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Original Article

Exploring Deviation from Time Perspective in Patients with Major Depressive Disorder, Obsessive Compulsive Disorder, and Generalized Anxiety Disorder: A Comparative Analysis in the Clinical Context

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Abstract

Objective: A growing body of research stresses the effect of time perspective (TP) on the genesis and maintenance of psychological disorders. However, the variations in the TP configuration of individuals with different disorders have not yet been completely investigated. We aimed to compare the differences in TP among patients with three common psychiatric disorders.
Method: We recruited 30 patients with major depressive disorder (MDD), 30 with generalized anxiety disorder (GAD), and 30 with obsessive-compulsive disorder (OCD). Participants completed Zimbardo's Time Perspective Inventory, Beck Depression Inventory, Generalized Anxiety Disorder Scale, Maudsley Obsessive Compulsive Inventory, and Structured Clinical Interview for DSM-5 (SCID-5). The one-way MANOVA was utilized for the comparison of TP dimensions among the three disordered groups.
Results: The results showed that TP was significantly affected in all three clinical groups. The effect of the disorder on time perspective was significant for Past Negative (PN) ($F(2, 84) = 11.86$, $P < 0.01$), Past Positive (PP) ($F(2, 84) = 6.66$, $P < 0.01$), Present Fatalistic (PF) ($F(2, 84) = 7.08$, $P < 0.01$) and Future (F) ($F(2, 84) = 26.40$, $P < 0.01$), but not for Present Hedonistic (PH). The findings revealed that the MDD group scored the highest on PN, with the GAD group scoring higher than the OCD group. The GAD and OCD groups reported higher PP than the MDD group. In addition, the MDD group scored higher than both the GAD and OCD groups on PF. Finally, the GAD patients reported higher scores than both the MDD and OCD patients on the F dimension, while the OCD patients scored higher than the MDD patients.
Conclusion: Individuals with MDD tend to obtain higher scores in PN and PF time perspective, whereas those with GAD and OCD showed higher PP and F scores. These findings demonstrate the significance of examining TP in clinical patients and prompt further research into the association between TP and the disorders being studied. Perspectives on therapy are also explored.

Keywords: *Depression; Generalized Anxiety; Obsessive-Compulsive Disorder; Time Perception*

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Over the last two decades, the development of Zimbardo and Boyd's (1999) Time Perspective Inventory (ZTPI) has sparked a surge in interest in the study of time perspectives (1). Nevertheless, curiosity about the influence of time may be traced back to Lewin's (1951) theory, in which he coined Time Perspective (TP) and fostered the development of numerous concepts, as well as the investigation of future event repercussions (2). The concept of TP refers to the procedure through which a steady stream of personal and societal experiences is allocated to temporal divisions or time periods that assist the provision of consistency, meaning, and organization to such experiences. By this means, it splits experience into past, present, and future temporal divisions, which are then utilized to process, maintain, and recall experienced occurrences, form perceptions, establish assumptions, concentrate attention, provide interpretations, set objectives, make decisions, and execute actions. Zimbardo and Boyd (1999) recognized five distinct temporal perspectives employing factor analysis. The first is Past-Negative (PN), which represents an inclination to associate the past with unpleasant experiences. Past–Positive (PP) refers to a penchant for favorable, sympathetic, or nostalgic attitudes toward memories. Likewise, two modes of thinking about the present were identified: Present–Fatalistic (PF), which denotes a gloomy and helpless outlook on life, and Present–Hedonistic (PH), which reflects an impetuous and risk-taking outlook on life events. The final component, Future (F), promotes thinking and planning about the future. According to Boniwell and Zimbardo (2004), maintaining a TP balance and harmoniously switching between the past, present, and future is critical for maximum efficiency in life and achieving happiness (3).

The five TP aspects have been found to be associated with mental health/disorder indicators. For instance, changes in temporal dimensions are exhaustively discussed in the literature on depressive disorders. Beck argued in 1979 that depressed individuals are too sensitive to past adverse events, which they interpret in an unduly generalized and sweeping manner (4).

