

spring 2020



Atlantic Health Exploration and Discovery
Collaborative Health Research Week
June 1 - 5, 2020

FIVE-MINUTE THESIS

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Coping, Social Support and Our Health
Understanding Medical Decision-Making
Treating Cancer and Its Sequelae

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Coping, Social Support and our Health

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- Elise Stevens: *Video gaming as a predictor of loneliness and social support*
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Treating Cancer and its Sequelae

- Adrienne Carpenter: *The effect of cancer on suicidal ideations*
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Closing Remarks

Dr. Bryn Robinson, AHEAD Planning Committee Chair

Poster Presentations

Available on our website from Monday, June 1 - Friday, June 5, 2020

Science Fair Presentations

Available on our website from Monday, June 1 - Friday, June 5, 2020

The value of quality social support and cognitive-emotional regulation coping in police officers

Jay Nero, Dr. Mary Ann Campbell, Laurrett Nwaonumah, Jenna Meagher, and Dr. Caroline Brunelle

Department of Psychology, University of New Brunswick

Centre for Criminal Justice Studies, University of New Brunswick

Police officers face occupational and operational stressors in their work, making them vulnerable to mental illness. Social support is a buffer against high stress; however, limited research exists on where officers receive their support and the quality of this support. The current study explored these questions and examined whether social support provides benefits beyond that achieved by the use of cognitive-emotional coping strategies for promoting psychological wellness. A total of 88 police officers ($Mage = 41.72$, $SD = 9.64$) completed a survey containing measures of social support type/quality, occupational stressors, mental health symptoms, and cognitive-emotional regulation strategies. Officers most commonly seek support from intimate partners (85.9%) and coworkers (84.9%). Social support quality was significantly related to higher psychological wellness. Hierarchical regression analyses demonstrated that social support predicted lower PTSD symptoms and did so even after accounting for use of cognitive-emotional coping and demographic variables. However, social support did not explain additional variance in other areas of wellness after first accounting for cognitive-emotional coping. Thus, wellness initiatives within policing organizations should include focus on fostering both quality social support and adaptive cognitive-emotional regulation skills.

Video gaming as a predictor of loneliness and social support

Elise Stevens and Dr. David Speed

Department of Psychology, University of New Brunswick

University students often move to attend school, separating them from friends and family. This separation can make them susceptible to loneliness, which is detrimental and exposes them to a range of associated problems, while social support has many protective effects. Online gaming—though it has been associated with negative outcomes, especially in those who play excessively—has been demonstrated to deliver some social support, and could remain available to students while other aspects of their lives change. Participants were 185 students recruited from the University of New Brunswick, Saint John. Measures of social support, loneliness, aggression, and gaming behaviour were completed online, and associations were explored through hierarchical linear regression. A negative association between offline cooperative gaming and loneliness was found. Additionally, negative associations between competitive and cooperative online gaming and Belonging social support were found, which were not accompanied by associations with loneliness. No significant associations between gaming and aggression were found. Together, the social support and loneliness findings can be interpreted as an inability of the Belonging subscale to detect online social support. The current study demonstrates some potential benefit and no definite harm from moderate amounts of gaming.

Psychological, physical and social factors contributing to well-being: Comparing functional somatic symptom disorders with well-defined autoimmune disorders

Kendra Hebert and Dr. Lisa Best

Department of Psychology, University of New Brunswick

Functional somatic symptom disorders (FSS) are characterized by persistent and chronic bodily complaints without a pathological explanation. Patients with these conditions often face scrutiny and stigma that make them feel alienated from the medical community. This research examines how social and medical support affects physical and psychological well-being by comparing FSS (fibromyalgia [FMS] and chronic fatigue syndrome [CFS]) with well-defined autoimmune disorders (multiple sclerosis [MS], and rheumatoid arthritis [RA]). A total of 609 participants, many of whom reported having more than one of the target disorders were recruited from social media platforms and online support groups. In order to examine the effects of a single disorder, only individuals who reported having a single target disorder were included, resulting in 111 FMS, 78 CFS, 97 MS and 103 RA participants. Quality of life, physical and psychological well-being, leisure satisfaction, social support, anxiety, depression, mindfulness, and psychological flexibility were assessed using valid psychological questionnaires. Overall, individuals with FSS had worse physical and psychological symptoms, social and medical support, and well-being than those with AD. Both physical symptom severity and psychological distress were correlated with medical and social support for both illness groups. Further, regression analyses indicated a unique role of medical support for participants with FSS. The results supported the hypothesis that individuals with FSSs have worse physical and psychological symptoms, and poorer subjective well-being than those with well-defined autoimmune disorders (ADs) in part due to the decreased medical and social support in this group.

Personality and mindfulness predicting physical and psychological health outcomes

Danie Beaulieu and Dr. Lisa Best

Department of Psychology, University of New Brunswick

Cross-culturally, subjective well-being is considered central to good health (Diener, 2000). Although physical and psychological wellness are interdependent, research indicates that psychological wellness better predicts physical wellness (Kekäläinen et al., 2019). The Five Factor Model of personality includes Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Open-Mindedness (John et al., 2008). Research supports the role of personality on physical (Bogg & Roberts) and psychological (Clark & Watson, 1991) health; negative consequences are associated with high Neuroticism and low Extraversion. Although mindfulness can improve physical (Crescentini et al., 2018) and psychological (Bränström et al., 2011) outcomes, there is evidence that mindfulness isn't an independent trait, but is encompassed by Conscientiousness (Chiesa & Serretti, 2010). Our purpose was to examine how personality and mindfulness affect physical and psychological health. Nine hundred participants completed online questionnaires measuring personality (BFI-2), mindfulness (FFMQ), physical (RAND-36), and psychological (SWLS) wellness. Two hierarchical regressions examined the predictors of wellness. Gender, Neuroticism, and SWLS were statistically significant predictors of RAND-36 Total. Age, RAND-36 Total, and Mindfulness-Observing significantly predicted SWLS. In this study, mindfulness acted as an extension of lower Neuroticism rather than higher Conscientiousness. Contrary to previous research, RAND-36 subscale scores accounted for more variability in SWLS, suggesting that physical predictors contribute more to psychological health. At the correlational level, results replicated literature on the effects of personality on physical and psychological wellness. Further, results suggest that aspects of mindfulness may improve overall psychological outcomes. Future research could examine how aspects of mindfulness affect different aspects of wellness

