The Effectiveness of Transdiagnostic Treatment on Anxiety Sensitivity and Prospective and Retrospective Memory of Employees with Depressive Syndromes: A Quasi-Experimental Study

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Abstract

Background: Depression, a complex and often debilitating mood disorder, transcends its clinical definition to impact various aspects of an individual's life, including their professional pursuits.

Objectives: This study aimed to investigate the effectiveness of transdiagnostic treatment on anxiety sensitivity and prospective and retrospective memory of employees with depressive symptoms.

Methods: This quasi-experimental study used a pretest-posttest design with a control group. The study included a total of 36 participants who were employees experiencing depression in the sixth and eighth municipal districts of Tehran in 2021. These participants were selected using a random sampling approach and allocated randomly into 2 groups: The experimental group (n = 18) and the control group (n = 18). The data collection process involved the utilization of questionnaires designed to assess depression, anxiety sensitivity, and prospective and retrospective memory. In the experimental group, a series of ten 90-minute sessions of transdiagnostic treatment was administered, while the control group received no such intervention. The collected data was analyzed using multivariate analysis of covariance (MANCOVA) using SPSS version 24.

Results: The results showed that transdiagnostic treatment significantly decreases physical (F = 66.47, P < 0.001, η^2 = 0.69), cognitive (F = 57.29, P < 0.001, η^2 = 0.66), social (F = 26.05, P < 0.001, η^2 = 0.47), prospective memory (F = 50.18, P < 0.001, η^2 = 0.63), and retrospective memory (F = 31.39, P < 0.001, η^2 = 0.52) in employees with depressive symptoms.

Conclusions: The findings of this study highlight the significant and positive impact of transdiagnostic treatment on individuals experiencing depressive symptoms. The results demonstrate substantial reductions in various domains, including physical, cognitive, social, prospective memory, and retrospective memory domains. These outcomes, characterized by substantial effect sizes, highlight the effectiveness of transdiagnostic treatment in addressing the multifaceted challenges associated with depression in employees.

Keywords: Transdiagnostic Treatment, Anxiety Sensitivity, Prospective and Retrospective Memory, Employees, Depressive Syndromes

1. Background

In today's rapidly evolving work environment, the well-being of employees has taken center stage as a key factor influencing both individual and organizational success (1). Among the myriad of mental health concerns that affect employees, depression stands out as a significant challenge with profound implications (2).

Depression, a complex and often debilitating mood disorder transcends its clinical definition to impact various aspects of an individual's life, including their professional pursuits (3). Employees with depression navigate an intricate landscape of emotions, cognitive disruptions, and interpersonal complexities that extend beyond the boundaries of their personal lives (4). The

results of the review research by Thisted et al. (5) determined that various factors, such as age, sex, work history, and employer behavior, can predict employee depression. Also, the findings of the review study by Koutsimani et al. (6) also indicated the relationship between depression and anxiety of employees and their burnout. The investigations of Tekin et al. (7) revealed that job self-efficacy and self-esteem of employees are among the factors influencing the toxic work environment, job burnout, and depression of employees. Along with depression, anxiety sensitivity is one of the factors that can reduce the mental health of employees (8).

The intricate web of human emotions and psychological experiences often weaves unexpected connections between seemingly disparate aspects of mental health (9). One such intricate interplay is found in the dynamic relationship between anxiety sensitivity and depression (10). Anxiety sensitivity (the heightened fear of experiencing anxiety-related sensations) and depression (a complex mood disorder marked by persistent feelings of sadness and hopelessness) might appear distinct at first glance (8). However, a growing body of research highlights the intricate connection between these 2 phenomena, revealing a complex interdependence that shapes individuals' mental and emotional landscapes (11). Li et al. (12) showed that factors such as more work experience, being a woman, and working on the night shift increase anxiety sensitivity in nurses. Also, the persistence of anxiety sensitivity caused burnout and burnout symptoms among nurses. The findings of the Rehman et al. (13) study indicated the role of anxiety and depression in the optimal performance of employees. People who suffered from high anxiety and depression in the work environment did not have enough concentration to perform activities related to their jobs. Having high levels of anxiety and depression can reduce the cognitive performance and memory of employees (14).

