Poverty and mental health

Mental health in high risk groups: focus on alcohol disorder

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It's well documented the higher risk of mental disorders because of greater exposure to unfavourable social, economic, and environmental circumstances. The pattern of social distribution of common mental disorders is observed as a social class gradient, more marked in women than in men (McNamus et al. 2007).

In community-based settings, 73% and 79% of studies reported positive associations between a variety of poverty measures and common mental disorders, 19% and 15% reported null associations and 8% and 6% reported negative associations (Lund et al. 2010). Although there is yet not full agreement in how to define and study poverty, some studies have suggested that one of the more useful measures could be the debt of the family (Jenkins et al. 2008).

The relationship between mental health and poverty is complex, and poverty has been associated both to an altered brain (and cognitive) development and to the emergence of psychiatric disorders. A recent study investigated relationships between socioeconomic factors and brain morphometry: Interestingly, income was logarithmically associated with brain surface area. Among children from lower income families, small differences in income were associated with relatively large differences in surface area, whereas, among children from higher income families, similar income increments were associated with smaller differences in surface area. (Noble et al. 2015)

Disadvantage starts before birth and accumulates throughout life.

It has been hypothesized that the etiopatogenetic mechanism that underlie the effect of poverty on mental development and mental health is related to higher level of stress associated with unfavorable social and economic conditions, as poverty has been frequently associated to higher levels of stress both in parents and in children (Haushofer & Fehr 2014).

Chronic exposure to stress hormones, whether it occurs during the prenatal period, infancy, childhood, adolescence, adulthood or aging, has an impact on brain structures involved in cognition and mental health. The timing and the duration of the exposure determine the effects that can be observed.

Many studies have evidenced the effect of the exposure to high levels of stress during pregnancy and the first years of life. Stress exposure can cause epigenetic modifications, namely DNA methylation, histone modifications, cromatine addensation, that have long lastingeffects (Tammen et al 2010).

In pregnancy poverty is associated with higher prevalence of maternal depression, reduce maternal care, higher exposure to maternal use of alcohol, cigarettes, substances. Mothers are likely to face multiple stressful life events, including lone-mother and teenage pregnancies, unemployment, more crowded or polluted physical environments, and far fewer resources to deal with these exposures. (Larson 2007).

Psychic disturbances during pregnancy are associated with inadequate antenatal care, low-birth weight and preterm delivery and some studies have suggested a long-lasting effect of antenatal depression on the child well being with an increase of emotional or cognitive problems, including an increased risk of attentional deficit/hyperactivity, anxiety, and language delay (Talge et al. 2007).

Not only maternal depression but all the conditions that cause higher levels of stress during
pregnancy are associated with epigenetic modification in the of the stress-responsive hypothalamic-pituitary-adrenal (HPA) axis that can have long lasting effects in adulthood (Murgatroyd et al 2015). Moreover, alcohol exposure during pregnancy has been associated with brain volume loss, demonstrating decreased plasticity, and altered cognitive performances (attention, language skills, memory, and visual and motor development) (Lebel et al. 2012, Flak et al. 2014). Some authors found that the detrimental effects of maternal alcohol use or abuse during pregnancy is present also in exposure at levels less than daily drinking suggesting that there is no safe amount of alcohol to consume while pregnant.

In the first years of life the long lasting effects on mental health have been associated to the children’s exposure to many different conditions usually associated with poverty: neglect, direct physical and psychological abuse, and growing up in families with domestic violence was particularly damaging. Although for children the effects of poverty on the mental development and on the mental health have different origins, many studies have confirmed that adverse conditions in early life are associated with long lasting detrimental effects on mental health. The effect of poverty on cognitive tasks demanding working memory and logical thinking has been recently analyzed through a series of experimental and field studies (Maner et al 2013, Vohs 2013). The impressive results are that experiencing poverty is like knocking 13 points off IQ.

During adolescence the continued maturation of the brain makes it particularly vulnerable to perturbations: in this period poverty is associated with school leaving, substance abuse, alcohol abuse, anxiety, depression. Particularly, the exposition to alcohol and substance has been associated to a range of adverse consequences, including academic problems, social problems, hangovers, unplanned and risky sex, aggression and victimization, unintentional injuries (especially motor vehicle crashes), various physical and emotional problems, and suicidality (Brown et al. 2008). Adolescent alcohol consumption has been associated also with damage to the brain and neurocognitive deficits, with implications for learning and other cognitive abilities that may continue to affect the individual into adulthood. Moreover, the adolescent vulnerability to the neurotoxic effects of alcohol may be exacerbated by the typical pattern of adolescent drinking, which often involves intermittent bouts of heavy drinking (ie, periodic binge drinking).

Concluding, childhood and adolescence poverty negatively impacts mental health in adulthood: altered brain development in response to social and environmental factors associated with poverty likely contributes to this effect, engendering maladaptive patterns of social attribution and/or elevated psychic stress.

**References**


