Research Round Up
Q3 | 2020
Research highlights from the field of childhood trauma
Cutting edge research on trauma & childhood maltreatment. The Research Round Up series helps to bridge the gap between academic researchers and busy professionals. This publication provides summaries of ten research studies from the field of trauma and childhood maltreatment published during the third quarter of 2020.

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Recent evidence suggests that subjective (e.g. self-reports) and objective (e.g. court-based evidence, social services/police investigations) measures of childhood maltreatment show poor agreement. However, it remains unclear whether the association between childhood maltreatment and future mental health difficulties varies depending on how childhood abuse and neglect is measured. To address this issue, Danese and Widom (2020) explored data from a longitudinal cohort of hundreds of children with both objective court-based evidence of maltreatment and subjective self-reports in adulthood. They found that objective measures of childhood maltreatment alone did not heighten an individual’s risk of future mental health difficulties. Instead, the risk was heightened for adults who self-reported experiences of childhood and neglect. In other words, these findings suggest that an increased risk of mental health difficulties may be more strongly linked to the subjective recall of abuse and neglect rather than their objective appraisal.

A growing body of evidence suggests that individuals with a history of childhood adversity may be more susceptible to the negative impact of stressful life events, increasing the risk of developing depression and anxiety. This is known as stress sensitization. However, the brain mechanisms underpinning this increased vulnerability to life stress remains unclear. The aim of Weissman and colleagues’ (2020) study was to examine whether changes in brain structure following maltreatment may represent a potential mechanism underlying stress sensitization.

The researchers focused their analyses on two brain regions involved in the response to threat/stress - the amygdala and the hippocampus. The results of this study showed that children and adolescents who had experienced maltreatment earlier in life, compared to non-maltreated peers, had smaller hippocampal and amygdala volumes. Moreover, they found that among those young people who had experienced childhood abuse, smaller amygdala and hippocampal volumes were associated with future depression symptoms following exposure to stressful life events.

In other words, these findings provide evidence of a brain mechanism underpinning the increased risk of depression and anxiety. That is, reduced hippocampal and amygdala volume following exposure to childhood maltreatment may index latent vulnerability to future mental health difficulties.


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New evidence that changes in brain structure following maltreatment increase the risk of depression and anxiety

Moreover, they found that among those young people who had experienced childhood abuse, smaller amygdala and hippocampal volumes were associated with future depression symptoms following exposure to stressful life events.
Impact of trauma

A longitudinal investigation of childhood maltreatment and genetic predisposition to antisocial and aggressive traits

Serotonin is a neurotransmitter in the brain which plays a key role in regulating a wide range of cognitive, emotional, behavioural, and even physiological processes. Several genes regulate the way serotonin works in the brain, including the serotonin transporter gene 5-HTTLPR. This gene is important for its metabolic breakdown. Current evidence suggests a possible association between a common, yet ‘riskier’, variation of the serotonin transporter gene and antisocial and aggressive behaviours. Exposure to early adverse childhood experiences, such as abuse and neglect, have also been linked with an increased risk of future antisocial and aggressive behaviours, including callous-unemotional traits. This is a specific type of antisocial and aggressive profile characterised by low empathy, interpersonal callousness and restricted affect. In this longitudinal study, Widom and colleagues (2020) compared a large group of individuals with substantiated experience of childhood maltreatment with a demographically matched control group. As predicted, exposure to childhood maltreatment predicted higher callous-unemotional traits scores in adulthood. However, this association did not differ by genetic risk in this group. Instead, the control group showed the expected association between the riskier genetic variation of the serotonin transporter gene and higher callous-unemotional traits.

In other words, the impact of childhood maltreatment on later antisocial and aggressive traits was not influenced by genetic predisposition.