Predictors of genetic testing from a psychological perspective: Examining the role of personality, coping behaviours and optimism

Courtney Hebert and Dr. Lilly Both

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Predictive testing attempts to identify a person's risk for developing a disease later in life. The purpose of the present study was to examine predictors of genetic testing from a psychological perspective grounded in personality theory, optimism and coping behaviours. Participants consisted of 184 undergraduate students who completed an online survey assessing demographic information, personality, coping, and optimism. Treatment availability was assessed using vignettes and open-ended questions were presented. The results from two regression analyses indicated that personality factors predicted the likelihood of going for testing only when treatment options were not available. Specifically, individuals who scored lower on extraversion and negative emotionality, and higher on openness. Common advantages cited for genetic testing were to seek treatment if available, to gain general knowledge on whether they had a gene mutation, and to prepare and plan for the future. Common disadvantages were that the results may be upsetting, a person may feel hopeless or doomed, and that it may cause a person to change how they view and live their life. When treatment options were available, the predictor variables were not statistically significant. Thus, there is a need to further explore variables that influence the decision to go or not go for testing when treatment options are available, as this study failed to do so. On the other hand, when treatment options were not available, individuals who were emotionally stable, introverted and higher in openness were more interested in genetic testing.

Attitudes toward medical assistance in dying

Joelynn Annoh-Kwafo¹ and Dr. Lilly Both

Department of Psychology, University of New Brunswick

The purpose of this study was to examine attitudes toward Medical Assistance in Dying. Medical Assistance in Dying, formerly known as Physician Assisted Suicide or Death, occurs when a medical doctor or nurse practitioner aids a patient with end-of-life services. It was legalized in Canada in June 2016, yet little is known about attitudes toward end-of-life care. The present study utilized an online survey to examine demographic and personality characteristics of the participants as well as their attitudes toward Medical Assistance in Dying. In total, 219 participants were recruited from Psychology courses at the University of New Brunswick in Saint John, and via social media for individuals in the general public. A hierarchical regression analysis was conducted to determine predictors of supporting Medical Assistance in Dying. The results indicated that approximately a quarter of the variance in support for Medical Assistance in Dying was attributed to age (i.e., being younger), place of birth (i.e., being born in Canada), lower religiosity and higher Negative Emotionality (or Neuroticism) scores. Most participants were in favour of the practice under certain conditions, such as being in a great deal of pain, or in an advanced state of irreversible decline. As well, participants felt that Medical Assistance in Dying reduced suffering, but proper consent had to be in place.

The effect of cancer on suicidal ideations

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This study examined the physical and psychological implications underlying suicidal ideation in cancer survivors. Determining factors underlying suicidal ideations, such as depression, anxiety, and hopelessness, increase our understanding of practices that individuals with a cancer diagnosis can undertake to decrease feelings of psychological distress. The purpose of this study was to determine the prevalence of suicidal ideation in a sample of cancer survivors, as well as examine how psychological flexibility and mindfulness mitigates the consequences of psychological and physical distress. This study included 350 individuals who have received a cancer diagnosis, and 384 control participants. All participants completed a questionnaire package, which included the Patient Health Questionnaire, the Edmonton Symptom Assessment Scale, and the Subjective Well Being Scale. The findings indicate that there was no significant difference in suicidal ideation between the cancer and control participants, but the control participants did have better satisfaction with life overall. Further, mindfulness was negatively correlated with suicidal ideations, indicating that individuals who were more mindful reported less suicidal ideation. There were statistically significant positive correlations between psychological flexibility and suicidal ideation, indicating that individuals with more psychological inflexibility were more likely to report suicidal ideation. Further, among individuals who reported a cancer diagnosis, psychological flexibility, specifically valued actions and openness to experience, contributed significantly to the model, after physical and psychological well-being were controlled. Although the current analyses are correlational, these results suggest that using techniques associated with psychological flexibility might alleviate some of the negative effects of having a cancer diagnosis.

A new approach to monitoring lung cancer therapy response: Exosomal miRNA profiling

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Despite treatment advances for lung cancer, the disease remains the leading cause of cancer related deaths globally. Current lung cancer monitoring methods include computed tomography and positron emission tomography which are resource intensive, taxing on the patient, and can lack accuracy. A promising new avenue for monitoring treatment response of patients is through liquid biopsy, specifically exosomal biomarkers. Exosomes are small, extracellular vesicles present in all body fluids, that act as intercellular communicators and have been found to be increased in cancer patients. Using a cohort of 45 patients from the Saint John Regional Hospital with advanced small cell lung carcinoma (SCLC) and non-small cell lung carcinoma (NSCLC) (pre- and post-treatment) and non-cancer control group, blood plasma exosomes were isolated; and characterized by immunoblotting, Zetasizer, and transmission electron microscopy. Expression of exo-miRNA was analyzed via high-throughput TaqMan Low Density Array (TLDA) Human MicroRNA array cards. Characterization confirmed the good quality of isolated exosomes. Interestingly, exo-miRNA content yield was found to be significantly greater in controls, while no significant difference was observed between lung cancer treatment groups/subtypes. Our data reveals that four exo-miRNAs were significantly upregulated in pre-treatment over post-treatment, and four others significantly upregulated compared to control exosomes suggesting their specificity to lung cancer. Validations involving a larger independent cohort will further confirm the monitoring potential of exosomes in lung cancer.

