

Maternal Depression and its Consequence for Young Child Development

Nishat F. Rahman^{*}
Sakila Yesmin^{**}

Abstract

Depression is a common mental health problem that contributes significantly to the global burden of disease. Depression among women during and after pregnancy is found to influence developmental outcomes for children. Prevalence of post- and ante-natal depression worldwide is estimated to be 13% and 10%-25%. Depression leads to substantial impairment of individual's ability to take care of his/her everyday responsibilities. Depressed mothers often give birth to neonates who have low birth weight and other health problems which require intensive care for postnatal complications.

Research evidence globally and in Bangladesh shows that as a consequence of maternal depression child development is compromised. In both high and low income countries maternal mental health problem is found to impact on children's temperament, behavior, cognitive performance, academic achievement, physical growth and general wellbeing. Postpartum depression not only influences the infant's development, but its effect can extend into toddlerhood, preschool age and even school age. Studies support the conclusion that behavioral and cognitive delays linked to maternal depression have influence on academic and social outcomes for toddlers and pre-school children.

In Bangladesh depression is not considered as a major health problem yet. However, considering the likely incidence among children, it is imperative to raise awareness and to do advocacy with policy makers. Measures should be taken carefully to help depressed mothers and to reduce negative child outcomes. Many NGOs and government programs are implementing mother and child health programs. In doing so, it is important to identify depressed mothers. By involving mental health professionals (psycho-therapists) it is possible to provide support to the mothers and thereby promote optimum development of children and reduce the possibility of developing behavioral, physical and mental disorders among children. Compared to need, a very limited number of psychologists is available in the country. Private universities should come forward simultaneously with the public universities in developing behavioral science departments from which more graduates and trained mental health professionals would be produced to serve women with mental health problems. Data on

* Assistant Professor, IED-BRAC University.

** Research Associate-III, IED-BRAC University.

depressed mothers and their children's outcome are also scarce. Retrospective research on mothers of those children will provide data on the prevalence of depression and their consequences among Bangladeshi Children. Also follow up studies on depressed mothers and their children will provide more data in this regard. Along with these initiatives, supportive interventions for mothers and children need to be designed to reduce risks for them.

Key words: Maternal depression, Maternal health and child development, Mothers' health and children's early learning.

Depression is a common mental health problem that contributes significantly to the global burden of disease. It affects people all over the world. It is estimated that depression today affects approximately 350 million people of the world. A mental health survey conducted in 17 countries showed that 1 in every 20 people reported an episode of depression in the previous year (WHO 2012). Depression among women during and after pregnancy is found to influence developmental outcomes for children.

1. What is Depression?

According to the Diagnostic and Statistical Manual of Mental Disorders (IV) published by the American Psychiatric Association:

If a person has depressed mood most of the days during a two week period or has markedly diminished interest or pleasure with almost all daily activities, has significant weight loss or weight gain without any change in the diet, suffers from insomnia or hypersomnia, feels restlessness or fatigue, has a feeling of worthlessness, lacks concentration, has recurrent thoughts of death and makes suicidal attempts or plans for suicide, he or she is prone to be depressed. If any five of the symptoms persists during the same two week period and represents a change in the previous functioning, the person will be diagnosed as having depression. (American Psychiatric Association, 1994)

However these symptoms cannot be caused by substance dependence, or due to general medical condition or bereavement. Based on the number and the severity of symptoms, a depression can be diagnosed as mild, moderate, or severe depression.

2. Prevalence of Depression

Depressive disorder may start at a very young age and it may recur. Depression is more common in women than men. The prevalence is almost 50% higher in women than men (WHO 2008). Women are more prone to develop depression during the postnatal period (Cox et. al., 1993). The prevalence rate of ante-partum depression is about 10-25% among women (Anderson, Sundstrom-Poromaa, Wulff, Astrom & Bixo, 2003, 2004; De Tychey et al., 2005; Marcus, Flynn, Blow & Barry, 2004; Stowe, Hostetter, & Newport, 2005). On the other hand the prevalence of postpartum depression is approximately 13% (O'Hara & Swain, 1996). Additionally antenatal depression is found to be one of the best predictors of postnatal depression (Lee & Chung, 2007; Beck, 2001).

