (Ejaz et al., 2020). According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, some prominent characteristics of social anxiety disorder are that affected individuals fear being embarrassed and are worried that others may perceive them as anxious, weak, crazy, or foolish. They fear speaking in the presence of others because they think people will notice their hands shaking or their voice trembling. They may become extremely anxious when speaking to others because they fear their speech may appear vague and incoherent; individuals with the disorder almost always experience symptoms of anxiety such as palpitations, trembling, and sweating (Jaiswal et al., 2020).

Another factor that can affect social anxiety in women is cognitive fusion (Cookson et al., 2020). Cognitive fusion is an important process that threatens psychological flexibility (Faustino & Vasco, 2020). Cognitive fusion means that an individual is so influenced by their thoughts that they seem completely real and cause behavior and perception to be dominated by other behavioral regulation sources, leading to reduced sensitivity to direct outcomes (Wetterauer et al., 2020). The phenomenon of cognitive fusion occurs when a person becomes trapped in their thought context (Fernández Rodríguez et al., 2022). Cognitive fusion is a cognitive and social concept that confuses a person to the extent that over time, a correct interpretation of personal experiences is considered, and they are no longer distinguishable from the actual experiences of the individual (Maftei & Merlici, 2023). Cognitive fusion is among the new variables in psychology, hence the minimal research conducted on it (Carvalho et al., 2019). Outside of Iran, Gillanders et al. (2015) showed in their research findings that cognitive fusion is associated with physical and mental disorders. Individuals with high cognitive fusion are more susceptible to physical and mental disorders (Gillanders et al., 2015).

Over the years, numerous psychological treatments have been developed to address psychological problems (Gloster et al., 2020). Today, therapists face the third generation of these types of treatments, which can be categorized under models based on acceptance, mindfulness-based therapy, metacognitive therapy, and Acceptance and Commitment Therapy (ACT) (Coto-Lesmes et al., 2020). These treatments strive to enhance an individual's psychological connection with their thoughts and feelings instead of changing cognitions. The goal of this therapeutic approach is to help clients achieve a more valuable and satisfying life through increased psychological flexibility rather than focusing solely on cognitive reconstructions (Fang & Ding, 2020). Acceptance and Commitment Therapy has six core processes that lead to psychological flexibility. These six processes are acceptance, cognitive defusion, being present, self as context, values, and committed action (Fogelkvist et al., 2020). In Acceptance and Commitment Therapy, the initial step is to increase an individual's psychological acceptance of mental experiences (thoughts, feelings) and simultaneously decrease ineffective control actions. It is taught that any action to avoid or control these unwanted mental experiences is either ineffective or counterproductive and exacerbates them; they must fully accept these experiences without any internal or external reaction to eliminate them. In the second step, the individual's psychological awareness in the present moment is increased (Stockton et al., 2019); that is, the person becomes aware of all their mental states, thoughts, and behaviors in the present moment. In the third stage, the individual is taught to detach themselves from these mental experiences (cognitive separation) so that they can act independently of these experiences. Fourth, efforts are made to reduce excessive focus on self-concept or the personal story (such as being a victim) that the individual has created in their mind. Fifth, the individual is helped to identify their core personal values clearly and convert them into specific behavioral goals (value clarification). Finally, motivation for committed action is generated, meaning activity directed toward the specified goals and values, which can involve thoughts of depression, obsessive thoughts, thoughts related to traumatic events, phobias, or social anxieties. Empirical evidence about the impact of this therapeutic approach on various disorders is increasing, for example, the effectiveness of this method in treating disorders such as depression, job burnout, chronic pain, substance abuse, and dependency has been specified (Prudenzi et al., 2022). Given the stated content, the aim of this study is to determine the effectiveness of

Acceptance and Commitment Therapy on cognitive fusion and social anxiety in women with generalized anxiety disorder. The present research sought to answer the following questions:

Was Acceptance and Commitment Therapy effective on cognitive fusion and social anxiety in women with generalized anxiety disorder in the post-test phase?

Was Acceptance and Commitment Therapy effective on cognitive fusion and social anxiety in women with generalized anxiety disorder in the follow-up phase?

