ASK AN EXPERT

MENTAL HEALTH

Intergenerational connection between environment and mental health

BY TAMMY LU

Mental health is a complex and stigmatized topic. While often used as an umbrella term to include any aspect affecting mental wellbeing, it also extends to more serious clinical and psychiatric conditions including depression, anxiety, and substance use disorders. A World Health Organization report in 2012 found that psychiatric disorders alone make up 13 per cent of the disease burden in the world [1,2]. While the cause of many psychiatric disorders remain difficult to define, new research suggests that many of them may have environmental and intergenerational roots.

Stephen Gilman, is the senior investigator and chief of the social and behavior sciences branch at the National Institute of Health in the U.S. His research focuses on how social determinants such as race and socioeconomic status contribute to mental disorders. Gilman has taken a developmental and life-course approach to understanding the factors in early life that can influence the onset and subsequent recurrence of psychiatric disorders in adults.

In his study of Finnish evacuees from World War II, Gilman found that parental exposure to mental disorder presents as a risk factor that can be passed onto the next generation.

The Finnish evacuation program of World War II was responsible for the evacuation of Finnish children to Sweden in order to protect them from war-time dangers such as armed conflict, malnutrition, and the deaths of family members. These evacuated children were fostered by Swedish families and were returned to Finland at the end of World War II. Using census data, hospitalization and evacuee records, Gilman compared hospitalization rates for psychiatric disorders amongst evacuated children and their non-evacuated siblings. Doing so, he found that evacuated women were 2.19 times more likely to be admitted to a hospital for a psychiatric disorder than their non-evacuated siblings [3,4].

In a follow up study, Gilman compared the children of the female evacuees to the children of their non-evacuated siblings. He found that daughters of previously evacuated women were 2.04 times more likely to be hospitalized for psychiatric disorders, and 4.68 times more likely to be hospitalized for mood disorders compared to their cousins, whose mothers were not evacuated. Surprisingly, Gilman found no correlation between evacuated fathers and their children [5].

Findings from these two studies suggest that children who face parental separation, and other stressors of war, may be at an increased risk for the development of psychiatric disorders, with that risk carrying onto the next generation, particularly in younger females. Gilman's results also highlight the protective effects of foster care programs on depression, particularly for younger boys. But it's not yet clear whether risks for psychiatric disorders were inherited biologically or whether these risks were due to nurture and the environment in which these children grew up. There's undoubtedly much more research needed to understand how environmental risk factors for psychiatric disorders may be passed down through generations, but the risks themselves are clear.

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Gilman has also studied the effects of economic hardships on mental health. By comparing states and neighborhoods with high- and low-income

inequality, Gilman found that women and girls were more likely to experience depressive symptoms in areas with high income inequality than those in other areas [6, 7]. Although it has not been studied whether these risks are heritable, income inequality, much like parental separation, can be viewed as a form of hardship that has the potential to impact the mental health of subsequent generations. With the large number of exposures affecting mental health outcomes and likely affecting more than one generation, it is important to reduce mental health risk exposure as much as possible, especially in children whose brains are still developing. Why girls are at a higher risk of developing mental disorders than boys from exposure to hardships such as parental separation and low socioeconomic status is not known. Ongoing research will study the gender differences in developing mental health disorders.

Research will always yield more questions to be answered, but Gilman says, "There is a lot we know already that we can implement, such as increasing the access to resources for treatment of mental health problems." This is not a surprise as a report by the WHO in 2011 outlines that less than two dollars per person is spent on mental health world-wide [2]. According to Gilman, studies increasingly show large populations of individuals suffering from psychiatric disorders that are not being treated. Even within high-income countries, 30-50 per cent of people are not receiving treatment for psychiatric disorders, with that number increasing to 76 and 85 per cent in low- and middle- income countries, respectively [2].

"[There's] a lot to be said for screening and recognizing mental health problems," Gilman added, particularly with suicide and depression. In a study that examined individuals who completed suicide in the U.S., 83 per cent sought health care, but almost half (approximately 41.5 per cent) did not receive a mental health diagnosis, and only 24 per cent received a diagnosis four weeks prior to death [8]. With better diagnostic methods and tools, interventions can be taken to prevent unfortunate consequences of psychiatric disorders, such as suicide. In discussing the importance of research into the development of psychiatric disorders, Gilman highlights "the importance of asking about access to care."

"It has been shown that even though treatments for mental disorders aren't perfect, they can still be very effective for many individuals."

"Population studies of psychiatric disorders show that a substantial proportion of individuals who have a psychiatric disorder have not been treated," Gilman said. "It has also been shown that even though treatments for mental disorders aren't perfect, they can still be very effective for many individuals; therefore, increasing access to treatment is important."

Gilman explained that issues of diagnosis and access to mental health treatment becomes even more complex when it comes to children, because they are dependent on parents to "initiate treatment." Exposure to risk factors during "sensitive periods" of childhood are particularly impactful to a child's development as their brain is still plastic. Gilman argues that protecting a child from these risks is more efficacious than changing behavior later in life, as interventions are also likely to be more effective in early childhood.

Environmental factors such as parental separation and economic inequality represent a small fraction of the factors that can increase the risk of developing a psychiatric disorder. Exposure to a risk factor during childhood has the potential to increase the risk of psychiatric disorders later in life, and can potentially be passed on to the next generation. Although how this occurs is not yet clear.

Nonetheless, a point Gilman frequently reiterates is the importance of "reducing exposure of children to very economically adverse situations, and strengthening or providing resources for identifying mental health problems early and improving access to treatment."

When it comes to the treatment and management of psychiatric disorders, Gilman says he hopes for a cure to be "on the horizon."

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