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How reconceptualising childhood adversity categorisation can advance our understanding and the development of effective interventions

Developing effective interventions for individuals who experienced early adversity relies upon improving our understanding of how such events impinge upon brain development, physical health, and behaviour. In their theoretical paper, Smith and Pollak (2020) argue that how we currently conceptualise adversity is hindering progress in the field. The authors contend that current subtypes of adverse experiences represent “fuzzy categories” which often tend to co-occur (e.g. physical abuse and physical neglect). Moreover, they argue that different subtypes of early adversity lack consistent evidence demonstrating specific long-term psychological and neurobiological outcomes. Moreover, Smith and Pollak argue that the body and brain’s stress-response systems are not sensitive to specific types of experiences and stressor events. Different stressors elicit similar responses in our brain and body. The authors argue that more promising formulations and categorisations of early adversity could focus on its developmental timing, severity, and chronicity. Important dimensions that also shape a young person’s development are linked to specific features of the early environment, such as its degree of predictability, the presence of contingent responses from caregivers, and the social/interpersonal context, such as the subjective perception of safety and the presence of social support. In other words, the authors argue that we should rethink how we conceptualise and categorise early adversity to advance our understanding of the mechanisms through which early experiences influence human development.

Smith, K. E., & Pollak, S. D. (2020). Rethinking concepts and categories for understanding the neurodevelopmental effects of childhood adversity. Perspectives on psychological science, Advance online publication. doi: 10.1177/1745691620920725
Several studies have identified that the presence (or absence) of several genes may cumulatively increase the risk of developing posttraumatic stress disorder (PTSD). However, little is known about what socio-environmental factors may influence the association between genetic risk and PTSD. In this study, Tamman and colleagues (2020) recruited a large sample of 2030 trauma-exposed war veterans to evaluate the effect of genetic predisposition and adult attachment style on PTSD. The association between greater overall genetic risk and PTSD symptom severity was observed only in war veterans with an insecure adult attachment style. Particularly significant was the interaction between attachment style and one specific ‘riskier’ variation of the IGSF11 gene (which is implicated in the regulation of neural transmission and brain plasticity). Moreover, increased genetic risk was found to be associated with both insecure attachment styles and PTSD symptoms severity. This suggests that the same underlying genetic predisposition may influence both adult attachment style and the emergence of PTSD. In other words, this study provides initial support for the protective role of social/interpersonal factors (such as adult attachment style) among trauma-exposed individuals at heightened genetic predisposition for developing PTSD.


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Attachment style influences war veterans’ genetic risk of developing PTSD
The amygdala is a core brain structure involved in the processing of threat information and stress-related responses. The emergence of a wide range of mental health difficulties are linked to alterations in this brain structure. In particular, numerous studies have reported increased amygdala activation following trauma and PTSD. However, there are mixed findings on changes in amygdala structure following trauma exposure. According to Ousdal and colleagues (2020), one possible reason for the inconsistency of the findings may be that the amygdala is often investigated as a single, uniform brain region despite the fact that it consists of several subregions, including the basal, lateral, cortical, central, and medial nuclei. For the study, the researchers recruited 47 survivors of the 2011 Norwegian terrorist attack and a group of 60 non-traumatised controls. PTSD symptoms were assessed 4–5, 14–15 and 24–36 months following trauma. The volume of all the amygdala subnuclei was measured at 24-36 months. The results indicated that PTSD symptom severity at 24–36 months post-trauma was associated with volumetric reductions of all basal, lateral, central and medial amygdala nuclei. However, only volume reduction in the right lateral amygdala nucleus was associated with less reduction in PTSD symptoms over time. That is, volumetric reductions in the lateral amygdala nucleus may represent a biological mechanism associated with increased risk of future and more persistent PTSD symptoms following trauma exposure.

In other words, these findings suggest that structural alterations only in certain subregions of the amygdala may contribute to the development of future PTSD symptomatology.

