OCD, Perinatal OCD, Parental Preoccupation and **Parenting**

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Introduction

Perinatal depression and postpartum psychosis are nowadays well detected. and numerous studies have shown their detrimental impact on the motherchild relationship and on the offsprings' socio-emotional development (Murray et al., 2019). In contrast, the impact of perinatal maternal or paternal obsessivecompulsive disorder (OCD) on the parentinfant relationship and on the offsprings' outcome, has been scarcely studied. This, in spite of the study published already in 2007 (Fairbrother et al., 2007) that showed new parenthood as a risk factor for the development of obsessional problems. Even in the last edition of the Handbook of Infant Mental Health (Zeanah, 2018), the topic has not been mentioned.

Several cases we have had at our community-based infant mental health clinic have prompted us to look deeper at the phenomenon, and we wish to share this clinical experience of ours with WAIMH members. First to note, is the fact that the reason for referral was not the parental OCD but rather non-specific symptoms in the young child. Such as: separation anxiety and aggressive temper tantrums in a 3 year old boy whose father turned out to have OCD; overeating disorder in a 2 years and 10 months old girl and maternal OCD; strong refusal to stay with mother in a 2 and half year old, and maternal OCD; and autistic-like symptoms in a 3 and half year old and maternal OCD. The youngest and most recent case, which will be described later in detail, was a 5-month-old baby boy, of a mother with OCD, who was referred because of concerning passivity and slow motor development.

In this paper, we will first review the literature on maternal and paternal OCD, while noting a theoretical continuum from normal parental primary preoccupation to perinatal obsessive-compulsive disorder and raising the question whether perinatal OCD is different from OCD in other periods of life. We will end with suggested clinical implications, including the importance to think of, and detect, paternal perinatal OCD.

From normal Primary Parental **Preoccupation to Obsessive Compulsive Disorder**

Winnicott (1956) described the perinatal period as a unique state of heightened sensitivity, that is like a dissociative state; the aim of which is to enhance the mother's ability to anticipate the infant's needs and to learn its unique signals. He called it: "almost an illness that a mother must experience and recover from, in order to create and sustain an environment that can meet the physical and psychological needs of the infant". Winnicott emphasized the crucial importance of such a stage for the infant's self-development (even before what we know today about the impact of early interactive experiences on the brain development), and the detrimental developmental consequences for infants when mothers are unable to tolerate such a level of intense sensitivity. Postpartum depression may actually be conceptualized as the inability to enter this special state of sensitivity, while perinatal obsessive-compulsive disorder could be viewed as a hyper primary preoccupation and postpartum psychosis as a distorted primary preoccupation.

From maternal to paternal primary preoccupation: A prospective longitudinal study of 82 parents (Leckman et al., 1999) on the course and content of the parental preoccupation showed that it starts towards end of pregnancy and peaks around the time of delivery. Fathers and mothers displayed a similar time course, though the intensity of preoccupation was less in fathers (this maybe well fitted to the fact they need to go back to work and to invest in the external world). Leckman and Mayes (1999) made an interesting link between parental and romantic love with the obsessive-compulsive condition. Furthermore, on the biological level, a link between parental preoccupation and oxytocin secretion has been demonstrated in mothers as well as in fathers (Leckman et al., 2004).

Postpartum period and brain plasticity: The altered mental states associated with this normal hypersensitive period is also a risky time. While many animal studies have shown a distinct neural plasticity of the female brain during pregnancy and postpartum period, an emerging body of research reveals the existence of reproduction-related brain plasticity in human mothers. Hormones and sensory



interactions with the offspring relate to complex structural and functional changes in the various areas implicated in maternal caregiving: areas of reward/ motivation, salience/threat detection, emotion regulation, and social cognition/ empathy (Barbara-Muller et al., 2019). Thus, the pregnant and postpartum mother's brain evolves in ways that promote mother-infant bonding and sensitive caregiving. At the same time, this brain plasticity predisposes the mother-to-be, to peripartum disorders. Sensitive maternal care lies on a U-shaped curve, where both hypo-reactivity (such as in postpartum depression) and hyper-reactivity (such as in postpartum anxiety) to infant cues in the amygdala, are problematic (Young et al.,

Is Perinatal OCD a subtype of Obsessive-Compulsive Disorder?