2. Methods

2.1. Study design and Participant

This study utilized a quasi-experimental design with a pre-test, post-test, and control group format. The population comprised all women with generalized anxiety disorder who sought treatment at counseling centers in the city of Sari. From this population, 30 participants were selected using convenience sampling and randomly assigned to two groups: an experimental group (15 participants) and a control group (15 participants). Participants in the experimental group received Acceptance and Commitment Therapy (ACT) over 10 sessions. Data were collected using the Social Anxiety Questionnaire and the Cognitive Fusion Questionnaire. Inclusion criteria were a willingness to participate regularly and consecutively in sessions, a minimum education level of cycle, and the absence of physical and psychological problems. Exclusion criteria included unwillingness to complete the treatment or questionnaire, refusal to continue participation and the project, diagnosis of another disabling psychiatric illness confirmed by a psychiatrist, and absence from more than one session in the group.

Ethical considerations in this research ensured that participation was completely voluntary. Before beginning the project, participants were familiarized with the details of the design and its regulations. Individual beliefs and attitudes were respected. Both experimental and control group members were allowed to withdraw from the research at any stage. Additionally, members of the control group were offered the opportunity to receive the same intervention as the experimental group in similar therapy sessions after the completion of the project. All documents, questionnaires, and records were confidential and accessible only to the researchers. Written informed consent was obtained from all volunteers. From the research population, individuals with social anxiety were invited to participate through a call, then responded to the Social Anxiety Questionnaire and the Cognitive Fusion Questionnaire, and from those who scored highly, 30 were selected and randomly assigned to two groups (15 per group). A pre-test was then conducted on both groups. One group was designated as the control group, on which no treatment was implemented, and the other as the experimental group, which received Acceptance and Commitment Therapy in 10 sessions of 90 minutes each, once a week. Finally, after the completion of the therapy sessions, participants in both groups completed the post-test.

2.2. Measures

2.2.1. Social Anxiety

This questionnaire, developed by Watson and Friend, is designed to diagnose and assess social anxiety. It contains two subscales: Social Avoidance and Fear of Negative Evaluation, comprising 58 items—28 items for Social Avoidance and 30 items for Fear of Negative Evaluation. Responses are scored on a binary scale of zero and one. Watson and Friend reported the reliability of this questionnaire for Social Avoidance as 0.68 and for Fear of Negative Evaluation as 0.78. Mehrabi Zadeh Honarmand, Najarian, and Baharlo validated the scale using a construct method with a construct validity of 0.85 for the scale and 0.67 for the Social Anxiety subscale. Watson and Friend also assessed the validity of this questionnaire using Taylor's Manifest Anxiety Scale, with correlation coefficients for these two subscales reported as 0.60 and 0.54, respectively, both statistically significant at $p = 0.05$ (Yousefi & Hashemian Nejad, 2021).

2.2.2. Cognitive Fusion

This 7-item scale was developed by Gillanders et al. in 2014 to measure cognitive fusion. It is rated on a 7-point Likert scale ranging from (always true: score 7 to never true: score 1), with possible scores ranging from 7 to 49; higher scores indicate greater cognitive fusion. Gillanders et al. (2006) confirmed its construct validity and reported a Cronbach's alpha reliability coefficient of 0.93 and a test-retest reliability over four weeks of 0.80 (Gillanders et al., 2015). In Iran, it was translated and standardized by Zare (2014), where content validity was confirmed, and a Cronbach's alpha reliability of 0.79 was obtained. In this study, internal consistency reliability was calculated with a Cronbach's alpha of 0.74 (Nateghi et al., 2019).

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2.3. *Intervention*

2.3.1. *Acceptance and Commitment Therapy Protocol for Social Anxiety*

Therapeutic sessions were delivered considering the treatment goals and focusing on the Acceptance and Commitment protocol for social anxiety disorder (Hayes et al., 2012). The treatment was provided in the form of group sessions lasting 2 hours, over a total of 10 group sessions with one therapist (15 people per group).

Session 1: Introduction and Group Orientation

The first session is dedicated to introducing the participants to each other and outlining the goals of the study. The therapist explains the timing, location, and duration of the sessions, along with the group rules. A therapeutic contract is established to set the expectations and boundaries for the treatment process. Additionally, an introduction to emotional regulation techniques is provided, laying the groundwork for future sessions.

Session 2: Overview of Acceptance and Commitment Therapy (ACT)

In this session, participants receive a general introduction to Acceptance and Commitment Therapy. The therapist discusses the role of ACT in emotional regulation and how it can help reduce anxiety while increasing existential tools. This session aims to familiarize participants with the core principles of ACT and set the stage for deeper therapeutic work.

