Postnatal depression, maternal-infant bonding and social support: A cross-cultural comparison of Nigerian and British mothers.

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Abstract

The high prevalence of Post-Natal Depression (PND) in low and lower-middle income countries of Africa raises questions about the functionality of the abundant informal support accessed in the enmeshed family structure. This study examined the interaction between social support, parity and culture in the development of PND and Maternal Infant Bonding (MIB) among Nigerian, British and Nigerian Immigrant mothers in the UK. Participants (N=124) were recruited from the UK and Nigeria via local support groups for mothers, websites offering motherhood-related content and social media. Questionnaires including the Edinburgh Postnatal Depression scale (EPDS), Postpartum Bonding Questionnaire and Norbeck's Social Support Questionnaire were uploaded onto SurveyMonkey®. Findings revealed significant cultural differences in PND and social support. Multiple Regression analyses revealed that PND, social support and culture could predict Maternal Infant Bonding (MIB), with PND being the only significant independent predictor. Our findings highlight the importance that cultural factors play in the development of PND and the establishment of MIB in the context of culturally attuned healthcare services.

Key Words:

Postnatal depression, maternal infant bonding, culture, social support.
Introduction

The processes and life events surrounding the perinatal period presents increased risk for psychiatric disorders including Antenatal Depression (AND), Postnatal Depression (PND) and perinatal anxiety (Stewart et al., 2003; Cantwell and Smith, 2009). The DSM-5 describes PND as a 'major depressive disorder with peripartum onset' as the most recent episode of major depression if onset of mood symptoms occurs during pregnancy or in the four weeks following delivery (American Psychiatric Association (APA), 2013).

The global prevalence rates of PND range between 10% and 15% (Pearlstein, Howard, Salisbury and Zlotnick, 2009; Sawyer, Ayers and Smith, 2010; Fisher et al., 2012). Researchers have argued that PND remains under-diagnosed and under-treated (Stewart et al., 2003; Halbreich and Karkun, 2006; Pearlstein et al., 2009). In developing countries, like Africa, this under-diagnosis is worsened by the structure of maternity service delivery settings and prioritised concentration on life-threatening preventable complications of birth (Fisher et al., 2012). Further, the idealised social norm of motherhood and deference for the good mother identity may cause symptomatic mothers to feel guilty and embarrassed about their condition and therefore under-report their symptoms when assessed for PND (Tammentie et al., 2004b; Williamson and McCutcheon, 2004; Pearlstein et al., 2009; Jones, Jomeen and Hayter, 2014). This trend can pose extensive risks to the mother, baby and the entire family (NICE, 2007) as the depressed mother shows flat affect, low stimulation and general social unresponsiveness (Burke, 2003; Field, 2010).
Previous UK based studies have reported an increased risk of PND among mothers from ethnic minority backgrounds (Onozawa, Kumar, Adams, Doré and Glover, 2003). These women tend to be migrants faced with stressors related to discrimination and acculturation issues (e.g. Surkan, Peterson, Hughes and Gottlieb, 2006). Key cultural issues such as isolation and language difficulties have been reported among South Asian, British Pakistani, Bangladeshi and Chinese migrant mothers in the UK experiencing PND (Parvin, Jones and Hull, 2004; Husain et al., 2012; Lam, Wittkowski and Fox, 2012; Wittkowski, Gardner, Bunton and Edge, 2014; Gardner et al., 2014). Ethnicity has been described as a significant predictor of depressed mood while controlling for age, marital status, income and educational level, and infant health outcome (Segre, O'Hara and Losch, 2006).

Gardner et al, (2014) conducted an interpretative phenomenological analysis of the experience of postnatal depression among six West African mothers in the UK. Five superordinate themes were identified and included conceptualising PND, isolation, loss of identity, issues of trust and relationships as a protective factor. Gardner et al., (2014) explained that although women exhibited symptoms of PND, they did not regard it as an illness but attributed it to social stress. Further, women perceived the supportive nature of social networks as being unavailable, highlighting the role that social support plays in the development of PND.

PND can trigger long-term negative and damaging effects that can majorly affect the baby (Williamson and McCutcheon, 2004; Murray, Halligan and Cooper, 2009; Parsons et al., 2012). Depressed mothers may experience a mixture of emotions ranging from apathy to anger and total rejection of the care of their babies (Kitamura et al., 2013). Empirical
Evidence suggests that this undermines early childhood interactions between mother and child (e.g., Burke, 2003; McMahon, Barnett, Kowalenko and Tennant, 2005; 2006; Field, 2010) and can lead to maternal-infant bonding (MIB) failure, which constitutes risk for development of social difficulties and psychological problems later in life (Campbell et al., 2004; McMahon et al., 2006).

