Conclusions: Our results indicate several important novel SNPs associated with suicidal ideation when considered in interaction with the effect of childhood adversities. Furthermore, gene-based analyses replicate several genes playing a key role in central nervous system function such as *GRM7* (encoding metabotropic glutamate receptor 7) or previously implicated in association with suicide (*CDH13*) or suicide-related factors such as aggression (*RBFOX1*).
Funding: NAP2022-I-4/2022, K143391, 2019-2.1.7-ERA-NET-2020-00005, TKP2021-EGA-25

Disclosure of Interest: None Declared

EPP0587

Can compassion impact us on a cellular level? Preliminary findings on the effects of a compassion focused intervention on immunological markers and CTRA gene expression

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doi: 10.1192/j.eurpsy.2024.696

Introduction: Addressing mental and physical health problems and promoting wellbeing in educational settings is a global priority. Teachers present a high risk of stress and burnout, which negatively impacts their professional performance as well as their mental and physical health. Compassion-based interventions have been found effective in promoting psychosocial and physiological wellbeing.
Objectives: The current paper presents preliminary findings of the impact of a 6-module Compassionate Mind Training intervention for Teachers (CMT-T) on immunological markers and the Conserved Transcriptional Response to Adversity (CTRA; a gene expression signature that involves a group of 53 genes: pro-inflammatory genes, type I interferon response and genes related to antibody synthesis).
Methods: A pilot non-controlled study was conducted in a sample of public-school teachers in Portugal (n=36). Participants were assessed at 4 time-points: 1) Extended Baseline Control_M0, in order to establish a within-subjects psychological and biophysiological baseline (8 weeks before the start of the CMT-T); 2) Pre-intervention_M1 (8-weeks after M0); 3) Post-intervention_M2 (8-weeks after M1); and 4) Follow-up_M3 (3 months after the CMT-T end). In all assessment moments, participants completed a set of psychological self-report measures and were assessed in immunological and epigenetic biological markers through the collection of blood. After M1, teachers completed the 8-week group CMT-T intervention and given access to its resources and materials. They were instructed to practice daily and incorporate the teachings in their personal and professional lives. All assessments and the CMT-T intervention took place at the schools.
Results: Preliminary data on the impact of CMT-T on Immune Response Profiling revealed that teachers' Natural Killer (i.e., NK) cells were decreased after the CMT-T intervention. In regard to the CTRA gene expression, results showed that type one interferon response genes (e.g., IFI16, IFI27L2, IFITM2, IFITM3, IFITM4P) were decreased after the intervention. In addition, we observed that the gene c-Jun, a pro-inflammatory gene, had a decreased expression after the CMT-T intervention.
Conclusions: These preliminary findings seem to corroborate previous studies involving the type one interferon response, the pro-inflammatory genes and antibody synthesis genes in a signature involving 53 genes previously described as the CTRA gene signature. Furthermore, our results suggest that cultivating compassion using a compassion focused intervention may have a positive impact on markers of the immune system response, associated with how our bodies respond to stress, infection and cancer, as well as, on reducing the expression of genes related to our bodies' response to stress and inflammation.

Disclosure of Interest: None Declared

EPP0588

ASCL1 dysfunction contributes to the pathogenesis of schizophrenia by regulating genes associated with neuronal signature formation and neuroplasticity

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doi: 10.1192/j.eurpsy.2024.697

Introduction: ASCL1 (Achaete-scute homolog 1) is a neuron-specific transcription factor involved in CNS maturation in the mammalian brain. It has been shown to be associated with schizophrenia (SZ), Parkinson's disease, and the development of brain tumors. ASCL1 is expressed in the neuroblastoma cell line SH-SY5Y, which is a widely used model for the study of neurodevelopmental diseases, including SZ.
Objectives: The aim of this work was to study the effect of functional *ASCL1* knockout on the transcriptional landscape of SH-SY5Y cells in undifferentiated and neuron-like phenotypes.
Methods: For ASCL1 deletion, SH-SY5Y was sequentially transduced with two lentiviral vectors. One pLV-rtTA-Cas9-(nls)-pCMV-eGFP-PuroR-T2A-rTetR (derived from pCW-Cas9 and pEGFP-Puro) construct encoded Cas9. Stably transduced lines were selected for 3-5 days on puromycin (2 g/L). The inducibility of Cas9 expression was checked after adding the inducer oxytetracycline to the culture medium. The second construct (based on pLK05-tagRFP) encoded, a pair of guide RNAs targeting the start