Session 3: Creative Hopelessness and Metaphor Usage

The third session involves confronting the therapy participant's "creative hopelessness," a concept in ACT that helps individuals realize the ineffectiveness of their usual avoidance strategies. The therapist uses metaphors such as "a man in a hole" and "the baby elephant" to illustrate these points, helping participants see the limitations of their habitual responses to anxiety.

Session 4: Control as a Problem

This session focuses on the principle of control being a core issue in psychological flexibility. Participants examine ineffective control strategies and practice letting go of these through various exercises. The therapist introduces the "lie detector" metaphor to help illustrate the pitfalls of overreliance on control in managing internal experiences.

Session 5: Embracing Acceptance as an Alternative to Experiential Avoidance

Participants learn about acceptance as an alternative to avoidance of unwanted internal experiences. Techniques and exercises are practiced to help participants apply acceptance in their daily lives. The "two scales" metaphor is introduced to help conceptualize the balance between acceptance and avoidance.

Session 6: Self-as-Context

This session aims to cultivate a transcendent sense of self, referred to as "self-as-context." Participants engage in exercises and are introduced to the "chessboard" metaphor to help differentiate between their thoughts, feelings, and the observing self. This differentiation is crucial for reducing literal engagement with one's thoughts and feelings.

Session 7: Mindfulness Practice and Clarifying Values

Mindfulness practices are introduced to enhance participants' present-moment awareness and non-judgmental observation of their thoughts and feelings. This session also begins the process of clarifying personal values, which are essential for guiding purposeful action.

Session 8: Cognitive Fusion and Mindfulness

The focus of this session is on cognitive fusion—becoming entangled with one's thoughts—and its impact on behavior. Participants practice mindfulness techniques, including the "milk exercise" and the "leaves on a stream" exercise, to help them observe their thoughts without becoming attached to them.

Session 9: Values Clarification and Commitment

Participants clarify their values and make commitments to engage in actions aligned with these values. Exercises such as the "funeral exercise" and the "eating the whole apple" metaphor are used to deepen the commitment and illustrate the importance of living in accordance with one's values.

Session 10: Review and Relapse Prevention

The final session is a review of all the concepts and practices covered in the previous sessions. Participants reflect on their learning and growth throughout the therapy and engage in relapse prevention strategies to maintain their gains and continue applying ACT principles beyond the therapy context.

2.4. *Data Analysis*

Data were analyzed using SPSS version 24 software and analysis of variance methods.

3. Findings and Results

The mean (standard deviation) age of participants was 39.7 (9.4) years in the experimental group and 36.2 (7.9) years in the control group. Additionally, the minimum and

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maximum ages in the experimental group were 30 and 48 years, respectively, and 31 and 50 years in the control group.

Table 1

Central Tendency and Dispersion Indices of Research Variables Scores in Experimental and Control Groups

Variable	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Follow-up Mean	Follow-up SD
Social Anxiety	Experiment	38.30	5.66	30.05	5.10	29.20	4.97
	Control	37.40	5.04	37.10	5.02	37.00	5.01
Cognitive Fusion	Experiment	25.80	4.38	18.89	3.33	18.97	3.40
	Control	26.41	4.49	25.49	4.53	25.45	4.52

Repeated measures ANOVA was used to assess the significance of differences between the social anxiety and cognitive fusion scores in both the experimental and control groups.

Table 2

Normality and Homogeneity of Variance Tests for Scores

Variable	Group	Kolmogorov-Smirnov	KS Significance	Levene's Test DF	Levene's Test Stat	Levene's Significance	M Box's M	M Box's Significance
Social Anxiety	Experiment	0.78	0.85	28	2.33	0.18	2.69	0.27
	Control	0.81	0.51					
Cognitive Fusion	Experiment	1.41	0.22	28	1.50	0.245	3.15	0.16
	Control	0.97	0.16					

Multivariate repeated measures ANOVA across the study groups for the variables of social anxiety and cognitive fusion showed that the between-subjects (group) effect was significant, indicating that at least one of the groups differed significantly from each other in at least one of the variables. The within-subjects (time) effect was also significant, indicating changes in the mean values from pretest to follow-up for at least one of the variables.

