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Role of maternal mental health on child growth and development

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ABSTRACT

Mental health problems of pregnant women and mothers of newborns is a serious but under-recognized public health problem, making a substantial contribution to maternal and infant morbidity and mortality in India. Poor maternal mental health affects the growth and development of children. For instance, maternal depression in the prenatal and postnatal periods predicts poor growth and higher risk of diarrhoea in infants, which reduces child survival. Early treatment of prenatal and postnatal maternal mental health problems would benefit the infant's physical health and development. Attention to the psychosocial and emotional needs of infants is crucial for optimal physical, cognitive, emotional, behavioral and social development of children, which is greatly interlinked with maternal mental health status. However, overall health status of mothers and children in India is not achieved, unless mental health aspect is equally given attention. Maternal physical as well as mental health status is the prime indicators of children's growth and development. Present paper tries to identify the risk factors of maternal mental health and justifies the need for integrating mental health care in to maternal and child health programs. It further suggests few guidelines for care providers for overall maternal and child health care facilities to reduce high rate mortality and morbidity in our country.

Key Words : Maternal mental health, Child mental health, Perinatal mental health care, Mother-child attachment

INTRODUCTION

The impact of maternal mental health problems on infants has been identified mostly in terms of psychosocial and emotional development, which was for the first time indicated through groundbreaking work of Spitz (1946) and of Bowlby (1951) that studied the emotional needs of infants and mother-child attachment. Subsequently, a large body of literature documented the effects of maternal mental health on the child's psychological development (Weinberg and Tronick, 1998), intellectual competence (Kaplan *et al.,* 1987), psychosocial functioning (Anderson and Hammen, 1993) and rate of psychiatric morbidity (Welner and Rice, 1988). Regrettably mental health is not specifically mentioned in the Millennium Development Goals, but the full realization of at least three of its goals are directly or indirectly related to women's mental health (or to the reduction of the impact of perinatal mental health problems), such as with:

MDG 4: Reducing child mortality,
MDG 5: Improving maternal health,
MDG 3: Promoting gender equality and empowering women.

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The contribution to the Global Burden of Disease (GBD) of only three classes of mental disorders (*i.e.*, mood disorders, schizophrenia and specific anxiety disorders) among women age 15 - 44 years (the years most relevant for reproductive health) is 7 per cent of the total GBD for women of all ages, and 3.3 per cent of the total GBD for both sexes (2008). Depression alone now ranks 5th among all causes of the GBD for both sexes combined and 4th for women only; it is expected to rank 2nd by the year 2020 (WHO Report, 2001). The perinatal period is a time of increased physical and emotional demands on the woman, and the disability associated with depression is likely to interfere with many essential functions related both to the mother and the infant. Therefore, it is not difficult to see that a large proportion of this burden of disease will affect women of reproductive age and their infants. In view of the potential health, development, and human rights implications of recent findings, the World Health Organization's (WHO) Department of Mental Health and Substance Abuse in collaboration with the United Nations Population Fund (UNFPA), launched an initiative to understand this problem better and to identify and propose solutions to it.

Maternal mental health issues:

Studies conducted in developed countries indicate a prevalence of 10% to15% of perinatal mental disorders (O'Hara and Swain, 1996, Ross and McLean, 2006). It has been suggested that rates of first onset and severe depression are three times higher in the postnatal period than in other periods of women's lives (Stewart *et al.*, 2003). More recently, Gavin *et al.* (2005) confirmed those findings, suggesting that the rates of mental disorders are particularly high during the first trimester following childbirth. Studies have found that in developing and under developed countries these problems are in the range of 10% to 41%, depending on the place and time of the perinatal period studied and the instruments employed. A firm diagnosis of a psychiatric disorder indicated the most frequently found condition (both during pregnancy and after childbirth) was depression, followed by anxiety disorders. Examples of psychiatric and psychological morbidity during pregnancy in India, Pakisthan and Thailand are – According to Chandran *et al.* (2002) in India, it was found 16.2% - antenatal depression; according to Patel, Rodrigues, De Souza (2002) in India showed 42% GHQ > 5; Rahman, Iqbal, Harrington (2003) in Pakisthan found that 25% depressive episode (ICD-10); and Limlomwongse, Liabsuetrakul (2006) in Thailand indicated 5% EPDS =10.

