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# Social context as a risk factor for psychopathology in children with epilepsy

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#### ABSTRACT

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#### 1. Childhood epilepsy

Epilepsy is a neurological disorder that involves two or more seizures that occur at least 24 h apart [1] and is often attributed to unknown causes [2]. Epilepsy is one of the most prevalent neurological disorders diagnosed world wide [3] and at least 1% of the population will be diagnosed with epilepsy within their lifetime [4]. In Canada, there are 15 500 new cases of epilepsy reported every year, with childhood and early adolescent cases accounting for 30% of them [5]. Childhood epilepsy is associated with numerous comorbidities including social-emotional [6,7] and cognitive problems [8-10]. In the United States, results from the National Survey of Children's Health suggest that children diagnosed with epilepsy are more likely to be diagnosed with autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), and conduct problems compared to children never diagnosed with epilepsy [4]. Children with epilepsy are also more likely to exhibit both externalizing (e.g., verbal and physical aggression, poor self control) and internalizing behaviours (e.g., anxiety, sadness, loneliness, and low self esteem) than their siblings [7,11] or children with other chronic illness [7]. In fact, Ott et al. [12] report that almost two thirds of children diagnosed with

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Epilepsy is the number one neurological disorder in children in western society. Childhood epilepsy is highly comorbid with psychopathology. Although neurological and biological factors may partially explain the increased risk of psychopathology in children with epilepsy, social contextual factors are also important to understanding development of psychopathology in children with epilepsy. The current paper examines the development of children with epilepsy utilizing Bronfenbrenner's micro-, meso-, exo-, and macrosystem social contexts. Negative interpersonal interactions within the microsystems and the ripple effect of social context at the other levels may contribute to increased risk for psychopathology. Crown Copyright © 2018 Published by Elsevier Ltd on behalf of British Epilepsy Association. All rights reserved.

epilepsy meet criteria for psychopathology, which is 3–6 times greater than the population [8].

Given the predominance of psychopathology associated with childhood epilepsy, it is important to understand how different factors in the development of these children might put them at increased risk compared to their typically developing peers. Research suggests that depression and anxiety are correlated with a number of epilepsy attributes such as age of seizure onset, seizure frequency, and medications [13,14]. Although this might suggest that epilepsy associated variables account for psychopathology there is an important interplay between biology and the environment that shapes development [15]. Thus, in order to fully understand risk factors for psychopathology in children with epilepsy we also need to consider contextual factors.

An ecological systems model can be an effective framework for understanding the importance of contextual factors for individuals with disabilities [16]. Power et al. demonstrate how an ecological systems approach to training can assist practitioners in providing child-oriented care for children with health problems [17]. This approach links different contexts (systems of care) to promote better outcomes. For example, an ecological systems model can be used when training psychologists so that they understand child health problems within multiple interacting contexts (e.g., medical, education, family systems). An ecological systems model highlights the need to consider multiple contexts to better understand psychopathology associated with health problems. Power et al. propose that practitioner training must include developing expertise in child and family assessment, intervention,

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and prevention in both healthcare and educational settings, as well as the promotion of interdisciplinary collaboration (e.g., medical, psychological, and educational specialists). Nelson and Lund suggest that all professionals (e.g., medical, clergy, education) who provide care to individuals with health concerns should understand the various contexts that influence well-being [16]. Hence, thorough understanding of the development of a child with healthcare problems involves understanding multiple contextual factors. The current paper utilizes Bronfenbrenner's [18] ecological model of development to highlight the contextual factors that may play a role in increasing the risk for psychopathology in children with epilepsy.