Promising treatment potential of a potent caffeic acid phenethyl ester (CAPE) analog for diffuse large B-cell lymphoma

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Diffuse large B-cell lymphoma (DLBCL) is a common, aggressive type of Non-Hodgkin's lymphoma affecting roughly 6 in 100 000 people/year with a median age of 64. Current treatment for DLBCL is particularly toxic to elderly patients, in some cases causing death and while less toxic therapies have been developed, these are less effective. The resistance to current chemotherapies in the majority of elderly DLBCL patients demonstrates the need to develop new anticancer treatments. Interferon regulatory factor (IRF4) is key to proper B-cell development and elevated levels of IRF4 have been implicated in lymphoid cancers. Nuclear factor-kappa B (NF- κ B) has been identified as a regulator of IRF4 expression and cell proliferation. Caffeic acid phenethyl ester (CAPE), a natural compound present in bee glue, is a potent inhibitor of NF- κ B. Hence, we evaluated the potential of CAPE analogs using two human DLBCL cell lines, U2932 and OCI-Ly3. CAPE analogs were synthesized and screened using PrestoBlue cell viability assays. The growth inhibitory effect of CAPE analogs in comparison with standard immunomodulatory drugs (lenalidomide) was assessed. Apoptotic effect was analyzed by flow cytometry and downstream effects of CAPE analogs were determined by immunoblotting methods. Our screening data revealed a potent analog with longer hydrocarbon chain than CAPE exhibits greater cell growth inhibition and apoptotic effect than CAPE itself. We found decreased expression of IRF4 and other cereblon pathway proteins by the potent CAPE analog. In summary, these results suggest that CAPE analogs are promising and could lead to new improved treatment for DLBCL patients.

Occupational stress and anger: Mediating effects of resiliency in first responders

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First responders experience substantial stress due to the nature of their work (Carleton et al., 2017), including occupational stress (OS; Osipow, 1998). OS can lead to maladaptive anger, which negatively impacts personal well-being and work performance (Velichkovsky, 2009). In contrast, resilience to demanding working conditions is associated with lower state and trait anger (Wilson et al., 2012); thus, resilience may serve a protective 'buffer' role against anger in the face of stress. Thus, we hypothesized that resiliency would mediate relations between aspects of OS and anger in first responders. As part of a wellness survey of Atlantic Canadian first responders ($N = 201$, 77.6% Male; $M_{age} = 43.73$ yrs; $SD = 10.97$; police officers = 64.2%), respondents completed measures of OS (OSI-R; Osipow, 1998), Anger (DSM-5 CC Anger; APA, 2014), and Resiliency (CD-RISC; Connor & Davidson, 2003). Collapsed across all employee roles, results indicated that resilience mediated relations between five components of OS and anger: role overload, insufficiency, role boundary, role ambiguity, and role responsibility. These findings support the value of resiliency-enhancing interventions to offset anger when confronted with occupational stress in first responder organizations.

Vulnerability to mental illness as a function of organizational stress and first responder role

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Susceptibility to mental illness associated with first responders' occupational (work context), operational (duty-related) and personal stressors is of significant concern. To better understand these relationships, 199 Canadian first responders (police/firefighters/civilian staff/dispatcher operators) completed a wellness survey containing validated self-report measures of psychological wellness (e.g., depression, PTSD) and organizational stress, and a checklist to capture operational and personal stressors. As many as 26.4% exceeded the threshold for PTSD and 24.4% had risky alcohol use. No differences emerged between employee groups on wellness or organizational stress. Hierarchical regressions found that, after controlling for demographics/employment role (Block 1), both personal stressors/operational critical incidents (Block 2) and organizational stressors (Block 3) significantly predicted elevated symptoms of PTSD, depression, anxiety, anger, and sleep problems. Occupational stress was not predictive of alcohol misuse beyond the preceding blocks but predicted suicidal ideation. Although critical incidents receive warranted attention as a clinical consideration for first responder employees, the current findings highlight the importance of appraising organizational stressors as well. Wellness resources should be instituted to mitigate these organizational challenges.

An evaluation of hepatitis C virus screening in infants born to seropositive mothers

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The primary route of Hepatitis C Virus (HCV) infection in infants is through vertical transmission, from mother-to-child, which occurs at an estimated rate of 5.8%. The objective of the current study was to evaluate the rates of screening for at-risk infants and determine if custodianship impacts infant screening rate. Active charts at the Centre for Research, Education & Clinical Care of At-Risk Populations (RECAP) were reviewed to identify infants born to HCV seropositive women at-risk for vertical transmission. Information collected included maternal HCV genotype, non-prescription drug use, transfusion history, income quintile and opiate substitution therapy. A 2x2 chi-square test was performed to assess the frequency of HCV screening status by the presence or absence of custodianship issues. HCV status at the time of pregnancy ($N = 62$ mothers, 123 pregnancies) revealed 18 (14.6%) with a positive HCV screen, 14 (11.4%) with a positive viral load, and 91 (74.0%) with results unknown (no testing prior to infant date of birth or unknown infant date of birth). A total of 30 infants had HCV screening performed ($N = 123$), of which 3 (10.0%) were HCV-antibody positive and had a detectable viral load. The presence or absence of custodianship issues was found to be non-significant. Improvements in chart documentation are essential to determine HCV status at the time of pregnancy and provide per child clarity on issues of custodianship. Further work on effective care pathways are needed to ensure vertical transmission of HCV is detected and treated appropriately.

Understanding the link between trauma & problematic substance use: Does diagnosis trump experience?

