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Characteristics of mothers' depressive illness as predictors for emotional and behavioural problems in children in a Sri Lankan setting

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ABSTRACT

Introduction: Maternal depression has been shown to be associated with neurodevelopmental, emotional and behavioural disorders in offspring. We aimed to describe the proportion of psychological problems among children of mothers with depression in Sri Lanka and to describe the association with the characteristics of the mothers' illness.

Methods: A cross-sectional descriptive study was conducted on 100 children and adolescents between 4–16 years whose mother has a diagnosis of depression and currently in remission. Specifically designed instruments were used to extract socio-demographic details and data on mother's illness. Strengths and Difficulties Questionnaire (SDQ) was used to detect psychological problems in children.

Results: 14% of the children scored abnormally high in hyperactivity, 13% in conduct problems, 12% in emotional problems, 9% in peer problems. Hyperactivity, internalizing problems, and total difficulties were significantly higher in where mothers' had a history of a moderate depressive episode and recurrent depressive disorder. Children whose mothers had no attempts of self-harm scored significantly higher in both emotional problems and internalizing problems. Children whose mothers have comorbid illness scored significantly higher in hyperactivity, conduct problems, emotional problems, externalizing problems, internalizing problems and total difficulties.

Conclusions: Screening for psychological problems in children and developing a holistic management plan which include steps to ensure the well-being of the children is important in managing mothers with depression.

1. Introduction

Rates of depression in women peak during pregnancy and the early post-natal period (Kessler, 2003). Miller et al. had described that in their first year of life itself, about one in eleven infants will experience their mothers' major depression, with higher rates being reported in mothers having a past history of depression or mothers with other ongoing stressors such as financial difficulties or social isolation (Miller, 2002).

Early reviews found rates of psychiatric disorder in the children of parents with affective illness is 3–4 times higher than in children of non-depressed mothers (Cummings and Davies, 1999). Maternal depression has been shown to be associated with a wide range of neurodevelopmental, emotional and behavioural disorders in offspring including sleep problems, depression, anxiety disorders, conduct and oppositional disorder, language and cognitive delays and attachment difficulties in children (Beardselee et al., 1998; Weissman et al., 1997; Chronis et al., 2007; Quevedo et al., 2012; Murray et al., 1996).

Previous literature has shown that the mothers' symptomatology counts more than the mothers' diagnosis in determining the impact on children (Hammen et al., 1987). The results on the persistence of psychological problems during remission of maternal depression is inconsistent with some studies demonstrating an improvement of symptomatology in children with remission of maternal depression (Weissman et al., 2006), while some showing effects of altered parenting behaviours and impact on child well-being persisting in remission (Kluczniok et al., 2016). The existing literature reveals greater chronicity of maternal depressive symptoms to be associated with more severe conduct problems in offspring. However, results regarding the association with the severity of maternal illness is inconsistent (Brennan et al., 2000; Shaw et al., 2009). Some studies reveal that moderately severe depression may have a higher association with later problem

ICD 10 – International Classification of Diseases 10th edition, PDS – Peradeniya Depression Scale, SDQ – Strengths and Difficulties Questionnaire.

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behaviour than severe depression (Gross et al., 2009; Hammen and Brennan, 2003).

In the busy Sri Lankan clinical practice, with the limited time and human resources, attention is often only paid to the recovery of the mother and the consequences on children is often underestimated. No studies have been conducted so far in Sri Lanka to assess the effect of maternal depression on children. This study would help in determining the extent of the problems in Sri Lanka and help in designing practices to minimize the impact on children.

2. Materials and methods

2.1. Study design and setting

This was a descriptive cross-sectional study. The study was conducted at the outpatient general adult psychiatry follow-up clinics of Colombo South Teaching Hospital and National Hospital Sri Lanka.

2.2. Study population

Female patients who have been diagnosed to have either a single depressive episode or recurrent depressive disorder by the Consultant Psychiatrist in accordance with the International Classification of Diseases 10th edition (ICD 10) (World Health Organization, 1992), who are currently in remission and having children aged between 4 and 16 years were included in the study. Patients diagnosed as having bipolar depression, patients who are not the primary caregiver for their children and patients whose children are having intellectual disability were excluded from the study. When the mother has more than 1 child, the first child was included in the study.

2.3. Sample size and sampling technique

A sample size of 100 was calculated using a confidence interval of 95%, a margin of error of 7.5% and an estimated prevalence of 18% according to the previous literature (Luoma et al., 2001). The first 100 patients who fulfill the inclusion and exclusion criteria were included in the study.

2.4. Study instruments and data collection

Data on socio-demographic factors was collected using a specifically designed self-administered questionnaire. Details of the patients past psychiatric history was obtained from clinic records using a specifically designed data extraction form.

The presence of depressive symptoms in the study population was assessed using the Peradeniya Depression Scale (PDS), in order to identify those who are currently in remission. The PDS is a screening tool for depression which was developed in Sri Lanka and validated among outpatients presenting to a psychiatry clinic in a government hospital (Abeyasinghe et al., 2012).

