

P.112**Understanding obstacles: a neurosurgical view on gender disparities in career progression**

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doi: 10.1017/cjn.2024.215

Background: Gender disparities persist in neurosurgery, unfortunately impacting career progression for women. Understanding these challenges is vital for fostering inclusivity. **Methods:** An international survey designed using a physician wellness framework was sent to neurosurgeons between June 2021 and November 2021. Univariate analysis (Kruskal-Wallis Test) was performed to assess various aspects of perceived career progression as a function of gender. **Results:** Of the total 537 respondents (64% neurosurgeons, 6% fellows, and 30% residents), 69% identified as male, 29% as female, and 2% as other. Compared to their male colleagues, female neurosurgeons expressed greater desire to advance in their career ($p < 0.05$) and to leave their home country in the interest of job prospects ($p < 0.05$). Despite these aspirations, female neurosurgeons reported that they did not have available career advancement opportunities ($p < 0.05$), that the culture in their country inhibited their career advancement ($p < 0.05$), and that they felt subject to harassment at their workplace ($p < 0.05$). **Conclusions:** Our survey highlights significant gender-related obstacles in neurosurgical career advancement. Female neurosurgeons express strong career aspirations but face barriers such as limited opportunities, cultural impediments, and harassment. Addressing these challenges is crucial for achieving gender equity in neurosurgery.

P.113**Mind the gap: illuminating gender disparities in neurosurgical inclusion and diversity**

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doi: 10.1017/cjn.2024.216

Background: Gender disparities endure in neurosurgery, impacting the experiences of female practitioners. Unveiling these challenges is crucial for promoting inclusivity and addressing the unique obstacles faced by women in the field. **Methods:** An international survey designed using a physician wellness framework was sent to neurosurgeons between June 2021 and November 2021. Univariate analysis (Kruskal-Wallis Test) was performed to assess feelings of inclusion and diversity as a function of gender. **Results:** Of the total 384 respondents (65% neurosurgeons, 6% fellows, and 29% residents), 71% identified as male, 27% as female, and 2% as other. Compared to their male colleagues, female neurosurgeons more strongly endorsed feeling that their career progression has been limited by their gender ($p < 0.05$) and were less likely to feel entrusted in their surgical ability ($p < 0.05$) or to have equal access to surgical resources ($p < 0.05$). Furthermore, they were less likely to endorse feelings that leaders in their department were committed to creating an inclusive environment ($p < 0.05$). **Conclusions:** Our survey sheds light on significant gender-related disparities in neurosurgery. Female neurosurgeons express

heightened concerns about gender-limiting career progression, reduced trust in their surgical abilities, and disparities in resource access. These findings underscore the imperative to foster a more inclusive and supportive environment within the field.

NEUROTRAUMA**P.114****The impact of screening for anxious and depressive symptoms on the outcome of patients with a mild traumatic brain injury**

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doi: 10.1017/cjn.2024.217

Background: An estimated 27-69 million individuals worldwide sustain a mild Traumatic Brain Injury (mTBI) each year, making it an important public health concern. Many victims experience post-injury neuropsychological issues such as anxiety and depression, which are associated with more post-concussive symptoms and worse functional outcomes. We sought to determine a systematic process to document the presence of anxiety and depression symptoms in mTBI patients to prevent negative impacts on their recovery. **Methods:** We administered the Generalized Anxiety Disorder-7 (GAD-7) and Center for Epidemiologic Studies Depression Scale Revised (CESDR-10) questionnaires, no more than three months after injury, to screen for these symptoms. A retrospective chart review was performed for 328 patients from the Montreal General Hospital mTBI Clinic who either received these questionnaires ($N=143$, $M_{age}=40.36$, $SD_{age}=15.557$, $N_{female}=90$, $N_{male}=53$) or did not ($N=185$, $M_{age}=41.17$, $SD_{age}=16.449$, $N_{female}=114$, $N_{male}=71$). The number of interventions received between groups were compared using ANOVA. **Results:** Patients who received the questionnaires ($M=1.34$, $SD=0.978$) were referred to significantly more interventions than those who did not ($M=0.90$, $SD=0.876$, $p < 0.001$) and the rate of referral positively correlated with GAD-7 and CESDR-10 scores. **Conclusions:** Screening for symptoms of anxiety and depression post mTBI helps clinicians refer patients to the appropriate resources, which in turn should improve outcome.