Depressed patients recall prior experiences with less precision compared to healthy individuals (5, 6), and they appear to recall stronger adverse memories (7, 8). Additionally, previous research has revealed a predisposition in depressed individuals to be despondent about upcoming events and future experiences. Individuals with depression overstate the possibility of adverse occurrences, downplay the likelihood of favorable occurrences, and have bleak and dispirited predictions for the future (9, 10). Depression levels among student participants were shown to be significantly associated with the five aspects of Zimbardo and Boyd's (1999) TP (11). Other studies have observed that PN is more strongly linked to depression symptoms compared to other dimensions of the TP (12, 13). Further, Lefèvre *et al*. (2019) demonstrated that TP is significantly altered in depressive individuals, exhibiting higher adverse perception of past experiences, a much-diminished pleasure-seeking attitude in the present, and a stronger fatalistic attitude than individuals with no depressive symptoms (9). In a study conducted by Carelli and Wiberg (2012), depressive symptoms in adults were predicted by PN and fatalistic attitudes. According to these findings, depression might be strongly linked to TPs, particularly with the PN dimension (14).

Generalized anxiety disorder (GAD) is a widespread psychiatric disorder characterized by irrational, enduring, and continuous worry (15). Individuals diagnosed with GAD are primarily concerned with events happening in their daily lives or anticipated future outcomes (16). PN orientation was demonstrated to be "[...] associated with depression, anxiety, self-reported unhappiness, and low self-esteem" (1, 17). Extant studies are indicating an association between anxiety and TP dimensions, including PN and PF, and Future Negative (See Carelli *et al*., 2015; Additional dimension to ZTPI), and PN (23). In a series of experiments, Papastamatelou *et al*. (2015) investigated deviation from balanced time perspective (DBTP) among GAD patients and reported a negative correlation between future time perspective and heightened DBTP among GAD patients (24).

Obsessive-compulsive disorder (OCD) is characterized by recurring and interrupting distressing thoughts (i.e., obsessions) and reiterative conduct (i.e., compulsions) to regulate and control these thoughts (25). OCD is associated with significant suffering, ineffective interpersonal and vocational functioning, lower life satisfaction and quality, depression, and increased incidence of divorce (26, 27). Reportedly, no earlier research has investigated time perspectives among OCD patients, except for a few studies on similar psychiatric conditions (e.g., gambling; 28). Regarding the sparse literature, Esfahani *et al*. (2015), in their seminal research, concluded that the time perspective intervention was effective in reducing the intensity of obsessions. However, this outcome was inconsistent, and this therapy did not alleviate the intensity of compulsive symptoms (29). Nevertheless, given the high comorbidity of this diagnostic category with anxiety and affective disorders (30, 31) and close aetiological connections between these classifications (32), hypothetical TP abnormalities in OCD patients could be expected. For instance, Black *et al*. (1995) investigated the familial connections between anxiety disorders and OCD and confirmed a diathesis for anxiety among relatives of OCD patients (33).

Based on previous investigations and to further corroborate the conclusions, we investigated how TP attitudes, as operationalized by Zimbardo and Boyd (1999), differ among MDD, GAD, and OCD patients. We compared the dimensions of ZTPI among individuals diagnosed with MDD, GAD, and OCD in our sample. Individuals with MDD or GAD were expected to have a greater reliance on the PN and PF dimensions and lower

levels of the PP, PH, and F dimensions. Furthermore, we expected that MDD patients would have a negative gaze at their life events, which would be reflected in the elevated PN element of their TP profile and lower levels of the F dimension, indicating a gloomy outlook on their future, in line with cognitive-behavioral theory (see; 34, 35). We also anticipated a higher deviation for the PF dimension among MDD patients. It has been substantiated that the external locus of control is associated with higher rates of depression and lower self-esteem (e.g., 36, 37), and fatalism is a construct sharing commonalities with the external locus of control (38). We expected lower levels of F and PH as well as high levels of PF dimensions for GAD patients. One possible rationale for this hypothesis is that cognitive-behavioral theory for generalized anxiety disorder involves two typical cognitive distortions: fortune-telling and catastrophizing (39, 40). In this sense, fortune-telling involves forecasting the worst circumstance as one of the most likely outcomes. In the case of OCD patients, it was also hypothesized that the PN and PF dimensions would be elevated while the F dimension would be reduced, as this disorder shares cognitive characteristics with anxiety disorders and mood disorders.