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It has been suggested that the consistent link between childhood trauma and problematic substance use may be explained by the self-medication hypothesis, which posits that individuals consume substances to dampen the secondary symptoms of having experienced trauma. However, little research has distinguished between the likelihood of using substances problematically following a trauma-related diagnosis (i.e., post-traumatic stress disorder) versus the experience of traumatic events without receiving a diagnosis. The current study utilized data from the Canadian Community Health Survey ($N = 21,917$) to investigate this distinction. A logistic regression revealed a significant interaction between PTSD and traumatic events without a clinical diagnosis on the likelihood of using substances problematically ($p = .038$, $OR = .684$, $95\% CI [.479, .973]$). Specifically, having PTSD may initially lead to a higher likelihood of using substances problematically as compared to having no clinical diagnosis; however, as the frequency of childhood traumatic events an individual experiences rises, disordered substance use increases as well, matching that of individuals with a clinical diagnosis. These findings suggest that substance use interventions in the context of trauma are necessary regardless of PTSD diagnosis and intensity of services should match the level of exposure to trauma.

Minimizing harm: Beliefs and attitudes of young adults engaging in non-medical prescription opioid (NMPO) use in New Brunswick

Dr. Lillian MacNeill, Dr. Shelley Doucet and Dr. Alison Luke

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In Canada, young adults (YAs) had the fastest growing rates of hospitalization for opioid poisoning in the last decade, compared to other age groups. The current mixed-methods study will explore non-medical prescription opioid (NMPO) use in YAs in New Brunswick (NB). We will recruit approximately 100 YAs in NB (14-30 years) who use NMPOs for an online survey. The survey will: 1) determine if certain motives for NMPO use relate to different levels of misuse, and 2) describe common beliefs about opioids in YAs who use NMPOs. We will also conduct semi-structured interviews with approximately 10 participants. The interviews will explore: 3) in what ways YAs who use NMPOs in NB engage in harm reduction activities; 4) what opioid misuse resources are available for and utilized by YAs who use NMPOs in NB; and 5) recommendations for improving harm reduction resources in NB. Recruitment for this study is currently on hold while the NB state of emergency is in effect. Upon completion of data collection, hierarchical multiple regression will be used to investigate the relationship between NMPO use motives and opioid use severity, and we will use thematic analysis to explore key themes that emerge from the interview data. Although the current opioid crisis in Canada is a national concern, it is crucial to investigate opioid use in local contexts as well. Understanding why, and in what context, YAs are using NMPOs may help in the development and implementation of more effective prevention and harm reduction resources for this population.

With great inequality comes great responsibility: The role of government spending on population health in the presence of changing income distributions

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To determine the association between provincial government health and social spending and population health outcomes in Canada, separately for males and females, and account for the potential role of income inequality in modifying the association. We used data for nine Canadian provinces, 1981 to 2017. Health outcomes and demographic data are from Statistics Canada, provincial spending data is from provincial public accounts. We model the ratio of social-to-health spending (“the ratio”) on potentially avoidable mortality (PAM), life expectancy (LE), potential years of life lost (PYLL), infant mortality, and low birth weight baby incidence. We interact the ratio with the Gini coefficient to allow for income inequality modification. When the Gini coefficient is equal to its average (0.294), the ratio is associated with desirable health outcomes for adult males and females. For example, among females, a 1% increase in the ratio is associated with a 0.04% decrease in PAM, a 0.05% decrease in PYLL, and a 0.002% increase in LE. When the Gini coefficient is 0.02 higher than average, the relationship between the ratio and outcomes is twice as strong as when the Gini is at its average, other than for PAM in females. Infant-related outcomes do not have a statistically significant association with the ratio. Overall, male and female outcomes have similar associations with the ratio. Inequality increases the return to social spending, implying that those who benefit the most from social spending reap higher benefits during periods of higher inequality.

Stay on MD: Recruitment and retention factors for Dalhousie Medicine New Brunswick graduates

Kathleen MacMillan (a,b), Sarah Melville (a), Alexandra Fournier (a), Peggy Alexiadis Brown (b), Dr. Daniel Dutton (a,b), and Dr. Keith Brunt (a,b)

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Dalhousie Medicine New Brunswick (DMNB) opened its doors to its first class of medical students in September 2010. It was created, in part, to promote training, recruitment and retention of physicians in NB. Although DMNB has been operating for ten years, no data shows why graduates of DMNB establish their practice in the areas they do, and if they are retained in these areas.

Objectives:

1. To evaluate where DMNB graduates from Class of 2014 currently practice, and determine why/whether they chose to practice in those locations.
2. To evaluate where DMNB's prospective Class of 2021 wants to practice, and why they are choosing to practice in those locations
3. To evaluate how many DMNB graduates are currently practising in the Maritime Provinces.
4. To identify and compare features that influence location of choice and decision to practice in NB.

Method: DMNB graduates of the inaugural class will be surveyed to gather data on their perspectives regarding their choice in practice locations and whether they will choose to stay in these communities. The DMNB class of 2021 will also be surveyed, and their thoughts on where they would like to practice and initial choice of specialty will be collected. Their findings will be compared to the inaugural class. Quantitative data regarding migration patterns and physician salaries in NB will be summarized using charts and data that will be extracted from CIHI. Trends will be compared with the data collected from the surveys.

Results and Discussion: In Progress

A rapid review exploring nurse-led memory clinics

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The number of individuals with dementia is predicted to reach 132 million by 2050. The need for early diagnosis and access to post-diagnostic care places a burden on our current healthcare systems. Nurse-led memory clinics (NLMCs) offer a model to help address this growing need. A rapid review was conducted to systematically explore the structures, functions, and outcomes of NLMCs, as well as the nursing roles and credentials of nurses leading memory clinics. MEDLINE (Ovid), CINAHL Full-Text (EBSCO), and EMBASE were searched and the PRISMA checklist was used to facilitate the review. Articles identified were screened and assessed for inclusion criteria and a lateral review was also completed. Six articles, including two case studies, two descriptive reports, one qualitative study and one program evaluation were included. We compared the structures, functions, and outcomes of nurse-led memory clinics, as well as the nursing roles and credentials of nurses leading memory clinics. Overall, there was low quantity and quality of evidence to evaluate outcomes. The main conclusions from each article suggest NLMCs are an effective service delivery model to improve access to dementia diagnosis and treatment; offer quality care and reliable diagnosis; and have high levels of stakeholder satisfaction. This review provides insight into how NLMCs are structured and how they function, which can inform practice. The paucity of peer-reviewed literature makes it difficult to come to any firm conclusions; however, the trends suggest these clinics could be an innovative solution to enhancing dementia care, warranting further exploration.