Perinatal OCD is defined as an obsessivecompulsive disorder that occurs during pregnancy or postnatally, with either new or exacerbated existing OCD. The clinical presentation is characterized by symptoms that orientate around baby and caregiving, but interestingly, the content of the obsessions differs by time of onset. Pregnancy-onset OCD has been more associated with fears of accidentally harming the baby by contamination and related compulsions, while the postnatalonset OCD has been more associated with fears of deliberately harming the baby with avoidance of caregiving tasks and mental rituals (Abramovitz et al., 2003). The prevalence of OCD in the general population is 1.2%, in contrast with OCD 4-9% for prenatal and postpartum OCD (Uguz et al., 2007 a, b, c; McGuinness et al., 2011).

Similarly, Miller and colleagues (2013) studied 461 pregnant women and found that 11% of women screened positive for OCD at 2 weeks postpartum (in contrast to 2-3% in general population). At 6 months, half of them still had persistent symptoms and 5.4% had developed new symptoms. Depression was the most frequent co-morbid diagnosis. The limitation of the study was the lack of antenatal assessment. It is interesting to note that the experience of intrusive thoughts of deliberate or accidental harm occurs in 80% of the general population of parents and even more commonly in new parents (Fairbrother et al., 2008). These thoughts are usually easily dismissed, in contrast with parents with OCD who do not get rid of them and become highly preoccupied and distressed. All this data may suggest that the Primary Parental Preoccupation that is inherent to the transition to parenthood, increases the risk for the development of OCD.

Several retrospective studies have reported a significant rate of perinatal onset of OCD between 15 and 30 % (Forray et al., 2010; Neziroglu et al., 2010), raising the possibility of a "hormone related" subtype of OCD. Women with pregnancy-onset OCD or perinatal worsening of preexisting OCD are more likely to experience premenstrual exacerbation of their OCD symptoms as compared to those women with symptoms that are unaffected by pregnancy. This link would be similar to the one found between premenstrual depressive disorder and increased risk for postpartum depression (Bloch et al., 2005). A prospective longitudinal study (Chaudron et al., 2010) of 44 women recruited at a gynecological clinic found that the majority of women diagnosed with OCD in pregnancy (29%) had: longstanding symptoms since childhood; and their symptoms increased in intensity postpartum, though did not change in character. An interaction between gonadal steroids, serotonin, and oxytocin has been hypothesized by the authors.

Postpartum Paternal **Psychopathology**

Paternal mental health is still a neglected topic in the child development research and clinical literature in spite of the increasing involvement of fathers into the parenting roles (due to several societal changing phenomenon such as women's increasing role in the work force, single gender families, and more) and in spite of what we know about the unique role of fathers in child development. Such as, father involvement and secure attachment has been linked with positive mental and physical health outcomes that persist into adulthood (Cabrera et al., 2000; Flouri et al., 2003; Wilson et al., 2010; Martin et al., 2007). Just in a mother's case, a father's mental health problem can be present before or at entry into parenthood. Entry into parenthood is a challenging developmental task as it involves multilevel changes (personal, marital, social and financial) with a risk of mental health problems in men as well as in women (Wonch et al., 2016). Although father mental health has been rarely examined in comparison to mothers, most studies have been on postpartum and subsequent paternal depression. It occurs in 10% of men (as compared to 5% rate of depression among men in general) during the first postpartum year, the peak being between 3 to 6 months (The 1:2 male to female ratio is kept as some 22% of mothers have postpartum depression (PPD)).

Several key factors have been identified that contribute to paternal depression, including: maternal PPD (Paulson et al., 2010), past history of depression, and the difficulty to express their depression and to ask for help, with a tendency to engage in avoidant, escape, or numbing behaviors (aggression, addiction, suicide). Although many men experience psychological distress in the perinatal period, they may question the legitimacy of their experiences, foregrounding their partner's needs. There is a lack of resources that are tailored specifically to men's information and preparing to become fathers. Fathers tend to manage stress through distraction, denial, and release (Brownhill et al., 2005).

With similar effect sizes to the impact of maternal depression, paternal depression (Wilson et al., 2010) has been associated with maladaptive parenting behaviors toward children, including: increased negative parenting (control, hostility, intrusiveness), decreased positive parenting behaviors (affection, positive involvement, supportiveness), and negative child outcomes, such as internalizing and externalizing problematic behaviors at 3 and 7 years (after controlling

for maternal depression) (Hanington et al., 2012; Ramchandani et al., 2005, 2008, 2011; Connell et al., 2002). Although depression and anxiety are highly comorbid, few studies have examined the impact of paternal anxiety compared to paternal depression. Fathers are at the same risk (21%) as mothers (24%) to experience depression and anxiety during pregnancy, post-partum, and after (Luoma et al., 2013) and both maternal and paternal factors predict high paternal symptoms; infant factors do not. Low social support and poor marital quality are risk factors for both fathers and mothers, more than the direct stress linked with the infant's condition (Zelkowitz et al., 2007). The inclusion of anxiety disorders in diagnostic interviews have substantially increased the rate of detected paternal postpartum mental illness (Matthey et al., 2003). Paternal anxiety is associated with overinvolvement and overcontrolling behaviors and these have been linked with both internalizing and externalizing child symptoms (Cimino et al., 2015; Breaux et al., 2014).