Table 3

Repeated Measures ANOVA for Comparing Pretest, Posttest, and Follow-up of Cognitive Fusion and Social Anxiety in Experimental and Control Groups

Variable	Source of Effect	Sum of Squares	Degrees of Freedom	Mean Square	F-value	Significance	Eta Squared
Cognitive Fusion	Time	87.62	2	43.81	164.78	.001	.85
	Time*Group	37.48	2	18.74	70.50	.001	.71
	Group	131.61	1	131.61	15.25	.001	.24
Social Anxiety	Time	230.46	1.70	160.14	79.16	.001	.73
	Time*Group	150.02	1.70	104.24	51.53	.001	.64
	Group	418.17	1	418.17	38.86	.001	.44

The results in Table 3 indicate that the ANOVA for the within-group factor (time) was significant and the between-group factor was also significant. These results mean that considering the group effect, the time effect was also significant by itself. Additionally, the interaction between group and time was significant as well. Post-hoc Bonferroni tests were used for pairwise comparisons between groups.

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Table 4

Bonferroni Post-hoc Test Results for Comparing Cognitive Fusion and Social Anxiety

Variable	Group	Stage	Post-test	Follow-up
Cognitive Fusion	Experiment	Pre-test	*7.20	*7.77
		Post-test	-	0.42
	Control	Pre-test	0.24	0.18
		Post-test	-	0.32
Social Anxiety	Experiment	Pre-test	*8.60	*8.75
		Post-test	-	0.49
	Control	Pre-test	0.52	0.63
		Post-test	-	0.20

*p<0.01

The results in Table 4 show that the cognitive fusion scores in the experimental group at the post-test stage were lower than in the control group, indicating that the treatment based on Acceptance and Commitment Therapy was effective in reducing cognitive fusion. Moreover, these results also indicate that cognitive fusion in the follow-up stage was significantly reduced in the experimental group compared to the control group. Similarly, the social anxiety scores in the experimental group at the post-test stage were lower than in the control group, indicating that the treatment was effective in reducing social anxiety. The results also demonstrate that there was a significant difference in social anxiety at the follow-up stage in the experimental group compared to the control group.

4. Discussion and Conclusion

The purpose of the present study was to determine the effectiveness of Acceptance and Commitment Therapy (ACT) on cognitive fusion and social anxiety in women suffering from generalized anxiety disorder. The results indicated that there was a significant difference between the ACT treatment and the control group, and that ACT was effective in reducing cognitive fusion and social anxiety in women with generalized anxiety disorder. These findings are in line with prior results (Coto-Lesmes et al., 2020; Fang & Ding, 2020; Fogelkvist et al., 2020; Gillanders et al., 2015; Gloster et al., 2020; Hayes et al., 2012; McMillan et al., 2022; Montaner et al., 2022; Moran & Ming, 2022; Prudenzi et al., 2022; Stockton et al., 2019).

This study suggests that in this therapeutic approach, there is a strong emphasis on individuals' willingness to experience internal experiences to help them perceive their distressing thoughts simply as thoughts, become aware of the inefficacy of their current behavioral patterns, and, instead of reacting to them, engage in activities that are important and aligned with their values in life. Here, by substituting self-as-context, clients were able to simply experience unpleasant internal events in the present moment and were capable of separating themselves from reactions, memories, and distressing thoughts (Stockton et al., 2019). Essentially, the goal was to increase these individuals' psychological flexibility. This approach, as statistical results showed, led to a significant reduction in social anxiety (Moran & Ming, 2022). The core processes of Acceptance and Commitment Therapy taught individuals how to relinquish the belief in thought suppression, disengage from disturbing thoughts, strengthen the observing self instead of the conceptualized self, accept internal events instead of controlling them, articulate their values, and engage with them. In this therapy, individuals learn to accept their emotions rather than distancing from them, pay more attention to their thoughts and thinking processes through mindfulness, and connect them with goal-directed activities. In summary, Acceptance and Commitment Therapy strives to teach individuals to experience their thoughts and feelings, instead of trying to stop them, and encourages them to work towards their goals and values and experience their thoughts and feelings (Prudenzi et al., 2022). This treatment can effectively reduce psychological issues such as depression and anxiety and lead to a reduction in experiential avoidance in these individuals, which ultimately results in outcomes such as increased hope for life, adaptation to circumstances, and improved relationships with others.

