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Have psychosocial stressors at work increased the prevalence of moral injury during the COVID-19 pandemic? A cross-sectional study in healthcare workers in Canada

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Statement of the Problem: Healthcare Workers (HCWs) on the frontline of the COVID-19 pandemic exhibit a high prevalence of depression and psychological distress. Moral Injury (MI) can lead to such mental health problems. MI occurs when perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations. Since the start of the pandemic, Psychosocial Stressors at Work (PSWs) might have been exacerbated, which might in turn have led to an increased risk of MI in HCWs. However, research examining the associations between PSWs and MI is lacking. Considering that these stressors are frequent and modifiable occupational risk factors, they may constitute promising prevention targets. This study aimed (a) to evaluate the associations between PSWs and MI in HCWs during the third wave of the COVID-19 pandemic in Quebec, and (b) to explore potential differences between urban and non-urban regions.

Methodology & Theoretical Orientation: The sample of this study consisted of 572 HCWs and leaders from the Quebec province, Canada. Prevalence Ratios (PR) of MI and their 95% Confidence Intervals (CI) were modelled using robust Poisson Regressions. Several covariates were considered, including age, sex, gender, socio-economic indicators, and lifestyle factors.

Findings: Results indicated HCWs exposed to PSWs were 2.22 to 5.58 times more likely to experience MI. Low ethical culture had the strongest association (PR: 5.58, 95% CI: 1.34-23.27), followed by low reward (PR: 4.43, 95% CI: 2.14-9.16) and high emotional demands (PR: 4.32, 95% CI: 1.89-9.88). In addition, workers from non-urban regions were less likely to report MI (11% versus 16%).

Conclusion and Significance: Identifying predictors of MI could contribute to the reduction of mental health problems and the implementation of targeted interventions in urban and non-urban areas. Moreover, prevention efforts deployed to reduce these mental health problems could promote the retention of professionals specializing in health, a category of workers extremely in demand.

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Kinesiotape – The duct tape of 2023

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Statement of the Problem: Kinesiotape is fast replacing all other tapes in usefulness therapeutically for strapping. The Therapeutic use of Kinesiology is in its infancy. There is a dearth of peer reviewed literature and few if any evidence informed mentors exist to establish a scientific algorithm for researching and clinically applying the tape. Kinesiology Tape was invented in the 80's but only the tip of the iceberg has been exposed when it comes to understanding its properties and uses. Pain and swelling reduction, improved performance decompression of tissues, increased flexibility and improved circulation have been shown to happen when kinesiology tape is applied to any area, in any fashion, with any level of stretch. This presentation, for the first time, is going to list and explain the most common therapeutic properties of Kinesiology Tape. It will also define and explain how these properties can be managed by a taping professional in order to be applied differently in stretch, shape, anatomical location and clinical need on a case-to-case basis. All kinesiology tape is spun white and then color dyed for aesthetic and placebo effect. This means that with rare exceptions (darker and lighter pigments), any piece of kinesiology tape of the same size and thickness when applied with the same stretch will has the same therapeutic value. For educational and demonstration advantage, I have invented a color-coding system, The Dr Shav Kinesiology Tape Color Coded System. When demonstrating or illustrating a strapping, each color of tape will have its own purpose, stretch and clinical use that will be consistent for that color. That way, when you see a strapping that is color coding, you can apply any color of tape with that color's properties allowing reproducibility, research ability and necessitating special training of the professional taper. This presentation will include didactics of The Dr Shav Kinesiology Tape Color Coding System and examples of strappings solving various problems scientifically.

Since other kinesiotape taping experts are using random colors with random cuts or shapes or sizes of strips of tape with random stretch and getting results, this color-coding system over time will provide more organization and expose more and more uses for this Duct Tape 0f 2023, Kinesiology Tape.

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Systemic administration of Mesenchymal Stem Cells-derived Microvecicles stimulates the recovery of motor function and supports Oligodendrocytes in dose-dependent manner after Spinal Cord injury

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Statement of the Problem: Spinal cord injury (SCI) is a serious neurological condition that causes severe disability. One of the approaches to overcoming the complications of SCI is stem cell-derived extracellular vesicle therapy. In this research, we performed a comparative evaluation of rat spinal cord post-traumatic regeneration efficacy using different methods of Mesenchymal Stem Cell-derived EVs (MSC-EVs).

Methodology and Theoretical Orientation: The animals were divided into two control and four experimental groups. EVs transplantation was performed as follows: animals of the first and second experimental groups received 5 μg and 10 μg of MSCs-EVs encapsulated in fibrin matrix after injury - SCI FM+EVs5 and SCI FM+EVs10, accordingly; animals of the third and fourth experimental groups 30 minutes after injury were injected intravenously 10 μg and 50 μg of MSCs-EVs in 500 μl of 0.9% NaCl - SCI EVs10 and SCI EVs50, accordingly. Motor activity was assessed throughout experiment. On day 60 after SCI, expression of oligodendrocytes were quantified.