In 1996 Warner *et al.* (1996) demonstrated that in UK the prevalence of psychiatric morbidity in the postnatal period varied between 10-15%. With regards to postnatal depression, a systematic literature review carried out by Robertson *et al.* (2003) found that the rates of both, first onset and severe depression were three times higher in the postnatal period than during other periods of women's lives. In a large proportion of women with postnatal depression, symptoms persist for at least a year postpartum. A review of studies from developed countries showed that for about 30% of women with postnatal depression, symptoms persisted for up to a year after giving birth (Goodman, 2004). A long-term follow-up study from a developing country, suggested that in women who were depressed during pregnancy, the rate of persistence in the first year may be even higher (*i.e.*, 56%) (Rahman and Creed, 2007). Anxiety disorders are also common in the perinatal period. A systematic review of anxiety disorders during pregnancy and the postpartum period by Ross and McLean (2006) revealed that these disorders are "common" during the perinatal period. They found that reported rates of obsessive-compulsive disorder and generalized anxiety disorder are higher in postpartum women than in the general population. As a result of their findings, they emphasized that the perinatal context represents a unique opportunity for the detection and management of anxiety disorders. Examples of psychiatric and psychological morbidity in the postpartum period in India: according to Affonso *et al.* (2000) was 35.5% EPDS > 9 32.2% BDI > 12; according to Chandran *et al.* (2002)11.9% EPDS > 12; according to Patel, Rodrigues, De Souza, (2002) 23% depressive disorder (ICD-10).

In summary, recent evidence shows that the prevalence of mental health problems in the perinatal

period in developing and underdeveloped countries is higher than in developed countries, and is more likely to be persistent. However, there have been no specific studies about the treatment coverage of these conditions in developing and developed countries, but from what is known about the identification and treatment of mental disorders in general in these countries, it can be reasonably expected that perinatal mental health problems are both under-identified and under-treated. Thus, this leaves these women (and their infants) exposed to a range of negative consequences that will be discussed later.

Risk factors of maternal mental health:

Various hypotheses have been advanced to explain the high prevalence of mental health problems during the perinatal period, ranging from biological (e.g., hormones and neuro-chemical modifications) to psychological (e.g., personality types and ways of thinking) and social determinants (e.g., gender disparities in access to education and income-generating opportunities, social roles, disproportionate burden of unpaid work, exposure to family violence, low autonomy, poverty and coincidental adversity) explanations. Overall the evidence is that these conditions are multifactor ally determined (Chen *et al.*, 2005). The theory of Brown and Harris (Brown and Harris 1978), that women are more likely to become depressed when they experience entrapment and humiliation, is highly salient to these data. A non-exhaustive list of risk factors which could explain the high prevalence of mental health problems in the perinatal period includes:

During pregnancy:

- Unwanted pregnancy
- Marital relationship: unsupportive; polygamous
- Previous stillbirth or repeated miscarriage
- Nulliparity.
- Poverty and lack of financial resources
- Lack of practical support within family,
- Pregnancy as a result of rape / forced pregnancy
- Partner / family violence
- Difficult relationship with in-laws

After childbirth:

- Difficulties with husband's behaviour (physical violence, verbal abuse, alcohol use, being illiterate and unemployed, providing little assistance, rejecting the pregnancy)
- Inability to confide in partner
- Poverty (low income, lack of personal income generating activity, inadequate housing)
- Overcrowding and lack of privacy
- Antenatal depression or severe anxiety
- Illnesses during pregnancy, antenatal hospital admission, operative birth
- Large number of children
- Infant unsettled, sick, not thriving
- Problematic relationship with in-law family (mother-in-law and sister-in-law)
- Birth of a girl child in cultures over - valuing boy child
- Lack of sustained, dedicated, practical care after birth for the culturally prescribed period
- Past psychiatric history
- Other stressful life events

Consequences of maternal mental health:

Consequences to the woman :

In addition to the economic losses that mental disorders represent, intangible costs in terms of human suffering and the total impact of these mental health problems on physical disorders are conceptually and methodologically difficult to estimate. There is, however, evidence that mental health problems during the perinatal period increase the risk and/or worsen obstetric outcomes, including preterm labour, obstetric complications, and pregnancy symptoms. These are more likely reciprocal associations rather than causally linked, which has not been much researched in this regard. In addition, data are emerging on the disproportionately high rates of suicide in the perinatal period. These data are briefly reviewed and discussed below.