In Acceptance and Commitment Therapy, psychological acceptance of mental experiences (beliefs and incorrect thoughts) is enhanced, leading to a reduction in anxiety, which is an effective step towards improving their mental health (Coto-Lesmes et al., 2020; Fogelkvist et al., 2020). This study elucidates that instead of emphasizing confrontation, the treatment increases the individual's willingness to experience internal events as they are, helping

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the person to experience an anxious thought as just a thought; and instead of responding to it, to do something that is important in life and in line with their values; that is, the presence of an anxious thought itself is not the issue, but the individual's effort to respond to the anxious thought is the real issue. Here, by substituting self-as-context, clients were able to simply experience unpleasant internal events in the present and were capable of detaching themselves from reactions, memories, and distressing thoughts (Moran & Ming, 2022). Essentially, the core processes of Acceptance and Commitment Therapy teach clients how to let go of the belief in thought suppression, detach from bothersome thoughts, strengthen the observing self instead of the conceptualized self, accept internal events instead of controlling them, articulate their values, and attend to them. Consequently, this reduces anxiety in the individual.

Furthermore, the findings also suggest that in the process of Acceptance and Commitment Therapy, psychological flexibility is recognized as the foundation of psychological health. A person who has psychological flexibility does not avoid unwanted events and does not attempt to control or change them, thus, they spend their energy on values and life instead of combating avoidance of unwanted events (Montaner et al., 2022). According to Hayes, group therapy based on Acceptance and Commitment encourages clients to change their relationship with thoughts and other internal experiences and to see them as mental events that come and go. Accepting thoughts as thoughts, feelings as feelings, and emotions as they are, neither more nor less, leads to a weakening of cognitive fusion (McMillan et al., 2022) and, alongside this, accepting internal events when the person is not struggling with distress and turmoil, allows them to develop a behavioral repertoire and can use the time thus gained for engaging in their valued activities and committing themselves to a valuable and purposeful life; in other words, in areas where experiential avoidance and cognitive fusion occur, the processes of acceptance and cognitive defusion help in breaking the patterns of avoidance and the rules that regulate them, assisting the individual.

5. Suggestions and Limitations

This study, while illuminating in several respects, is not without limitations. First, the sample size is relatively small and restricted to women with generalized anxiety disorder, which limits the generalizability of the findings to broader populations. Additionally, the study participants were all from a single geographic location, which may influence the extent to which the results can be applied to populations in different regions or cultures. Another limitation is the reliance on self-reported measures for assessing cognitive fusion and social anxiety, which can introduce bias as these measures are subjective and can be influenced by participants' current mood or social desirability.

Future research could expand on the current study by including a larger and more diverse sample size that encompasses different demographic backgrounds and various types of anxiety disorders to enhance the generalizability of the findings. Longitudinal studies would be beneficial to investigate the long-term effects of Acceptance and Commitment Therapy on cognitive fusion and social anxiety, as well as to examine potential relapse rates over extended periods. Additionally, incorporating objective measures or third-party assessments could provide a more comprehensive evaluation of the therapy's effectiveness and minimize the reliance on subjective self-report scales.

The findings from this study suggest practical implications for clinical practice, particularly in the treatment of anxiety disorders. Clinicians may consider integrating Acceptance and Commitment Therapy into their therapeutic arsenal, especially for clients who have not responded well to traditional cognitive-behavioral approaches. Training programs for psychotherapists could incorporate modules that focus on the techniques used in Acceptance and Commitment Therapy, emphasizing the importance of experiential acceptance and cognitive defusion. Moreover, the study underscores the importance of aligning therapeutic interventions with clients' values, which can enhance motivation and engagement in therapy. Health policymakers and mental health service providers might also consider promoting these therapeutic approaches in clinical settings to improve treatment outcomes for individuals suffering from anxiety disorders.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

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Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

References

Carvalho, S. A., Trindade, I. A., Gillanders, D., Pinto-Gouveia, J., & Castilho, P. (2019). Cognitive fusion and depressive symptoms in women with chronic pain: A longitudinal growth curve modelling study over 12 months. *Clinical Psychology & Psychotherapy*, *26*(5), 616-625. https://doi.org/10.1002/cpp.2386

Cookson, C., Luzon, O., Newland, J., & Kingston, J. (2020). Examining the role of cognitive fusion and experiential avoidance in predicting anxiety and depression. *Psychology and Psychotherapy: Theory, Research and Practice*, *93*(3), 456-473. https://doi.org/10.1111/papt.12233