Memory, the intricate tapestry that weaves together our experiences and perceptions, plays a pivotal role in shaping our understanding of the world and our place within it (15). Two distinct yet intimately connected threads within this tapestry are prospective and retrospective memory (16). Prospective memory (the ability to remember and perform future tasks) and retrospective memory (the art of recalling past events) jointly influence how we navigate our lives (14). However, this intricate interplay can become more complex when overlaid with the shadows of depression (17). The results of McFarland and Vasterling (18) showed that people who have high levels of prospective memory are constantly worried about ruining their work, making negative predictions, and perceiving themselves as having already

failed. All these factors increase depression in people, resulting in a decrease in their performance. The findings of the meta-analysis study by Zhou et al. (19) indicated the role of prospective memory in the exacerbation of depression. In contrast, non-depressed individuals scored low on prospective memory. The results of Zhang et al. (20) showed that prospective and retrospective memory plays an important role in causing and aggravating depression.

In the realm of mental health treatment, a pioneering approach has emerged that seeks to transcend the confines of traditional diagnostic boundaries (21). The effectiveness of transdiagnostic treatment, a novel therapeutic strategy, challenges the notion that distinct psychological disorders necessitate separate interventions (22). Instead, this approach focuses on common underlying factors shared among various disorders, presenting a promising avenue for addressing complex mental health challenges like depression (23). While conventional treatments have made significant strides, transdiagnostic treatment offers a fresh perspective by targeting mechanisms shared across multiple emotional difficulties (24). By dismantling the confines of disorder-specific treatments, this approach aimed to cultivate a comprehensive understanding of the factors causing depression, potentially revolutionizing the way we approach its treatment (25). Studies conducted by Choi et al. (26), Sloan et al. (27), Cuijpers et al. (28), and Bisby et al. (29) indicated the effectiveness of integrated transdiagnostic treatment on various emotional disorders, including depression and anxiety.

2. Objectives

Based on the investigations, employees who have psychological and cognitive disorders cannot perform their duties well, they do not have good communication with clients, and they create a lot of costs for the company and the institution. Given the substantial contribution employees make to the progress and productivity of offices and companies, prioritizing their optimal mental health becomes of utmost importance. In light of this, the current study aimed to explore the efficacy of transdiagnostic treatment in addressing anxiety sensitivity, as well as to enhance prospective and retrospective memory among employees with symptoms of depression.

3. Methods

3.1. Study Design

This quasi-experimental study used a pretest-posttest approach with the inclusion of a control group.

3.2. Study Population and Sampling

The research encompassed depressed employees from municipal districts 6 and 8 of Tehran in 2021. Following the administration of the Beck Depression Questionnaire to 190 employees, individuals who attained scores exceeding 22 on the depression questionnaire were designated as the final participants for the study. Among this selected group, 36 employees were chosen and distributed randomly through a lottery-based selection method, ultimately forming the experimental group (n = 18) and the control group (n = 18). The sample size was determined based on the G*Power (30) software results and considering the points raised for the sample size in an analysis of covariance (ANCOVA). Inclusion criteria included belonging to the research community, absence of reported physical problems, interest in participating in the study, and having a work experience of 10 years. Also, the absence of more than 2 meetings and the unwillingness to continue cooperation in the research were considered exclusion criteria.

3.3. Tools

Beck Depression Inventory-II: One of the most suitable instruments for assessing depression is a tool that effectively delineates varying degrees of depression, ranging from mild to severe. This tool should encompass an evaluation of physical, behavioral, and cognitive symptoms associated with depression. The method of scoring items is 0 to 3, and the range of scores is between 0 and 63 (31). In this inventory, scores are at different levels from 0 to 13 (least depression), 14 to 19 (mild depression), 20 to 28 (moderate depression), and 29 to 63 (severe depression). Beck et al. (31) documented the test's reliability as 0.96, showing internal consistency ranging from 0.73 to 0.92, with an average of 0.86. Additionally, they reported Cronbach's alpha coefficients of 0.86 for patients and 0.81 for non-patients. In the Iranian context, they recorded an alpha coefficient of 0.93 for student samples and a retest coefficient of 0.93 after a 1-week interval (32). In this present study, Cronbach's alpha coefficient for this scale was calculated at 0.86.

Anxiety Sensitivity Index-3: This tool was designed to assess the extent of concern regarding various anxiety symptoms (33). This index is an adaptation of the revised Anxiety Sensitivity Index (ASI) and consists of 18 items. The Anxiety Sensitivity Index assesses anxiety across 3 dimensions: Physical (6 items), cognitive (6 items), and social (6 items) dimensions. Respondents rate their agreement on a 5-point Likert scale ranging from 0 (slightly agree) to 4 (completely agree). The cumulative score can range from 0 to 72. People who get high scores suffer from high anxiety sensitivity. Regarding its psychometric properties, ASI demonstrates strong internal consistency, with reliability coefficients ranging from 0.76 to 0.86 for physical concerns, 0.79 to 0.91 for cognitive concerns, and 0.73 to 0.86 for social concerns. Additionally, the index exhibits solid validity, showing both convergent and divergent validity (33). In an Iranian context, Cronbach's alpha coefficients for the physical, cognitive, and social subscales were reported as 0.89, 0.84, and 0.80, respectively (34). In the current study, Cronbach's alpha coefficients for the physical (0.89), cognitive (0.91), and social (0.85) subscales of anxiety sensitivity were deemed appropriate.