Interpersonal Psychotherapy for Depressed Adolescents (IPT-A) is a time-limited effective intervention for young people who are struggling with low mood. This form of therapy focuses on improving the quality of a client’s interpersonal relationships and social functioning. In this study, Toth and colleagues (2020) explored whether a history of childhood abuse and neglect might result in differential IPT-A treatment outcomes. They recruited an ethnically and racially diverse sample of 120 low-income adolescent girls with and without histories of childhood maltreatment. Half of the participants received IPT-A, while the other half received an equal number of sessions of enhanced community support (ECS). ECS is counselling delivered in the community by a therapist with a master’s degree in social work. For adolescent girls who did not have a history of childhood trauma, IPT-A and ECS were equally effective in reducing symptoms. However, IPT-A was found to be more effective than ECS among adolescent girls who had experienced two or more subtypes of childhood maltreatment. This was particularly true for girls with a history of sexual abuse. In other words, the preliminary findings of this study suggest that when a history of childhood trauma is present, directly addressing the interpersonal and social context associated with low mood might increase treatment efficacy.

Cognitive therapy for post-traumatic stress disorder (CT-PTSD) is a well-established evidence-based trauma focused cognitive-behavioural therapy. Its protocol was originally developed in the context of traditional face-to-face therapy. So, the delivery of CT-PTSD during the Covid-19 pandemic may pose novel challenges for clinicians who are increasingly compelled to deliver treatments remotely. This means that clinicians cannot meet with the patient in-person when guiding them through emotionally salient aspects of treatment (such as the trauma-focused work). Equally, patients may be constrained in their ability to carry out treatment components which require contact with other people or travel (such as behavioural experiments and in vivo exposure). In this paper Wild and colleagues (2020) compiled a practical guide for clinicians on how to deliver CT-PTSD remotely. They provide examples and adaptations for each key treatment components, such as memory focus-techniques, trigger discrimination, and challenging unhelpful cognitive and behavioural strategies. The authors argue that, even during the Covid-19 pandemic, it is paramount that patients can benefit from this effective treatment for PTSD. National and international clinical guidelines recommend CT-PTSD.

Please note that this guide relates only to adults; it will be important to consider these (and other) adaptations in the context of child populations.

Interventions

Trauma focused therapy for adults with PTSD from childhood trauma

There is limited evidence on the effectiveness of psychological treatment for adults with PTSD that emerges from childhood trauma (Ch-PTSD). In this study, Boterhoven de Haan and colleagues (2020) investigated the potential efficacy of two trauma-focused treatments for Ch-PTSD which require only minimal exposure/reliving of trauma—imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR). ImRs encourages patients to imagine different outcomes related to their trauma memories with the aim of changing their meaning. EMDR involves lateral eye movements or tapping to facilitate processing of traumatic memories with the aim of reducing their vividness and associated distress. Participants received either trauma-focused treatment in a brief format (up to 12 90-min sessions) and without a stabilisation phase. The results indicated a significant and large drop in PTSD symptoms at 8 weeks post treatment for both ImRs and EMDR. Moreover, low dropout rates (7.7%) suggested that treatment was acceptable for patients. In other words, the results from this study provide support for the use of trauma-focused treatments for Ch-PTSD.

In this study, Rossouw and colleagues (2020) evaluated how well different forms of psychological interventions lead to long-lasting improvements in symptoms among young people (13–18 years) with PTSD. Participants received either prolonged exposure therapy for adolescents (PE-A) or supportive counselling (SC). Both treatments consisted of 7 to 14 sessions delivered by trained and supervised non-specialist health workers. Participants in both treatment groups achieved a large and significant reduction in PTSD symptoms post-treatment. This was maintained at 12- and 24-month follow-ups. Participants receiving PE-A experienced greater improvement on the PTSD symptom severity. In other words, this study suggests that although both therapeutic modalities are effective in reducing PTSD symptoms among adolescents, a trauma-focused intervention, such as PE-A, yields greater clinical improvements up to two years after completion of treatment.