#### 2. Bronfenbrenner's ecological model of development

According to Urie Bronfenbrenner [18], human development is shaped by reciprocal interactions between the individual and those in the immediate environment (e.g., parents, peers, teachers). These interactions are indirectly influenced by other social structures (e.g., interactions between parents, community resources, and culture) and become increasingly complex and enduring interactions (proximal processes). Individual personal characteristics (e.g., age, gender) may also influence these processes in addition to time (e.g., time span that proximal processes occur). Bronfenbrenner's current model includes five subsystems of ecological context that impact development; the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (see Fig. 1). Although the chronosystem is briefly described here, the four ecological contexts (microsystem, mesosystem, exosystem, and macrosystem) described in his earliest model are the primary focus of the current paper. The five systems are interconnected with each layer being nested within the next [18,19]. The layer closest to the child is referred to as the *microsystem* and is comprised of the direct interpersonal interactions between the child and other individuals in his immediate environment (e.g., child-parent, child-peers, childteacher). Since these interactions are reciprocal, the parent influences the child's behaviour and the child influences the behaviour of the parent. The microsystem is proposed to have the most impact on the development of the child, but the other levels also affect the child's development.

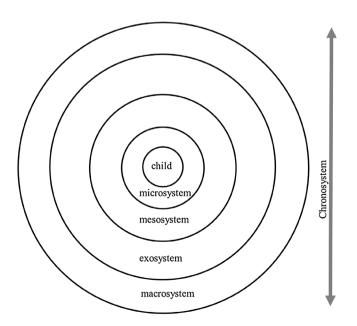


Fig. 1. Bronfenbrenner's Ecological Contexts.

Encompassing the microsystem, is the *mesosystem* [18]. This system is comprised of the interactions between the individuals in the child's immediate environment, and as a result, these mesosystems indirectly influence the development of the child. For instance, how a mother interacts with her child may be influenced by the mother's relationship with her husband; if the mother is discontent with her marriage, her interactions with her child will differ compared to if she were happily married. Moreover, the mother-father relationship also impacts how the child and father interact, and how the three interact as a triadic unit.

The mesosystem is nested within a larger social system, the exosystem. The exosystem is a system of interactions within social contexts that include the people (e.g., parents) within the child's immediate network (microsystem) as well as social contexts that do not include the child (e.g., parent's workplace). These are distal systems that include things like social policy or legislation that indirectly impact the meso- and microsystems. Although the child does not have direct involvement in these contexts, the interactions at this level are still important to development. For instance, workplace policy may allow a parent to take as many paid sick days as needed to care for an ill child, reducing the stress associated with caring for a child. On the other hand (and perhaps more typically), days missed from work may result in reduced pay, lower promotion rates, and increased work load on days actually worked, thereby increasing stress levels and causing parental discontent, which in turn impacts the child. Moreover, workplace demands may also impact how parents interact with one another due to stress, which in turn, influences each parent's interaction with the child. Thus, while the child may not be involved in the events that occur in the mesosystem, there are ripple effects on the child's development.

Similarly, a ripple effect occurs from the macrosystem, or culture, to the individual through the exo-, meso-, and microsystems [18]. Ideologies, values, customs, and material resources are but a few aspects of culture that influence development. For example, many workplaces follow 9-5 work days, which means that many medical facilities are open at similar times as other workplace and school settings. Thus, parents may have to take time off work in order to take their children to doctor appointments. These appointments may not only cause the nature of the interactions between parent and child to change (e.g., parent and child have an opportunity to interact without siblings or other parent present, parent may be concerned about missed work and be distracted), but also the nature of the interactions between teacher and child (e.g., missed lessons and in-class work periods may lead to increased homework or instruction during times normally allocated for breaks).

Lastly, the *chronosystem* [19] encompasses the consistency or change in aspects of the individual life with the passage of time. For example, a child can experience changes in family structure (e.g., divorce), educational status, health changes, and physical environment. Although the chronosystem is not explored in any detail here, it is important to keep in mind that changes in systems occur over time and have a different influence on the child depending on when the change occurs and the length of time that a child experiences the change in a system (e.g., later age of epilepsy onset is associated with higher depression and anxiety scores) [14].

## 3. Microsystemic understanding of development in childhood epilepsy

Seizures can occur at any time without warning, so it is not surprising that children and adolescents live in fear of having a seizure [20–22]. Although many of these children do not recall experiencing the seizures themselves, they do experience the Download English Version:

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