Canadian registered dietitians' perceptions towards and engagement in interprofessional collaboration

Dr. Kathryn Asher, Dr. Shelley Doucet and Dr. Alison Luke

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Interprofessional collaboration (IPC) has received substantial attention in the literature given its benefits for patient and health service delivery outcomes. Yet, little is known about collaborative practice as it relates to the dietetic profession in Canada. To address this gap, a pan-Canadian, cross-sectional online survey was administered to registered dietitians (RDs) between January and March 2020. Prior to data collection, the study underwent piloting, ethics approval, and public pre-registration. Data was analyzed in SPSS and entailed descriptive and inferential statistics. A total of $n=469$ RDs from 10 provinces participated in the study. Findings showed a significant difference between the frequency with which RDs collaborated with other health and social care providers and their desired frequency, with 61.0% reporting they wanted more frequent collaboration ($p < .001$). Results on the Interprofessional Interaction Scale showed 59.2% of RDs had a score in the negative range, 35.7% in the neutral range, and 5.1% in the positive range. Most RDs believe their profession is underutilized in health care (92.5%) and that there is a need to raise better awareness about the dietetic profession (95.4%). A majority of respondents reported that their dietetic training prepared them to work with other providers and imparted knowledge and awareness around IPC. The obstacles to IPC cited most frequently were insufficient time/availability, followed by communication and opportunities/proximity. Findings suggest that IPC is an area in need of attention in the dietetic profession. The study's results point to potential areas for improvement.

New Brunswick physicians' perspectives toward medical assistance in dying (MAiD)

Caitlin Robertson (a,b) and Dr. Emily Read (a)

(a) University of New Brunswick

(b) Canadian Frailty Network

With the addition of medical assistance in dying (MAiD) to Canadian law in 2016 came many challenges to patients and providers. Since physicians and nurse practitioners are the professions able to provide MAiD, it is imperative to understand their perspectives. In New Brunswick, only physicians are currently providing MAiD within the two regional health authorities. Semi-structured one-on-one interviews with New Brunswick physicians were conducted. A Straussian Grounded Theory approach to data collection and analysis was taken to understand the social structures in place shaping their opinions on this topic. A snowball sampling approach was used to recruit participants, as well as a call for participants through the New Brunswick Medical Society's eBulletin. We attempted to collect data until a sufficiency of information was observed, but this was only possible in the group that agreed with MAiD ($n=12$). Sufficiency was not found in the group that did not agree with MAiD ($n=3$) as the sample was too small. Data collection is complete, and analysis is currently underway. The preliminary results point to patient suffering, patient autonomy, physician's religion, and the Hippocratic oath as being important to New Brunswick physicians. Additionally, there were many instances of conscientious objection and the need for more education on the topic discussed. This research will provide a rich understanding of what is shaping the views of New Brunswick physicians toward this important topic. Understanding these perspectives is important in shaping further policies and regulations that affect access to MAiD in our province.

Evaluating the implementation of a pediatric patient-navigation centre in Atlantic Canada

Dr. Lillian MacNeill, Dr. Alison Luke, Dr. Shelley Doucet, and Brittany Skelding

Centre for Research in Integrated Care, University of New Brunswick

NaviCare/SoinsNavi is a research-based patient navigation centre for children/youth with complex care needs (CCNs) in New Brunswick. While the central focus of NaviCare/SoinsNavi is to improve the care experience of children/youth with CCNs and their families, research and advocacy are an integral part of NaviCare/SoinsNavi's mission. This process evaluation focused on the implementation of NaviCare/SoinsNavi by exploring indicators related to program coverage and process. Key indicators were explored using client charts and program archives, as well as interviews with past clients ($n=12$) and members of the NaviCare/SoinsNavi team ($n=6$). With respect to coverage, NaviCare/SoinsNavi served 200 clients between December 2017 and May 2020. Most clients resided in Saint John, Fredericton, or Moncton, and were English speaking. The most commonly reported diagnoses were Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD). Process activities were divided into four categories: outreach/marketing, patient navigation, research/training, and integrated care. Preliminary qualitative analysis revealed that clients and staff felt the centre could improve their outreach/marketing efforts to expand the reach and coverage of the centre. Patient navigation was considered the most important aspect of NaviCare/SoinsNavi and both clients and staff felt this role was successfully implemented. NaviCare/SoinsNavi staff expressed the need to focus more on the centre's research program. NaviCare/SoinsNavi staff also felt that efforts towards integrated care could be improved by building stakeholder relationships to inform practice and policy. It is hoped this process evaluation will be valuable for others developing similar programs and services for children and youth.

Improving the paediatric to adult care transition experience: Recommendations from young adults with complex care needs

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With advancements in modern medicine, an increasing number of youth with complex care needs (CCN) now survive into adulthood. As service demands increase for this group, challenges exist on how to best facilitate meeting their high resource needs. When transitions to adult care are uncoordinated, youth with complex care needs (e.g., youth with diabetes, autism, mental health conditions) may suffer poor outcomes (e.g., costly ER admissions). To date, studies exploring how to improve the transition to adult care are primarily from perspectives other than the youth/young adults themselves. The objective of this scoping review was to identify literature capturing recommendations on how to improve the transition from pediatric to adult care from the perspective of young adults who have completed this transition. JBI methodology for scoping reviews was followed. A comprehensive search strategy was developed by a JBI trained librarian. Two independent reviewers used inclusion criteria to screen title/abstracts and full-text article results, then extracted synthesized data. Upon consensus, improvement recommendations from the youth were categorized and analyzed into pertinent themes accompanied by narrative summary. Young adults expressed need for integrated and patient-centred care. Peer-mentorship opportunities and patient navigators were recommended throughout the transition process for achieving successful outcomes. The insights learned from this review can benefit service delivery by addressing important barriers to access in the realms of health, education, and social services for youth transitioning from pediatric to adult care, while providing hope for improved transition experiences for youth who have not yet transitioned.

