

Cognitive profile linked to risk for peer victimization and bullying behaviour



A new study led by researchers at CHU Sainte-Justine showed that we can predict who will become a bully and how to change their path with targeted neurocognitive strategies.

MONTREAL, September 27, 2018 – Bullying is a major public health concern in Canada and worldwide. Canada has the 9th highest rate of bullying in the category of 13-years-olds on a scale of 35 international countries and 1 in 3 Canadian adolescent students have recently been bullied. Adolescents who experience bullying report a wide range of long-lasting negative consequences, including lower academic performance and drop-out from school, and higher risk of mental health problems, such as depression and anxiety, involvement in criminal activities, and suicidal ideation and/or attempts. A new study by researchers at CHU Sainte-Justine and Université de Montréal, published in the *Journal of Abnormal Psychology*, showed that a computer-based cognitive test can predict who will become a bully and can explain how a basic cognitive function lead to interpersonal aggression through vulnerability to peer victimisation and its effects on thoughts about oneself and others. These findings highlight the overwhelming need to make early interventions for disinhibited and/or victimised adolescents a priority in Canada.

Understanding bullying behaviour involves considering individual vulnerability factors along with environmental factors. Intervention efforts to improve interpersonal difficulties among adolescents would highly benefit from targeted neurocognitive strategies aimed at managing inhibitory control or impulsivity and school-level changes that promote more empathy towards disinhibited children and help them to learn better self-management skills. “Our findings also suggest that interventions designed to effectively increase cognitive and behavioural coping strategies to manage hostile automatic thoughts, and to build a positive and strong self-esteem in the face of victimisation might lead to better outcomes for disinhibited youth,” explains **Hanie Edalati, PhD**, postdoctoral research fellow and first author of this study.

How did they achieve this?

A number of recent studies similarly link the disinhibited profile in childhood to peer victimisation and perpetration behaviour by showing that adolescents with disinhibited temperament show higher levels of problem behaviours, including aggression and fighting following exposure to victimisation, but what is not clear from these studies is the longitudinal path from disinhibited temperament to aggression. “We were interested in understanding why and how traits of disinhibition or impulsivity transforms into aggressive behaviours during adolescence. As a clinical psychologist, I understand impulsivity as being caused by difficulties with “stopping” behaviour or response inhibition, which can be measured using very simply reaction time cognitive tasks. I have also observed that this trait and cognitive style co-occurs with hostile and aggressive behaviors in adolescents, including bullying behaviors. But to date, there is little empirical research explaining such a cognitive style can cause hostile and aggressive thoughts, intentions and behaviours. Our research confirmed that an impulsive cognitive style only leads to hostile thoughts and aggressive behaviour through important environmental circumstances, such as the tendency to be susceptible to be bullied by peers,” said the study’s senior author, **Patricia Conrod, PhD**, Researcher at CHU Sainte-Justine and Professor at Université de Montréal Department of Psychiatry.

To study this trajectory, the research team followed a sample of 3826 Canadian adolescents aged around 13 years old during four years and collected extensive data on their clinical and cognitive characteristics. The statistical technique of multilevel path analysis was applied to test the indirect effects of response inhibition and victimisation on bullying perpetration through self-esteem and hostility-related thoughts in terms of general liability and fluctuations at each time point and over the 4-year period. “This big-data longitudinal approach has never been applied to the study of adolescent bullying behaviour, particularly from such a neurocognitive perspective,” adds Dr. Conrod.

What’s new?

The research team found that the expression of perpetration behaviours in disinhibited adolescents might be largely explained by exposure to peer victimisation during adolescence. Aggressive behaviours in disinhibited youth might therefore be understood as a coping strategy, rather than goal-oriented controlled aggression, as described in some of the previous studies. Expression of perpetration behaviours in disinhibited adolescents can be prevented, at various points in this trajectory: by targeting disinhibited cognitive styles, by reducing victimisation experiences, or by addressing hostile and negative self-thoughts in reaction to peer victimisation.

The findings from the current study support efforts to ensure that school counsellors and care providers attend to the experience of past and current victimisation, as well as underlying disinhibited traits, when providing services to adolescents demonstrating perpetrating behaviours. “Our findings provide strong support for the importance of early intervention with disinhibited adolescents to reduce the long-term adverse effects of this problem before their vulnerability places them and their peers at risk of further harm,” specifies Dr. Edalati.

What’s next?

The research team will investigate the role of other risk factors for the emergence of interpersonal difficulties during adolescence, such as individual (e.g., psychopathology, substance use, puberty), and/or environmental and systemic (e.g., poverty, peer group, parenting) factors. They have developed targeted interventions for disinhibited youth aimed at managing inhibitory control and impulsivity and are currently evaluating the impact of these targeted interventions on bullying perpetration in schools. “One advantage to targeting underlying cognitive risk in early intervention is that it has the potential to be truly preventative and will also lead to benefits on other outcomes related to that trait,” says Conrod. “In the case of poor response inhibition, we know that this cognitive style is implicated in a number of different emotional and behavioural problems, including adolescent substance misuse. The benefit of this approach to bullying prevention is that it can be integrated in to a more comprehensive mental health promotion programme aiming to prevent a wide variety of mental health problems.”

About this study

The article entitled “Poor Response Inhibition and Peer Victimization: A Neurocognitive Ecophenotype of Risk for Adolescent Interpersonal Aggression” was published online in the *Journal of Abnormal Psychology* in September 2018. The first author is Hanie Edalati, PhD, a postdoctoral research fellow, under Patricia Conrod’s supervision. Senior author is Patricia Conrod, Ph.D., Researcher and Director of the Venture laboratory at CHU Sainte-Justine, Full Professor in the Department of Psychiatry of Université de Montréal and holder of the Chair Dr Julien/Fondation Marcelle and Jean Coutu in Social and Community Pediatrics of Université de Montréal. This study was funded by the Canadian Institutes of Health Research, the Fonds de recherche du Québec – Santé, the Social Sciences and Humanities Research Council of Canada and the Canada Research Chair program, the Chair Dr Julien/Fondation Marcelle and Jean Coutu in Social and

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