

and public health, and also to aid design more effective mechanisms for DCSs' further implementation.

A Scoping Review on Barriers to Mental Healthcare in Canada as Identified by Healthcare Providers

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Aims. Mental illness is among the leading causes of disability globally, however the treatment gap is wide even for developed countries. The perspectives of patients and mental healthcare providers are critical to understanding barriers to adequate mental healthcare and developing scalable solutions that improve access and quality of services. However, the views of providers are relatively understudied, precipitating our review to collate and synthesize their perspectives on the barriers to mental healthcare in Canada.

Methods. We searched MEDLINE/PubMed and PsychINFO for studies with findings in Canada published in English from 2000–2021 with terms for mental health, psychiatry, barriers, and referrals. Included studies were evaluated with the National Institutes of Health Study Quality Assessment Tools and Critical Appraisal Skills Programme.

Results. 631 papers were screened, finding 20 eligible studies, including 13 qualitative, one cross-sectional, one retrospective, and five mixed-methods studies. Through inductive content analysis, five themes of barriers emerged: (1) patient accessibility (19% of studies), (2) health systems availability and complexity (31%), (3) training/education (25%), (4) work conditions (21%), and (5) cultural sensitivity (4%). Among barriers discussed, common challenges included a lack of resources for both patients and providers, gaps in continuing education for primary care providers, and health systems challenges such as difficulty securing referrals, unclear intake criteria, and confusion due to overload of contacts.

Conclusion. Health systems face a multi-faceted set of challenges to improving access to mental healthcare that will require solutions from various stakeholders. Understanding these barriers is critical in focusing initiatives to improve mental health care, both in Canada and in countries facing similar challenges.

Genetic Polymorphisms Are Differentially Associated With Affective Outcomes in Adolescents With and Without ADHD

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Aims. Various genetic polymorphisms have been associated with attention-deficit/hyperactivity disorder (ADHD), and some of these have also been implicated in individual differences in affective processing. Yet, no studies to date have examined the complex interrelations across these genetic polymorphisms, ADHD, and affective processing. Several variables (e.g., age, ethnicity, sex) have been shown to affect whether a given genetic variant confers risk. Our aim was to examine whether relevant genetic variants differentially confer risk for negative affectivity (NA) and/or emotion dysregulation (ED), depending on ADHD status.

Methods. Participants were $n = 297$ adolescents ($M_{\text{age}} = 15.30$ years; $SD = 1.06$; 60.27% boys) with ($n = 83$) and without (DSM-5) ADHD. ADHD- and affective processing-related dopaminergic and serotonergic polymorphisms were genotyped (i.e., DRD2/ANKK1 TaqIA (rs1800497), dopamine receptor DRD4 exon-3 48 bp VNTR, and serotonin transporter linked polymorphic region 5-HTTLPR including the rs25531). Affectivity and ED were measured via parent- and/or self-report.

Results. We first calculated bivariate correlations between polymorphisms, affectivity, and ED then compared the obtained (Fisher's r to z -transformed) values between with and without ADHD groups. There were no correlations that were significant – but several differed – across groups. In youth without ADHD, carrying the DRD2 rs1800497 T-allele was negatively associated both with negative affectivity ($p_{\text{corr}} = .033$) and with self-rated ED ($p_{\text{corr}} = 0.039$). In youth with ADHD, carrying the DRD4 VNTR 7-repeat allele was positively associated with self-rated ED ($p_{\text{corr}} = 0.008$), and carrying the L'L' relative to the low-expression S' serotonergic allele was also positively associated with parent-rated ED ($p_{\text{corr}} = .042$).

Conclusion. Differences across with and without ADHD groups with regard to correlations between genetic polymorphisms – previously implicated in both ADHD and affective processing – and negative affectivity and emotion dysregulation indicate that certain genetic variants may differentially confer risk for affective outcomes, given ADHD status. These results have implications for targeted prevention of adolescent affective outcomes, which will be discussed during the presentation. That findings held across different indices of affective processing (dispositional affectivity and certain emotion dysregulation components) suggest these results may be robust.

Religiosity and Psychotic Experiences: A Large Community-Based Study From Qatar

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Aims. We wished to explore associations between intrinsic religiosity, extrinsic (non-organizational (ENORG) and organizational (EORG)) religiosity and hallucinations phenomenology in a non-clinical Muslim population.

Methods. We selected full-time students at Qatar University using systematic random sampling and administered the Questionnaire of Psychotic Experiences online. We modelled the effects of socio-demographic variables, anxiety, depressive symptoms, and religiosity measures, delusions on hallucinations severity and distress/impact in the past week, using structural equation modelling.

Results. Direct-effects models supported ENORG religiosity's protective role against experiencing distress or negative impact on daily function from hallucinations. Intrinsic religiosity had positive indirect-effects on hallucinations distress/impact through depression, anxiety, and through EORG but negative (suppression) indirect-effects on hallucinations distress/impact through ENORG. Younger and married from lower socio-economic class participants had comparatively more severe hallucinations and more distress from them.

Conclusion. We present evidence of differential associations between the religiosity types, socioeconomic and cultural groups, and past week distress/impact of hallucinations.

Our data support the importance of alignment between religious education and mental health and well-being education.