Exploring the practices, experiences, and needs of care providers when supporting youth with complex care needs transition from pediatric to adult care

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Centre for Research in Integrated Care, University of New Brunswick

Youth with complex care needs (CCN) require significant health, educational, and/or social assistance beyond what is generally required by their peers. These youth experience complex conditions that were once seen as fatal and are now increasingly associated with survival into adulthood. As youth approach adulthood, they transition from pediatric to adult healthcare. Current transition practices, when present, are disorganized, resulting in health status deterioration and complications due to unmet needs of the youth. Consequently, the purpose of the proposed study is to develop a broader understanding of the current transition practices, experiences, and needs of primary care providers, specialists, and subspecialists in the support of youth with CCN as they transition from pediatric to adult healthcare. The exploratory study will use a qualitative descriptive design. A purposeful sample of 20 care providers in New Brunswick and Nova Scotia who support youth in the transition from pediatric to adult healthcare will be obtained and interviewed individually using a semi-structured interview guide. Data analysis will consist of thematic analysis following the six phases outlined by Braun and Clarke (2006). Scientific rigor will be enhanced by employing techniques to improve the study's credibility, transferability, dependability, and confirmability. Multiple strategies will be used to disseminate the research findings to practitioners, educators, administrators, and decision makers. Ethics approval has been obtained from UNB and Horizon Health Network with interviews currently being conducted. The findings from the proposed research study have the potential to improve transition practice and policy, and guide future research in this area.

A retrospective review of colorectal cancer patient outcomes

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Colorectal cancer (CRC) is the third most commonly diagnosed cancer in Canada. It is heterogeneous in development and presentation, therefore, treatment strategies must be personalized for each CRC patient. It is important to understand the value that each prognostic factor of CRC provides in estimating prognosis. In this study, a retrospective chart review was conducted at a single institution located in New Brunswick, Canada, in order to evaluate the demographic, clinical and pathologic prognostic factors and their influence on patient outcome in terms of overall survival (OS) and reoccurrence free survival (RFS) for CRC patients ($n = 60$). Kaplan Meier survival curves were constructed for each of the prognostic factors assessed. The log-rank test was used to determine if there was a statistically significant difference in OS and RFS for each of the patient groups within each prognostic factor. This study showed that for the relatively small sample of patients, the strongest prognostic factors for overall survival was histologic grade of the tumour, whilst the strongest prognostic factors for reoccurrence free survival were age at diagnosis, distal resection margin and circumferential resection margin. Because there is no central database of CRC patient outcome after surgery in the province of New Brunswick, our study may point to areas where further investigation is needed. In the future, we hope this will provide a foundation for a larger survival analysis that will increase knowledge on OS and RFS, allowing for more successful CRC patient outcome in New Brunswick.

Longitudinal follow-up of opiate agonist therapy patients' retention in care in a community-based hepatitis C-focused harm reduction clinic: Examining differences in characteristics, risk factors and retention in care between biological sexes

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The RECAP clinic is the first hepatitis C (HCV) focused, community-based harm reduction clinic in New Brunswick, Canada delivering individualized comprehensive care to individuals positive for, or at risk of acquiring, HCV. In the context of delivering opiate agonist therapy (OAT), research has demonstrated that females often engage in care in the setting of increased medical, psychological and social issues over their male counterparts. These factors are a possible predictor in decreased retention in OAT care. All individuals enrolled in the Hepatitis C Positive and At-Risk (HEAR) Database between April 2014 and March 2018 who were prescribed OAT through the RECAP clinic were included in the analysis. Number of days retained in care was captured from their first OAT visit at the clinic to last prescribed day of OAT or January 31, 2020, if they were still active. Overall 167 individuals, including 65 females (38.9%), were included in the analysis. Females had a lower average age (31.1 years vs. 34.9 years, $p=0.014$) and lower income (income below \$25,000 92.3% vs. 73.8%, $p=0.009$). Females had significantly higher reports of depression (52.3% vs. 27.5%, $p=0.001$), suicide attempts (41.5% vs. 19.8%, $p=0.006$), and prior abuse (78.3% vs. 27.2%, $p<0.0001$). No significant differences were found in risk factors related to HCV acquisition. A lower proportion of females were HCV-positive (31.7% vs. 52.3%, $p=0.013$). No significant differences were found in the proportion not retained in care (20% vs. 20.6%, $p=0.927$) or mean number of days retained in care (1317 vs. 1239 days, $p=0.3872$). Consistent with prior research, females demonstrated a significantly higher social and psychological burden than the males in our cohort. In the context of comprehensive care provided, overall duration in care among both sexes was higher than typically reported and no significant differences were noted between sexes in mean days retained in care.