Prospective and Retrospective Memory Questionnaire: Comprising a total of 16 items, this questionnaire features a dual structure including 2 distinct subscales: Prospective memory (8 items) and retrospective memory (8 items). The derivation of these subscales is based on the cumulative content of the questionnaire (35). The evaluation of responses is based on a 5-point Likert scale, ranging from 1 (very low) to 5 (very high). The total score for each falls within the range of 16 to 80. The validation of this questionnaire, conducted by Crawford et al. (35), provides strong evidence for its reliability and validity. The internal consistency of both prospective and retrospective scales achieved satisfactory levels. Specifically, Cronbach's alpha coefficients of 0.80 and 0.84 were reported for retrospective and prospective memory. Zare et al. (36) explored the psychometric properties of this questionnaire in the Iranian context and showed noteworthy psychometric qualities. Notably, the entire scale yielded an alpha coefficient of 0.83. In the present study, the calculated Cronbach's alpha coefficients accentuate the strength of the prospective (0.86) and retrospective (0.83) memory subscales, indicating their reliability.

3.4. Intervention Procedure

Within meta-diagnostic approaches, the transdiagnostic treatment formulated by Barlow et al. (37) stands out as a prominent intervention recently applied within the domain of mood and anxiety disorders, garnering substantial research interest (37). This therapeutic protocol focuses on emotions and their maladaptive regulatory strategies, targeting the shared underlying mechanisms of emotional disorders. The implementation of Barlow's transdiagnostic approach highlights the functional and constructive aspects of emotions, improving the patient's comprehension of the interconnectedness between cognitions, emotions, bodily sensations, and actions. In the present study, after the initial assessment, the experimental group received a

Table 1. Summary of Transdiagnostic Treatment Sessions (37)

Sessions	Target	Topic
1	Acquaintance and introduction	The strategies used to engage the research participants included introducing them to each other, enhancing their motivation, conducting motivational interviews to encourage participation, fostering company involvement throughout the treatment, providing a comprehensive understanding of the treatment rationale, and establishing clear treatment objectives.
2	Identify emotions	The approach to participant engagement included the provision of psychological training, facilitating the recognition and monitoring of emotional experiences, and imparting knowledge about the 3 components of emotional experiences and the antecedent-reaction (AR) model.
3	Emotional awareness training	Incorporating mindfulness techniques, participants were guided in the process of observing their emotional experiences, including emotions and their corresponding reactions.
4	Cognitive reappraisal	Promoting awareness of the reciprocal impact and interconnectedness between thoughts and emotions, participants were guided in recognizing inconsistent automatic evaluations and common cognitive distortions. The intervention also focused on cognitive reevaluation techniques to enhance cognitive flexibility in thinking.
5	Identifying patterns of avoiding emotion	Participants were introduced to a range of strategies designed to help them manage emotional experiences and mitigate their associated consequences. The intervention emphasized understanding the contradictory outcomes associated with avoiding emotions.
6	Examining behaviors caused by emotion	Participants were guided in recognizing and identifying behaviors triggered by emotions and comprehending their influence on emotional experiences. The intervention focused on identifying alternative courses of action through confrontation with these behaviors.
7	Awareness and tolerance of physical feelings	Raising awareness about the significance of physical sensations in shaping emotional experiences, participants engaged in visceral confrontation exercises to enhance their recognition of these bodily sensations. The intervention also aimed to bolster the participants' tolerance toward these physical symptoms.
8-9	Visceral coping and situational emotional coping	Educating participants about the rationale behind emotional confrontations, the intervention included guidance on creating a fear and avoidance hierarchy. Participants learned how to systematically design and implement emotionally challenging exercises through visual and objective methods. The aim was to curtail avoidance behaviors and foster effective emotional confrontation.
10	Conclusion	Relapse prevention, treatment concept overview, and recovery and treatment advance discussion.

comprehensive transdiagnostic treatment intervention developed by Barlow et al. (37). Treatment sessions were conducted in a psychology and counseling center by an expert therapist during ten 90-minute sessions (once a week). For ethical reasons, after taking the posttest, treatment sessions were also held for the control group (Table 1).

3.5. Ethical Consideration

At first, general explanations were given to the people, and after obtaining their written consent, the participants entered the research. Also, to comply with ethical issues points such as the anonymity of the questionnaires, the right of confidentiality, and the possibility of withdrawing from the research and group data analysis were observed for the participants.