Alongside PND, Maternal-Infant relationship Dysfunction (MID) is becoming an increasingly recognised mental health issue in obstetrics and gynaecology (Brockington, 2004; Kitamura et al., 2013). Maternal Infant Bonding (MIB) is the care-giver-to-infant direction of the mutual and reciprocal systems of interaction in the attachment process which begins at birth, grows and endures over time (e.g., Bowlby, 1969; Klaus and Kennell, 1976; Edhborg, Nasreen and Kabir, 2011). However, because the aetiology of MIB failure is only minimally investigated (Kitamura, et al., 2013), there are still reservations among researchers about the role PND plays in the development of MIB. Some argue that both issues are separate and merely coexist (Brockington, 2004; Kitamura, et al., 2013). In a study of 1,198 rural Japanese mothers, Kitamura, et al. (2013) reported that depressive mood and bonding failure did not predict each other, but predicted abusive parenting. This infers that other variables including cultural factors may be involved in the establishment of MIB among depressed mothers.

Previous studies have consistently identified an inverse relationship between social support and development of PND (Heh, 2003; Surkan et al., 2006; Leahy-Warren and McCarthy, 2007; MacArthur, Winter and Bick, 2007; Dennis and Kingston, 2008). However, the estimation of the protective importance of social support against development of PND and
ultimately the establishment of MIB is potentially questionable. Goodman (2008) identified social support as a factor that can impede maternal-infant interaction and ultimately bonding. This is because culturally driven practices which take over rather than support mothers to care for their babies may hinder the quantity and quality of interactions between mother and child, possibly impacting on self-efficacy (Salonen et al., 2009), and potentially leading to depression (Crockenberg and Leerkes, 2003). Therefore, some types of social support offered to mothers could in fact be counter-productive (Lindblad-Goldberg and Dukes, 1985).

The current explored the relationship between PND, social support and MIB cross-culturally. We hypothesised that between Nigerian, African Immigrant and Indigenous British mothers, there would be variation in social support, PND and MIB.

**Method**

**Participants**

124 Participants were recruited from the UK (n=79) and Nigeria (n=32) through online Pre- and Post-natal Depression and Support (PANDAS) groups in London, UK. African immigrants (n=13) were Nigerians who had immigrated to Britain. The mean duration spent in Britain among the African Immigrant group was 12.23±10 years. Mothers who delivered no later than two years prior to the time of the study and who had no previous history of other types of depression or mental health problems were included in the study.

**Materials**
Questions were asked using SurveyMonkey® about age, sex of last child, marital status, number of deliveries, history of obstetric complications during last pregnancy and delivery, ethnicity (nationality) and available baby-care assistance. PND screening was conducted using the standardised Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden and Sagovsky, 1987). This is a 10-item questionnaire with a four point Likert scale. Responses on Questions were scored 0-4, with the highest obtainable score being 30 and scores above 12 indicating PND. The Cronbach alpha for this study was 0.71. The Impaired bonding subscale of the Postpartum Bonding Questionnaire (PBQ; Brockington, Fraser and Wilson, 2006) was used to assess MIB. The PBQ consists of a series of 25 statements, followed by a six-point Likert scale ranging from Always to Never. A score above 12 indicates defective bonding and lower scores indicate good bonding. The PBQ also has good validity 0.69 (Cronbach alpha 0.76 reported by Brockington et al., 2006). Total functional social support and total support network available to the mothers during postnatal period were measured using Norbeck Social Support Questionnaire (NSSQ; Norbeck, Lindsey, and Carriere, 1981; 1982; Norbeck, 1995). NSSQ also measures two sub-themes of support; emotional support and tangible support (Aid). Total Functional support was the sum of the emotional and tangible support scores. The NSSQ was adapted for the study by adding child-care related words or phrases to make it more situation-specific. NSSQ has a reliability coefficient estimated as 0.68 (Stevens, 2008). The Cronbach alpha for this study was 0.71.

**Procedure**

Ethical clearance was granted by the University Psychology Research Ethics Committee. Then advertisements on websites and blogs offering motherhood-related contents (such as mumsnet.com, netmums.com, mums-aid.org helpforbusymums.com) and social media
Participants based in Nigeria were recruited through advertisements on social media and blogs offering motherhood-related contents (mumsinnigeria.com and mamalette.com). A survey link was sent to the coordinators of PANDAS for distribution to potential participants. Permission to mention the study was sought via administrators of websites and Blogs prior to upload. 159 mothers started the online survey, of which 124 (78%) completed all questionnaires. Data was obtained from respondents who consented to take part in the study and responses were downloaded from SurveyMonkey® for analyses.

With reference to table 1 below, the mean age of respondents was highest (30.85±6.35) among African Immigrant mothers, 28.28±4.40 for Nigerian mothers and 29.66±5.36 among British mothers. The majority (77%) of the African Immigrants were primiparous. The same trend is observed in Nigerian mothers (63%), the majority (66%) of British mothers were multiparous.