Coto-Lesmes, R., Fernández-Rodríguez, C., & González-Fernández, S. (2020). Acceptance and Commitment Therapy in group format for anxiety and depression. A systematic review. *Journal of affective disorders*, *263*, 107-120. https://doi.org/10.1016/j.jad.2019.11.154

Coyle, S., Vagos, P., Masia-Warner, C., Silva, J., Xavier, A., Martin, G., Wimmer, J., Kalvera, A., Jeyanayagam, B., & Lekas, H. M. (2022). A qualitative study of social anxiety and impairment amid the COVID-19 pandemic for adolescents and young adults in Portugal and the US. *European journal of education and psychology*, *15*(2), 115-131. https://dialnet.unirioja.es/servlet/articulo?codigo=8675163

Egbe, C. I., Ugwuanyi, L. T., Ede, M. O., Agbigwe, I. B., Onuorah, A. R., Okon, O. E., & Ugwu, J. C. (2023). Cognitive Behavioural Play Therapy for Social Anxiety Disorders (SADs) in Children with Speech Impairments. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, *41*(1), 24-44. https://doi.org/10.1007/s10942-022-00442-6

Ejaz, B., Muazzam, A., Anjum, A., Pollock, G., & Nawaz, R. (2020). Measuring the Scale and Scope of Social Anxiety among Students in Pakistani Higher Education Institutions: An Alternative Social Anxiety Scale. *Sustainability*, *12*(6), 2164. https://www.mdpi.com/2071-1050/12/6/2164

Fang, S., & Ding, D. (2020). The efficacy of group-based acceptance and commitment therapy on psychological capital and school engagement: A pilot study among Chinese adolescents. *Journal of Contextual Behavioral Science*, *16*, 134-143. https://doi.org/10.1016/j.jcbs.2020.04.005

Faustino, B., & Vasco, A. B. (2020). Early Maladaptive Schemas and Cognitive Fusion on the Regulation of Psychological Needs. *Journal of Contemporary Psychotherapy*, *50*(2), 105-112. https://doi.org/10.1007/s10879-019-09446-3

Fawwaz, A. N., Prihadi, K. D., & Purwaningtyas, E. K. (2022). Studying online from home and social anxiety among university students: The role of societal and interpersonal mattering. *International Journal of Evaluation and Research in Education (Ijere)*, *11*(3), 1338-1345. https://doi.org/10.11591/ijere.v11i3.23464

Fernández Rodríguez, C., Coto Lesmes, R., Martínez Loredo, V., & Cuesta Izquierdo, M. (2022). Psychological inflexibility, anxiety and depression: The moderating role of cognitive fusion, experiential avoidance and activation. *Psicothema*. https://digibuo.uniovi.es/dspace/bitstream/handle/10651/66073/4742.pdf?sequence=1

Fogelkvist, M., Gustafsson, S. A., Kjellin, L., & Parling, T. (2020). Acceptance and commitment therapy to reduce eating disorder symptoms and body image problems in patients with residual eating disorder symptoms: A randomized controlled trial. *Body Image*, *32*, 155-166. https://doi.org/10.1016/j.bodyim.2020.01.002

Gillanders, D. T., Sinclair, A. K., MacLean, M., & Jardine, K. (2015). Illness cognitions, cognitive fusion, avoidance and self-compassion as predictors of distress and quality of life in a heterogeneous sample of adults, after cancer. *Journal of Contextual Behavioral Science*, *4*(4), 300-311. https://doi.org/10.1016/j.jcbs.2015.07.003

Gloster, A. T., Walder, N., Levin, M. E., Twohig, M. P., & Karekla, M. (2020). The empirical status of acceptance and commitment therapy: A review of meta-analyses. *Journal of Contextual Behavioral Science*, *18*, 181-192. https://doi.org/10.1016/j.jcbs.2020.09.009

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and Commitment Therapy as a Unified Model of Behavior Change. *The counseling psychologist*, *40*(7), 976-1002. https://doi.org/10.1177/0011000012460836

Jaiswal, A., Manchanda, S., Gautam, V., Goel, A. D., Aneja, J., & Raghav, P. R. (2020). Burden of internet addiction, social anxiety and social phobia among University students, India. *Journal of Family Medicine and Primary Care*, *9*(7). https://journals.lww.com/jfmpc/fulltext/2020/09070/burden_of_internet_addiction,_social_anxiety_and.74.aspx