Potent CAPE analogs as novel treatment for multiple myeloma

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Multiple myeloma is an incurable bone marrow cancer and is the second most common hematological malignancy. Existing therapies yield adverse side effects and many patients display resistance to traditional treatments, which emphasizes the need for developing novel therapeutics for this disease. Caffeic Acid Phenethyl Ester (CAPE), one of the main active components extracted from the propolis of honeybee hives, has been shown to act as a potent NF- κ B inhibitor. Since the key transcription factor, interferon regulatory factor 4 (IRF4) involved in myeloma pathobiology is regulated by NF- κ B, our study aimed to investigate the anti-myeloma potential of CAPE analogs in vitro using human myeloma cell lines. Structural analogs of CAPE were synthesized and screened for anti-myeloma potential. Myeloma cell lines were treated with varying concentrations of the CAPE analogs. Cell growth inhibition was measured using Prestoblu^e cell viability assays and half-maximal inhibitory concentration (IC₅₀) was determined. We found the potent CAPE analogs by comparing them with the effect of immunomodulatory drugs (IMiDs) such as Lenalidomide and Pomalidomide, which are widely used to treat myeloma. We have identified two phenpropyl ester analogs that demonstrated significantly higher cell growth inhibition than CAPE and IMiDs. We have investigated the mechanism of action of these potent analogs in our laboratory and revealed the downregulation of several cereblon pathway proteins including IRF4. These findings suggest that potent CAPE analogs have the potential to provide an improved treatment strategy for myeloma.

A retrospective chart review (RCR) of clinical outcomes of patients treated for chronic subdural hematomas (CSDH) at the Saint John Regional Hospital (SJRH)

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The optimal treatment approach to CSDH and if or how the use of antithrombotic medications prior to surgery influences patients outcomes remains inconclusive. A RCR of 147 patients treated for CSDHs conservatively or surgically with twist drill craniostomy (TDC), burr hole craniostomy (BHC), or craniotomy between January 2010 and June 2018 at the SJRH. Between surgical groups, there was no significant difference in patient's post-operative hospital length of stay (LOS) ($F(2, 110) = 0.089, p = .915, \eta p2 = .002$), rates of reoperation ($p = .446$), or rates of post-operative seizures ($p = .584$). A comparison of patients on antiplatelet medications and patients not on antithrombotic therapy revealed no significant difference in post-operative hospital LOS ($F(1, 87) = 0.134, p = .715, \eta p2 = .002$), or rates of post-operative seizure ($\chi^2(1) = 1.269, p = .269, V = 0.015$). However, significantly more patients in the antiplatelet group required a second operation ($\chi^2(1) = 3.886, p = .049, V = .048$). Between patients on anticoagulant and not taking antithrombotic medications, no significant difference was found in post-operative hospital LOS ($F(1, 79) = 0.201, p = .655, \eta p2 = .003$), rates of reoperation ($p = .498$), or rates of post-operative seizures ($p = 1$). The study suggest that TDC, BHC, and craniotomy are equally effective for managing CSDHs. Additionally, the use of antiplatelet or anticoagulant medications prior to surgery does not seem to impact LOS, or post-operative seizure rates. However, antiplatelet use may increase reoperation rates.

The use of portraiture and narrative to explore the impact of vagal nerve stimulation in children with intractable epilepsy

Melanie MacGillivray, Dr. Mark Gilbert and Dr. Wendy Stewart

Dalhousie University

Epilepsy is common and impacts both the individual and their caregivers. The vagal nerve stimulator (VNS) is a palliative implantable device that can reduce seizure frequency and duration and has a positive effect on mood. Qualitative research allows exploration of the lived experience of children with epilepsy and their family, however limited qualitative research exists in this area. Portraiture has been shown to empower participants and create a sense of community. This study explored the impact of VNS implantation in children with intractable epilepsy. Following Research Ethics Approval, 5 children and their caregivers were recruited. Data consisted of portraits, the artist's journal and semi-structured interviews. All interactions were recorded and transcribed. Narrative data was analyzed using a phenomenological approach. Three main themes were identified: seizure pattern, VNS impact and quality of life. The severity, frequency and type of seizure experienced changed after insertion of the VNS. Quality of life improved with increased hope for the future and independence for the child. Families felt they had more control, and more freedom to engage in activities. Families found the portraiture process and meeting other families helpful. Approximately one third of children with epilepsy require multiple medications with minimal treatment success. The frequency and duration of seizures impacts daily life and causes significant stress. Implantation of the VNS resulted in improved seizure control and quality of life. Portraiture provided an innovative way to deepen understanding of the impact of VNS and humanizes the children and their experience.

Interpreting ambiguous stimuli: The role of loneliness

Elisabeth Nombro, Dr. Enrico DiTommaso and Dr. L. MacNeill

Department of Psychology, University of New Brunswick

Past research suggests that people with high levels of depression and anxiety tend to have a negative interpretation of ambiguous social stimuli. Chronic loneliness is highly correlated with depression and anxiety, leading many researchers to assume that chronic loneliness is also related to a negative interpretation of ambiguous information. However, past studies exploring this relationship suffered from methodological issues. The current study examined the relationship between chronic loneliness and interpretation of ambiguous information, addressing the methodological issues of past studies. One hundred and thirty-one participants were recruited from undergraduate psychology classes and from the general public through social media. Participants completed measures of loneliness, social anxiety, depression, and a measure of their interpretation of ambiguous stimuli. Relationships between the three subtypes of chronic loneliness (social, family, and romantic) and participants' ratings of the pleasantness of the ambiguous situations were assessed using Pearson correlation and regression analyses. Results showed that higher levels of chronic loneliness were related to more negative interpretation of ambiguous social information. In addition, social loneliness negatively predicted pleasantness ratings over and above the effect of depression and anxiety. These results are important as they might lead to ways of improving treatment methods for chronic loneliness, in particular social loneliness. For example, incorporating an interpretation bias reduction program in a cognitive behavioural therapy could significantly improve treatment outcomes for socially lonely individuals.