3. Effect of Maternal Depression

Depression leads to substantial impairment of individual's ability to take care of his/her everyday responsibilities. Individual may commit suicide in severe cases. Antenatal depression increases in severity from the first to the second trimester (Hoffman & Hatch, 2000). Depression during antenatal period negatively affects fetal development and neonatal outcome (Anderson, Sundstrom-Poromaa, Wulff, Astrom & Bixo, 2003, 2004; De Tychey et al., 2005; Marcus, Flynn, Blow & Barry, 2004; Stowe, Hostetter, & Newport, 2005). Based on the severity, antepartum depression is found to be associated with higher rate of placental abnormalities (Jablesky, Morgan, Zubrick, Bower & Yellachich, 2005), preeclampsia (Kurki, Hiilesmaa, Raitasalo, Mattila & Ylikorkala, 2000) spontaneous abortion (Nakano et al., 2004; Sugiura-Ogasawara et al., 2002) and premature delivery (Jesse, Seaver, Wallace, 2003; Moncuso, Schetter, Rini, Roesch & Hobel, 2004; Orr, James & Blackmore Prince 2002).

Depressed mothers often give birth to neonates who require intensive care for postnatal complications including bronchopulmonary dysplasia and intraventricular hemorrhage (Chung, Lau, Yip, Chlu & Lee, 2001). Neonates of depressed mothers are also at a greater risk of having low birth weight (<2500 g) and of small gestational age (<10th percentile) (Field et al., 2004; Hoffman & Hatch, 2000), which is a leading cause of fetal morbidity and mortality (National Center for Health Statistics, 2004). Approximately 20% of low birth weight infants experience fetal growth retardation (Bernstein & Gabbe, 1996).

In a study infants of depressed mothers were studied shortly after birth using the Brazelton neonatal behavior (N= 36). It was found the neonates received inferior orientation and motor scores, and they showed more irritability and less activity, robustness and endurance during the assessment (Abrams et al., 1995). Such behavior may persist long which may have an effect on mother child interaction. It was mentioned above that ante-partum depression is associated with postpartum depression.

A report by Wachs et. al. (2009) on maternal depression, a global threat to children's health, development and behavior and to human rights showed the consequence to children of depressed mothers living in the middle and low income countries. Several articles of the Convention on the Rights of the Child (CRC) such as Articles 2 and 27 emphasize government responsibility to support children's physical, mental, spiritual, moral and social development (CRC, 2002). Various studies showed that maternal depression is associated to children perceived to have a difficult temperament (Galler et al, 2004), behavioral problems, (Josefsson and Sydsjo, 2007), childhood depression (Galler et. al., 2000 and Patel, Desouza & Rodrigues, 2003), cognitive delay (Patel et al., 2003; Black et al., 2007; Galler et al., 2006), motor delay (2007), low academic achievement (Salt et al., 1988 and Galler et al., 2004), under nutrition, stunting, diarrhea (Rahman et al., 2004a, Rahman et al., 2004b and Rahman et al., 2007), and problems in breastfeeding (Patel et al., 2002; Flaceto et al., 2004; Galler et al., 2006).

Mothers remaining depressed are unable to take care of their children. A systematic review of studies found that for about 30% of women with postnatal depression, the symptoms persisted for up to a year after birth (Goodman, 2004). In low income countries considering the complexity of life stress, a much higher percentage is likely. A study by Rahman (2007) in low income countries showed the persistence rate may be up to 56% in the first year.

Several studies found that when the mothers are depressed it affects parental responsiveness contributing to negative consequences for birth weight, nutrition, cognitive development, behavior and mother-infant relationship (Patel et al. , 2004; Harpham et al, 2005; Wachs et al., 2009; Black et al., 2007, Nasreen et al., 2010, Edbhorg et al., 2011).

A study conducted in Bangladesh found 33% prevalence rate of ante-partum depressive symptoms (Gausia et al., 2009). Another study conducted by Nasreen et al in 2011 found 18% prevalence of Antepartum depressive symptoms and 29% of ante-partum anxiety symptoms in rural Bangladesh. Both the studies found that the depressive symptoms are associated with lower educational background, poor relationship with the partners, physical violence, forced sex, lower socio economic status, lack of support from husband and his family and preference for male child.

