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Ancestry and different rates of suicide and homicide in European countries: A study with population-level data

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Abstract

Introduction: There are large differences in suicide rates across Europe. The current study investigated the relationship of suicide and homicide rates in different countries of Europe with ancestry as it is defined with the haplotype frequencies of Y-DNA and mt-DNA.

Material and methods: The mortality data were retrieved from the WHO online database. The genetic data were retrieved from <http://www.eupedia.com>. The statistical analysis included Forward Stepwise Multiple Linear Regression analysis and Pearson Correlation Coefficient (R).

Results: In males, N and R1a Y-DNA haplotypes were positively related to both homicidal and suicidal behaviors while I1 was negatively related. The Q was positively related to the homicidal rate. Overall, 60-75% of the observed variance was explained. L, J and X mt-DNA haplogroups were negatively related with suicide in females alone, with 82-85% of the observed variance described.

Discussion: The current study should not be considered as a study of genetic markers but rather a study of human ancestry. Its results could mean that research on suicidality has a strong biological but locally restricted component and could be limited by the study population; generalizability of the results at an international level might not be possible. Further research with patient-level data are needed to verify whether these haplotypes could serve as biological markers to identify persons at risk to commit suicide or homicide and whether biologically-determined ancestry could serve as an intermediate grouping method or even as an endophenotype in suicide research.

Keywords: suicide, homicide, haplogroups, ancestry, genetic markers

Introduction

One of the peculiar facts in psychiatry is the large difference in suicide rates across different countries. When studying the possible causes of suicide, one should have in mind that suicide is probably the end result of an interaction between many different risk factors with mental disorders being the decisive one (Mann et al., 2005; Qin et al., 2003). It is solidly proven that over 90% of people who die from suicide suffer from mental illness. Mood disorders are found in 80-85% (Gray and Otto, 2001; Mann et al., 2005;

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