Prevalence of Common Mental Disorders and its Association with Life Events and Social Support in Mothers Attending a Well-Child Clinic: Findings from Mombasa, Kenya

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Abstract

Common mental disorders (CMD), such as depression and anxiety disorders that affect mothers with young children, are a major public health issue in developing countries. This study investigates the prevalence of CMD and its associated factors among mothers attending a well-child clinic in Mombasa, Kenya. In this cross-sectional study, 429 women were screened for the presence of CMD using the Self-Reporting Questionnaire—20 (SRQ-20). Social support and social stress were measured using the OSLO Social Support Scale and the Life Events Checklist. The prevalence of CMD was 20%. High SRQ scorers were more likely to be single or separated/divorced compared with low scorers. Language, neighborhood, and financial difficulties were found to be significant independent correlates of CMD through multiple logistic regression analysis. Rates of CMD among mothers with young children in Kenya are high. This is important for nurses and pediatricians whose contact offers them an opportunity to detect CMD and refer mothers for appropriate support.

Keywords

common mental disorders, poverty, Kenya, social stress, prevalence

Depression, a common mental disorder (CMD), is a serious public health concern in the developing world and is predicted to become the most common cause of disability by the year 2020 (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006). Depression is associated with increased mortality (particularly through suicide) and significantly contributes to the disability of comorbid physical diseases (Mousavi et al., 2007).

Raising a child is a demanding task, and any physical or mental disability in the mother may have negative consequences on the child’s health, particularly in adverse circumstances such as poverty (Goodman & Gotlib, 1999; Patel, Rodrigues, & DeSouza, 2002; Rahman, Iqbal et al., 2004). This is of great concern in low-income countries where rates of both poverty and maternal depression are high (Husain et al., 2011; Lund et al., 2010). Maternal mental disorders have been linked to a number of child problems including low birth weight, infant undernutrition, early cessation of breastfeeding, and reduced preventive or help-seeking behavior for their children (Patel, Rahman, Jacob, & Hughes, 2004; Rahman, Harrington, & Bunn, 2002; Rahman, Iqbal et al., 2004). Children of mothers affected by mental disorders are also at increased risk of behavioral and emotional problems, cognitive delays, and psychiatric morbidity later in life (Carter, Garrity-Rokous, Chazan-Cohen, Little, & Briggs-Gowan, 2001; Grace, Evindar, & Stewart, 2003; Josefsson & Sydjo, 2007).

Many communities in low-income countries such as Kenya are in transition from a more traditional way of life. In this context, lack of social, emotional, and practical support...
for mothers has been found to be a consistent risk factor for depression (Husain et al., 2006; Harpham, 1994).

Child survival and growth are a major public health priority in low- and middle-income countries (LAMIC) and one of the main Millennium Development Goals (Sachs & McArthur, 2005). A key aspect of addressing the fifth Millennium Development Goal—improving maternal health—involves paying special attention to maternal mental health (World Health Organization [WHO], 2008). There are few studies looking at maternal mental health in Kenya (Chersich et al., 2009). Mombasa is the second largest city in Kenya, a coastal country in East Africa which has a population of 41.8 million people (Kenya National Bureau of Statistics, 2014). Kenya is classified by the World Bank as a low-income country with almost 46% of the population living in poverty (World Bank, 2005). According to the World Bank (2015), the under-5 mortality stands at 49 deaths/1,000 live births with contributing factors including poverty, illiteracy, and inaccessibility to affordable health care (Kenya National Bureau of Statistics, 2009).

Research that identifies the prevalence of maternal mental health difficulties and its social determinants is essential to help develop interventions to improve maternal and child health in these countries. The aim of this study was to investigate the prevalence of CMD in mothers attending a well-child clinic in Mombasa, Kenya, and to explore whether the CMD are associated with variables such as social stress, socioeconomic status, and social support.

Method

Study Area and Participants

This cross-sectional study took place at Bomu Hospital, Mombasa. Bomu Hospital is a charitable organization run by the Mkomani Clinic Society that was registered in 1980 and has now grown to an internationally recognized United States Agency for International Development (USAID) Centre of Excellence. It now provides leading reproductive health services and HIV care for adults and children in the Coast Province of Kenya. Since 2008, Bomu Hospital has been providing free outpatient services to a large number of patients (especially mothers and children below 5 years). The well-child clinic runs 5 days a week, and up to 250 children are seen per week.

The researcher approached a total of 500 mothers with children of age below 5 years, who consecutively attended the well-child clinic between March and August 2009. Out of these women, 429 (86%) consented to take part in the study. The Self-Reporting Questionnaire–20 (SRQ-20) was administered on all women consented to take part in the study (WHO, 1994).

