Mama, please stop crying: lowered postnatal depression scores in mothers after a course of chiropractic care for their infants

By Kevin E. Marillier, DC¹, Ashleigh M. Lima, DC¹, Lisa Y. Donovan, DC¹, Candice Taylor, DC¹ and Joyce Miller, BSc, DC, DABCO, PhD²

1. Chiropractor in private practice, United Kingdom
2. Associate Professor, Anglo European College of Chiropractic, MSc Musculoskeletal Health of Paediatrics, Bournemouth University, United Kingdom

Corresponding author: Joyce Miller. Email: jmiller@aecc.ac.uk

ABSTRACT

Objective: The objective of this study was to investigate postnatal depression scores in mothers during a course of chiropractic care for their infants. Methodology: A prospective non-randomized case series of maternal depression scores was undertaken in a chiropractic teaching clinic in the UK. A convenience sample of 117 mothers, whose infants were enrolled in chiropractic care, were recruited over a one year period for this study. Maternal EPDS scores on intake were compared with EPDS scores on discharge. Results: Overall, a statistically significant decrease in postnatal depression score of 2.26 (P=<0.0001) was noted at the discharge visit. Conclusion: Reductions in postnatal depression scores in mothers occurred during a course of chiropractic care for their infant. The reasons for these reductions are not known but it may be considered a clinically significant change, although further research is indicated to validate these ideas.

Key words: postnatal depression, Edinburgh Postnatal Depression Scale, chiropractic, infants, mothers.

Introduction

Postnatal depression (PND) has the potential to be a destructive, damaging and even fatal condition. The effects of PND are known to go beyond the mother, affecting the partner and the child; it can be deemed a public health problem.¹ PND is defined as “the first occurrence of psychiatric symptoms severe enough to require medical help occurring after child birth and before the return of menstruation.”² Symptoms include despondent mood, feelings of inadequacy as parent, sleep and appetite disturbances, and impaired concentration. It can last for several months, and if left unaided, for several years.³

Approximately 13% of women will experience this condition within the first 12 weeks postpartum, and a period prevalence has been assessed at 19.2% within first postpartum year.⁴ Women who have suffered from PND are twice as likely to experience future episodes of depression.⁴ As such, screening for depression by all clinicians who encounter mothers of newborns is important.⁵

The Edinburgh Postnatal Depression Scale (EPDS) is a 10-item questionnaire aimed at identifying whether or not the mother is at risk of PND. The EPDS was designed to be easy to administer and an effective screening tool for PND.⁶ A variety of characteristics are associated with high EPDS: past history of depression, being divorced, birth partner overseas and assisted delivery.⁷,⁸ Of great importance now are women who report having had a traumatic delivery (this includes all delivery types, and is related to the woman’s experience of her delivery and is linked to pain, feeling of loss of control and powerlessness and the fear she experienced) who may have increased risk of PND but also increased risk of developing post-traumatic stress disorder which may mimic PND.⁸

It has been theorised that PND has a deleterious effect on child development including a direct impact on the child of exposure to the parental disorder and indirect impact via the effect of the parental disorder on interpersonal behaviour in general and parenting.⁹

The impact of depression on the postnatal period is of particular importance due to the infant’s extreme dependency on their caretaker, their sensitivity to interpersonal contacts, and the fact that, in the great majority of cases, the mother constitutes the infant’s primary environment in the first postnatal months.¹⁰ It is evident that PND poses a risk for the mother-infant relationship and infant developmental outcome. The adverse effects of PND appear to be mediated through its association with maternal cognitions and parenting. In turn, children of depressed mothers are more likely to have delayed psychological, cognitive, neurological, and motor development, and are at higher risk of avoidance and distressed behaviour.¹⁰
Chiropractic is a safe, popular modality of manual therapy used worldwide for treatment of neuro-musculoskeletal problems for all ages. With regard to pediatric treatment, the chiropractor is well-placed to assist the parent and infant in identifying contributing factors and controlling the problem, with crying, feeding and sleeping problems being most common. Chiropractors use treatment primarily aimed at correcting biomechanical and musculoskeletal imbalance.