The presence of psychological problems among the children was assessed using the parent rated version of the Strengths and Difficulties Questionnaire (SDQ) (Perera et al., 2013). The SDQ has 5 subscales with 5 items each. The 5 subscales include emotional problems, hyperactivity, conduct problems, peer problems and prosocial behaviour.

A structured clinical interview based on ICD research criteria was used to assess for the presence of a psychiatric disorder in children with borderline or abnormal scores in any of the subscales of the SDQ.

2.5. Data collection and analysis

A pilot study was carried out on a sample of 10 patients prior to study proper, to test the feasibility of the study and to detect and practical difficulties. Data were summarized and analyzed using the computer application, Statistical Package for the Social Sciences (SPSS 22.0). Scores for hyperactivity, conduct problems, emotional problems, peer problems, externalizing problems (sum of hyperactivity and conduct problems), internalizing problems (sum of emotional problems and peer problems) and a total difficulties score was calculated. The independent samples *t*-test was used in examining the association between SDQ scores of two groups and one way ANOVA was used in examining the association between SDQ scores of more than two groups. Associations that generated a p-value less than 0.05 were considered as true associations.

Table 1
Proportion of psychological problems in children.

Domain	Average (%)	Borderline (%)	Abnormal (%)	Missing (%)
Hyperactivity	76	09	14	01
Conduct problems	76	11	13	–
Emotional problems	81	06	12	01
Peer problems	87	04	09	–
Pro-social behaviour	96	02	02	–
Total difficulties	85	05	10	–

3. Results

3.1. Psychological problems in children

Fourteen percent (n = 14) of the children scored abnormally high in hyperactivity, 13% (n = 13) in conduct problems, 12% (n = 12) in emotional problems, 9% (n = 9) in peer problems and 10% (n = 10) in total difficulties score. Two percent (n = 2) had abnormally low scores on pro-social behaviour (Table 1).

4% (n = 4) of the children had an ICD-10 diagnosis. 2% (n = 2) of the children had Attention Deficit Hyperactivity Disorder, 1% (n = 1) had Attention Deficit Hyperactivity Disorder with Comorbid Conduct Disorder and further 1% (n = 1) had Depression with comorbid Obsessive Compulsive Disorder.

3.2. Characteristics of the mother's depressive illness

Fifty six percent (n = 56) of mothers had a recurrent depressive disorder, with 33% having 2 depressive episodes in the past. In 39% of mothers, depression was first diagnosed when the child was between 6 and 12 years. Fifty two percent (n = 52) of mother have had previous hospital admissions and 34% (n = 34) had a past history of self-harm. Nineteen percent (n = 19) had comorbid mental illness (Table 2).

3.3. Characteristics of mothers' illness associated with psychological problems in children

Statistically significant differences were observed in hyperactivity ($F = 2.74$, $p = 0.047$), internalizing problems ($F = 3.28$, $p = 0.024$) and total difficulties ($F = 4.38$, $p = 0.006$) in children, in relation to the mothers' diagnosis. Hyperactivity scores were significantly higher in children whose mothers' had a moderate depressive episode ($M = 4.46$, $SD = 3.50$) and recurrent depressive disorder ($M = 3.38$, $SD = 2.83$), when compared to children whose mothers' had a diagnosis of severe depressive episode with psychotic symptoms ($M = 1.14$, $SD = 1.06$). Similarly, scores for internalizing problems were significantly higher in children whose mothers' were diagnosed with a moderate depressive episode ($M = 4.50$, $SD = 3.76$) and recurrent depressive disorder ($M = 3.09$, $SD = 2.85$), when compared to mothers with a diagnosis of a severe depressive episode with psychotic symptoms ($M = 1.29$, $SD = 1.11$). The total difficulties score was also significantly higher in children whose mothers' were diagnosed as moderate depressive episode ($M = 10.92$, $SD = 6.60$) and recurrent

Table 2
Characteristics of mothers' depressive illness.

Characteristics of mothers' depressive illness	Percent
Diagnosis	
Moderate depressive episode	24
Severe depressive episode without psychotic symptoms	13
Severe depressive episode with psychotic symptoms	07
Recurrent depressive disorder	56
Number of episodes	
1	42
2	33
3	16
4	09
Duration of remission	
6 months	30
6 months to 1 year	29
1 to 5 years	33
> 5 years	07
Missing	01
Number of previous hospital admissions	
0	48
1	32
2	14
3	06
Number of previous acts of self-harm	
0	66
1	19
2	13
3	02
Presence of comorbid psychiatric illness	
Yes	19
No	81

depressive disorder (M = 8.11, SD = 5.83), when compared to children whose mothers' diagnosed with a severe depressive episode with psychotic symptoms (M = 3.29, SD = 5.83) (Table 3).

