Distinct symptom profiles in unipolar and bipolar depression based on the neurocircuitry theory

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Depression is a heterogeneous disorder manifesting with distinct clinical pictures reflecting differential involvement of neurotransmitter systems and neurocircuitry pathways in the background of symptoms, constituting a challenge for proper diagnosis and effective pharmacological treatment. Separating unipolar and bipolar acute depressive episodes in the lack of previous manic or hypomanic episodes is a challenging task. Treatment of various subtypes of unipolar and bipolar depressive episodes both acutely and in the long term requires different pharmacotherapeutic approaches in part due to different neurochemical mechanisms. With a significant rate of depressive episodes nonresponsive to treatment, and these being predominantly bipolar, both understanding the neuroanatomical and neurochemical underpinnings of depressive episode subtypes and more accurate differential diagnosis would be a crucial step towards more effective treatment. The majority of instruments assessing depression provide a single composite score but no means to establish a cross-sectional detailed symptom profile to indicate the presence and relative weight of individual depressive symptoms also reflecting differences in neurobiology. Depression Profile [1], including 102 items (90 referring to symptoms of depression and 12 to previous (hypo)manic symptoms) and yielding 14 symptom clusters was developed based on the neurocircuitry theory [2] describing the neurobiological background of major depressive symptoms to selectively assess symptom clusters associated with different...
neurotransmitter systems and neuroanatomic structures. The aim of the present study was to investigate the differences in symptomatic manifestation of acute depressive episodes in unipolar and bipolar patients using the Depression Profile.

**Methods:** Scores of the 14 depression clusters of Depression Profile were analysed with General Linear Models with age and gender as covariates in 308 patients (227 with unipolar and 75 with bipolar depression) consecutively hospitalised for acute major depressive episode.

**Results:** After correction for age and gender a significant difference between unipolar and bipolar patient profiles was found in the overall model (Wilk's lambda = 0.8996, \( p = 0.0067 \)). Univariate tests indicated significant differences in case of Inability to decide (\( p = 0.0400 \)), Feeling of guilt (\( p = 0.0221 \)), Tiredness (\( p = 0.0127 \)), Psychomotor retardation (\( p = 0.0288 \)), and Loss of interest and pleasure (\( p = 0.0024 \)) subscales.

**Discussion:** Our results show a significant and informative difference in the Depression Profiles of unipolar and bipolar patients hospitalised for depression indicating clinically important distinctions in the symptomatic manifestations of unipolar and bipolar depressive episodes possibly reflecting the differential involvement of neurotransmitter systems and neuroanatomical pathways. Therefore besides the clinically established intra- and interepisodic indicators of bipolar disorder several characteristics of the acute depressive episode may indicate the possibility of bipolar depression. Distinct profiles of unipolar and bipolar depressed patients may not only guide diagnosis, but also proper treatment of depressive episode subtypes. Our results provide an important further step towards refining prospective differential diagnostics of unipolar and bipolar disorders based on the cross-sectional symptom manifestations during acute depressive episodes and also aid decisions regarding pharmaceutical interventions. To refine our results further follow-up with neuroimaging and monitoring of illness course especially with respect to pharmacological response and pharmacogenomic studies are planned to develop algorithms for more accurate diagnosis of depressive episode subtypes and for personalised treatment.

**References**


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