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The effect of maternal postnatal depression on infant's verbal and nonverbal communication skills: A video-based analysis

Overview

The Froebelian principles that argue for the right of every child to achieve his/her full potential and the right of children to protection from disadvantaged home circumstances and to the promotion of their overall well-being are the cornerstones of this research agenda. There is a general agreement in the literature that families with mothers with post-natal depression (PND) are likely to experience unstable living conditions (Hipwel et al., 2000). The novel aspect of this study is its focus on a negligible at-risk population (Pawlby et al., 2010), namely infants and their mothers who suffered from PND enough to warrant hospitalization; a comparison group of mothers without PND and their infants were used to illustrate the real differences between the two groups. In particular, infants of mothers who are resident on a MBU constitute a vulnerable subpopulation; these infants are at an increased risk not only due to the exposure to disturbed maternal behaviours that are linked to severe impairments in infant development and mother-infant relationship but also due to a variety of implications related to the institutionalization; for instance, the involvement of multiple substitute caregivers when the mother with mental health illness is too unwell to provide appropriate care for her baby (Kumar, 1992).

The present research project is also based on the Froebelian approach which sets the child in the centre of attention while requires adults to have a comprehensive understanding of young children's needs and abilities. To achieve this, this study was the first that focused on inpatient mothers with PND and their infants in order to provide a detailed and extensive examination of the four main modalities of communication (i.e., affect, gaze, vocal tone, and touch), through the prism of mother-infant reciprocity, maternal sensitivity and infant self-regulation. Parallel to that and following the Froebelian view of the importance of play and maternal singing as central integrating elements in child development and learning, a fine-grain examination of actual and observable play actions of mothers with and without PND and their infants took place while the

actual mother-infant behavioural patterns that coexist during maternal singing were also analysed.

In addition, Froebel believed that only the observation leads to real understanding, encouraging his colleagues to use the child observation as a starting point of their methods (Bruce, 2012). This study adopted a video-based observation research method, utilizing the different research capacities that technology offers today (i.e., observation through video recordings). In particular, for the purpose of this study a mixed methods sequential approach was applied for the analysis of these videos; verbal and NVC patterns along with play-related behavioural patterns analysed frame by frame at a micro-analytic level while emotional qualities (i.e., mother-infant emotional tone, mother-infant reciprocity, maternal sensitivity, maternal coercive behaviours, infant self-regulation & general atmosphere) were assessed using valid and reliable assessment tools. This approach is highly recommended for exploring more complex aspects of human relationships (Malina et al., 2011).

Key findings

Five of the most important research conclusions are as follows:

- 1) While mothers without PND predominantly engaged in play activities with their infant that were organised around the use of toy-objects, mothers with PND were mainly playing with their infants without the use of toy. The fact that dyads from the clinical group usually play without the use of toy is a novel and encouraging finding indicating the maternal ability to engage into a play interaction through different ways in the case of PND. However, this play pattern could compromise the educational and developmental benefits that infants could get from the play activities with toys.
- 2) The infants of mothers with PND (vs infants of mothers without PND) showed more immature and passive way of playing. In particular, the findings indicated that infants of mothers with PND were less likely to engage in play activities with their mothers and display a decreased level of curiosity for and interest in objects during playtime. Taking into account that the use of toys in playtime creates a space in which infants engage with the toys not only to discover the world but also to manage their emotions and soothe themselves, the findings of this research project highlighted that that infants of PND mother could be at an increased risk poor developmental outcome.
- 3) A negative association was found between the absence of toy manipulation in infants and their self-regulatory skills in both groups (i.e., clinical and comparison group). This finding is of

fundamental importance pointing to the emotional function of object play in infants' well-being that contributes to children's emotional expressiveness, self-regulation and self-awareness, as suggested by Froebel.

4) Mothers with PND were found to sing and talk less to their infants while the quality of the content of their speech showed deficits when compared to mothers without PND. Given the evidence that reduced quality of maternal vocal behaviour, including the way of speaking and singing, could lead to poorer language outcomes and cognitive capacities as well as to emotional difficulties in children (Alhusen et al., 2013; Music, 2011; Sohr-Preston & Scaramella, 2006; Kawai et al., 2017; Kaplan et al., 2012; 2014; Zajicek-Farber, 2009; Paulson et al., 2009), the findings of the present study are of fundamental importance, showing that the infants of mothers with severe PND are a population at risk for adverse developmental outcomes.

5) Overall, differences were found in infants' verbal and NVC skills between the clinical and the comparison group. Infants from the clinical group (vs. infants from the comparison group) displayed more passive non-verbal communication patterns while they were more vocally active, insofar that this could be a sign of distress. These findings regarding the high level of vocalizations in infants of mothers with PND are important, given that there is an association between a higher infant vocalization frequency and later child psychopathology.

Next Steps

A paper on the effects of PND on mother – infant relationship is in progress. The aim of this paper is to provide an overall picture of the quality of interaction between mothers with and without PND and their infants as well as to explore in depth what emerges from this kind of interaction. In this paper, the following research question is addressed: "What are the differences between the two groups (mothers with and without PND and their babies) in the quality of mother-infant interaction?". The Global Ratings Scales (GRS) of Mother– Infant Interaction has been used to evaluate the quality of mother-infant interaction, exploring the differences between groups of mothers with or without PND in a video-recorded play session. For this purpose, two items of this instrument, namely general atmosphere and reciprocity, were used in this study. "General atmosphere of the interaction" assesses the extent of how harmonious or disharmonious the overall interaction between the mother and infant is while "reciprocity" dimension refers to the "dance-like" fluency occurring in mother-infant interaction (Provenzi et al., 2018). Two additional items of the GRS instrument were used, namely maternal emotional tone and infant emotional tone; these dimensions assess how happy or unhappy the mother and the infant are during their play interaction. One additional item was used for the evaluation of infants' emotional state, which

is called "infant self-regulation" measure. This refers to the overall impression of how emotionally and physically well-regulated the infant expresses him or herself, taking into account the number of state-changes the infant may circle through as well as the self-soothing and self-distracting strategies used by the infant. Finally, Infant CARE-Index has been used to assess maternal sensitivity in a dyadic context for both groups. Infant CARE-index has been derived from attachment theory to evaluate sensitivity in mother-infant interaction (Crittenden, 2010).