3.6. Statistical Analysis

To analyze the research data, descriptive statistics (mean and SD) and ANCOVA were used based on their assumptions using SPSS version 24 (SPSS Inc, Chicago, IL, USA). The significance level of these tests was considered 0.05.

4. Results

Table 2 displays the average and SD of pretest and posttest scores regarding anxiety sensitivity and prospective and retrospective memory for employees with depressive syndromes in both the experimental and control groups. Additionally, this table presents the results of the Shapiro-Wilk test used to evaluate the normality of variable distributions within the 2 groups. Upon analyzing the data presented in Table 2, it is evident that the results of the Shapiro-Wilk test show non-significant findings for all variables. This non-significance signifies that the distribution of variables conforms to normality assumptions, allowing the conclusion that the data distribution is indeed normal (Table 2).

This study used multivariate analysis of covariance (MANCOVA) to assess the effectiveness of transdiagnostic treatment on anxiety sensitivity and prospective and retrospective memory of employees with depressive syndromes. The researchers tested various assumptions related to the equality of variance, covariance matrix, and regression coefficients. The results indicated that these assumptions were valid. As a result, MANCOVA was conducted to examine the differences between the

Table 2. Descriptive Indices of Study's Variables in Control and Experimental Groups

Groups	Mean ± SD	S-W test	P-Value
Depression			
Pretest			
Experimental	25.63 ± 1.25	0.196	0.069
Control	25.12 ± 1.69	0.091	0.084
Posttest			
Experimental	20.48 ± 2.45	0.108	0.055
Control	25.94 ± 2.66	0.102	0.115
Physical			
Pretest			
Experimental	15.50 ± 1.94	0.086	0.163
Control	15.38 ± 1.28	0.064	0.084
Posttest			
Experimental	12.33 ± 1.33	0.092	0.103
Control	15.61 ± 2.92	0.128	0.080
Cognitive			
Pretest			
Experimental	18.27 ± 2.07	0.095	0.074
Control	18.16 ± 2.53	0.053	0.118
Posttest			
Experimental	15.17 ± 1.67	0.090	0.066
Control	18.39 ± 1.24	0.084	0.071
Social			
Pretest			
Experimental	16.38 ± 2.59	0.102	0.135
Control	16.50 ± 1.39	0.086	0.076
Posttest			
Experimental	13.34 ± 2.14	0.091	0.055
Control	16.05 ± 1.87	0.109	0.059
Prospective Memory			
Pretest			
Experimental	29.38 ± 2.60	0.083	0.067
Control	29.33 ± 1.57	0.108	0.084
Posttest			
Experimental	25.94 ± 2.66	0.068	0.101
Control	29.45 ± 1.84	0.094	0.134
Retrospective Memory			
Pretest			
Experimental	31.83 ± 1.93	0.057	0.079
Control	31.94 ± 2.50	0.106	0.064
Posttest			
Experimental	28.39 ± 1.74	0.057	0.102
Control	31.72 ± 1.83	0.093	0.079

Abbreviation: S-W, Shapiro-Wilk test.

experimental and control groups (Table 3).

Table 3 shows the effect of the independent variable on the dependent variables; in other words, experimental and control groups have a significant difference in at least one of the variables of anxiety sensitivity and prospective and retrospective memory, which, according to the calculated effect size, 75% of the total variance of experimental and control groups was due to the effect of the independent variable.

Based on the data presented in Table 4, it becomes apparent that the F-statistic holds substantial significance for the variables of physical (66.47), cognitive (57.29), social (26.05), prospective memory (50.18), and retrospective memory (31.39) at a significance level of 0.001. These outcomes signify a significant difference between the groups about these variables. Furthermore, the effect value calculations show that a notable proportion of variance in the variables of physical (69%), cognitive (66%), social (47%), prospective memory (63%), and retrospective memory (52%) remains uninfluenced. Consequently, it can be confidently asserted that the application of transdiagnostic treatment leads to a significant reduction in anxiety sensitivity and prospective and retrospective memory impairment in employees with depressive syndromes.

5. Discussion

The primary objective of this study was to explore the efficacy of transdiagnostic treatment in mitigating anxiety sensitivity, as well as enhancing prospective and retrospective memory among employees with depression symptoms. The results of the present study showed that employees with depressive symptoms had less anxiety sensitivity (physical, cognitive, and social) after receiving transdiagnostic treatment. These results are consistent with the studies conducted by Autenrieth et al. (10), Okajima and Kadotani (11), Li et al. (12), and Rehman et al. (13).