Paternal obsessive-compulsive disorder (OCD) is the most under-researched of the paternal mental health disorders (Fisher, 2017; Misri, 2018). Abramowitz et al. (2001) was the first to report four cases of paternal postpartum OCD, and found it very similar to maternal postpartum OCD, even though men do not experience the same postpartum hormonal fluctuations as female. Coelho et al. (2014) conducted a follow-up study to describe prevalence rates and correlates of OCD in fathers in the third trimester of pregnancy and in the first 2 months postpartum. The prevalence of OCD was 3.4% in the third trimester of pregnancy and 1.8% in the postpartum period. Most postpartum cases were of new onset (92.3%).

Of interest, OCD in fathers was significantly associated with OCD in mothers, both during pregnancy and in the postpartum period (Coelho et al., 2014). These figures definitely show the need to actively look for perinatal disorders among fathers, and not only among mothers, as fathers tend to restrain from disclosing their distress and to look for help (O'Brien et al., 2016).

The impact of perinatal OCD on parent and child

Untreated perinatal OCD has been associated (Gezginc et al., 2008) with poor quality of life, impaired physical health, impaired social, marital, and parent-child relationships. The impact of parental anxiety, depression, bipolar disorders, eating disorders, and schizophrenia on the infant have been studied, but parental OCD has received much less clinical and

research attention (House et al., 2016). Weinberg and Tronick (1998) studied infants of parents with OCD, depression, or panic disorder, and found compromised mother-infant interactions in all the three groups. To our best knowledge, there are no other studies among infants of parents with OCD. In contrast, among children and adolescents, Griffiths et al. (2012) conducted semi-structured interviews of ten 13-19 years old who had one parent with OCD and found recurrent themes. Having a parent with OCD meant living in a highly controlled home environment, with frequent arguments, social isolation, a negative impact on schooling, assuming aspects of the parenting role, and participating in their parent's rituals.

Clinical vignettes

A 5-month-old baby was referred to our community-based infant mental health clinic by the mother's psychiatrist who treats her for a severe OCD. The main concern regarding the infant was, on one hand, an extreme passivity and slow motor development, and on the other hand, the mother's compulsive need to stimulate him from fear that he would "get bored". O. is the only child of his mother, 35 years old, and his father, 27 years old. Mother's OCD started in her twenties but significantly worsened during pregnancy. She is also diagnosed with borderline personality traits and eating disorder (mixed periods of binge eating and fasting). She is also described as having a tendency to use her OCD symptoms as an excuse for problematic behaviors at work and at home. Since O's birth, she does not let the father get involved in the baby's care because "only mothers know how to do it", and the marital relationship has become very tense. Mother's own mother was intrusive and forced her to eat. O's father is withdrawn, sad and helpless, does not contradict his wife so as to avoid stormy fights. His wife's obsessive-compulsive disorders, reminds him of his father's; he himself is diagnosed

with ADHD and overeating. The observation of her interaction with O. reveals an extremely intrusive pattern of over stimulation and hypervigilance, as if danger is all around. She argues endlessly about the room temperature being either too high or too low for O. Even when the baby drinks from the bottle, she feels an urge to show him toys "so he does not get bored". O. is a very quiet baby, stays still on the carpet, but is attentive and makes good eye contact. Baby does not try to reach toys but grasps them when handled. The treatment plan includes CBT and psychiatric follow up for the mother, and triadic interactive guidance at our clinic. Parents are well aware of the changes that need to be done, but by the first 6 months of treatment, no changes are achieved, O. starts to show signs of motor delay and mother finally says "I am not sure I really want to get rid of my OCD, it often helps me to get things the way I want them to be". Under the threat of involving the Child Protection Services, the mother agrees to have O. start day care (a move the father wanted very much), but they stopped coming to the Unit and mother did not comply with her CBT treatment. Four months later, mother calls and asks for renewing the treatment process, as she and her husband are having a hard time to say "no" to O. (now a year and half old), and to give him autonomy in eating.