Materials and Methods

Participants

Through availability sampling, we recruited 107 community-dwelling individuals with the DSM-5 diagnoses of MDD, GAD, and OCD (41). G*Power software was utilized to compute the sample size (42). We concluded that 27 individuals were required, and the effect size was determined to be 0.43, $\alpha = 0.05$. Additionally, the power of the statistical analysis was calculated to be $1 - \beta = 0.95$. However, in order to enhance the generalizability of the findings and reduce attrition concerns, we recruited 30 individuals for each group. Patients were referred to the study from psychiatric outpatient centers, Razy Asylum of Urmia, and psychological treatment centers in the year 2020. As for the inclusion criteria, individuals in the depression group had to have a diagnosis of MDD (according to the DSM-5) without any concurrent psychiatric conditions. Similarly, for the GAD group, individuals required a diagnosis of GAD and no other comorbid psychiatric conditions. Lastly, for the OCD group, patients should meet the DSM-5 criteria for the diagnosis of OCD without any other comorbid diagnoses. In addition to a psychiatric history review, a psychiatrist (the Third Author) verified diagnoses in all three groups using the Structured Clinical Interview for DSM-5 (SCID) (43).

Furthermore, SCID was used to recognize potential comorbidities among patients, and comorbid individuals were excluded before attending the experiment. Because of coexisting bipolar disorder or other psychiatric conditions such as personality disorders, neurological abnormalities, serious head trauma, and other impairments, seventeen (16%) individuals were excluded from the study. Moreover, symptom measures of MDD, GAD, and OCD were utilized to confirm the presence of these psychiatric disorders. As a result of these exclusions, 30 individuals were recruited for each group. The mean age for the GAD, MDD, and OCD groups were 32.43 ± 6.26, 35.00 ± 11.35, and 32.40 ± 9.27 years, respectively. The comparison of the mean ages among the groups showed an insignificant difference ($F(2, 87) = 2.47$, $P = 0.09$).

Procedure

The Institutional Review Board at Urmia's Razi Hospital authorized this study with the ethical code IR.IAU.URMIA.REC.1397.25. The participants were asked to sign an informed consent form after reading the explanatory statement. The assessments took place in a calm and comfortable setting in a psychiatric clinic from 9 A.M. to 2 P.M. A clinician/Master of Clinical Psychology, who was blinded to the subgroups and assumptions of the study, delivered the assessments. For participating in the study, all patients received no remuneration but were provided with a couple of CBT-based psychoeducation sessions for their condition.

Measures

Zimbardo Time Perspective Inventory (ZTPI; 18) is a 56-item self-report scale that has predictive validity and subscale test-retest reliability, with Pearson's r values ranging between 0.70 and 0.80 (18). This questionnaire assesses a person's view of their PP ("It gives me pleasure to think about my past"), PN ("I often think of what I should have done differently in my life"), PF ("my path is controlled by forces I cannot influence"), PH ("I take each day as it is rather than try to plan it out"), and F ("when I want to achieve something, I set goals and consider specific means for reaching those goals"). The responses are provided on a 5-point Likert scale. Greater time dimension scores imply a greater inclination to focus on this dimension. According to Golestaneh *et al*. (2016), the reliability of ZTPI dimensions was reported to be $\alpha = 0.67$ for PN, $\alpha = 0.57$ for PP, $\alpha = 0.58$ for PH, $\alpha = 0.56$ for PF, and $\alpha = 0.59$ for the F dimension (45).