Methods
This prospective non-randomized case series used data collected from mothers of infant pediatric patients at new and discharge visits in an out-patient public chiropractic teaching clinic on the south coast of England. The Edinburgh Depression Scale was given on the first examination visit and again at the discharge visit. The Edinburgh Depression Scale is a 10-item questionnaire with each question scoring between 0-3; these were subsequently summated to give a final score out of 30 for each mother and these scores were compared before and after treatment of the infant. No cut-off scores to diagnose depression or not were used in this study, but the scores were used as a continuum, since this has been considered an appropriate use of this screening tool.

Inclusion criteria were all mothers who presented an infant for care. Exclusion criteria were inability to read English and refusal to complete the survey. Participants were of a convenience sample and there was no recruitment beyond those who voluntarily presented their child to the clinic for treatment. There was no treatment of the mothers, only of the infant.

The forms for the study were reviewed by the projects ethics panel prior to beginning the use of the forms in the clinical file of the infants who were presented to the clinic. These forms were considered a routine part of clinical practice. However, mothers could refuse at any point to complete the questionnaires and all participants that agreed to take part gave signed consent. All data were anonymous. For assurance of accuracy, 10% of the data were checked at specific data points during the collation process.

All the data were plotted onto an Excel Spreadsheet by number (not name) and analysed using Statistical Product and Service Solutions (SPSS v.20). The EPDS scores on intake were compared with the EPDS score on discharge. Wilcoxon matched pair testing was undertaken. The Wilcoxon matched pairs test was used as it compares two paired groups of non-parametric data.

Results
The subjects studied were a consecutive sample of 117 mothers who presented their infant to this clinic for care. No eligible mothers refused to participate. The average overall EPDS change score from first to last visit was a decrease of 2.26 points. The change score ranged from a decrease of 12 points to an increase of 4.

The EPDS change score was lower at the end of an episode of care to a highly statistically significant degree with a p value of <0.0001 after an episode of care. The level of significance of change of EPDS score was calculated using Wilcoxon matched pairs test.

Table 1 demonstrates the average age of the infants and average time they spent in care. Table 2 shows the average EPDS score of the mother at intake and discharge of the infant and the overall change score (n=117).

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<tr>
<th>Table 1. Age and time of episode of infant’s care</th>
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<td>Average age on first visit (weeks)</td>
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<td>Average time spent in care (weeks)</td>
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<th>Table 2. Average EPDS scores</th>
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<tr>
<td>Average EPDS score on first visit</td>
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<td>Average EPDS score in last visit</td>
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<td>Change score</td>
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Discussion
It is reasonable to think that mothers would feel better when their baby is better. The EPDS is considered a good surrogate measure for anxiety in mothers and therefore, should be used as a continuum and any lowering of scores is a benefit. At least one previous study has demonstrated that maternal stress levels went down as they reported fewer crying and sleeping problems in their infants.

However, it cannot be declared that chiropractic care of the infant was the only, most significant or even part of the reason for the improvement in maternal mental health. Whilst a change score of 2.26 is highly significant, it may be attributable to several factors. There are a myriad of potential confounding factors in this type of study. Strong predictors of a high EPDS score are reported night awakenings disturbing mothers sleep alongside frequent infant crying. Therefore, anything that helped the infant sleep may have affected the mother in a positive way. Time itself may be a factor in change. Infant sleep is sporadic and transient in nature and there can also be unrealistic parental expectation about how the child should be sleeping. It is possible that as infant’s sleep improves naturally over time, a
mother’s stress and anxiety levels decrease as they are also able to sleep more themselves and become more adapted to life as a mother. Rosentrom and colleagues suggest complaints of poor sleep quality are estimated to occur in 50% to 90% of diagnosed cases of depression for which sleep problems often proceed the onset of a depressed mood. There is evidence to suggest that chiropractic treatment improves infant sleep which in turn could lead to improvements in the mother’s sleep. Some infants may be more difficult to settle and may wake more frequently. Infants who have not learned to settle independently or self-soothe may disrupt their mother’s sleep resulting in maternal sleep deprivation and report of symptoms similar to depression. It can therefore be suggested that infant temperament mediates the relationship between maternal sleep disruption and depression. However, after a series of chiropractic treatments parents reported that their infants settled more quickly and easily, and fewer had difficulty settling to sleep.