This case illustrates the potentially very detrimental impact of perinatal OCD on parenting. The mother's chronic OCD changed its nature with entry into motherhood: it became a "relational" OCD. Its ego-syntonic quality makes it very challenging to treat and requires close collaboration between the adult psychiatrist and the child psychiatrist, each with his/her own lens.

Y.,2 years and 8 months, was referred to our IMH clinic for aggressive behaviors at home and at kindergarten, together with separation anxiety. Mother had just delivered her third child. Y. is the second one. His aggressive behavior was first interpreted by us as being an adjustment reaction to the birth of his baby brother. Father was very reluctant to come to the clinic as he explained: "my wife is the one who deals with the kids, I am at work most of the day". Hence, the treatment started as a dyadic interactional guidance and was aimed at increasing the mother's reflective functioning. During one of the sessions, Mother revealed that her husband has often severe anger outbursts at her not being "efficient enough" at doing all the home and caregiving chores. As it became obvious that part of the problem was around the parents' co-parenting alliance, we persisted in trying to reach out the father. He finally agreed to come, as the marital tension raised, and mother started to threaten she would divorce him. Only then, the father's severe, chronic and untreated OCD with periods of depression was disclosed. Entry to parenthood had exacerbated his OCD as he described "my wife and kids make mess all the time, I come back from work tired and I cannot stand the mess, I am angry most of the time, especially at Y's behavior". He confessed he would often lose his temper and become aggressive.... like Y. Treatment became triadic, father agreed to have a CBT treatment for himself, and Y's symptoms almost disappeared.

As this second case illustrates, the impact of paternal OCD on the child is as significant as the impact of maternal OCD.

Conclusion

Perinatal OCD is still a hidden problem with long term consequences on parenting. Challacombe & Wroe (2013) have described how perinatal OCD is often misdiagnosed due to several barriers to detection, including: the shame of disclosing the intrusive thoughts and compulsions; and the fear of being misunderstood and judged as a potentially harmful parent. Postnatal depression diagnosis is often given, instead of perinatal OCD. In severe cases, perinatal OCD can be misdiagnosed as postpartum psychosis. Last but not least is the need to be aware of the prevalence of postpartum psychopathology among fathers, to detect it and treat it early in order to prevent maladaptive paternal behaviors towards the child.

References

- Abramowitz, J., Moore, K., Carmin, C., Wiegartz, P. S., & Purdon, C. (2001). Acute onset of obsessive-compulsive disorder in males following childbirth. *Psychosomatics*, 42(5), 429-431
- Barbara-Muller, E., Craddock, S., Carmona, S. & Hoekzema, E. (2019). Brain plasticity in pregnancy and the postpartum period: links to maternal caregiving and mental health. *Arch Womens Ment Health*, 22:289-299.
- Bloch, M., Rotenberg, N., Koren, D., & Klein, E. (2005). Risk factors associated with the development of postpartum mood disorders. *J Affect Dis*, 88, 9–18.
- Breaux, R. P., Harvey, E.A., & Lugo-Candelas, C. I. (2014). The role of parent psychopathology in the development of preschool children with behavior problems. *J Clin Child Adolesc Psychol.*, 43, 777-790.
- Brownhill, S., Wilheilm, K., Barclay, L., & Schmied, V. (2005). "Big build": Hidden depression in men. *Australian & New Zealand J Psychiat*, 39, 921-931.
- Cabrera, N. J., Tamis-LeMonda, C. S., Bradley, R. H., Hofferth, S., & Lamb, M. E. (2000). Fatherhood in the twenty-first century. *Child Dev*, 71, 127-136.
- Challacombe, F. L., & Wroe, A. L. (2013). A hidden problem: consequences of the misdiagnosis of perinatal OCD. *Br J Gen Pract*, 63: 275-76.
- Chaudron, L. H., & Nirodi, N. (2010). The obsessive-compulsive spectrum in the perinatal period: a prospective pilot study. *Arch Womens Ment Health*, 13:403-410.