Structured Clinical Interview for DSM-5 (SCID-5; 45) is a semi-structured clinical interview formerly considered the gold standard for identifying contemporary mood and anxiety disorders (46). For the present study, the SCID-based diagnoses of current MDD, GAD, and OCD served as the reference standard in assigning participants to the groups. Sharifi *et al*. (2004) reported that for most of the diagnostic categories, the diagnostic concordance for the Persian form of SCID was fair to good, with kappas over 0.6 (47). The overall weighted kappa for current diagnoses were 0.52 and 0.55 for lifetime diagnoses. Finally, the administration of the Persian SCID was reported to be practical by the majority of clinicians and interviewers (47).

Beck Depression Inventory-II (BDI-II; 48) was initially developed for assessing depression in 1996 and has subsequently been extensively utilized in a variety of populations. It comprises 21 sets of sentences, each with

four statements characterizing the subject's condition. The subjects are asked to indicate to which extent the sentence most accurately reflects their condition in the past week, "including today." The four phrases are evaluated on a scale of 0 to 3, which results in a test score ranging from 0 to 63, with higher scores reflecting greater depression. The studies have indicated that BDI-II has adequate psychometric characteristics in psychiatric and nonpsychiatric groups in many nations, and it has been translated into many other languages, such as Persian. In a study, the BDI-II was translated and modified into Persian by Ghassemzadeh *et al*. (2005), and its internal consistency (Cronbach's $\alpha = 0.87$) and test-retest reliability ($r = 0.74$) were acceptable (49).

Maudsley Obsessional Compulsive Inventory (MOCI; 50) is a 30-item, patient-rated measure that is used to determine the presence and intensity of O-C symptoms. It includes four subscales: checking-control, cleaning-hygiene, slowness, and doubting (51). Higher scores indicate greater severity of obsessive-compulsive symptoms. A comprehensive meta-analysis revealed that the average mean scores for sub-clinical samples as well as clinical samples are 11.40 and 13.11, respectively (53). Dadfar *et al*. (2001) found a total Cronbach's alpha of 0.84 and convergent validity of 0.87 with the Yale-Brown obsessive-compulsive scale in an Iranian population (53).

The 7-item generalized anxiety disorder scale (GAD-7; 54) is a 7-item self-report measure developed to assess GAD and evaluate the severity of symptoms using DSM-IV criteria. This measure assesses how frequently individuals have been disturbed by anxiety symptoms in the last two weeks. Questions are rated on a 4-point Likert scale, with scores varying from 0 (not at all) to 3 (almost every day), and the overall score ranging between 0 to 21, with higher overall scores denoting GAD. According to the scale developers, the overall scores are categorized as follows: little or low anxiety (from 0 to 4), mild (from 5 to 9), moderate (from 10 to 14), or acute (from 15 to 21), with a cut-off value of 10 points being sufficient for recognizing GAD. Spitzer *et al*. (2006) reported high reliability for the GAD-7, with a Cronbach's alpha of 0.92, and a test-retest reliability to be 0.83. The Cronbach's alpha for the Persian version was 0.876 indicating acceptable reliability (55). All adjusted item-total and inter-item correlations were within an acceptable range (55, 56).

Statistical analysis plan

SPSS 23.0 statistical software was used for data analysis (SPSS Inc.) (57). Two one-way multivariate analyses of variance (MANOVA) examined age, gender, and marital status as covariates, the TP dimensions as dependent variables (DVs), and three disordered groups as independent variables (IV).

Results

Table 1 displays the results, including variable means, standard deviations, and an analysis summary. Prior to conducting the analysis, two main MANOVA assumptions, homogeneity of variance and equality of covariance matrices, were tested. For the former, Levene's test indicated unequal variance for PN ($F = 3.60$, $P < 0.05$), PF ($F = 3.89$, $P < 0.05$), PH ($F = 1.42$, $P < 0.05$), PF ($F = 1.35$, $P < 0.05$), F ($F = 1.86$, $P < 0.05$). The Box's M value of 49.81 was non-significant, and in order to utilize MANOVA, the covariance matrices between the groups were assumed to be equal.

