CULTIVATING COMPASSIONATE SCHOOLS: PRELIMINARY FINDINGS ON THE EFFECTS OF A COMPASSION FOCUSED INTERVENTION ON TEACHERS' IMMUNOLOGICAL MARKERS AND CTRA GENE EXPRESSION

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Grant 74/22

Background: 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.

Aims: The current paper presents preliminary findings of the impact of a 6-module Compassionate Mind Training intervention for Teachers (CMT-T) on immunological markers (i.e., the most frequent populations of cells involved in the immune response: T cells, B cells and Natural Killer cells) and the Conserved Transcriptional Response to Adversity (CTRA; a gene expression signature that involves a group of 53 genes encompassing pro-inflammatory genes, type I interferon response and genes related to antibody synthesis).

Method: 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, participants were assessed 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.

Preliminary 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, preliminary data 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 Jun, a pro-inflammatory gene also known as c-Jun, had a decreased expression after the CMT-T intervention. 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, such as Compassionate Mind Training, 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.

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, such as Compassionate Mind Training, 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.

Keywords: Compassionate mind training, Psychophysiological indicators, Teachers' wellbeing, Gene expression, Immunological markers

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