The change found in our study may be considered more meaningful in light of another current study which found that, without intervention, there was no change between the early (first trimester) infant and maternal stress levels and later levels at six months of age. Their study clearly showed that these problems for the mother and infant are long-term. That said, they didn’t report any interventions for either the mother or the baby.

Another factor to consider which may go some way to explaining the positive results is the psychological impact of visiting a healthcare professional. Miller proposed that the most effective help for parents is from a supportive healthcare professional and the chiropractor is in a position to provide that support. The mothers in this study presented to the clinic with a multitude of problems. It is natural for mothers to experience anxiety about their child’s condition. Mothers may gain confidence from receiving a diagnosis and explanation of their child’s condition in a chiropractic setting. Listening to the parents’ concerns and reassurance that the child is healthy and thriving may also be useful, although not curative, both of which could be contributing factors in reducing the EPDS score. The chiropractor, if required, treats with mild touch to restricted barriers, restoring musculoskeletal balance, resulting in comfort for the infant and reassurance for the parent. It is therefore understandable that this might have a positive impact on PND risk factors in the mother as they will be less anxious and worried if their child is in good health.

Increased incidence of assisted deliveries in recent years has led to an epidemic of minor birth trauma to the infant of which musculoskeletal (MSK) problems dominate. Many infants present to chiropractors after traumatic deliveries; a risk factor for PND. Chiropractors treat MSK problems in neonates and infants. Therefore it might be postulated that as the child’s condition improves, the mother’s anxiety improves, the overall EPDS score may lessen.

Assisted births are also associated with poorer sustained breastfeeding. The presence of breastfeeding problems may influence the onset of depression in vulnerable women, by reducing levels of self-esteem and confidence in their ability to be effective mothers. Dennis and McQueen found that breastfeeding was associated with lower levels of depressive symptomatology. Vallone found that chiropractic therapy was helpful in solving breastfeeding problems. These ideas suggest that chiropractic treatment of MSK related breastfeeding complaints may reduce feelings of frustration and increase self-esteem leading to a reduction in these risk factors for PND. More research investigating the link between poor breastfeeding and onset of PND is required to validate these ideas.

Limitations
This study exposed several limitations. First, it recorded only the time spent in care (<3 weeks) not the total number of treatments each infant received. This could have varied depending on the duration of treatment, the infant’s natural progression, development and symptom relief could be accountable for the decrease in EPDS score. The average number of treatments per infant is 4 in this clinic.

As there were no inclusion or exclusion criteria for the infant, a wide range of conditions were seen and treated. Therefore some situations may have been more serious than others depending on the nature of the condition thus affecting the EPDS score of the mother. However, this clinic accepts only infants with the types of musculoskeletal conditions that can be treated with manual therapy and it is unlikely that any child with illness was part of the study. This is a routine chiropractic practice and it is unlikely that the cases varied from those reported throughout the research literature.

Another limitation of this study is that the ages of the mothers are unknown. However, Ghosh and Goswami investigated PND risk factors using the EPDS in 6000 patients, and found that age and parity showed no relationship with developing PND.

The rapid nature of infant development suggests possible outgrowth of conditions, for example, normalization of sleeping patterns. A way to further investigate such factors would be to observe mothers who do not utilize any therapy compared to those who use chiropractic care to investigate if the same trend in reduction of EPDS scores is noticed over the same period of time. However, these developmental changes in sleep time normally take considerably lon-
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ger than the average treatment episode in this clinic, which was less than three weeks. As a case series, this research is the lowest level of investigation and further, more well designed studies are required to validate or refute these ideas.

Conclusion
This study into PND scores of mothers whose infants underwent chiropractic care showed statistically significant reduction in scores when concluding a course of chiropractic treatment. No deductions can be made to the broad spectrum of PND. However, it brings to light the need for further well-designed studies, with control groups, to ascertain whether chiropractic care for the child has any scope in reducing a mother’s post-natal depression score.

Clinical Bottom Line: Significant reductions in post-natal depression scores in mothers were noted during a short course of chiropractic treatment for their infant.

References
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