From the above discussion it is clear that as a consequence of depression child development is compromised. In both high and low income countries maternal mental health problem is found to impact on children's temperament, behavior, cognitive performance and academic achievement, physical growth and general wellbeing (Wachs, et al., 2009; WHO, 2008; Rutter & Quinton, 1984; Welner & Rice, 1988; Kaplan, et al., 1987). Thus it is very important to provide necessary support to mothers suffering from depression.

4. Effect of Maternal Depression on toddlers' and preschoolers' learning and development

Postpartum depression not only influences infant's development, but its effect can extend into toddlerhood, preschool age and even school age. Depressed mothers are generally less attentive and show less responsiveness to their children. They are also found to be poor models in controlling and regulating negative moods and emotional environment and solving problems arising from these satiations. A longitudinal study by Kochanska, et.al. in 1987 compared the behaviors of depressed and non-depressed mothers, and the outcomes for their children. They found that depressed mothers were less likely to set limits on their children and to follow through if they did set limits. Another study by Kuczynski, et al. (1990) found that the children of depressed mothers appeared more passively noncompliant, with less mature expressions of age-appropriate autonomy. They were also found more likely to respond negatively to friendly approaches, more likely to engage in low-level physical play and less likely to engage in individual creative play than control children (Murry et al, 1999).

Children of depressed mothers were also found to have poor cognitive functioning in several large sample studies because of early experience with insensitive maternal interactions, as in maternal postpartum depression (Murry et al, 1996). Other aspects of cognitive development, such as cognitive-linguistic functioning were found to be negatively affected (NICHD, 1999), and were also deficient on the perceptual and performance scale (Cogill et al., 1986).

A longitudinal study on Australian children (4-5 yr old and 6-7 yr old) found maternal postnatal depression to be a significant predictor of attention deficit hyperactivity disorder (ADHD) (Sciberras, Ukoumunne, & Efron, 2011). These studies support the conclusion that behavioral and cognitive delays linked to maternal depression have influence on academic and social outcomes for toddlers and pre-school children.

5. Management of depression

Depression can be clinically diagnosed and can be treated with antidepressant and psycho-social support such as cognitive behavior therapy, interpersonal psychotherapy or problem-solving treatment. Antidepressants can be a very effective form of treatment for moderate to severe depression but are not appropriate for cases of mild or sub-threshold depression. Psycho-social support is suggested in these cases. However in Bangladesh a few public universities are producing a limited number of mental health professionals (psycho-therapist). No private university is offering specialized courses like clinical psychology or counseling. In comparison to the need of the country the number of professionals is severely insufficient.

6. What can be done?

In Bangladesh depression is not considered as one of the major health problems yet. However considering the incidence of problems among children it is imperative to raise awareness and to do advocacy with policy makers. Measures should be considered and implemented carefully to help depressed mothers and to reduce negative child outcomes.

In order to receive support from the family before and after the childbirth, it is very important to educate the husbands and the other family members. Therefore, parenting programs including father involvement programs are very important. At present a few NGOs are implementing parenting programs. Interventions for fathers are almost non-existent. Early screening programs for children of depressed mothers help to identify the disability and disorders among children so that early intervention can be offered to those children for better outcome.

Many NGOs and government programs are implementing mother and child health programs. In doing so, it is important to identify depressed mothers. By involving mental health professionals (psycho-therapists), it is possible to provide support to the mothers and thereby promote optimum development of children and reduce the possibility of developing behavioral, physical and mental disorders among children.

Compared to need, a very limited number of psychologists are available. Private universities should come forward simultaneously with the public universities in developing behavioral science departments from which more graduates and trained mental health professionals would be produced to serve women with mental health problems.

A very small number of hospitals in Bangladesh offer specialized support to children in identifying behavioral and intellectual problems, learning disabilities and attention deficit hyperactivity disorder, etc. Data on depressed mothers and their children's outcome are also scarce. Retrospective research on mothers of those children will provide data on the prevalence of depression and their consequences among Bangladeshi Children. Also follow up studies on depressed mothers and their children will provide more data in this regard. Along with these initiatives, supportive interventions for mothers and children need to be designed to reduce risks for them.