P.115**The national impact of traumatic brain injury on labor markets: a canada-wide observational cohort study of post-injury employment and personal income loss**

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doi: 10.1017/cjn.2024.218

Background: Employment and personal income loss after traumatic brain injury (TBI) is a major source of post-injury

stress and barrier to societal reintegration for affected patients. We sought to quantify the labor market implications for tax-filing adult TBI survivors. Methods: We performed a matched difference-in-difference analysis using a national retrospective cohort of working adult TBI survivors injured between 2007-2017. Linear and logistic mixed effects regressions were used to estimate the magnitude of personal income loss and proportion of patients displaced from the workforce in the three post-injury years (Y+1 to Y+3). Results: Among 18,050 patients identified with TBI, the adjusted average loss of personal annual income was \$-7,635 dollars in Y+1 and \$-5,000 in Y+3. An additional -7.8% individuals were newly unemployed compared to the pre-injury baseline. For mild, moderate, and severe TBI subgroups, income loss was \$-3354, \$-6750, and \$-17375 respectively in Y+3; the proportion of newly unemployed individuals in Y+3 was 5.8%, 9.2%, and 20% lower than baseline. We estimated 500 million dollars of incurred labor markets losses related to TBI in Canada. Conclusions: This work represents the first national cohort data quantifying the labor market implications of TBI. These results may be used to inform post-injury care pathways and vocational rehabilitation.

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Days at home after traumatic brain injury: moving beyond mortality to evaluate patient-centered outcomes using population health data

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doi: 10.1017/cjn.2024.219

Background: Despite the utility of administrative health data, there remains a lack of patient-centered outcome measures to meaningfully capture morbidity after traumatic brain injury (TBI). We sought to characterize and validate days at home (DAH) as a feasible measure to assess population-level moderate to severe TBI (msTBI) outcomes and health resource utilization. Methods: We utilized linked health administrative data sources to identify adults with msTBI patients presenting to trauma centers in Ontario injured between 2009-2021. DAH at 180 days reflects the total number of days spent alive and at home excluding the days spent institutionalized in acute care, rehabilitation, inpatient mental health settings or post-acute readmissions. Construct and predictive validity were determined; we additionally estimated minimally important difference (MID) in DAH_{180days}. Results: There were 6340 patients that met inclusion criteria. Median DAH_{180days} were 70 days (interquartile range 0-144). Increased health resource utilization at baseline, older age, increasing cranial injury severity and major extracranial injuries were significantly associated with fewer DAH_{180days}. DAH_{180days} was correlated to DAH counts at 1-3 years. The average MID estimate from anchor-based and distribution-based methods was 18 days. Conclusions: We introduce DAH_{180days} as a feasible and sufficiently responsive patient-centered outcome measure with construct, predictive and face validity in an msTBI population.

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Antiplatelet and anticoagulation use and outcomes following chronic subdural hematoma drainage: systematic review and meta-analysis

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doi: 10.1017/cjn.2024.220

Background: Chronic subdural hematoma (CSDH) is a common neurosurgical condition which can be treated with surgical evacuation. A significant percentage of CSDH patients are on antiplatelet or anticoagulation therapy at baseline which may influence risk of recurrence and postoperative thromboembolic events. Methods: A search was conducted in MEDLINE (1946 to April 6, 2023), Embase (1974 to April 6, 2023), and PubMed (up to April 6, 2023) on preoperative use of antiplatelet or anticoagulation therapy and outcomes following surgical evacuation of CSDH. Results: Our literature includes 14,410 patients from 42 studies, with 3218 (22%) in the antiplatelet (AP) group, 1731 (12%) in the anticoagulation (AC) group, and 9537 (66%) in the no antithrombotics (NA) group. The AP group had significantly higher recurrence compared to NA (OR = 1.21, 95% CI = 1.04 to 1.40, p = 0.01). The AC group also had significantly high recurrence compared to NA (OR = 1.39, 95% CI = 1.15 to 1.68, p = 0.0007). However, being on any antithrombotic therapy is also associated with significantly higher thromboembolic events (OR 5.41, 95% CI 3.16 to 9.26, p < 0.00001). Conclusions: Patients on antithrombotic therapy have both higher recurrence and higher thromboembolic risk compared to patients not on antithrombotic therapy.

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NIRS regional oxygen saturation based cerebrovascular reactivity in the recovery from moderate/severe TBI

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doi: 10.1017/cjn.2024.221

Background: Near-infrared spectroscopy (NIRS) regional cerebral oxygen saturation (rSO₂) based cerebrovascular reactivity (CVR) indices have enabled the entirely non-invasive continuous monitoring. This study aims to compare CVR in those recovering from moderate/severe TBI to a health control group. Methods: In this prospective cohort study the cerebral oxygen CVR index, COx_a (using rSO₂ and arterial blood pressure), was measured in subjects with moderate/severe TBI at follow-up. COx_a was also measured in a group of healthy controls. CVR was compared within and between these groups using conventional statistics. Results: A total of 101 healthy subjects were recruited for this study along with 29 TBI patients. In the health cohort COx_a was not statistically different between males and females or in the dominant and non-dominant hemisphere. The TBI cohort, COx_a was not statistically different between first and last available