A mixed-methods study on the impact of participation in music-making workshops on youth self-esteem and self-efficacy

Sophia Miao and Dr. Wendy Stewart

Dalhousie University

Literature on the therapeutic outcomes of youth engagement in active music-based interventions is limited. This study explores how music workshops empower youth; particularly, how their self-esteem and self-efficacy are impacted by the experience of lyrical and musical composition. A convergent mixed-methods approach was used to investigate the experiences of male and female youth ($n = 11$) aged 12-16 in music workshops run at the Kennebecasis Valley Oasis Youth Centre in New Brunswick. Both 1-hour focus groups and The Rosenberg Self-esteem and General Self-Efficacy Scales (administered as quantitative tools and scored on a Likert-type scale) took place preceding and following the workshops. Qualitative data was analyzed using phenomenology. Qualitative and quantitative results were compared and integrated for interpretation. Quantitative methods revealed improvements in self-esteem, general self-efficacy, and social self-efficacy from baseline (1.55, 2.09, 0.55 respectively), but this effect was not statistically significant (respective $p = 0.11, 0.24, 0.48$). Phenomenological analysis substantiated this development in self-concept, revealing two overarching clusters of ten themes as contributing factors. The first consisted of internal factors: current state, mood and emotional regulation, agency, experience and mastery. The second encompassed external factors, such as interpersonal relationships, context, perception of others, modelled behavior, and culture. The dynamic interplay between internal and external contributors was dependent on the worth that the individual assigns to each. Youth participation in a music-making workshop had a positive impact on self-efficacy and self-esteem. This study can serve to further the development of music-based interventions for adolescent wellbeing and self-concept.

Differences in sexual health between individuals who engage in non-heteronormative versus exclusively heterosexual sexual activity

Brittany Skelding and Dr. David Speed

Department of Psychology, University of New Brunswick

The current lack of research examining the sexual health behaviours of individuals who practice non-heteronormative sexual activity (N-HET) is striking considering the marked lack of formal N-HET sexual education in North America. The current study addressed this gap by using the 2014, 2016, and 2018 cycles of the General Social Survey to explore various sexual health behaviours using logistic regressions. All analyses yielded significant results excluding knowledge of HIV with one exception: HET individuals were less likely to be aware that HIV could not be spread through kissing than N-HET individuals ($p=.028$, $OR=.476$, 95% CI [.248, .919]). A significant interaction was observed between HET and N-HET individuals and sex on the likelihood of having been tested for HIV ($p=.003$, $OR=.357$, 95% CI [.181, .704]). Specifically, N-HET men were most likely to be tested for HIV, however moving from N-HET to HET was associated with a reduced likelihood of HIV testing in males compared to females. A main effect emerged between HET and N-HET for both number of sexual partners ($p<.001$, $OR=-.917$, 95% CI [-1.186, -.649]) and engaging in casual sex ($p<.001$, $OR=2.224$, 95% CI [1.462, 3.412]), as HET individuals had fewer partners and were more likely to be in a relationship with their most recent sexual partner. These findings may aid in the identification of individuals who are at higher risk for sexually transmitted infections, allowing for further development of targeted sexual health campaigns.

Factors influencing empowerment around female sexual health: A phenomenological study of grade 9 students

Liora Naroditsky (a) and Dr. Wendy Stewart (b)

(a) Dalhousie Medicine New Brunswick

(b) Horizon Health Network

There is an abundance of qualitative research demonstrating that better sexual health education correlates with improved mental, physical and social health in adolescent females. There is a paucity of qualitative research that explores the ways of administering sexual health education to better meet the needs of youth. Using the method of phenomenology, this study sought to explore the experiences of grade nine female youth with the quality of sex education they received thus far, and their views on their own sexual health, including sexuality, relationships and empowerment. Two 1-hour focus groups of 5-6 female students aged 14-15 years were conducted in two high schools. The sessions were audio-recorded, transcribed and analysed. During analysis, data was coded and then organized into themes and sub-themes. Three main themes were identified: enablers and barriers to feeling empowered in life; sexual health education barriers and successes; and perceptions and understandings of gender, sexuality and sexual health. Participants indicated that empowerment significantly affected their abilities to make decisions, including those related to sexual health. Participants also shared that receiving sex education in school was most valuable when their teacher seemed comfortable with and open to teaching sex-related topics. Participants also recognized that they often encounter unfair gender stereotypes and societal pressures. Teaching around empowerment could assist female youth in decision-making around sexual health. The implication of this study is that the sexual health curriculum could be improved in New Brunswick. These data will be used to promote discussion around potential changes.

Understanding the Spread of Illness and Infection

Do common household items reduce the growth of human and dog mouth bacteria?

William Byczko

Valley Christian Academy

The poster explores a) the ability of several common household items to reduce bacterial growth, and b) whether there is a difference between bacteria coming from either a human's mouth or a dog's.

The 5-Second Rule: How fast do germs spread?

Alexander Tobias and Aiden Wetmore

Princess Elizabeth School

The poster presents experiments that test the length of time it takes for bacteria to transfer from one surface to another.

Why diseases are coming back

Tina Liu

Forest Hills Middle School

The poster explores possible reasons as to why previously eradicated diseases are returning, including: vaccine refusal, waning or insufficient immunity, drug resistance, and climate change.

Video Games' Impact on Health

Gaming and Your Health

Alex Saulnier

River Valley Middle School

The poster looks at whether horror and fast-paced video games have an impact on one's blood pressure, pulse, and body temperature.

Understanding and Preventing Concussions

Mind Ready / Tête Prête

Sawyer Russell

St. Stephen Middle School

Using their experience as a hockey goalie, the presenter designs and begins building a mobile app that hopes to improve individuals' reaction times - and thus hopefully reduce incidence of concussions.

Est-ce qu'une commotion cérébrale est une blessure évitable?

Ainsley Grant

St. Stephen Middle School

The poster explores individual perceptions as to whether or not concussions are an avoidable injury.

Motivation and Social Facilitation

Est-ce qu'il y a un effect psychologique si tu sais les résultats d'une autre personne?

Orri Gionet

Hampton Middle School

The presenter hypothesized that seeing the results of others would improve your own performance, versus not seeing others' performance.

Growing Your Own Food

How to train your radishes

Kenadie Kellar and Dawson Trentowsky

River Valley Middle School

The presenters hypothesized that different liquids would have a positive impact on the growth of radish plants, based on the liquids' water content.

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