The *t*-test revealed a statistically significant difference between children whose mothers had deliberate self-harm and children whose mothers had no self-harm in the score for emotional problems ($t = -2.08$, df = 98, $p = 0.04$), with children whose mothers did not have attempts of deliberate self-harm (M = 2.21, SD = 2.17) scoring significantly higher in emotional problems scale than children whose mothers had attempts of self-harm (M = 1.32, SD = 1.68). There was also a statistically significant difference in the internalizing score ($t = -2.05$, df = 94.35, $p = 0.042$), where children whose mothers did not have self-harm (M = 3.55, SD = 3.37) having a significantly higher score than children whose mothers had attempted self-harm (M = 2.41, SD = 2.10).

The *t*-test revealed a statistically significant difference between children whose mothers had comorbid psychiatric illness in addition to depression, and the children whose mothers did not have comorbid illness, with children whose mothers have comorbid illness scoring higher on several domains including hyperactivity ($t = 2.06$, df = 98, $p = 0.04$), conduct problems ($t = 2.73$, df = 98, $p = 0.007$), emotional problems ($t = 2.78$, df = 98, $p = 0.006$) externalizing problems ($t = 2.21$, df = 98, $p = 0.02$) internalizing problems ($t = 3.33$, df = 98, $p = 0.001$) and total difficulties ($t = 3.30$, df = 98, $p = 0.01$).

The presence of psychological problems in children had no significant association with the number of depressive episodes, the duration of remission or previous hospital admissions.

4. Discussion

4.1. Significance of findings

The present study revealed emotional and behavioural difficulties in 10% of the children studied. This highlights the need to be mindful about the impact of the mothers' depression on the children, when clinically managing a mother presenting with depression. At the same time, it should be considered whether behavioural difficulties in the children are adding further adding stress to the mother, which may be contributing a decline in her mental health.

The current study revealed a higher proportion of hyperactivity, internalizing problems, and total difficulties in children whose mothers' had a moderate depressive episode and recurrent depressive disorder, when compared to children whose mothers' having a diagnosis of a severe depressive episode with psychotic symptoms. There is consistent evidence that greater chronicity of maternal depressive symptoms predicts more severe problems in offspring, which is consistent with our finding that recurrent depressive disorder to be associated with more psychological problems than a severe depressive episode. Literature regarding the link between severity of maternal depression and psychological problems in children is inconsistent (Brennan et al., 2000; Shaw et al., 2009), with some studies revealing that moderately severe depression to have a higher association with later problem behaviour than severe depression (Gross et al., 2009; Hammen and Brennan, 2003). Rutter (1990) suggested that in severe depression, it may be easier for the child to understand that a parent is "ill" and to undergo adjustment by relying more on other caregivers (e.g. fathers, grandmothers etc.). Moreover, depression that is severe is more likely to be detected by others than moderate depression, making other supports more readily available to the child (Rutter, 1990).

Furthermore, emotional and internalizing problems were found to be lower in children whose mothers had attempted self-harm, when compared to children whose mothers have not self-harmed. To our knowledge, no previous literature had examined the impact the role of deliberate-self harm as a determinant of psychological problems in children of mothers with depression. However, it could be hypothesized that similar to a parent having a severe depressive episode, a mother who has an attempt of self-harm may be more likely to be perceived as "ill" by the child and also more likely to be noticed as "ill" by others, thus making other social supports more readily available for the child, which may have contributed to children having less psychological impact.

Another important finding that the study found is the significant association of many domains of psychological problems in children with the presence of co-morbid mental illness in the mother. Previous literature has described patients with depression with other co-morbidities to have poorer functioning and lower recovery rates than those without comorbid illness (Keitner and Ryan, 1991). Therefore it can be hypothesized the presence of co-morbid illness would have a greater impact on parenting than depression alone, which would result in greater emotional and behavioural problems in children.

Table 3
Variation of psychological problems according to mothers diagnosis.

Diagnosis	Hyperactivity (%)	Conduct problems (%)	Emotional problems (%)	Peer problems (%)	Total difficulties (%)
Moderate depressive episode	6	6	3	3	5
Severe depressive episode without psychotic symptoms	0	0	1	1	0
Severe depressive episode with psychotic symptoms	0	0	0	0	0
Recurrent depressive disorder	8	7	8	5	5

4.2. Limitations

This study was carried out in follow-up clinics at National Hospital Sri Lanka and Colombo South Teaching Hospital, which mainly caters to patients from the Colombo district. Therefore, the results may not be generalizable to the entire Sri Lankan population.

4.3. Conclusions

Ten percent of children whose mothers had a depressive disorder had emotional or behavioural problems. Factors associated with higher psychological problems in children were a diagnosis of moderate depressive episode or recurrent depressive disorder and presence of comorbid mental illness in the mother. Screening for emotional and behavioural problems in children where mother is diagnosed to have depression is an important in early identification of problems. Organizing extra support to the mother, especially where the depression is recurrent and when there is comorbid mental illness, by liaison with primary health care professionals would help in reducing the impact on the child. Education of health professionals and teachers on the detrimental effects of maternal depression on the child's mental health are important in reducing the impact of maternal depression on children.

Conflict of interest

None

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