and end of the ASCL1 gene. The sgRNA construct was transduced into the SH-SY5Y-Cas9 cell line in parallel with a nontemplate control (NTC gRNA) as a negative control. Cas9 expression was induced with oxytetracycline for 2 days. Individual clones were obtained by serial dilutions. *ASCL1* partial deletion in the clones was confirmed by PCR followed by Sanger sequencing. Disruption of ASCL1 protein synthesis was confirmed by western blot analysis. SH-SY5Y differentiation was induced by retinoic acid (RA). The transcriptomes of mutant clones and NTC controls before and after RA-induced differentiation were sequenced using Illumina technology.
Results: RNAseq data show that a wide range of genes are differentially expressed between control NTC gRNA and wild-type SH-SY5Y. This can be explained by insertional mutagenesis of lentiviral vectors and/or cellular response to the presence of lentiviral constructs. Therefore, we compared the transcriptomes of the ASCL1-del line with NTC control. Differentially expressed genes (DEGs) are predominantly associated with the pathogenesis of SZ, bipolar and depressive disorders. DEGs in ASCL1-del are involved in cell mitosis, neuronal projection, neuropeptide signaling, and formation of intercellular contacts including the synapse. During RA-induced differentiation, ASCL1 activity is restricted to the regulation of a small subset of genes involved in neuroplasticity.
Conclusions: We have established a valid cellular model to study ASCL1-mediated mechanisms associated with SZ. ASCL1 dysfunction promotes SZ development predominantly before neuronal differentiation begins, slowing cell proliferation and preventing the formation of neuronal signatures.

Disclosure of Interest: None Declared

Mental Health Care

EPP0589

A Randomized Clinical Trial Comparing the Effects of Mindfulness-Based and Cognitive Behavioral Therapy-Based Stress Reduction in Medical Students

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doi: 10.1192/j.eurpsy.2024.698

Introduction: Medical students face an enormous amount of stress (Dyrbye LN *et al. Ann Intern Med* 2008; **149:** 334-41). They suffer from higher rates of depression, anxiety, and suicide compared to the general population. Despite experiencing more mental health problems, there is a lack of research exploring ways to improve their mental health. Although there are a few small sample studies investigating the effectiveness of Mindfulness-Based Stress Reduction (MBSR) on medical students, there is no study comparing its effectiveness against an active intervention group in the literature (van Dijk I *et al. Acad Med* 2017; **92:** 1012-1021)
Objectives: We aimed to compare the effects of the Mindfulness-Based Stress Reduction (MBSR) and the Cognitive Behavioural Based Stress Reduction (CBSR) group interventions on depressive and anxious symptoms and perceived stress of medical students.
Methods: 323 medical students applied to participate in one of the group interventions and were assessed with the Mini International Neuropsychiatric Interview. Of these, 253 (77% female, mean age=21.9 ± 2.9 years) were allocated into online MBSR (n=127) and online CBSR (n=126) groups after randomization. Their anxiety and depressive symptoms and perceived stress levels were assessed at baseline and after 8 weeks of interventions. 33,2% of participants (MBSR: n=39; CBSR: n=45) completed the protocol by attending five or more sessions. Both intention-to-treat (ITT) analysis and per-protocol (PP) analysis were used to assess outcomes. In the ITT analysis, we used multiple imputation to address missing values. All assessments and group interventions were done online.
Results: In the ITT analysis, both MBSR and CBSR were found to be slight to moderately effective in reducing symptoms of depression (MBSR: d=.50; CBSR: d=.40), anxiety (MBSR:d=.73; CBSR: d=.52), and perceived stress (MBSR: d=.48; CBSR: d=.42), but they were no superior to each other. In the PP analysis, both interventions moderately to strongly improved the symptoms of depression (MBSR: d=1.03; CBSR: d=.74), anxiety (MBSR: r=-.74; CBSR: r=-.72), and perceived stress (MBSR: r=-.80; CBSR: r=-.68). While there was no statistically significant difference between them in reducing depressive symptoms and perceived stress, MBSR was found to be significantly more effective than CBSR in reducing anxiety symptoms (u=469, z=-2.756, p=0.006).
Conclusions: Both MBSR and CBSR improve symptoms of depression and anxiety in medical students after 8 weeks of interventions. Completing the protocol or attending more sessions may increase the effectiveness of the interventions. While the interventions did not show superiority to each other in terms of effectiveness in reducing depressive symptoms and perceived stress, MBSR appears to be more effective in reducing anxiety symptoms compared to CBSR in the group that completed the protocol.

Disclosure of Interest: None Declared

EPP0590

Validating and Adapting the Brief Resilient Coping Scale for Greek Humanitarian Workers

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doi: 10.1192/j.eurpsy.2024.699

Introduction: Humanitarian workers (HWs) face significant challenges while providing aid to those in need, often leading to psychological exhaustion and the risk of primary or secondary trauma.
Objectives: Our study aimed to validate and adapt the Greek version of the Brief Resilient Coping Scale (BRCS) for HWs in Greece.