In the modern workplace, the mental well-being of employees has emerged as a crucial issue, with depression receiving considerable attention due to its extensive implications (2). Employees experiencing depression face a complex interplay of personal, social, and professional challenges that can affect not only their well-being but also the overall dynamics and productivity of the workplace (7). Depression, characterized by persistent feelings of sadness, low energy, and a lack of interest or pleasure in daily activities, goes beyond its emotional toll; it can impede cognitive functioning, impair decision-making, and disrupt interpersonal relationships (1). As employers and organizations increasingly recognize the importance of fostering a mentally healthy workforce, understanding the nuances of employees dealing with depression becomes paramount (6).

Regarding anxiety disorders, anxiety sensitivity plays a pivotal role in perpetuating distress and impairment (9). Transdiagnostic treatment emerges as a potent tool for reducing anxiety sensitivity by targeting shared mechanisms, providing psychoeducation, employing cognitive restructuring, and facilitating gradual exposure

Table 3. The Results of Multivariate Analysis of Covariance on Mean Posttest Scores

Test	Value	F	df	Error df	P-Value	Effect Value
Pillai's trace	0.750	14.979	5	25	0.001	0.75
Wilks lambda	0.250	14.979	5	25	0.001	0.75
Hotelling trace	2.996	14.979	5	25	0.001	0.75
Roy's Largest root	2.996	14.979	5	25	0.001	0.75

Table 4. Results of Univariate Analysis of Covariance on the Mean of Posttest Scores of Dependent Variables in Experimental and Control Groups

Variables	SS	SS Error	DF	MS	MS Error	F	P-Value	Effect Value
Physical	106.007	46.24	1	106.007	1.59	66.47	0.001	0.69
Cognitive	101.166	51.20	1	101.166	1.76	57.29	0.001	0.66
Social	68.666	76.42	1	68.666	2.63	26.05	0.001	0.47
Prospective memory	116.508	67.55	1	116.508	2.32	50.18	0.001	0.63
Retrospective memory	95.213	87.95	1	95.213	3.02	31.39	0.001	0.52

(22). By fostering a comprehensive understanding of anxiety-related sensations, transdiagnostic treatment empowers individuals to mitigate their anxiety sensitivity and manage the challenges posed by various anxiety disorders, ultimately leading to improved mental health (25). Autenrieth et al. (10) showed that nurses with anxiety sensitivity had more depression, panic, health anxiety, and job burnout. Okajima and Kadotani (11) indicated the role of anxiety sensitivity in worsening depression and insomnia in Japanese government employees. The findings of the study by Schniering et al. (25) also indicated the effectiveness of integrated transdiagnostic treatment on adolescent depression and anxiety.

The findings of the present study showed that employees with depressive symptoms had less prospective and retrospective memory impairment after transdiagnostic treatment. These results are consistent with the studies conducted by McFarland and Vasterling (18), Zhou et al. (19), Zhang et al. (20), Vaskivuo et al. (16), and Lebowitz and Ahn (17).

In the ever-evolving landscape of mental health interventions, transdiagnostic treatment stands out as a promising avenue for addressing the intricate interaction between emotional challenges and cognitive functioning (28). By addressing shared cognitive mechanisms, promoting cognitive restructuring, and fostering emotion regulation skills, this approach effectively improves prospective and retrospective memory (15). Accordingly, transdiagnostic treatment offers a bridge between emotional resilience and cognitive strength, ultimately leading to a more enriched and empowered experience for individuals navigating the complex landscape of mental health and memory challenges (18). The transdiagnostic treatment represents a transformative approach in the realm of mental health by addressing the intricate interplay between emotional challenges and cognitive functioning. Through mechanisms such as cognitive restructuring, psychoeducation, and skill-building, transdiagnostic treatment offers a comprehensive solution to reducing prospective and retrospective memory difficulties (20). By targeting shared factors across emotional challenges, this approach not only fosters memory improvement but also enhances cognitive resilience (17).

Vaskivuo et al. (16) indicated that people who had high levels of retrospective and prospective memory suffered from depression, anxiety, and unfavorable executive performance. Also, depression caused by memory has reduced the quality of life, mental health, and social relationships of people. The study conducted by Lebowitz and Ahn (17) provides evidence of a significant correlation between depression and retrospective memory. The participants who were informed that their genetic makeup predisposed them to depression tended to exhibit elevated levels of depressive symptoms over the preceding 2 weeks in comparison to those who were not provided with this genetic feedback. The results of the review research by Carlucci et al. (24) showed that integrated transdiagnostic treatment significantly reduces depression and anxiety in patients.

