

Intergenerational Transmission

Perinatal mental health concerns have severe implications not only for mothers and fathers but for the children of mothers who experience mood changes during pregnancy (Kingston, Tough, & Whitfield, 2012). During pregnancy, the fetus of mothers with mood disorders experience disturbed fetal activity and growth rates (Field, 2011). Subsequently, pre-term delivery, low weights for gestational age, low birth weights and increased admission to neonatal intensive care units are reported for infants of mothers experiencing mood disorders (O'Brien, Laporte, & Koren, 2009; Muzik & Borovska, 2010). Of key consequence is that low birth weight is associated with higher rates of mortality and morbidity for infants (Public Health Agency of Canada, 1999). Pregnant women who are depressed are reported as less likely to follow prenatal health directives and are more likely to use alcohol and/or drugs (O'Brien et al., 2009).

Furthermore, children of mothers with PPMD are less likely to attend well baby checkups and follow immunization schedules. These children have increased emergency room utilization (Minkovitz et al., 2005) as well as significantly increased infant hospitalization rates than children of non affected mothers (Guttman, Dick, & To, 2004; Holland et al., 2010; Minkovitz et al., 2005). Recently, even greater catastrophic implications for PPMD have been reported by international researchers, stating that infants, toddlers and preschoolers, up to the age of five, of mothers with PPMD are at increased risk of mortality (Chen, Tsai, & Lin, 2011).

The literature demonstrates a strong link between PPMD and adverse effects not only on children's physical wellbeing but also on their social and psychological well being. This is shown by the "distortions of the communication regulatory system in the mother-infant dyad [that] lead to an intergenerational transfer of both depression and a negative affective state from mothers to their infants" (Tronick & Reck, 2009, p. 148).

For example, postpartum mood disordered infant mother dyads have fewer vocal and physical interactions, less visual communication, disturbed sleep and appetite, and increased crying (Righetti-Veltema, Bousquet, & Manzano, 2003). Children of mothers who have experienced PPMD have higher levels of anxiety, hyperactivity and aggression, and poorer pro-social behaviors than children of non-depressed mothers (Letourneau et al., 2006). These children show delays in cognitive development at four years of age (Righetti-Veltema et al., 2003) and are two to five times more likely to develop long term behavioral problems (Letourneau et al., 2006). A recent systematic review of perinatal mental health and infant development by Canadian researchers Kingston, Tough and Whitfield (2012) clearly indicates that perinatal distress has adverse effects on the cognitive, behavioural, psychomotor, cognitive and socio-emotional development of children. In addition, children of mothers who experience maternal depressive symptoms have a decreased utilization of preventative services, including age appropriate well child visits, which may have provided an opportunity for early intervention of treatment for developmental concerns (Minkovitz, et al., 2005). Early intervention and treatment of PPMD can help to prevent the adverse effects on mothers, children and families, and help to minimize the chances of intergenerational transmission (Kingston et al., 2012).

Furthermore, recent research has demonstrated the importance of a systematic response to perinatal mental health and its impact on child development. Interventions should focus on developing partnerships between adult and pediatric providers (Letourneau et al., 2012), and should also focus on the parents, the infant and the parent child dyad while concurrently addressing the triadic nature of the issue (Kingston, Tough, & Whitfield (2012); Letourneau et al., 2012; Tronick & Reck, 2009). Looking toward global trends, New Zealand's Ministry of Health (2011) has promoted this triadic model of care within its' *Health Beginnings* guidelines and is advocating for a concurrent model because a "child's development should be viewed within the context of the system of relationships that form their environment" (p.6).

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