Early identification of children with behavioral and cognitive delay is necessary. ADHD has negative influence on children's academic performance. Therefore proper management of this problem is necessary involving a combination of medications, behavior therapy, lifestyle changes, and counseling.

Medications are recommended for children who have severe symptoms. Medication can also be considered for children with moderate ADHD symptoms who refuse psychotherapeutic options or fail to respond to psychotherapeutic input (NIHC, 2008). Children with cognitive deficits need to be identified and supportive measures and need-based educational approaches have to be adopted for these children. Otherwise they become vulnerable to school dropout or failure. Proper management support for these children bringing together school and parents is very important. Especially necessary is the counseling of the parents. Teachers should be skilled and experienced in handling children with developmental delays. These children have to be systematically and carefully observed. Any progress or deterioration of the child has to be monitored and responses adjusted accordingly.

Reference

- Abrams, S. M., Field, T., Scafidi, F., & Prodromidis, M. (1995). Newborns of depressed mothers. *Infant Mental Health Journal*, 16, 233–239.
- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders*. Fourth Edition. APA.
- Anderson, L., Sundstrom-Poromaa, I., Wulff, M., Astrom, M., & Bixo, M. (2003). Point prevalence of psychiatric disorders during the second trimester of pregnancy: a population-based study. *American Journal of Obstetric Gynecology*, 189, 148–154.
- Anderson, L., Sundstrom-Poromaa, I., Wulff, M., Astrom, M., & Bixo, M. (2004). Implications of antenatal depression and anxiety for obstetric outcome. *Obstetric Gynecology*, 104, 467–476.

- Anonymous. (n.d.). Major Depressive Episodes retrieved on March 21, 2013 at <http://www.mental-health-today.com/dep/dsm.htm>
- Beck CT (2001). Predictors of Postpartum Depression: an update. *Nursing Research*, 50(5): 275-85.
- Bernstein, I., & Gabbe, S. G. (1996). Intrauterine growth restriction. In S. G. Gabbe, J. R. Niebyl, J. L. Simpson, & G. J. Annas, et al. (Eds.), *Obstetrics: normal and problem pregnancies* (3rd ed., pp. 863–886). New York: Churchill Livingstone.
- Black MM., Baqui AH., Zaman K., McNary SW., Le K., Arifeen SE., Hamadani JD., Parveen M., Yunus M., Black RE. (2007). Depressive symptoms among rural Bangladeshi Mothers: implications for infant development. *Journal of Child Psychology and Psychiatry*; 48:764–72.
- Chung, T. K., Lau, T. K., Yip, A. S., Chiu, H. F., & Lee, D. T. (2001). Antepartum depressive symptomatology is associated with adverse obstetric and neonatal outcomes. *Psychosomatic Medicine*, 63(5), 830–834.
- Convention on the Rights of the Child. (2002). *A world fit for Children*. New York: UNICEF.
- Cox JL., Murray D., Chapman G.(1993). A controlled study of the onset, duration and prevalence of postnatal depression. *British Journal of Psychiatry*;163:27-31
- De Tychey, C., Spitz, E., Briancon, S., Lighezzolo, J., Girvan, F., Rosati, A., Thockler, A., & Vincent, S. (2005). Pre- and postnatal depression and coping: a comparative approach. *Journal of Affect Disorders*, 85, 323–326.
- Edhborg M., Nasreen HE., Kabir NZ. (2011). Impact of postpartum depressive and anxiety symptoms on mothers' emotional tie to their infants 2-3 months postpartum: a population-based study from rural Bangladesh. *Archive of Women's Mental Health*; 4(4):307-16.
- Falceto, O., Giugliani, E., & Fernandes, C. (2004). Influence of parental mental health on early termination of breast-feeding: A case-control study. *Journal of the American Board of Family Practice*, 17, 173–183.
- Field, T., Diego, M., Dieter, J., Hernandez-Reif, M., Schanberg, S., Kuhn, C., et al. (2004). Prenatal depression effects on the fetus and the newborn. *Infant Behavior and Development*, 27, 216–229.
- Galler, J., Harrison, R., Ramsey, F., Forde, V., & Butler, S. C. (2000). Maternal depressive symptoms affect infant cognitive development in Barbados. *Journal of Child Psychology and Psychiatry*, 41, 747–757.
- Galler, J., Harrison, R., Ramsey, F., Butler, S., & Forde, V. (2004). Postpartum maternal mood, feeding practices, and infant temperament in Barbados. *Infant Behavior and Development*, 27, 267–287.
- Galler, J., Harrison, R., Ramsey, F., Chawla, S., & Taylor, J. (2006). Postpartum feeding attitudes, maternal depression, and breast-feeding in Barbados. *Infant Behavior & Development*, 29, 189–203.
- Gausia K., Fisher C., Ali M., Oosthuizen J. (2009). Magnitude and contributory factors of postnatal depression: a community-based cohort study from a rural sub district of Bangladesh. *Psychological Medicine*; 39:999–1007. doi:10.1017/S00033291708004455
- Goodman, J. (2004). Postpartum depression beyond the early postpartum period. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 33, 410–420.