Procedure

The study was given ethical approval by the Kenya Ministry of Science and Technology and the Institutional Review Board of Bomu Hospital. A research assistant working for the Centre in Africa for Learning and Living (C.A.L.L.) received training to administer the study questionnaires. Consecutive mother–child pairs were recruited from the well-child clinic between March and August 2009 on two fixed days of the week when the research assistant attended the clinic. Written informed consent was obtained from all participants.

Participants were screened for the presence of a CMD which includes symptoms of depression and anxiety using the SRQ-20 (WHO, 1994). Sociodemographic data including level of education, marital status, and economic level were obtained using a specifically designed Socio-Demographic Questionnaire (SDQ). Social support was assessed using the OSLO Social Support Scale (Meltzer, 2003), and social stress was assessed via the brief Life Events Checklist (Husain et al., 2006a). All questionnaires were translated and culturally adapted into Kiswahili, the local language.

SRQ-20. The SRQ-20 is a standardized screening instrument developed by the WHO which uses 20 yes/no questions to detect the presence of CMD symptoms including depressive symptoms, anxiety, and psychosomatic complaints (WHO, 1994). It was specifically designed for use with low-literacy populations by trained lay personnel. As a screening instrument, it aims to provide an estimation of the presence of probable CMD prior to a more extensive diagnostic interview (Harding et al., 1983).

The SRQ has been translated into multiple languages and has been validated against gold standard instruments in many countries including Zambia, Ghana, Malawi, and Ethiopia (Chipimo & Fylkesnes, 2010; Hanlon et al., 2008; Stewart et al., 2009; Weobong et al., 2009). The cutoff score for the SRQ can vary, with 7/8 being the most widely used (Harpham et al., 2003). For this study, a score of 8 or more on the SRQ was used to represent probable “caseness” for CMD.

OSLO Social Support Scale. The perceived level of social support was assessed using the three-item OSLO Social Support Scale (Dalgard, 1996) which takes around 2 min to complete. This assesses the number of people in the social support network, the level of interest and concern shown by others, and the ease of obtaining practical help. The scores from the individual questions can be added together to indicate whether the perceived support is “poor” (score 3-8), “moderate” (9-11), or “strong” (12-14). This scale was one of the instruments recommended for use to allow national health data to be compared between different countries as part of the EUROHIS project. When field tested in 1,200 respondents across three European studies, the OSLO Social Support Scale showed high acceptability and feasibility and was recommended as a common instrument for studies in mental health and quality of life (Meltzer, 2003). This scale has been previously used successfully in a low-income country.
LEC. Life events and social difficulties were assessed through an LEC that was based on categories included in the Quebec Health Survey (Paykel et al., 1971) which was used in a previous study in Pakistan (Husain et al., 2008). Life events and difficulties were rated categorically as present or not in the previous 12 months. This checklist has been used in a study of postnatal depression in rural Pakistan (Rahman, Iqbal, & Harrington, 2003).

### Statistical Analysis

Data were analyzed using the data analysis and statistical software (STATA) version 12 for Windows. High and low SRQ scorers were compared for marital status, education level, and financial data using the chi-square test. Social support was compared using the t test. Individual and total scores of the LEC were compared using the Fisher’s two-sided exact test and t test, respectively.

The following variables were significant (p < .05) in the univariate analyses: being unmarried and from the LEC, having major concerns with children, language problems, troubles in the neighborhood, financial constraints, and relationship difficulties. These variables were entered into a multiple logistic regression with the dependent variable being a total SRQ score of 8 or more. Two variables from the SDQ (debt or financial problems and difficulties meeting daily needs in the last month) were omitted from this analysis because of likely problems of multicollinearity with financial difficulties on the LEC. Odds ratios, 95% confidence intervals, and significance of all variables entered into the analysis are presented.

### Results

Of the 500 women approached, 429 (86%) consented to take part in the study. Of those screened using the SRQ, 86 (20.0%) were high scorers with a total SRQ-20 score of 8 or more, with 343 (80.0%) low scorers (with a total SRQ-20 score less than 8).

#### Sociodemographic Variables and the Presence of a CMD

As Table 1 shows, high scorers were more likely to be single or separated/divorced compared with low scorers. High scorers were more likely to report the presence of financial problems (48.8% vs. 31.8%, p = .003) and difficulties in meeting their daily needs (54.7% vs. 32.4%, p < .001) in the last month. There was no significant difference in participants’ age, education status, or number of children between the two groups.

