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Developmental regression associated with PTSD in children: a poorly defined and understudied phenomenon

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Abstract

Developmental regression (DR) is a clinically relevant phenomenon that is most recognized in neurodevelopmental disorders such as in autism spectrum disorder, but it is also described in association with psychological trauma and post-traumatic stress disorder (PTSD) in children. It is not uncommon for children with PTSD to present symptoms of DR, which manifests as a loss of recently acquired developmental skills such as toilet training or language skills. International diagnostic classifications are not consistent regarding DR nosology. There exists, however, some theoretical ground to group DR with the cluster of dissociative symptoms in PTSD. There is no agreement on how to define, classify and manage DR in PTSD due to a research gap, which require further studies.

Keywords: Developmental regression; post-traumatic stress disorder; dissociation; functional neurological disorder

Developmental regression (DR) is most recognized in neurodevelopmental conditions such as autism spectrum disorder, but also in epileptic encephalopathies, as well as in genetic and metabolic disorders. Although a consistent definition has not been adopted, DR is, broadly speaking, when a child loses previously established skills, especially language, social and motor skills (1). In addition, it has been long recognized that childhood trauma can be associated with a wide scope of regressive behaviors (2). However, the DR description is less well delimited in the psychological trauma literature, where some authors include, in addition to the aforementioned 'hard signs', a wide range of symptoms such as enuresis, encopresis, thumb-sucking, assuming fetal position, identity disruption as well as features from the emotional (such as fear, clinginess and excessive compliance) and daily-living domains (3,4). This wider description of DR is probably related to the Freudian definition of regression as an unconscious defense mechanism that causes the temporary or long-term reversion of the ego to an earlier stage of development, hence going beyond the loss of previously acquired skills. Regression has also been described in adults as a reaction to a stressful situation, such as inpatient hospitalization (5).

Importantly, the formal recognition of DR as a feature of childhood PTSD has undergone several vacillations throughout the different editions of the diagnostic and statistical manual of mental disorders (DSM). The first mention was in the DSM-III-R (6), in the formal PTSD criteria, as part of the avoidance cluster, stated as 'markedly diminished interest in significant activities (in young children, loss of recently acquired developmental skills such as toilet training or language skills)'. Curiously, it disappeared in the DSM-IV and DSM-IV-TR, only to reappear in the DSM-5 and DSM-5 TR, not in the formal criteria, but in the associated features section stated as 'Developmental regression, such as loss of language in young children, may occur'(7,8). Interestingly, DR is also mentioned as a potential expression of distress in children suffering from prolonged grief disorder, a condition recently added to the latest DSM-5-TR edition.

Although the prevalence of PTSD in children and adolescents varies across settings and methodologies, it is not a rare phenomenon. For example, a recent nationwide Danish study found a lifetime prevalence of 2.3% PTSD in school-age children, probably an underestimate since the diagnosis was solely based on hospitals' records in this study (9). Also, DR does not seem to be a rare phenomenon in the clinical setting. For example, in the aftermath of two powerful earthquakes in Turkey, approximately 20% of children and 10 % of adolescents referred to the child psychiatry were found to have regression (10). DR in

PTSD should also be differentiated from the effects of adverse childhood experience, including abuse and neglect, on cognitive and language development (11,12). While the former is conceived as an acute to subacute phenomenon expected to fully resolve with remission of PTSD, the latter is seen as a chronic, long-lasting and partly irreversible phenomenon in reaction to adversity. Needless to say, these theoretical distinctions can easily be blurred by considerable overlap in clinical practice.

Despite its clinical importance, DR in PTSD is poorly defined and understudied. To the author's knowledge, there exists no guidance nor research directly addressing the management of post-traumatic DR, perhaps reflecting the assumption that treating the primary PTSD will end up treating the secondary DR. One challenge is the loose conceptual framework of DR which makes an operational definition elusive, and undermines the possibility to elucidate a clear underlying pathophysiology, and to elaborate specific management plans, thus compromising the validity and clinical utility of DR. For example, it does not seem straightforward to expect post-traumatic enuresis to have the same underlying pathophysiology as, say, post-traumatic mutism. In fact, it is not yet clear under which PTSD cluster DR would fit, if ever. For example, while the DSM-III-R classified DR under the avoidance cluster, the ICD-11 puts 'regression in skills (e.g., verbal skills, toileting)' along the hypervigilance cluster when discussing PTSD in pre-school children (13). In severe presentations, such as the case of a mute unengaged adolescent paralyzed by fear, catatonia could even enter into the differential diagnosis.

It seems, however, that DR would be best classified under the dissociation cluster. The presence of dissociative symptoms in PTSD, as well as their clinical relevance have been recognized, prompting the DSM-5 to introduce a new specifier 'with dissociative symptoms' to the PTSD criteria (14), a subtype that is even more prevalent in children compared to adults (15). Although some evidence suggests that dissociative subtype of PTSD has a distinct neurobiological signature compared to non-dissociative PTSD (16), this is not without controversy (17). While the presence of dissociation may signal a more severe PTSD (18), it is not yet clear, beyond the severity aspect, how its presence would affect clinical management and the choice of treatment modality. With regards to DR, several of its symptoms would be classified as a functional neurological disorder (FND). For example, a regression in speech would reasonably qualify for a DSM-5 diagnosis of a 'functional neurological symptom disorder, with speech symptom, with psychological stressor'(8). Importantly, not only is FND often associated with dissociative symptoms, but dissociation has been hypothesized to be FND's underlying mechanism. This view, although not universally accepted, is adopted by the ICD-11 which categorizes FND as 'dissociative neurological symptom disorder' (19). Since many DR symptoms qualify as FND, this would support the hypothesis of dissociation as a putative mechanism of DR in PTSD. In the same line, the Child Dissociative Checklist, a 20-item screening instrument that assesses dissociative symptoms based on ratings by caregivers for children and adolescents, lists DR as one of the items that indicates dissociation, stated as 'the child shows rapid regressions in age-level behavior, e.g. a twelve-year old starts to use baby-talk sucks thumb or draws like a four-year old'(20). Dissociation may, however, not explain all the DR symptoms. For example, the role of psychological factors in relation to childhood urinary continence problems is not fully understood and further research is needed (21). Nevertheless, the dissociation model is relevant because it suggests some practical implications. It can especially aid the clinician to present, to PTSD patients and their caregivers, a more coherent explanation of DR, as well as to potentially elaborate a treatment plan that accounts for DR symptoms (22).

In conclusion, DR in PTSD is a relevant, yet poorly defined and understudied clinical phenomenon. Unfortunately, there is a dearth of research that has examined its definition, nosology, mechanisms, prognosis or management. Although it seems theoretically reasonable to place DR within the cluster of dissociative symptoms of PTSD, this hypothesis awaits confirmation by future research.

Conflicts of interest

The author has no conflicts of interest to declare.

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