- Harpham T., Huttly S., De Silva MJ., Abramsky T. (2005). Maternal mental health and child nutritional status in four developing countries. *Journal of Epidemiological Community Health*; 59:1060–1064
- Hoffman, S., & Hatch, M. C. (2000). Depressive symptomatology during pregnancy: evidence for an association with decreased fetal growth in pregnancies of lower social class women. *Health Psychology*, 19(6), 535–543.
- Jablesky, A. V., Morgan, V., Zubrick, S. R., Bower, C., & Yellachich, L. A. (2005). Pregnancy, delivery, and neonatal complications in a population cohort of women with schizophrenia and major affective disorders. *American Journal of Psychiatry*, 162, 79–91.
- Jesse, D. E., Seaver, W., & Wallace, D. C. (2003). Maternal psychosocial risks predict preterm birth in a group of women from Appalachia. *Midwifery*, 19, 191–202.
- Kaplan BJ., Beardslee WR., Keller MB. (1987). Intellectual competence in children of depressed parents. *Journal of Clinical Child Psychology*; 16:158-163.
- Kochanska G, Kuczynski L, Radke-Yarrow M, Welsh JD. (1987). Resolutions of control episodes between well and affectively ill mothers and their young children. *Journal of Abnormal Child Psychology*. 15:441–56.
- Kuczynski L, Kochanska G. (1990). Development of children's non-compliance strategies from toddlerhood to age 5. *Developmental Psychology*. 26:398–408
- Kurki, T., Hiilesmaa, V., Raitasalo, R., Mattila, H., & Ylikorkala, O. (2000). Depression and anxiety in early pregnancy and risk for preeclampsia. *Obstetrics and Gynecology*, 95, 487–490.
- Lee DT., & Chung TK. (2007). Postnatal Depression: an update. *Best Practices of Research on Clinical Obstetric and Gynecology*; 21(2):183-91
- Marcus, S. M., Flynn, H. A., Blow, F. C., & Barry, K. L. (2004). Depressive symptoms among pregnant women screened in obstetrics settings. *Women's Health*, 12, 373–380.
- Moncuso, R. A., Schetter, C. D., Rini, C. M., Roesch, S. C., & Hobel, C. J. (2004). Maternal prenatal anxiety and corticotropin-releasing hormone associated with timing of delivery. *Psychosomatic Medicine*, 66(5), 762–769.
- Murray L, Hipwell A, Hooper R, Stein A, Cooper P. (1996). The cognitive development of 5-year-old children of postnatally depressed mothers. *Journal of Child Psychology and Psychiatry*. 37:927–35.
- Murray L, Sinclair D, Cooper P, Ducournau P, Turner P, Stein A. (1999) The socioemotional development of 5-year-old children of postnatally depressed mothers. *Journal of Child Psychology and Psychiatry*. 40:1259–71.
- Nakano, Y., Oshima, M., Sugiura-Ogasawara, M., Aoki, K., Kitamura, T., & Furukawa, T. A. (2004). Psychosocial predictors of successful delivery after unexplained recurrent spontaneous abortions: a cohort study. *Acta Psychiatrica Scandinavica*, 109, 440–446.
- Nasreen HE, Kabir NZ, Forsel Y, Edhborg M. (2010) Low birth weight in offspring of women with depression and anxiety symptoms during pregnancy: result from a population based study in Bangladesh. *BMC Public Health*, 1-9.