One of the limitations of this research was the lack of control over the social, educational, and economic backgrounds of the research participants. Future studies are needed to make efforts to better control and manage these variables. Additionally, the impact of the COVID-19 pandemic led to a relatively small sample size in this study.

It is suggested that future investigations involve a larger number of participants to enhance the generalizability of the findings. Another limitation was the absence of a long-term follow-up assessment to track the enduring effects of the intervention. For forthcoming research, it is advisable to incorporate a follow-up test to explore the sustained impact of transdiagnostic treatment over an extended period.

5.1. Conclusions

The findings of this study highlight the significant and positive impact of transdiagnostic treatment on individuals experiencing depressive symptoms. The results demonstrate substantial reductions in various domains, including physical, cognitive, social, prospective memory, and retrospective memory. These outcomes, characterized by substantial effect sizes, highlight the effectiveness of transdiagnostic treatment in addressing the multifaceted challenges associated with depression in employees. As a result, these results have significant implications for both mental health professionals and organizations seeking to support the mental well-being of their employees. The incorporation of transdiagnostic treatment strategies into mental health interventions may offer a more holistic and effective approach to addressing depressive symptoms and their associated impairments.

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Footnotes

References

1. Pyc LS, Meltzer DP, Liu C. Ineffective leadership and employees' negative outcomes: The mediating effect of anxiety and depression. *Int J Stress Manag.* 2017;**24**(2):196–215. https://doi.org/10.1037/str0000030.

2. Mangerini I, Bertilsson M, de Rijk A, Hensing G. Gender differences in managers' attitudes towards employees with depression: a cross-sectional study in Sweden. *BMC Public Health.* 2020;**20**(1):1744. [PubMed ID: 33213425]. [PubMed Central ID: PMC7678207]. https://doi.org/10.1186/s12889-020-09848-2.

3. Kalargyrou V, Sundar V, Jahani S. Managers' attitudes toward employees with depression and organizational citizenship behaviors in the hospitality industry: assessing the mediating role of personality. *Int J Contemp Hosp Manag.* 2022;**35**(2):602–29. https://doi.org/10.1108/ijchm-01-2022-0082.

4. Sussman M, O'Sullivan A K, Shah A, Olfson M, Menzin J. Economic Burden of Treatment-Resistant Depression on the U.S. Health Care System. *J Manag Care Spec Pharm.* 2019;**25**(7):823–35. [PubMed ID: 31232205]. [PubMed Central ID: PMC10398213]. https://doi.org/10.18553/jmcp.2019.25.7.823.

5. Thisted CN, Labriola M, Vinther Nielsen C, Kristiansen ST, Strom J, Bjerrum MB. Managing employees' depression from the employees', co-workers' and employers' perspectives. An integrative review. *Disabil Rehabil.* 2020;**42**(4):445–59. [PubMed ID: 30384779]. https://doi.org/10.1080/09638288.2018.1499823.

6. Koutsimani P, Montgomery A, Georganta K. The Relationship Between Burnout, Depression, and Anxiety: A Systematic Review and Meta-Analysis. *Front Psychol.* 2019;**10**:284. [PubMed ID: 30918490]. [PubMed Central ID: PMC6424886]. https://doi.org/10.3389/fpsyg.2019.00284.

7. Tekin OA, Unguren E, Dogrucan A, Yildiz S. How Does Organizational Toxicity Affect Depression? A Moderated Mediation Model. *Int J Environ Res Public Health.* 2023;**20**(5). [PubMed ID: 36900844]. [PubMed Central ID: PMC10001265]. https://doi.org/10.3390/ijerph20053834.

8. Yesilot SB, Yesil Demirci P, Eskimez Z. The role of intolerance of uncertainty and anxiety sensitivity on nursing students' depression, anxiety, and stress levels. *Nurse Educ Pract.* 2022;**65**:103487. [PubMed ID: 36356321]. https://doi.org/10.1016/j.nepr.2022.103487.

9. Kensbock JM, Alkærsig L, Lomberg C. The Epidemic of Mental Disorders in Business—How Depression, Anxiety, and Stress Spread across Organizations through Employee Mobility*. *Adm Sci Q.* 2021;**67**(1):1–48. https://doi.org/10.1177/00018392211014819.

10. Autenrieth LK, Benke C, Asselmann E, Pane-Farre CA. Anxiety sensitivity elevates the risk of mental health problems in employees with higher probability of contacting COVID-19 at work. *J Affect Disord Rep.* 2023;**12**:100491. [PubMed ID: 36718156]. [PubMed Central ID: PMC9877319]. https://doi.org/10.1016/j.jadr.2023.100491.