Maternal suicide in the perinatal period:

In view of the absence of systematic data, a few studies that specifically examined causes of death during the perinatal period are worth mentioning, particularly in view of the dramatic and unexpected results they revealed. Studies by Appleby (1996), Kendell (1991), Frautschi *et al.* (1994), and Brockington (2001) have examined mortality during the perinatal period. And found that the leading cause of maternal death during this period was suicide, with rates significantly higher than in non-pregnant, non puerperal women. Risk factors identified by these authors include adolescent pregnancy (in many cases complicated by unintended pregnancy and lack of access to contraception for single women), in addition to self-induced abortion. Unfortunately, in developing and underdeveloped countries the situation does not seem to be better. A detailed review of 2882 deaths of women during pregnancy, or up to 42 days postpartum, conducted in three provinces in Vietnam, found that 29% of those deaths were attributed to non-natural causes (suicide, murder and accidents) of which 14% were due to suicide (Hieu *et al.,* 1999). An enlarged study conducted by the WHO, covering seven provinces in Vietnam, confirmed the high percentage of suicides among women in the perinatal period: 8% to 16.5%, depending on the province (WHO, 2005). Lal *et al.* (1995) examined 219 deaths of mothers after 9894 births in Haryana, India. They found that 20% of those deaths were attributed to suicide or 'accidental' burns (a common misclassification for suicide or femicide, particularly in India) (Kumar, 2004). In addition, the following adverse consequences to infants of maternal mental health problems have also been established:

- Increased admission to neonatal care unit;
- Higher rates of diarrhoeal diseases;
- Higher rates of infectious illness and hospital admissions;
- Diminished completion of recommended immunization schedules; and
- Worse physical, cognitive, social, behavioural and emotional development in children.

Several studies have demonstrated that maternal depression and stress lead to early cessation of breastfeeding, with its well-known range of negative consequences (Adewuya *et al.,* 2007*,* Handerson *et al.,* 2003*,* Papinczak and Turner 2000). In addition to the impact of maternal mental health problems on infants, its negative consequences can be observed at later ages (Canals *et al.,* 2003); which might create a negative snowball effect on the cognitive, emotional and behavioural characteristics of the individual who is progressively left behind, with possible repercussions into adult age. O'Connor *et al.* (2002) for instance, have demonstrated, in a longitudinal study, that antenatal maternal anxiety significantly predicted behavioural/emotional problems in 4 year-old boys and girls after accounting for covariates. The significant effect persisted even when controlled for co-varying maternal anxiety up to 33 months postnatal period. They attributed these results to a direct effect of maternal mood on fetal brain development, which later affects the behavioural development of the child. These authors were also able to demonstrate that antenatal anxiety and postnatal depression represent separate risks for behavioural/emotional problems in children and act in an additive manner. Depressed mothers

have been observed to provide less quantity and poorer quality of stimulation for their infants and to be slower in responding and less responsive to them. They are also more likely to have negative views of themselves as parents, seeing themselves as having less personal control over their child's development, and less able to positively influence their children1.

In summary, maternal mental health is inextricably linked with both physical and psychological development of children. Addressing the mental health needs of the mother is likely to benefit these important outcomes. However, maternal mental health has been ignored in both child nutrition and development programmes and it may be the missing link in maternal and child health programmes.

Integrating mental health care into maternal health programmes:

Once a mental health problem has been recognized in a woman in the perinatal period, there are a series of community-based interventions that have demonstrated their usefulness and efficacy. These range from empathy and active listening, to the utilization of different psychosocial approaches, to the use of medication, according to the woman's need. Methods to be applied will also depend on the severity of the condition, the ability and knowledge of health workers, and the local health and social infrastructure. The health worker can then consider moving into a problem-solving approach that includes:

- Assistance with social problems including housing
- Active assistance with problems in the marital relationship
- Linking women together in discussion groups
- Closer monitoring
- Provision of increased support, according to the woman's needs
- Women's own physical and mental wellbeing: nutrition, rest, exercise, self-care, management of sadness and worries
- Mother-fetal/Mother-baby relationship: imagining the baby and preparing for life with a baby.
- Relationships with others: quality and sufficiency.
- Women experiencing family violence
- Women pregnant as a result of forced intercourse
- Women who are HIV positive
- Women who are infertile
- Women who have experienced pregnancy losses, stillbirths or whose babies are seriously ill, malformed or have died.
- Adolescents who are pregnant
- Women who are refugees, internally displaced or from areas affected by war, conflict or natural disaster
- Women who are lone mothers
- Women with disabilities

For these women, special programmes, or special components in mainstream programmes, should be considered. These will require particular skills to be developed if they are not available locally. Health care workers will require education and training to provide the mental health care outlined above, especially in the areas of counseling. This training should always be accompanied and followed by ongoing supervision in order to maintain both the psychological skills of health workers and the quality of the care provided.

Integrating maternal mental health with child health:

A comprehensive consideration of mental health problems in women in the perinatal period cannot ignore the identification and management of their impact on infants, since the mother is

usually the most important person for the baby during the first year of life. In order to be properly cared for, the baby needs a physically and emotionally capable mother (or primary caregiver), in addition to a supportive environment provided by the father and extended family. This is a high order task that goes well beyond the boundaries of individual specific agencies interested in the problem, be they within or outside the UN system. Therefore a concerted and articulated action across those agencies is needed. Because the mental health of the mother and physical development, especially nutrition, of the infant are so inextricably linked, an approach to tackle these through an integrated programme of care for both mother and infant has been propounded

Following a multi-method study in rural Pakistan, a intervention employing principles of cognitive behaviour therapy (CBT) was developed. This is being delivered by ordinary village-based primary-level health workers. The intervention, called the "Thinking Healthy Programme" (THP), used the following CBT techniques:

– Active listening,

– Collaboration with the family,

– Guided discovery - a style of questioning both to gently probe for family's health beliefs and to stimulate alternative ideas, and

– Homework - trying things out in between sessions, putting what has been learned into practice.

These techniques were applied to health workers' routine practice of maternal and child health education. The intervention was integrated into existing health systems in rural Pakistan and pilot studies showed that both health workers and depressed mothers found the programme relevant and useful. "Lady Health Workers" found this method as helpful, in as much as it provided them with a structured routine tool that also facilitated communication with their clients. A randomized controlled trial of the intervention has been completed and preliminary results indicate benefits for both maternal mental health and infant health outcomes.

When there are maternal mental health problems, specific interventions are needed because adverse maternal attitudes and behaviours, dysfunctional infant care giving and negative environmental conditions interfere with parental and family functioning, with long lasting effects. There is evidence on the efficacy of some simple, specific interventions that can be delivered by first level health care providers based either at home visits or at health facilities (e.g., maternity centres, or maternity hospitals) (Wendland, 2004). It has also been shown that the highest impact is reached with a mix of centre-based and home visit services (Love *et al.,* 2005). Adequate training and supervision of intervention providers is a crucial component of these interventions.

Conclusions:

Mental health problems of pregnant women and mothers of newborns is a serious but under-recognized public health problem, making a substantial contribution to maternal and infant morbidity and mortality. One in three to one in five pregnant women and mothers of newborns experience significant mental health problems, the most common of which are depression and anxiety states. Suicide is one of the leading causes of pregnancy-related deaths. Mothers whose mental health is poor are less able to care for themselves and their infants, whose survival, health and development could be then compromised. Poor maternal mental health affects the health and development of children. For instance, maternal depression in the prenatal and postnatal periods predicts poorer growth and higher risk of diarrhoea in infants, which may reduce child survival. Early treatment of prenatal and postnatal mental health problems would benefit not only the mother's mental health, but also the infant's physical health and development. Attention to the psychosocial and emotional needs of infants (e.g., a good mother-baby relationship) is crucial for optimal physical, cognitive, emotional, behavioural and social development of children. There is the need for attention to mental

health is fundamental in attaining the Millennium Development Goals of improving maternal health, reducing child mortality, promoting gender equality and empowering women, achieving universal primary education and eradicating extreme poverty and hunger.

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