- Nasreen HE., Kabir NZ., Forsel Y., Edhborg M. (2011). Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: A population based study in rural Bangladesh. *BMC Women's Health*; 1-9
- National Institute for Health and Clinical Excellence (2008). "CG72 Attention deficit hyperactivity disorder (ADHD): full guideline." PubMed - indexed for MEDLINE 21468666.
- NICHD Early Child Care Research Network Chronicity of maternal depressive symptoms, maternal sensitivity, and child functioning at 36 months. *Dev Psychol.* 1999;35:1297–310.
- O' Hara M. and Swain, A. (1996). Rates and Risk of Postpartum depression- ameta analysis. *International Review of Psychiatry*, 8:37-54
- Orr, S. T., James, S. A., & Blackmore Prince, C. (2002). Maternal prenatal depressive symptoms and spontaneous preterm births among African–American women in Baltimore, Maryland. *American Journal of Epidemiology*, 156, 797–802.
- Patel, V., Rodrigues, M., & DeSouza, N. (2002). Gender, poverty, and postnatal depression: A study of mothers in Goa, India. *American Journal of Psychiatry*, 159, 43–47.
- Patel V., Rahman A., Jacob KS., Hughes M. (2004). Effect of maternal mental health on infant growth in low income countries: new evidence from South Asia. *BMJ*;328:820–823.
- Rahman, A., Iqbal, Z., & Harrington, R. (2007). Life events, social support and depression in childbirth: Perspectives from a rural community in the developing world. *Psychological Medicine*, 33, 1161–1167.
- Rahman, A., Iqbal, Z., Bunn, J., Lovel, H., & Harrington, R. (2004 a). Impact of maternal depression on infant nutritional status and illness. *Archives of General Psychiatry*, 61, 946–952.
- Rahman, A., Lovel, H., Bunn, J., Iqbal, Z., & Harrington, R. (2004 b). Mothers' mental health and infant growth: A case-control study from Rawalpindi, Pakistan. *Child Care, Health and Development*, 30, 21–27.
- Rahman A., & Creed F. (2007). Outcome of prenatal depression and risk factors associated with persistence in the first postnatal year: Prospective study from Rawalpindi, Pakistan'. *Journal of Affective Disorders*; vol 100 pp 115-121
- Rutter, M., & Quinton D. (1984). Parental psychiatric disorder: Effects on children. *Psychological Medicine*, 1984, 14:853-880.
- Salt, P., Galler, J., & Ramsey, F. (1988). The influence of early malnutrition on subsequent behavioral development. VII. The effects of maternal depressive symptoms. *Developmental and Behavioral Pediatrics*, 9, 1–5.
- Sciberras, E., Ukoumunne, O.C., & Efron, D. (2011). Predictors of parent-reported attention-deficit/hyperactivity disorder in children aged 6-7 years: a national longitudinal study. *J Abnorm Child Psychol.* Oct;39(7):1025-34.
- Sugiura-Ogasawara, M., Furukawa, T. A., Nakano, Y., Hori, S., Aoki, K., & Kitamura, T. (2002). Depression as a potential causal factor in subsequent miscarriage in recurrent spontaneous aborters. *Human Reproduction*, 17, 2580–2584.

- Stowe, Z. N., Hostetter, A. L., & Newport, D. J. (2005). The onset of postpartum depression: implications for clinical screening obstetrical and primary care. *American Journal of Obstetric Gynecology*, 192, 522–526.
- Wachs TD., Black MM., Engle PL. (2009). Maternal Depression: A Global Threat to Children's Health, Development, and Behavior and to Human Rights. *Child Development Perspectives*; Vol. 3, Issue 1, pages 51-59
- Welner Z., Rice J.(1988). School aged children of depressed parents: A blind and controlled study. *Journal of Affective Disorders*; 15:291-302.
- World Health Organization. (2008). Maternal Mental Health and Child Health and Development in low and middle income countries: Report of the meeting held in Geneva , Switzerland. p 1-11
- World Health Organization (2008) The Global Burden of Disease 2004 update. Retrieved June 30, 2012 from http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf
- World Health Organization. (2012) World suicide prevention day . Retrieved on June 16, 2012 at http://www.who.int/mediacentre/events/annual/world_suicide_prevention_day/en/pdf