**RESULTS**

As can be seen in Table 1., the African immigrant sample rated the delivery and postnatal support received from healthcare professionals in the UK as being moderate to a great deal of support whereas about one-third of British mothers rated the support as ranging from none-at-all to just a little.

*Insert table 1 about here*

The majority of British (72%) and African Immigrant (77%) mothers had EPDS scores above 12 (15.16±9.109 and 14.23±6.821 respectively), however, only 19% of Nigerian mothers did
(9.03±4.73). Maternal Infant Bonding scores were significantly different between African Immigrant, Nigerian and British mothers, $X^2_{(2,N=124)}=17.55$, $p<0.05$, with African Immigrant mothers having the highest mean PBQ score (16.08±12.26) and Nigerian mothers having the lowest (6.58±3.97). Nigerian mothers reported the highest level of Emotional Support (56.90±28.84), Tangible Support (AID) (27.70±15.86) and Functional Support (84.59±43.61). British mothers reported the highest social network ratings (43.69±35.85) and African Immigrants had the lowest scores on all parameters.

We found a significant main effect of cultural affiliation (African Immigrant, Nigerian or British) on PND $F_{(2,113)}=5.037$, $p>0.05$, partial $\eta^2=0.08$. However, although table 2 shows that women scoring above the 50th percentile on total functional support had slightly higher mean PND scores (11.23±6.14) than those below the 50th percentile (11.09±7.55), the main effect of Total Functional Support score was not significant, $F_{(1,113)}=0.001$, $p>0.05$, partial $\eta^2=0.00$. In addition, although multiparous mothers had higher mean PND scores (11.26±6.9) than primiparous mothers (11.07±6.9), this difference did not reach statistical significance, $F_{(1,113)}=3.70$, $p>0.05$, partial $\eta^2=0.032$. The nationality x total functional support interaction was significant, $F_{(2,113)}=6.560$, $p<0.05$, partial $\eta^2=0.104$, as was the nationality x parity interaction, $F_{(2,113)}=11.286$, $p<0.05$, partial $\eta^2=0.166$.

*Insert table 2 about here*

Further analyses using multiple linear regression to predict MIB (PBQ scores) generated a significant model, $F_{(6,117)}=34.784$, $p<0.01$. This model explained 62% of the variability in
PBQ scores (Adjusted $R^2=0.622$). Table 3 shows a 1% increase in amount of Emotional support and Tangible support causes a 2% and 0.4% decrease in PBQ scores respectively while holding other variables constant. In addition, the model non-significantly predicts that British mothers will have 9% lesser PBQ scores than Nigerian mothers, $t=-1.495$, $\beta=0.089$, $\rho>0.05$ while African Immigrants will have 3% higher PBQ scores, $t=0.525$, $\beta=0.033$, $\rho>0.05$, holding all other variables constant. Individually, Total functional support has the highest effect on PBQ with a 1% increase in TFS resulting in 2% increase in PBQ scores. However, the effect was not statistically significant, $t=1.13$, $\beta=2.151$, $\rho<0.01$. PND was the only statistically significant independent predictor of MIB, $t=13.316$, $\beta=0.766$, $\rho<0.01$, with a 1% rise in EPDS score giving rise to a 1% rise in PBQ scores.

*Insert table 3 about here

**DISCUSSION**

This study examined social support, parity, postnatal depression and maternal infant bonding cross-culturally among Nigerian, African immigrant and British mothers. We found that British mothers receive significantly higher total functional support when compared to Nigerian and African immigrant mothers. These differences may be due to the size of the social network available to Nigerian mothers rather than the actual functionality of the support from the network. This may be reflected in the variability in total functional support attributable to total social network which was highest among British mothers compared to African immigrants and Nigerian mothers. Compared to African immigrant and Nigerian mothers, British mothers had better access to formal social support networks (e.g.
community-based peer support groups, health visitors and psychological wellbeing practitioners). African Immigrants are faced with other issues of acculturation, discrimination and stereotyping which limits their social network and functional support received from formal supportive structures (Onozawa et al., 2003; Surkan et al., 2006). This implies existence of other factors accounting for the improved total functional support not accounted for in the model. Jones et al., (2014) suggested that some types of support received from the social network especially family network may not ultimately constitute the right support while some supportive structures may not necessarily be beneficial for all women.