Thus, one-way multivariate analysis of variance (MANOVA) was conducted to examine which time-perspective dimension is different across groups, while controlling for covariates (age, gender, and marital status). A statistically significant MANOVA effect was obtained, Wilke's λ $F(12, 158) = 6.08$, $P < 0.01$, $\eta^2 = 0.31$, which implies that 31.0 % of canonically derived dependent variable was accounted for by the presence of psychological disorder. Furthermore, univariate analysis for the effect of the disorder on time perspective found the effect to be significant for PN ($F(2, 84) = 11.86$, $P < 0.01$, $\eta 2 = 0.22$), PP ($F(2, 84) = 6.66$, $P < 0.01$, $\eta 2 = 0.13$), PH ($F(2, 84) = 7.08$, $P < 0.01$, $\eta 2 = 0.14$), F ($F(2, 84) = 26.40$, $P < 0.01$, $\eta 2 = 0.38$).

A pairwise comparison was performed as a post hoc test, investigating the differences between the three groups concerning their time perspective dimensions. The results revealed significant differences in the past negative dimension (PN) among all three groups. Particularly, the MDD group attained a higher score than the other two groups, and the GAD group scored higher than the OCD group in PN time perspective. With regard to PP, the difference between the GAD and MDD groups was significant, as well as between the OCD and MDD groups. However, the difference between GAD and OCD groups was insignificant, implying that individuals with GAD and OCD reported higher PP than those with MDD. Moreover, the pairwise comparison showed that individuals with MDD gained higher scores than both GAD and OCD groups in the PF time perspective, but the difference between the GAD and OCD groups was not significant. Finally, the results indicate that the difference between all three groups was significant regarding the F dimension, where the GAD group gained higher scores than MDD and OCD groups, and the OCD group obtained higher scores than the MDD group.

In general, the results indicate that the MDD individuals tend to have higher scores in the PN and PF dimensions of time perspective, but the GAD and OCD patients tend to show higher PP and F scores.

Table 1. Means, Standard Deviation and Comparison of Time Perspective Scores Among Study Groups

Variable	GAD (N = 30) Mean (SD)	MDD (N = 30) Mean (SD)	OCD (N = 30) Mean (SD)	Univariate F	Partial eta-squared	Post hoc
Negative past	32.9 (5.93)	39.56 (3.53)	36.23 (5.26)	11.86**	0.22	MDD > GAD, OCD; GAD > OCD
Positive past	31.83 (3.56)	28.76 (5.06)	32.66 (4.04)	6.66**	0.13	GAD > MDD, OCD > MDD
Hedonistic present	50.63 (6.07)	48.46 (6.49)	51.43 (4.87)	0.81	0.02	
Fatalistic present	26.86 (4.57)	31.73 (5.65)	28.23 (5.12)	7.08**	0.14	MDD > GAD, OCD
Future	52.33 (5.26)	40.63 (6.52)	44.73 (7.03)	26.40**	0.38	GAD > MDD, OCD; OCD > MDD

Note. ** = P < 0.001; OCD = Obsessive – Compulsive Disorder GAD = Generalized Anxiety Disorder; MDD = Major Depressive Disorder.

