Mediator role of affective temperament between childhood trauma and environmental factors in MetS and/or BD

Temperament originates in the brain structure, and individual differences are attributable to neural and physiological function differences (Kesebir et al. 2005a). Affective temperament is a suggested endophenotype for BD as well. It has been suggested that temperament is associated with metabolic syndrome (MetS) markers, which may be partly mediated by lifestyle and socioeconomic status. Altunbaj et al. suggest that depressive temperament profiles may predispose an individual to the development of MetS in the winter (2013). In their study the proportions of MetS were 19.2, 23.1, 34.6, and 38.5% in the summer, fall, spring, and winter, respectively. Only depressive temperament scores were higher during the winter in patients with MetS. Neuroticism and openness were confirmed as factors linked to seasonal mood variability (Oginska and Oginska-Bruchal, 2014). Additionally, the study revealed an association between susceptibility to mild winter depression and an avoidance-oriented coping style. The avoidance coping style was correlated positively with all the aspects of seasonality described by SPAQ (correlation coefficients from 0.21 to 0.34). Both sub-types of avoidance-oriented style, i.e. distraction and social diversion, were associated with marked subjective seasonal changes in sleep length, mood and the energy level. While the subjective amplitude of circadian rhythm proved to be connected with seasonality, the subjective acrophase of the rhythm (morningness-eveningness preference) did not. Temperamental factors were related cross-sectionally to, as well as predicted for, the MetS precursors over the 3-year period (Ravaja et al. 1995). Mental vitality and positive emotionality were likely to be related and positive emotionality were likely to be related to a low MetS risk level, whereas hyperactivity, negative emotionality, responsivity to others, and cooperativeness were related to a high level of MetS risk. Same group's results showed that a temperament profile characterized by a high level of persistence and reward dependence, an average level of novelty seeking, and a low level of harm avoidance was related to a high level of MetS risk factors (Keltikangas-Järvinen 1999). In a systematic review with thirteen cross-sectional analyses, and ten longitudinal analyses, hostility, anger, type A behavior and neuroticism and type D personality were associated with an increased prevalence of metabolic syndrome and its development over time (Mommersteeg and Pouwer 2012). In our study, two types of affective temperament were differentiatied between MetS (+) and (-) subjects: Anxious and irritable temperaments (Kesebir et al. 2017). Hyperactivity, high level of persistence and reward dependence, average level of novelty seeking, and low level of harm avoidance which were reported in earlier studies are similar to the features defined for irritable temperament. Additionally, negative emotionality, responsivity to others and cooperativeness are features consistent with the properties defined for the anxious temperament. Irritable temperament was associated with mixed episodes in patients with BD (Kesebir et al. 2005b). According to McIntyre, obesity may affect the symptomatic presentation of BD, by increasing the likelihood that these patients will present with mixed episodes (McIntyre 2013). I think this is applicable not only to obesity but also to MetS. Inappropriate psychopharmacological antidepressant use may contribute to this situation directly by increasing the risk of mixed episode and indirectly by increasing the risk of MetS. On the other hand, there was no clear association between temperament measures and the occurrence and development of the metS. In our last study, triglyceride levels were found to be correlated with hyperthymic, irritable and anxious temperament scores (Kesebir et al. 2016f). There was a inverse correlation between HDL levels and irritable and anxious temperament scores. Blood pressure was found to be correlated with irritable and anxious temperament scores. There was a strong correlation between waist circumference and cyclothymic and anxious temperament scores. There was not found to be any relation between blood fasting glucose levels and affective temperament.
scores. There is, however, a cluster of risk factors that include the presence of the metabolic syndrome, as well as a more negative prone temperament profile, that both predispose to the development of coronary heart disease and diabetes.

**Conclusion:** In conclusion, there is multidimensional explanation for bipolar disorders that is coherent, comprehensive, and explanatory. The presence of MetS seems to be correlated with the onset and progression of BD. Previous depressive episode, seasonality, negative family history and childhood trauma are determined as the predictors of MetS. Anxious and irritable temperament scores were higher in MetS (+) patients. This link could provide an interesting new paradigm for the study of the "systemic" nature of mood disorders. This may also contribute to the discovery of biological markers, increase in our diagnostic tools, development of protective and individual-specific treatment options. At this point, some endocrinological drugs may be effective in the treatment of mood disorders. Use of Allopurinol and Tamoxifen was determined as antimanic treatment in guidelines for the treatment of mood disorder (Kesebir et al. 2014, Yıldız et al. 2008).

**Biography**
Born in Germany in 1972. She completed his specialist education at Ege University. During his professional life, she worked as a psychiatric specialist in a general medical hospital, as a associate professor of psychiatry in the second largest mental health hospital in the Turkey. Since 2014, as a professor of psychiatry she has taught at Üsküdar University and has been worked with bipolar disorder in NPIstanbul Brain Hospital. Another area of interest is psychoanalytic psychotherapies.

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