Findings showed that nationality has a significant main effect on PND, while parity and total functional support did not, suggesting that culture tends to mediate the effect of parity and social support on PND, a finding consistent with the assertions that culture is the milieu for all affective experiences (Bashiri and Spielvogel, 1999). The significant PND difference between groups may not mean that prevalence of PND is different between the two countries, as empirical evidence has shown PND prevalence rates of 15%-19% in Nigeria (Adewuya, Eeguranti and Lawal, 2005; Abiodun, 2006) to be comparable to global figures. However, the acknowledgement of the symptoms and the manner of expression of the symptoms in the two cultures has been shown to be different; Nigerians somatize symptoms of depression (Bashiri and Spielvogel, 1999; Adewuya et al., 2005) and may be more reticent than Britons in acknowledging it when completing surveys. African immigrants may also have embraced the expressive characteristics of their environment due to acculturation (their mean length of stay in Britain was approximately 10 years). Generally, the differences between the three groups may not necessarily reflect differences based on cultural factors and practices but structural and functional disparities in societal settings. These findings are similar to Shaw et
al., (2006) who revealed that neither home visitation nor peer support reduced PND scores for mothers (Shaw et al., 2006).

A study between Taiwan and UK participants found no statistically significant difference in prevalence of PND between the two cultures (Huang and Mathers, 2001) despite the significant differences in culturally-based postnatal social support. It must be noted that the current study also recruited participants via local support groups for postnatal depression. This could have significantly contributed to the percentage of British mothers in the study having high PND scores. Our findings conflict earlier research (Leahy-Warren, et al., 2007), with higher PND scores being found among mothers who had total functional support above the 50th percentile. Additionally, Warren et al. (2011) found a significant relationship between total functional social support and PND at six weeks postpartum, reporting that first-time mothers receiving medium and low levels of emotional support had five and eight times higher risk of PND, respectively.

The present study failed to find any significant relationship between social support, culture, PND and IMB. Reasons for this finding are unclear because maternal-infant bonding assessment from Nigerian mothers was highest among the three cultural categories. However, it is vital to observe that the major source of social support in the enmeshed family structure found among Nigerians consists of family members (Osamor, 2015). While this finding is an association which does not indicate causality, it portends the possibility that social support received by Nigerian mothers could be hindering adequate maternal infant bonding. Indeed, Goodman (2008) noted social support as a factor that can impede maternal-infant interaction and bonding.
British mothers were more likely to have higher MIB than Nigerian mothers, African immigrants had the lowest MIB scores. There appears to be more clandestine variables affecting this relationship however, the model implies that the presence of PND might be the mediator for some of these effects. Notwithstanding, the strong idealistic motherhood notion intrinsic to the cultural perspectives of Nigerians (Jones, Jomeen and Hayter, 2014) may be responsible for the lower PBQ scores rather than actual strong bonding, particularly since the data was based on self-report measures. Finally, greater exposure to formal social support networks via the National Health Service may help British mothers to better understand bonding.

A variety of concerns necessitates the need for caution in the interpretation of the study findings. Factors such as parenting efficacy and parenting practices, which may confound social support and cultural differences, were not measured. Further, the African immigrant group was smaller than other groups. The cross-sectional design of this study restricts deductions about the relationships examined. Nigerian participants in the study may not have been adequately representative of the population as they were accessed through social media and website advertisements. An overwhelming majority of mothers in Nigeria do not have access to internet (National Bureau of Statistics, 2012) and may have been excluded from participating in this study.

However, when addressing the implications for future practice, there is a need for practitioners to be understanding of the needs of African immigrants in the UK. This is
because findings suggest that this group have lower functional support and social network and higher PND and MIB. These indices differ from both British and Nigerian categories where African Immigrant mothers pose their own unique experiences and health care needs. Therefore, culturally-sensitive care, which is only based on assumptive African stereotypes alone may not suffice when making inclusive healthcare arrangements for them. Further, there is need for improved structuring in formal social support networks and community-based mental healthcare for newly delivered mothers in Nigeria as is existent in the UK. Such structures should include improving post-delivery access to health professionals outside the clinical setting even when there is no imminent physical problem, since PND can go undiagnosed, to create an opportunity for critical mental health assessment of, at-risk, newly-delivered mothers, especially within the puerperium period. There exists a gap in research and measurement instruments for dysfunctional support within social networks, which begs further research. More cross-cultural studies designed prospectively will aid better understanding of the relationships between social support and different cultural factors in the development of PND.

In conclusion, culture plays a significant role in the amount of functional support that is accessible from the social network for women with PND. British mothers are more likely to receive functional support from their social networks than Nigerian and African Immigrant groups. Parity and social support did not significantly influence the development of PND individually or collectively; but their effects may be mediated by cultural or societal factors. The development of PND appears to be affected by interaction of parity, social support and culture. Also, the study established that the interaction of the presence of PND, culture and social support significantly predicts strength of maternal-infant bonding, despite PND being the only significant individual predictor. Though speculative, African immigrants
demonstrated many indices that highlighted they may be at risk of assumptive stereotypes and discrimination, which may cause disparities in the formal and informal support and skilled mental healthcare that they access when compared to non-African British mothers. Further cross-cultural research may examine these cultural differences when working in healthcare with African mothers.

References