Discussion

Our study's primary purpose was to investigate the notion and perception of time in the clinical contexts of depression, generalized anxiety disorder, and obsessive-compulsive disorder and analyze the possible differences. Our findings indicate that depressed individuals place a greater emphasis on the negative past and had a greater predisposition to fatalism (fatalistic present) compared to GAD and OCD patients. These results align well with the works of Lefèvre *et al*. (2019), who also found that depressed individuals put a higher emphasis on negative past TP and PF (9). Additionally, these findings are in accord with previous autobiographical memory research, which has demonstrated that depressed individuals recall a greater quantity of unpleasant memories and fewer pleasant memories; they are also inclined to generalize negative events, leading to an overall bleak picture of the past (58, 59). It can be assumed that people suffering from depression remember past events with feelings of loss, remorse, shame, or incompetence. As these experiences reiterate and become engrained, fundamental beliefs (e.g., "I'm a failure") may emerge, affecting self-esteem and influencing perceptions of the present (i.e., stronger present fatalistic tendencies) and the future (i.e., dark future; See 62). These assumptions are consistent with the literature on the link between temporal perspective, self-esteem, self-efficacy, and psychological distress (60–63). This is understandable since individuals who look at the past with a negative gaze are stuck with a history for which they have adverse sentiments. In addition, the GAD patients showed higher PN and PF rates than the OCD patients. Accordingly, the PN orientation was associated with depression, anxiety, dissatisfaction, and low self-esteem (18). Anagnostopoulos and Griva (2012) observed that the PN and PF inclinations were strongly and positively correlated with anxiety and depression (12). Griffin and Wildbur (2013) also identified a connection between anxiety and PN and PF perspectives (21). Furthermore, Abdollahpour Ranjbar *et al*. (2022) demonstrated that DBTP directly correlates with depressive and anxiety symptoms as well as indirect associations through cognitive fusion and experiential avoidance with depression and anxiety (64). The MDD individuals showed poorer inclinations to recall prior events with positive valence when it comes to PP. In contrast, the patients with GAD and OCD had higher scores on the PP scale, although they were not significantly different from one another. Our findings regarding the Future (F) dimension of time perspective revealed that the GAD patients reported higher F orientations than the MDD and OCD patients, while the OCD patients were better in terms of Future orientation than the MDD patients. However, findings from other studies in this regard are mixed. For example, Zimbardo and Boyd (1999) found that the F orientation and anxiety have a modest negative association. Individuals with GAD are likely to be unable to pursue their current objectives and instead focus on future tasks. Conversely, Griffin and Wildbur (2013) reported no relationship between anxiety and the F orientation or the PH dimension, which are partially concordant with our findings (21). These mixed findings could be attributable to the inadequacy of the F time perspective, as it lacks negative dimension of future perspective (See; 65). Further, anxiety was formerly classified as a (negative) future-oriented emotion because it entails fear of unpleasant future occurrences. To compensate for this constraint, Carelli *et al*. (2011) proposed the Future Negative (FN) time frame, which includes eight questions that assess "negative expectation about the future" (14).

Limitation

Our study has some limitations. Firstly, concrete conclusions on the predictive impact of temporal perspective cannot be drawn because of the cross-sectional methodology utilized in this study. Longitudinal research may aid in understanding the patterns and causal links between temporal perspective and discussed

psychopathologies. Secondly, due to the nature of the investigation in the clinical population, we employed convenient sampling procedure, and we had a relatively modest, although sufficient, sample size, which hinders us from the generalization of the results. Future research should strive to replicate the study's findings in more extensive clinical population samples and use more solid study designs such as randomized control trials and longitudinal techniques such as cross-legged designs (66, 67). Additionally, cultural differences should be considered. Recent examinations of the Iranian culture on cognitive factors have revealed some variances (e.g., 64, 68, 69).

Conclusion

The current research adds to our knowledge of psychopathogenesis by highlighting the potential significance of TP in depression. Our findings suggest that an adverse recall of the past, a fatalistic present orientation, and a weak future perspective might be risk factors for depression and anxiety symptoms. On the other hand, positive memories and a hedonistic present perspective may be preventive factors against psychological disorders. This study also introduced the concept of time perspective to the domain of OCD research. To the best of our knowledge, time perspective has not been studied in OCD patients. Another noteworthy aspect of our research was the utilization of a pure clinical population, which might be utilized to guide future research and tailor clinical interventions. The findings of this study have crucial implications for therapists in terms of identifying deficient or over-emphasized TPs and addressing them in therapeutic settings, considering their clients' unbalanced temporal perspectives. The initial phase of Time Perspective Therapy (TPT) is to determine a patient's dysfunctional temporal attitudes. Understanding the complexion of the association between putative risk factors and symptoms, and specifically identifying common pathways that connect unique susceptibilities to common outcomes are crucial for developing theory-driven trans-diagnostic therapies.

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Conflict of Interest

None.

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