Emotional Dysregulation and Altered Reward Processing in Self-Harm

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Aims. Self-Harm (SH) is defined as “any act of self-injury or poisoning carried out by a person irrespective of their motivation”. SH increases the risk of adverse outcomes including suicide attempts, necessitating early intervention. The most widely reported reason for SH is to relieve negative affect (NA), with NA precipitating SH engagement. SH participants show altered reward processing, particularly reward hypersensitivity. NA could trigger reward hypersensitivity and therefore SH engagement. However, the interaction between NA and reward processing in SH remains unclear.

Aim: To investigate whether those who SH show differences in processing SH stimuli compared to healthy controls (HCs) following NA induction.

Hypothesis: NA induction will result in SH participants having significantly shorter reaction latency (RL) and significantly greater reaction accuracy (RA) in the SH condition of the Incentive Delay task (IDT) than HCs.

Methods. 16–25-year-old SH ($n = 35$) and HC ($n = 20$) participants were recruited on social media. Participants completed the Trier Social Stress Test, to induce NA, followed by the IDT. In the latter, participants were cued to respond to a target as quickly as possible, and on responding were shown images of either a SH act (SH condition), people socializing (social condition) or money (monetary condition), where each condition had control trials where a neutral image was shown, which participants also had to respond to (SH neutral, social neutral and monetary neutral conditions respectively). RA was the percentage of IDT trials in which participants responded within the target's presentation time. RL in the IDT was the time (seconds) between the target appearance and the participant's response.

Results. A linear mixed effects model showed no significant main effect of group on RL (SH vs HC), condition (Social, SH or Monetary) or group \times condition interaction ($p > 0.05$). There was a significant main effect of condition on RA ($p < 0.05$) but not group or group \times condition interaction ($p > 0.05$). Past-week SH frequency and RA were significantly and positively correlated in social, social neutral and monetary conditions ($p < 0.05$).

Conclusion. Overall, there was a non-significant effect of NA on reward processing. However, as greater past-week SH frequency was significantly associated with greater RA, understanding how

reward processing and NA interact in SH can provide greater insight into its triggers. Given this study's limited sample size and cross-sectional nature, future studies should investigate how NA and reward processing interact longitudinally and in larger samples to understand how SH can be reduced.

Gray's Impulsivity Is Differentially Associated With Amygdala-Insula Functional Connectivity in Adolescents, Depending on ADHD Risk Status

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Aims. Attention-Deficit/Hyperactivity Disorder (ADHD) is associated with alterations in both reinforcement sensitivity and affective processing but the nature of the associations of these characteristics is yet to be examined. We hypothesized that individual differences in the sensitivity of the Behavioral Approach System (BAS) would exhibit differential relations with affective network connectivity – involved in emotional regulation and salience monitoring – in youth at-risk for, relative to youth not at-risk for, ADHD.

Methods. Adolescents ($n = 125$; $M_{age} = 16.24$ years, $SD = 1.09$ years; 61.6% boys) were recruited as part of The Budapest Longitudinal Study of ADHD and Externalizing Disorders. Forty-nine were classified as at-risk for ADHD ($M_{age} = 16.15$ years; $SD = 1.21$ years; 77.6% boys), defined as exhibiting ≥ 4 parent-rated symptoms of either domain on the ADHD Rating Scale-5. Participants completed a 10-minute resting-state functional Magnetic Resonance Imaging session, during which they were asked to focus their attention on a fixation cross, as well as various self-report assessments, including the Reinforcement Sensitivity Theory of Personality Questionnaire (RST-PQ).

Results. Functional Network Connectivity analyses indicated an interaction effect between the RST-PQ BAS impulsivity subscale and at-risk status on functional connectivity between four affective network region-pairs ($ps < .05$, False Discovery Rate [FDR] corrected) within a cluster based on functional similarity ($p = .014$, FDR-corrected). Follow-up OLS linear regressions showed higher impulsivity scores predicted stronger functional connectivity between the (1) left amygdala-right insula ($F(6, 117) = 3.298$, $p = .005$, adjusted $R^2 = .101$), (2) left amygdala-left insula ($F(6, 117) = 2.2$, $p = .048$, adjusted $R^2 = .055$), (3) right amygdala-right insula ($F(6, 117) = 3.833$, $p = .002$, adjusted $R^2 = .121$), and (4) right amygdala-left insula ($F(6, 117) = 3.064$, $p = .008$, adjusted $R^2 = .092$) in at-risk youth, whereas an inverse relationship was apparent in not at-risk youth.

There was no main effect of group status on BAS impulsivity scores ($t(122) = -1.167$, $p = .246$) or on functional connectivity ((1) $t(122) = .383$, $p = .702$; (2) $t(122) = .195$, $p = .846$; (3) $t(122) = -.107$, $p = .915$; (4) $t(122) = -.206$, $p = .837$).

Conclusion. The amygdala-insula connection has been shown to be involved in trait impulsivity, however, available ADHD-focused studies targeted emotional functioning. To our knowledge, we are the first to demonstrate that Gray's impulsivity – reflecting trait reward sensitivity – is predictive of amygdala-insula functional connectivity at rest and that this relation differs given ADHD risk. Results have conceptual and practical implications (e.g., early identification) as the role of the amygdala-insula connection in reward sensitivity appears