#### Social Support and the Presence of a CMD

As Table 2 shows, there was no significant difference in the OSLO Social Support Scale total scores between the two groups.

#### Life Events and the Presence of a CMD

There was no significant difference in the mean total number of difficulties detected by the LEC between the two groups (Table 3). Significant differences were observed when...
individual questions were analyzed. High scorers were 4.1 times as likely as low scorers to report financial difficulties (52.3% vs. 21%, \(p < .001\)) and 4.9 times as likely to report difficulties relating to language (9.3% vs. 2%, \(p = .004\)). High scorers were also 3.1 times as likely as low scorers to report troubles related to the neighborhood they lived in (9.3% vs. 3.2%, \(p = .034\)) and 2.5 times as likely to report the presence of relationship difficulties (15.1% vs. 6.7%, \(p = .017\)).

**Possible Correlates of CMD on Logistic Regression Analysis**

Language problems, neighborhood problems, and financial difficulties were found to be significant independent correlates of a high SRQ score in multiple logistic regression analysis (Table 4). A major concern with children was a significant correlate of a low SRQ score.
Discussion

In this study, we have found the prevalence of CMD as measured using the SRQ to be 20.0%. This concurs with the findings of Patel and Kleinman (2003) who reported median CMD prevalence rates for men and women ranging from 20% to 30% in six LAMIC, including Lesotho and Zimbabwe. Similarly, Harpham et al. (2003) reported the prevalence of poor mental health using the SRQ ranging from 18% to 42% in a number of developing countries including Zambia. Fisher et al. (2012) conducted a systematic review into the determinants of common perinatal mental disorders (CPMD) in LAMIC (including Nigeria, Uganda, and Zimbabwe), finding average prevalence in pregnancy was 15.9% with postpartum rates being 19.8%. The wide variation may be due to differences in populations and methodology with higher rates of illness reported when screening as opposed to diagnostic measures are used.

Studies have shown that women are at higher risk of developing CMD with typical rates of 2:1 (females:males) for conditions such as depression (Kuehner, 2003; Maier et al., 1999). There are many potential reasons for this including the impact female gender has on socioeconomic status, social roles, and access to resources. This is particularly so in developing countries where women are typically more effected by poverty and may be effected by reduced access to education or job opportunities, reduced decision-making autonomy, forced marriages, or gender-based violence (Patel & Kleinman, 2003; Patel et al., 2006). Maternal mental health problems are often under-diagnosed with core features such as tiredness or poor sleep being interpreted as within societal expectations of motherhood. The risks of CMD however are significant and may contribute to self-neglect and higher rates of physical illness as well as suicide. Data from the United Kingdom have highlighted that suicide is one of the four leading causes of maternal deaths within the first postnatal year (Gentile, 2011). It is noteworthy that in India and China, suicide is now the leading cause of maternal deaths (Miranda & Patel, 2005). Data from developing countries particularly in certain African countries report few maternal deaths by suicide; however, this is perhaps a reflection of less than optimal record keeping and underreporting particularly in countries where suicide is a particularly sensitive issue and may even be considered illegal (WHO, 2014).

Social Stress and CMD

Although there was no significant difference between the two groups in terms of the total LEC scores, mothers with CMD were more likely to report that they had experienced problems related to finances, their neighborhood, and their relationships. Several studies worldwide have found an association between recent similar social problems and the presence of CMD (Husain et al., 2006; Patel et al., 2001; Seedat et al., 2009). Previous Kenyan studies have shown an association between recent life events and depression (Ndeitei & Vadher, 1984; Vadher & Ndeitei, 1981). Urbanization in low-income countries is associated with changes in social support and life stress which are known to have an adverse effect on mental health, particularly among low-income women (Harpham, 1994). Interestingly, our study found that low scorers were more likely than high scorers to report difficulties relating to their children. This requires further research and may reflect the impact of a CMD on parent–child interaction, with distressed mothers possibly being less engaged with their children. This notion is supported by research that suggests that the presence of common mental illnesses such as perinatal depression and anxiety as well as severe and enduring illnesses (such as schizophrenia) has been frequently found to negatively affect the ability of the mother to respond to infant cues in a sensitive manner (Karl, 1995; Shin, Park, Ryu, Seomun, 2008; Wan, Warren, Salmon, & Abel, 2008).