11. Okajima I, Kadotani H; On Behalf of the NinJa Sleep Study Group. Association of Sleep Reactivity and Anxiety Sensitivity with Insomnia-Related Depression and Anxiety among City Government Employees in Japan. *Clocks Sleep.* 2023;**5**(2):167–76. [PubMed ID: 37092427]. [PubMed Central ID: PMC10123658]. https://doi.org/10.3390/clockssleep5020015.

12. Li S, Li L, Zhu X, Wang Y, Zhang J, Zhao L, et al. Comparison of characteristics of anxiety sensitivity across career stages and its relationship with nursing stress among female nurses in Hunan, China. *BMJ Open.* 2016;**6**(5). e010829. [PubMed ID: 27147388]. [PubMed Central ID: PMC4861120]. https://doi.org/10.1136/bmjopen-2015-010829.

13. Rehman Z, Shakoor K, Nawaz MA. Impact of Depression and Anxiety on Employee Performance: An Empirical Analysis. *Pak Lang Hum Rev.* 2022;**6**(2):115–24. https://doi.org/10.47205/plhr.2022(6-II)10.

14. Gao H, Xia Q, Zhang X, Chen Y, Yan J, Gao J, et al. Intermediary roles of prospective memory and retrospective memory in the comorbidity of depression and pain. *Gen Psychiatr*. 2023;**36**(1). e100895. [PubMed ID: 36844966]. [PubMed Central ID: PMC9950883]. https://doi.org/10.1136/gpsych-2022-100895.

15. Uttl B, White CA, Cnudde K, Grant LM. Prospective memory, retrospective memory, and individual differences in cognitive abilities, personality, and psychopathology. *PLoS One*. 2018;**13**(3). e0193806. [PubMed ID: 29584735]. [PubMed Central ID: PMC5870974]. https://doi.org/10.1371/journal.pone.0193806.

16. Vaskivuo L, Hokkanen L, Hanninen T, Antikainen R, Backman L, Laatikainen T, et al. Associations between Prospective and Retrospective Subjective Memory Complaints and Neuropsychological Performance in Older Adults: The Finger Study. *J Int Neuropsychol Soc*. 2018;**24**(10):1099–109. [PubMed ID: 30178733]. https://doi.org/10.1017/S135561771800053X.

17. Lebowitz MS, Ahn WK. Testing positive for a genetic predisposition to depression magnifies retrospective memory for depressive symptoms. *J Consult Clin Psychol*. 2017;**85**(11):1052–63. [PubMed ID: 29083221]. [PubMed Central ID: PMC5679424]. https://doi.org/10.1037/ccp0000254.

18. McFarland CP, Vasterling JJ. Prospective Memory in Depression: Review of an Emerging Field. *Arch Clin Neuropsychol*. 2018;**33**(7):912–30. [PubMed ID: 29228162]. https://doi.org/10.1093/arclin/acx118.

19. Zhou FC, Wang YY, Zheng W, Zhang Q, Ungvari GS, Ng CH, et al. Prospective memory deficits in patients with depression: A meta-analysis. *J Affect Disord*. 2017;**220**:79–85. [PubMed ID: 28600931]. https://doi.org/10.1016/j.jad.2017.05.042.

20. Zhang X, Yang B, Shao D, Zhao Y, Sun J, Li J, et al. Longitudinal association of subjective prospective and retrospective memory and depression among patients with glioma. *Eur J Oncol Nurs*. 2019;**42**:1–6. [PubMed ID: 31446258]. https://doi.org/10.1016/j.ejon.2019.07.003.

21. Barlow DH, Harris BA, Eustis EH, Farchione TJ. The unified protocol for transdiagnostic treatment of emotional disorders. *World Psychiatry*. 2020;**19**(2):245–6. [PubMed ID: 32394551]. [PubMed Central ID: PMC7215073]. https://doi.org/10.1002/wps.20748.

22. Garcia-Escalera J, Valiente RM, Sandin B, Ehrenreich-May J, Prieto A, Chorot P. The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A) Adapted as a School-Based Anxiety and Depression Prevention Program: An Initial Cluster Randomized Wait-List-Controlled Trial. *Behav Ther*. 2020;**51**(3):461–73. [PubMed ID: 32402261]. https://doi.org/10.1016/j.beth.2019.08.003.

23. Thompson-Brenner H, Boswell JF, Espel-Huynh H, Brooks G, Lowe MR. Implementation of transdiagnostic treatment for emotional disorders in residential eating disorder programs: A preliminary pre-post evaluation. *Psychother Res*. 2019;**29**(8):1045–61. [PubMed ID: 29553881]. https://doi.org/10.1080/10503307.2018.1446563.

