

## THE RELATIONSHIP BETWEEN DEPRESSIVE SYMPTOMS, ANGER EXPRESSION, ANXIOUS DISTRESS, AND RUMINATION IN MAJOR DEPRESSIVE DISORDER

Emre Misir

*Department of Psychiatry, Başkent University, Ankara, Türkiye*

**BACKGROUND AND AIM:** Anxious distress (AD), rumination, and anger are associated with poor outcome in major depressive disorder (MDD). However, the relationship between anger and AD in MDD is not well understood. This study aims to investigate the relationship between anger, rumination, and AD.

**METHODS:** The study included 48 MDD patients [age=33±11.17 years, 62.5% females, 24 AD+] and age- and gender-matched 48 healthy controls (HCs) [age=29.21±8.95 years; 54.2% females]. All participants were administered Hamilton Depression Severity Scale (HDRS-17), Hamilton Anxiety Scale (HAMA), DSM-5 Anxious Distress Rating Scale (ADRS), Ruminative Responses Scale, and the State-Trait Anger Scale. Since the data were normally distributed, comparisons between MDD with AD (MDD-AD+), MDD without AD (MDD-AD-), and HCs were conducted with ANOVA. The effects of rumination, AD, and anger on depressive symptoms were assessed using multiple linear regression analysis. Then, causal mediation analysis examined AD's mediator role in the relationship between controlled anger (CA) and melancholic features (MF). Analyses were conducted with R-4.4.1. Ethics approval was obtained from Baskent University (Project no and date: KA24/254-18.09.2024).

**RESULTS:** The total and subscale scores of HDRS-17 and HAMA were highest in the MDD-AD+ and lowest in the HCs. The CA [F(2,93)=8.86, p<0.001] and ADRS score [F(2,93)=135.4, p<0.001] were higher in the MDD-AD+, while there was no difference between the MDD-AD- and HCs. In patients, the ADRS score was significantly correlated with CA (r=0.455, p=0.001) and brooding (r=0.396, p=0.005). At the same time, ADRS ( $\beta=0.83$ , t=7.69, p<0.001) and CA ( $\beta=-0.73$ , t=-7.35, p<0.001) predicted MF. Mediation analysis showed that both direct (p<0.001) and total effect (p=0.002) of CA on MF were negative, while the indirect effect through AD was positive (p<0.001).

**CONCLUSIONS:** Our findings indicate that anger control may have various effects on melancholic features through different mechanisms. Further studies are needed to investigate the confounding effects in the relationship between anger and depressive symptoms.

**Keywords:** Major depressive disorder, anxious distress, anger, rumination, anxiety, melancholic features