

revealed the genetic, physical activity, sleep and dietary risk factors for dimensional psychopathology in early adolescence. Importantly, we characterized the effect of consistent day-to-day sleep patterns in attenuating the effect of genetic predispositions on specific domains of psychopathology. Our study recapitulated the multifactorial nature of psychopathology, and pointed towards a potential target of behavioral intervention to counteract the effects of genetic predispositions for psychiatric disorders.

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HOME AND EPIGENOME: HOW DNA METHYLATION COULD EXPLAIN THE ASSOCIATION BETWEEN HOUSING QUALITY AND DEPRESSION

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Abstract text

Poor housing quality is a consistent risk factor for mental health problems. Despite the large body of evidence for housing's relationship with mental health, housing quality as an environmental stressor has not yet been investigated with regards to the mediational process of DNA methylation. Previous investigations have provided little insight into the biological mechanisms through which this association may arise and been limited by insufficient control of socioeconomic status (SES) and baseline depression. By investigating the mediational role of DNA methylation in the association between housing and mental health, this research paper aimed to investigate housing's potential as both a protectant and opportunity for intervention for mental health on a population-level. In a sample of up to 6,446 mothers from the Avon Longitudinal Study of Parents and Children (ALSPAC), we set out to investigate if housing quality (e.g. size, facilities, condensation/mould, decorations and feelings towards the home) associated with depressive symptoms (Crown Crisp Experiential Index depression scores) in early or middle adulthood (mean age 29 and 48, respectively). In these associations we controlled for neighbourhood quality, housing stability (the number of times the individual moved house in the previous 5 years), contextual risk (including socioeconomic factors such as experiences of losing a job, reduced income, homelessness) and familial history of depression (known history of persistent low mood or known diagnoses in parents). We then investigated whether this association was mediated by DNA methylation, measured at the same time points in a sub-sample of these mothers with blood sample data (n=786), whilst controlling for cell-type heterogeneity, total fat-mass, age and smoking. Housing quality predicted depression consistently over 3 years in early adulthood (beta range: .316 to 1.21, all p-values <.003), even after controlling for multiple SES risks, familial depression risk, 5-year housing stability, baseline depression at age 28 and neighbourhood quality. However, housing quality did not predict depression in middle adulthood (beta = 0.63, p value = .251). In an epigenome-wide association analysis (EWAS), housing quality was associated with DNA methylation at 4 CpG sites at age 29 with suggestive evidence for 391 CpGs, as defined in Smith et al. (2021). Following up on these 391 CpGs using high-dimensional mediational analysis, the largest indirect effect, mediating the association between housing and depression at age 29, was detected for a CpG linked to gene SLC04A1 (beta = -.009, p-value = .052). The smallest indirect effect, mediating the association between housing and depression at age 48, was detected for a CpG linked to gene Mir_544 (beta = -.076, p-value = .037). These results demonstrate the importance of housing quality in depression's aetiology, especially in early adulthood. However, our findings point towards limited evidence for single CpG sites mediating this association, suggesting a more complex relationship between housing quality, DNA methylation and depression. Moreover, our findings suggest the role of housing quality in the aetiology of depression may vary across the lifespan.

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LONGITUDINAL TRAJECTORY OF OBSESSIVE-COMPULSIVE SYMPTOMS IN THE GENERAL POPULATION DURING THE COVID-19 PANDEMIC

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Abstract text

The COVID-19 pandemic led to a worldwide state of crisis with a significant impact on the mental health of the general population. Public health measures proclaimed to help prevent contracting the virus, such as washing hands, and refraining from touching possible contaminated objects, are common behaviours adopted by people diagnosed with obsessive-compulsive disorder. This coupled with the fact that stressful events are one of the possible causes for the onset and/or worsening of obsessive-compulsive symptoms, makes it relevant to analyse the prevalence of this type of symptomatology in the general population during the pandemic. Three different time-points since the beginning of the pandemic in Portugal were considered: March of 2020 (appearance of the first cases and beginning of lockdown), March of 2021 (two months after a new period of increased restriction measures) and March of 2022 (one month after the beginning of the loosening of restricted measures such as non-mandatory use of mask). Friedman tests, non-parametric analysis of repeated measures, were performed to the Obsessive Compulsive Inventory-Revised (OCI-R[4]) Total scale and six other subscales (washing, checking, ordering, neutralizing, obsessing, and hoarding) to analyse differences in the levels of symptomatology throughout time. Two hundred and nineteen persons (86.8% female, M age = 39.55 y.o. SD= 11.64) completed the OCI-R in the three timepoints. For the OCI-R total and subscales of washing, checking, hoarding, and neutralizing the highest score was registered in 2020, whereas for the subscales of ordering the highest score was recorded in 2021, and for obsessing the highest score was obtained in 2022. Considering the comparison of the OC symptoms across time, there was only statistically significant differences in the OCI-R total ($\chi^2(3) = 20.200, p < .001$, Kendall's W = 0.046) and washing ($\chi^2(3) = 136.549, p < .001$, Kendall's W = 0.312). In OCI-R total, there were found statistically significant differences between 2020 and 2021 (Z = 3.707, *pholm* <.001), and 2020 and 2022 (Z = 4.056, *pholm* < .001). In the washing subscale there were statistically significant differences between all time points: 2020 vs 2021 (Z = 11.468, *pholm* < .001), 2020 vs 2022 (Z = 7.744, *pholm* < .001), and 2021 vs 2022 (Z = 3.723, *pholm* < .001). As hypothesised, in general, the severity of the obsessive compulsive symptoms were higher in the beginning of the pandemic due to a greatest uncertainty and absence of knowledge about the new virus. There were found statistically significant differences with time only on total obsessive symptoms and washing, making us believe that the washing subscale is driving the significant differences in the total scale. Due to the reliance on the washing like behaviours to contain the pandemic spreading, it is normative for these augmented scores right in the midst of the pandemic outbreak in Portugal. As such, with increased knowledge about the virus, success protecting ourselves and renewed hope with the creation of vaccines, it seems that people tended to engage less in washing behaviors and turned to other coping mechanisms to deal with this continuous stressor[5].

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