24. Carlucci L, Saggino A, Balsamo M. On the efficacy of the unified protocol for transdiagnostic treatment of emotional disorders: A systematic review and meta-analysis. *Clin Psychol Rev*. 2021;**87**:101999. [PubMed ID: 34098412]. https://doi.org/10.1016/j.cpr.2021.101999.

25. Schniering CA, Einstein D, Kirkman JJL, Rapee RM. Online treatment of adolescents with comorbid anxiety and depression: A randomized controlled trial. *J Affect Disord*. 2022;**311**:88–94. [PubMed ID: 35594970].

https://doi.org/10.1016/j.jad.2022.05.072.

26. Choi KW, Kim YK, Jeon HJ. Comorbid Anxiety and Depression: Clinical and Conceptual Consideration and Transdiagnostic Treatment. *Adv Exp Med Biol*. 2020;**1191**:219–35. [PubMed ID: 32002932]. https://doi.org/10.1007/978-981-32-9705-0_14.

27. Sloan E, Hall K, Moulding R, Bryce S, Mildred H, Staiger PK. Emotion regulation as a transdiagnostic treatment construct across anxiety, depression, substance, eating and borderline personality disorders: A systematic review. *Clin Psychol Rev*. 2017;**57**:141–63. [PubMed ID: 28941927]. https://doi.org/10.1016/j.cpr.2017.09.002.

28. Cuijpers P, Miguel C, Ciharova M, Ebert D, Harrer M, Karyotaki E. Transdiagnostic treatment of depression and anxiety: a meta-analysis. *Psychol Med*. 2023;**53**(14):1–12. [PubMed ID: 36606456]. [PubMed Central ID: PMC10600931]. https://doi.org/10.1017/S0033291722003841.

29. Bisby MA, Scott AJ, Fisher A, Gandy M, Hathway T, Heriseanu AI, et al. The timing and magnitude of symptom improvements during an Internet-delivered transdiagnostic treatment program for anxiety and depression. *J Consult Clin Psychol*. 2023;**91**(2):95–111. [PubMed ID: 36201813]. https://doi.org/10.1037/ccp0000761.

30. Faul F, Erdfelder E, Lang AG, Buchner A. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods*. 2007;**39**(2):175–91. [PubMed ID: 17695343]. https://doi.org/10.3758/bf03193146.

31. Beck AT, Steer RA, Brown G. *Beck Depression Inventory–II (BDI-II) [Database record]*. **78**(2). APA PsycTests; 1996. p. 490–8.

32. Rezaeian A, Agha Akbari L, Amirzadeh F, MalekMohammadi N. The Effectiveness of Acceptance and Commitment Therapy on Distress Tolerance and Depression in Students. *Q J Child Ment Health*. 2021;**8**(4):94–107. https://doi.org/10.52547/jcmh.8.4.8.

33. Taylor S, Zvolensky MJ, Cox BJ, Deacon B, Heimberg RG, Ledley DR, et al. Robust dimensions of anxiety sensitivity: development and initial validation of the Anxiety Sensitivity Index-3. *Psychol Assess*. 2007;**19**(2):176–88. [PubMed ID: 17563199]. https://doi.org/10.1037/1040-3590.19.2.176.

34. Bagheri Sheykhangafshe F, Fathi-Ashtiani A, Savabi Niri V, Otadi S, Rezaei Golezani H. The Efficacy of Cognitive-Behavioral Therapy on Coping Strategies and Anxiety Sensitivity of Patients With COVID-19 Obsession. *J Res Health*. 2023;**13**(1):41–50. https://doi.org/10.32598/jrh.13.1.1922.2.

35. Crawford JR, Smith G, Maylor EA, Della Sala S, Logie RH. The Prospective and Retrospective Memory Questionnaire (PRMQ): Normative data and latent structure in a large non-clinical sample. *Memory*. 2003;**11**(3):261–75. [PubMed ID: 12908675]. https://doi.org/10.1080/09658210244000027.

36. Zare H, Alipur A, Mostafaie A. [Standardization of Retrospective-Prospective Memory Scale]. *Soc Cogn*. 2014;**3**(1):45–56. Persian.

37. Barlow DH, Farchione TJ, Bullis JR, Gallagher MW, Murray-Latin H, Sauer-Zavala S, et al. The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders Compared With Diagnosis-Specific Protocols for Anxiety Disorders: A Randomized Clinical Trial. *JAMA Psychiatry*. 2017;**74**(9):875–84. [PubMed ID: 28768327]. [PubMed Central ID: PMC5710228]. https://doi.org/10.1001/jamapsychiatry.2017.2164.