

Symposium: Social science and biological findings informing research in suicidal behavior

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Electrodermal reactivity and suicide

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Electrodermal Activity (EDA) refers to changes in electrical conductance of the skin. Electrodermal hyporeactive individuals are those who show an unusual rapid habituation to identical non-significant stimuli. Previous findings suggested that electrodermal hyporeactivity has a high sensitivity and a high negative predictive value for suicide. The aim of the present study is to test the effectiveness and the usefulness of the EDOR[®] (ElectroDermal Orienting Reactivity) Test as a support in the suicide risk assessment of depressed patients.

One thousand five hundred and seventy three patients with a primary diagnosis of depression, whether currently depressed or in remission, have been recruited at 15 centres in 9 different European countries. Depressive symptomatology was evaluated through the Montgomery-Asberg Depression Scale. Previous suicide attempts were registered and the suicide intent of the worst attempt was rated according to the first eight items of the Beck Suicide Intent Scale. The suicide risk was also assessed. During the EDOR[®] Test two fingers are put on gold electrodes and a moderately strong tone is presented through headphones now and then during the test. The EDOR[®] Test is able to register the electrodermal responses to those tones, along with the blood volume in the fingers. Each patient is followed up for one year in order to assess the occurrence of suicidal behaviors.

Expected results would be that patients realizing a suicide attempt with a strong intent or committing suicide should be electrodermally hyporeactive in most cases and non-hyporeactive patients should show only few indications of death intent or suicides. Preliminary findings will be presented.

Disclosure of interest The participating centres received funding for this study by EMOTRA AB, Sweden.

<http://dx.doi.org/10.1016/j.eurpsy.2017.01.208>

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Neural patterns in ecological momentary assessment of social stressors

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Background Suicidal behaviors result from a complex interaction between social stressors and individual vulnerability. Ecological Momentary Assessment (EMA) provides the opportunity to investigate the relationship between social stressors in daily life and the occurrence of negative thoughts leading to suicidal ideation. fMRI showed that a neural network supports the sensitivity to social stressors in suicide attempters.

Objective A joint fMRI/EMA study investigated whether individual differences in brain reactivity to scanner-based social rejection was related to social rejection during real-world social interactions.

Method Sixty women were included: euthymic women with a history of depression with or without suicidal behavior and healthy controls. The Cyberball Game was used as a social exclusion paradigm. Following the fMRI, subjects used EMA for seven

days, providing data on environmental, contextual and emotional factors.

Results In the fMRI study, in comparison to patients without any history of suicide attempt and healthy controls, suicide attempters showed decreased activation in the posterior cingulate cortex, insula and superior temporal gyrus during the exclusion vs. inclusion condition. In the EMA study, social stressors were specific predictors of suicidal ideation in suicide attempters. We will examine here if individuals who show greater activity in specific brain regions during scanner-based social rejection reported a greater social distress during their daily social interactions.

Conclusions this study used a combined technique to assess whether neural reactivity to experimental social rejection in the scanner is related to real-world social experience, and if it may help to understand the sensitivity to social stress in suicidal behavior.

Disclosure of interest The authors declare that they have no competing interest.

<http://dx.doi.org/10.1016/j.eurpsy.2017.01.209>

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A review of advances in social sciences and their application for research in suicidal behavior

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Suicidal behavior and its prevention constitute a major public health issue, and the moderating effect of sociodemographic factors has been studied for more than a century. In the last years it has become evident that the relationship between social factors and suicidal behavior is complex and highly dependent on the context. For instance, minorities suffering marginalization, such as the Inuit in Canada or the aborigines in Australia, present high rates of suicide. However, other minorities, such as immigrants arriving to tightened communities, can be protected from suicide compared to the social majority. Other contradictory effects have been reported concerning income per capita and the evolution of the economy. Unfortunately, the interplay of social factors in suicidal behavior and the social consequences of suicide attempts are rarely represented in theoretical models of suicidal behavior, despite their importance to adapt suicide prevention policies to social groups at risk. In this presentation, recent advances and new and integrative avenues for future research in the social aspects of suicidal behavior will be summarized.

Disclosure of interest The author declares that he has no competing interest.

<http://dx.doi.org/10.1016/j.eurpsy.2017.01.210>

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MicroRNA profiling in postmortem brain and plasma exosomes: Biomarker perspective of suicidality

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Introduction Suicide is a leading cause of death. Although research on the biological aspects of suicide is accumulating, there is no testable biomarker to assess suicidality. miRNAs, small non-coding RNAs, have been implicated in synaptic plasticity, genetic susceptibility to stress and coping to stress response. Because of the presence of microRNAs in circulating body fluids, miRNAs can not only be used as regulators of disease pathologies but also in prognosis and treatment response.

Objectives Whether miRNAs can be used as biomarker for suicidality.