Findings: The results showed that in the SCI EVs50, Olig2 expression was higher in the area of the ventral horns compared to the control groups; there was also an increased level of Olig2 expression in the ventral funiculi in the SCI EVs10 and SCI EVs50. In the area of the lateral funiculi, Olig2 expression in the SCI EVs10 and SCI EVs50 were also higher than in the control groups. The index of motor function recovery in the groups with intravenous injection of EVs had increased more than 2-fold compared to the corresponding index in the control groups.

Conclusion and Significance: The results of this study show that treatment with EVs isolated from MSCs stimulated the recovery of motor function. Increasing of Olig2-expressing cells was observed in the gray and white matter of the SC, which indirectly indicates the stimulation of myelination.

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Assessments of subjective cognitive complaints: Whose reports should we rely on – participant versus informant?

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Objectives: Older adults often report Subjective Cognitive Complaints (SCC), which relate to an individual's self-experience of cognitive deterioration and contribute to the criteria for a diagnosis of Mild Cognitive Impairment. SCC can be self-reported or reported by informants (family member or friend) who are close to the individual with the advantage of quickly and easily capturing daily cognitive and memory changes that standardized neuropsychological tests may not detect. However, no empirical examination was conducted to date using an appropriate methodology to investigate whose reports (i.e., participants' or informants') are more reliable, and at what stage researchers and clinicians should rely on which reports.

The aim of this study was to investigate the reliability of two widely used SCC assessment tools, the self-reported Memory Complaint Questionnaire (MAC-Q) and the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE).

Methodology: Generalizability theory was applied to SCC assessment scales using longitudinal measurement design with five assessments spanning 10 years of follow-up.

Findings: The IQCODE demonstrated strong reliability in measuring enduring patterns of SCC with G=0.86. Marginally acceptable reliability of the 6- item MAC-Q (G=0.77-0.80) was optimized by removing one item resulting in G=0.80-0.81. Most items of both assessments were measuring enduring SCC with exception of one dynamic MAC-Q item. The IQCODE significantly predicted global cognition scores and risk of dementia incident across all occasions, while MAC-Q scores were only significant predictors on some occasions.

Conclusion & Significance: While both informants (IQCODE) and self-reported (MAC-Q) SCC scores were generalizable across sample population and occasions, self-reported (MAC-Q) scores may be less accurate in predicting cognitive ability and diagnosis of each individual.

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Complementary and integrative approaches to sleep and Obesity disorders in children

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Sleep is a critical part of a child's physical as well as emotional development. It can have a huge impact on overall functioning of the child and optimal sleep may help with improved regulation of mood and behaviors (Arns et al, 2021). In typical preschool and school aged children the prevalence is sleep problems is around 25 % (Wiorjanan etal, 2007). Sleep disorders are very frequently associated with a range of child and adolescent psychiatric condition. Sleep quality can be affected by mood and developmental disorders and vice-versa. In fact, they are one of the most frequent symptoms in child and adolescent psychiatry (Arns et al, 2021). Not only does poor sleep affects child's quality of life, but it also affects the entire family's functioning and parents often seek help to address sleep difficulties in their child (Parker et al, 2019). Sleep difficulties can present in many ways including difficulty initiating sleep, maintaining sleep, and waking up early as well as other abnormal sleep related behaviors or parasomnias. Sleep wake cycles are controlled by endogenous circadian processes as well as exogenous environmental influences. Circadian rhythm abnormalities may play a role in sleep disorders, and these may arise out of complex biological and social factors (Arns, 2021). Environmental and social influences are especially crucial in adolescence with increasing use of light emitting devices at night as well as the rampant use social media in this age group. Thus, finding safe and effective ways to address sleep issues in children is critical for their wellbeing and development. In addition, interventions targeting sleep could potentially be an important therapeutic avenue to improve psychiatric disorders and psychosocial outcomes in children (Arns, 2021). There are many concerns about long term pharmacological treatment for sleep including dependence, tolerance, and adverse effects. One of the most frequently used pharmacological treatment for sleep disorders is melatonin which is an endogenous hormone (Parker et al, 2020).

Impaired sleep is associated with emotional dysregulation as well as disruption in physical development in children. Children with autism have abnormalities in melatonin secretion and may benefit from exogenous supplementation. Studies have demonstrated that melatonin supplementation for insomnia in many psychiatric disorders is safe and has minimal side effects with long term use. Sleep hygiene is one of the factors that can impact sleep and is a modifiable risk for children. Parent education of sleep hygiene has been shown to be helpful in reducing sleep problems in children.

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