- Cimino, S., Cerniglia, L., & Paciello, M. (2015). Mothers with depression, anxiety, or eating disorders; outcomes on their children and the role of paternal psychological profiles. *Child Psychiatr Hum Dev*, 46, 228-236.
- Coelho, F. M., Silva, R. A. D., Quevedo, L. D. Á., Souza, L. D., Pinheiro, K. A., & Pinheiro, R. T. (2014). Obsessivecompulsive disorder in fathers during pregnancy and postpartum. *Brazilian J Psychiatr*, 36(3), 272-272.
- Connell, A. M. & Goodman, S. H. (2002). (2002). The association between psychopathology in fathers versus mothers and children's internalizing and externalizing behavior problems: a metanalysis. *Psychol Bull.*, 128, 746-773.
- Fairbrother, N., & Abramowitz, J. S. (2007). New parenthood as a risk factor for the development of obsessional problems. *Behav Res Ther.*, 45, 2155–2163.
- Fairbrother, N., & Woody, S. R. (2008). New mothers' thoughts of harm related to the newborn. *Arch Wom Ment Health*, 11, 221–229.
- Fisher, S. D. (2017). Paternal mental health: why is it relevant? *Am J of Lifestyle Med*, 11(3), 200-211.
- Flouri, E. & Buchanan, A. (2003). The role of father's involvement in children's later mental health. *J Adoles*, 26, 63-78.
- Forray, A., Focsensunu, M., Pittman, B., McDougle, C. J., & Epperson, C. N. (2010). Onset and exacerbation of OCD in pregnancy and the postpartum period. *J Clin Psychiatry*, 71:1061-1068.
- Gezginc, K., Uguz, F., Karatayli, S., Zeytinci, E., Aşkin, R., Güler, O., Sahin, F., et al. (2008). The impact of obsessive-compulsive disorder in pregnancy on quality of life. *Internat J Psychiatry Clinic Practice*, 12, 134-137.
- Griffiths, J., Norris, E., Stallard, P. & Matthews, S. (2012). Living with parents with obsessive-compulsive disorder: children's lives and experiences. *Psychol Psychoter*, 85, 68-82.
- Hanington, L., Heron, J., Stein, A. & Ramchandani, P. (2012). Parental depression and child outcomes -I smarital conflict the missing link. *Child Care Health Dev*, 38, 520-529.
- House, S. J., Tripathi, S. P., Knight, B. T, Morris, N., Newport, D. J. & Stowe, Z. N. (2016). OCD in pregnancy and the postpartum period: course of illness and obstetrical outcome. *Arch Women's Ment Health*, 19, 3-10.

- Leckman, J. F. & Mayes, L. C. (1999).

 Preoccupations and behaviors
 associated with romantic and parental
 love. Perspectives on the origin of
 obsessive-compulsive disorder. *Child Adol Psych Cl*, 8, 635–65.
- Leckman, J. F., Mayes, L. C., Feldman, R., Evans, D. W., King, R.A. & Cohen, D. J. (1999). Early parental preoccupations and behaviors and their possible relationship to the symptoms of OCD. *Acta Psychiat Scand*, 100:1-26.
- Leckman, J. F., Feldman, R., Swain, J. E., Eicher, V., Thompson, N., & Mayes, L. C. (2004). Primary Parental Preoccupation: Circuits, Genes, and the Crucial Role of the Environment. *J. Neural Transmission*, 111:753-771.
- Luoma, I., Puura, K., Mantymaa, M., Latva, R., Salmelin, R. & Tamminen T. (2013). Fathers' postnatal depressive and anxiety symptoms: an exploration of links with paternal, maternal, infant and family factors. *Nord J Psychiatry*, 67, 407-413.
- Matthey, S., Barnett, B., Howie, P. & Kavanagh, D. J. (2003). Diagnosing postpartum depression in mothers and fathers: Whatever happened to anxiety? *J Affect Dis*, 74, 139-147.
- Martin, L. T., McNamara, M. J., Milot, A. S., Halle, T. & Hair, E. C. (2007). The effects of father involvement during pregnancy on receipt of prenatal care and maternal smoking. *Matern Child Health J*, 11, 595-602.
- Martin, L. A., Neighbors, H. W. & Griffith, D. M. (2013). The experience of symptoms of depression in men versus women: analysis of the National Comorbidity Survey Replication. *JAMA Psychiatry*, 70, 1100-1106.
- McGuinness, M., Blissett, J., & Jones, C. (2011). OCD in the perinatal period: Is postpartum OCD (ppOCD) a distinct subtype? A review of the literature. *Behav Cogn Psychoth.* 5, 1–26.
- Miller E., Chu, C., Gollan, J. & Gossett, D. R. (2013). Obsessive compulsive symptoms during the postpartum period. *J Reprod Med*, 58: 115-122.
- Misri, S. K. (2018). Obsessive-Compulsive Disorders in New Fathers: Feeling Out of Control. In Paternal Postnatal Psychiatric Illnesses (pp. 81-99). Springer, Cham.
- Murray, L., Halligan, S., & Cooper, P. (2019). Postnatal depression and young children's development. In C.H Jr. Zeanah (Ed.) *Handbook of Infant Mental Health*, 4th edition, New York:

- The Guilford Press. pp. 172-186.
- Munk-Olsen, T., Laursen, T., Tederson, C., et al. (2006). New Parents and mental disorders: a population-based register study. *JAMA*, 296, 2582–2589.
- Neziroglu, F., Anemone, R. & Yaryura-Tobias J. (2010). Onset of obsessivecompulsive disorder in pregnancy. *Am J Psychiatr*, 149, 947–950.
- O'Brien, A. P., McNeil, K. A., Fletcher, R., Conrad, A., Wilson, A. J., Jones, D., & Chan, S. W. (2017). New fathers' perinatal depression and anxiety – Treatment options: An integrative review. *Am J Mens Health*, 11, 863-876.
- Paulson, J. F., & Bazermore, S. D. (2010).

 Prenatal and postpartum depression
 in fathers and its association with
 maternal depression: A meta-analysis. *J Am Med Assoc*, 303, 1961-1969.
- Ramchandani, P. G., O'Connor, T. G., Evans, J., Heron, J., Murray, L., & Stein, A. (2008). The effects of pre-and postnatal depression in fathers: a natural experiment comparing the effects of exposure to depression on offspring. *J Child Psychol Psychiatr*, 49, 1069-1078.
- Ramchandani, P. G., Psychogiou, L., Vlachos, H., Iles, J., Sethna, V., Netsi, E., & Lodder, A. (2011). Paternal depression: An examination of its link with father, child and family functioning in the postnatal period. *Depression and Anxiety*, 28, 471-477.
- Ramchandani, P. G., Stein, A., Evans, J., & O'Connor, T. G. (2005). Paternal depression in the postnatal period and child development: A prospective population study. *Lancet*, 365, 2201-2205.
- Uguz, F., Akman, C., Kaya, N., & Savas Cilli, A. (2007a). Postpartum-onset obsessive–compulsive disorder: incidence, clinical features, and related factors. *J Clin Psychiatry*, 68, 132–138.
- Uguz, F., Gezginc, K., Zeytinci, I. E., Karatayli S., Askin, R., Guler, O., Kir Sahin, F. et al. (2007b). Obsessive– compulsive disorder in pregnant women during the third trimester of pregnancy. Compr Psychiatry, 48, 441–445.
- Uguz, F., Gezginc, K., Zeytinci, I. E., Karatayli, S., Askin, R., Guler, O., Kir Sahin. F. et al. (2007c). Course of obsessive—compulsive disorder during early postpartum period: a prospective analysis of 16 cases. *Compr Psychiatry*, 48, 558–561.
- Weinberg, M. K. & Tronick, E. Z. (1998). The impact of maternal psychiatric illness on infant development. J Clin

- Psychiatry, 59 Suppl 2, 53-61.
- Wilson, S., & Durbin, C. E. (2010). Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review. *Clin Psych Review*, 30, 176-180.
- Winnicott, D. W. (1956). Primary Maternal Preoccupation. In *Collected Papers: Through Paediatrics to Psycho-Analysis*. London: The International Psycho-Analytical Library; 1975. pp. 299–304.
- Wonch, K. E., de Medeiros, C. B., Barrett, J. A., Dudin, A., Cunningham, W. A., et al. (2016). Postpartum depression and brain response to infants: differential amygdala response and connectivity. *Soc Neurosci.* 11, 600–617.
- Yoshida, T., Taga, C., Matsumoto, Y., Fukui, K. (2005). Paternal overprotection in obsessive-compulsive disorder and depression with obsessive traits. *Psychiatr Clin Neurosci.*, 59, 533-538.
- Young, K. S., Parsons, C. E., Stein, A., Vuust, P., Craske, M. G., & Kringelbach, M. L. (2017). The neural basis of responsive caregiving behavior: investigating temporal dynamics within the parental brain. *Behav Brain Res.* 325, 105–116.
- Zeanah, C. H. Jr. (Ed.) (2018). Handbook of Infant Mental Health, 4th edition, New York: The Guilford Press.
- Zelkowitz, P. & Milet, T. H. (1997). Stress and support as related to postpartum paternal mental health and perceptions of the infant. *Infant Ment Health J*, 18, 424-435.