Social Support and CMD

Several recent systematic reviews from both developing and developed countries have supported the assertion that social factors such as poor social support play an important role in the etiology of CMD generally (Brown & Harris, 1978). Ehsan and De Silva (2015) found that aspects of social capital were protective against the development of CMD. A systematic review by Biaggi, Conroy, Pawly, and Pariante (2015) suggested that lack of a partner or social support was associated with higher rates of antenatal depressive and anxiety symptoms while Yim et al. (2015) found that low social support and poor quality relationships with close others was a predictor for postpartum depression. Fisher et al. (2012) conducted a systematic review into the determinants of CPMD in LAMIC. They found that difficulties in the relationship between the woman and her partner were associated with CPMD (Fisher et al., 2012). These difficulties were varied and could include a partner who was unsupportive, uninvolved, overcritical, or inflicting physical abuse (Fisher et al., 2012). Fisher et al. also found that insufficient social support was associated with CPMD. Research has suggested that there are several pathways by which social support may improve and protect maternal health and consequently child outcomes (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Feldman, Dunkel-Schetter, Sandman, & Wadhwa, 2000).

In this study, however, no association between CMD and the reported level of social support was found. This may reflect either a methodological limitation of using the brief OSLO
Social Support Scale or significant social support received by most mothers in Mombasa. As different dimensions of social support are related to different mother and child outcomes, perhaps a more robust measure such as the Multidimensional Scale of Perceived Social Support which has been validated in various groups in several developing countries would have been more appropriate (Akhtar et al., 2010; Zimet et al., 1998).

**Socioeconomic Status and CMD**

We have found that women with CMD were more likely to report financial problems and difficulties in meeting their daily needs. This is consistent with a review linking CMD and poverty in LAMIC (Lund et al., 2010). Studies conducted across the world, including studies from rural South Africa and urban Zimbabwe, have reported an association between CMD and financial problems (Abas & Broadhead, 1997; Bhagwanjee, Parekh, Paruk, Petersen, & Subedar, 1998; WHO, 2007). Interestingly, Lund et al. (2010) found that certain dimensions of poverty such as food insecurity, housing, social class, and financial stress tended to be more strongly associated with CMD compared with other measures such as income and employment.

Fisher et al. (2012) found that socioeconomic disadvantage was widely found to be associated with the presence of a CPMD with odds ratios ranging between 2.1 and 13.2. This socioeconomic disadvantage was varied including low income, living in an overcrowded or inadequate home, or being unable to afford sufficient food or vital health care.

It is notable that over one third of the women in both groups were educated only up to primary school. This study did not find low education to be significantly associated with the presence of a CMD; this is in contrast to other research suggesting that poor education was significantly associated with the presence of a CMD (Araya, Lewis, Rojas, & Fritsch, 2003, review by Patel & Kleinman, 2003), with a large survey-based study in Chili finding a dose-dependent relationship between low education and higher CMD prevalence (Araya, Rojas, Fritsch, Acuna, & Lewis, 2001). Further research is needed to understand why education is significantly associated with CMD in certain countries but not in others. Further work is needed to better understand the language difficulties which were significantly more reported by the group with likely presence of CMD.

**Strengths and Limitations**

This study has a number of strengths. First, this is one of the very few reports from Kenya to study the rate of CMD and its correlates in mothers. This study also included a relatively large sample size with a good response rate.

The present study also has some limitations that need to be addressed to inform future research. Although the SRQ-20 with similar cutoffs has been validated worldwide including in Zambia (Weobong et al., 2009), Ghana (Stewart et al., 2009), and Malawi (Hanlon et al., 2008), using a gold standard diagnostic interview would have been ideal. There is also lack of information relating to the child outcomes or the presence of comorbid conditions (e.g., HIV/AIDS) which may have an effect on the mother’s mental health.

Finally, the cross-sectional design of this study using subjective self-administered screening questionnaires means that we cannot establish a direct cause–effect relationship between the presence of social stress and CMD. Future studies should involve a prospective cohort design with objective measures of variables such as financial difficulties as well as child and maternal physical indicators to further build on these preliminary findings.

**Conclusion**

This study reports high levels of CMD in low-income mothers attending an urban Kenyan well-child clinic. Consistent with previous research, significant associations between the presence of a CMD and certain life stresses—financial hardship in particular—have been found, which has significant implications for public health and policy. Given the impact of maternal CMD on mothers and their children, greater understanding of the risk factors for the development and persistence of CMD in LAMIC is vital to enable better recognition and to develop culturally appropriate interventions at an individual and population level.

As the *Lancet* article “No Health Without Mental Health” highlighted, addressing mental health issues in developing countries is vital to aid their future development (Prince et al., 2007). The findings are pertinent particularly to nurses and pediatricians whose frequent contact with mothers with young children offers them an opportunity to detect maternal depression and to refer mothers with CMD for appropriate help and treatment.

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