Keskin, S., Şahin, M., Uluç, S., & Yurdugul, H. (2023). Online learners' interactions and social anxiety: the social anxiety scale for e-learning environments (SASE). *Interactive Learning Environments*, *31*(1), 201-213. https://doi.org/10.1080/10494820.2020.1769681

Kim, S. S. Y., Liu, M., Qiao, A., & Miller, L. C. (2022). "I Want to Be Alone, but I Don't Want to Be Lonely": Uncertainty Management Regarding Social Situations among College Students with Social Anxiety Disorder. *Health Communication*, *37*(13), 1650-1660. https://doi.org/10.1080/10410236.2021.1912890

Maftei, A., & Merlici, I.-A. (2023). Am I thin enough? Social media use and the ideal body stereotype: The mediating role of perceived socio-cultural pressure and the moderating role

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of cognitive fusion. *Current Psychology*, *42*(24), 21071-21084. https://doi.org/10.1007/s12144-022-02938-x

McMillan, L. J., McCarthy, M. C., Muscara, F., Anderson, V. A., Walser, R. D., O'Neill, J., Dimovski, A., Rayner, M., Nicholson, J. M., Hearps, S. J. C., Read, P. A., Morrison, E., McCabe, K., & Williams, K. (2022). Feasibility and acceptability of an online acceptance and commitment therapy group for parents caring for a child with cerebral palsy. *Journal of Family Studies*, *28*(4), 1338-1354. https://doi.org/10.1080/13229400.2020.1822198

Montaner, X., Tárrega, S., Pulgarin, M., & Moix, J. (2022). Effectiveness of Acceptance and Commitment Therapy (ACT) in Professional Dementia Caregivers Burnout. *Clinical Gerontologist*, *45*(4), 915-926. https://doi.org/10.1080/07317115.2021.1920530

Moran, D. J., & Ming, S. (2022). The Mindful Action Plan: Using the MAP to Apply Acceptance and Commitment Therapy to Productivity and Self-Compassion for Behavior Analysts. *Behavior Analysis in Practice*, *15*(1), 330-338. https://doi.org/10.1007/s40617-020-00441-y

Nateghi, N., Dadashi, M., & Mahmoud Alilou, M. (2019). Metacognitive Therapy in Improving sign, Metacognitive Beliefs and Thought Fusion in Patients with Obsessive-Compulsive Disorder [Original Research Article]. *Middle Eastern Journal of Disability Studies*---, *9*(0), 112-112. http://jdisabilstud.org/article-1-991-en.html
http://jdisabilstud.org/article-1-991-en.pdf

Prudenzi, A., Graham, C. D., Flaxman, P. E., Wilding, S., Day, F., & O'Connor, D. B. (2022). A workplace Acceptance and Commitment Therapy (ACT) intervention for improving healthcare staff psychological distress: A randomised controlled trial. *PLoS One*, *17*(4), e0266357. https://doi.org/10.1371/journal.pone.0266357

Ran, G., Li, J., Zhang, Q., & Niu, X. (2022). The association between social anxiety and mobile phone addiction: A three-level meta-analysis. *Computers in human Behavior*, *130*, 107198. https://doi.org/10.1016/j.chb.2022.107198

Stockton, D., Kellett, S., Berrios, R., Sirois, F., Wilkinson, N., & Miles, G. (2019). Identifying the Underlying Mechanisms of Change During Acceptance and Commitment Therapy (ACT): A Systematic Review of Contemporary Mediation Studies. *Behavioural and Cognitive Psychotherapy*, *47*(3), 332-362. https://doi.org/10.1017/S1352465818000553

Wetterauer, C., Shahin, O., Federer-Gsponer, J. R., Keller, N., Wyler, S., Seifert, H. H., & Kwiatkowski, M. (2020). Feasibility of freehand MRI/US cognitive fusion transperineal biopsy of the prostate in local anaesthesia as in-office procedure—experience with 400 patients. *Prostate Cancer and Prostatic Diseases*, *23*(3), 429-434. https://doi.org/10.1038/s41391-019-0201-y

Yousefi, F., & Hashemian Nejad, F. (2021). The Effect of Educational Games on Learning Math Concepts and Social Skills in Anxious Preschoolers [Original Research Article]. *Middle Eastern Journal of Disability Studies*---, *11*(0), 213-213. http://jdisabilstud.org/article-1-2428-en.html
http://jdisabilstud.org/article-1-2428-en.pdf