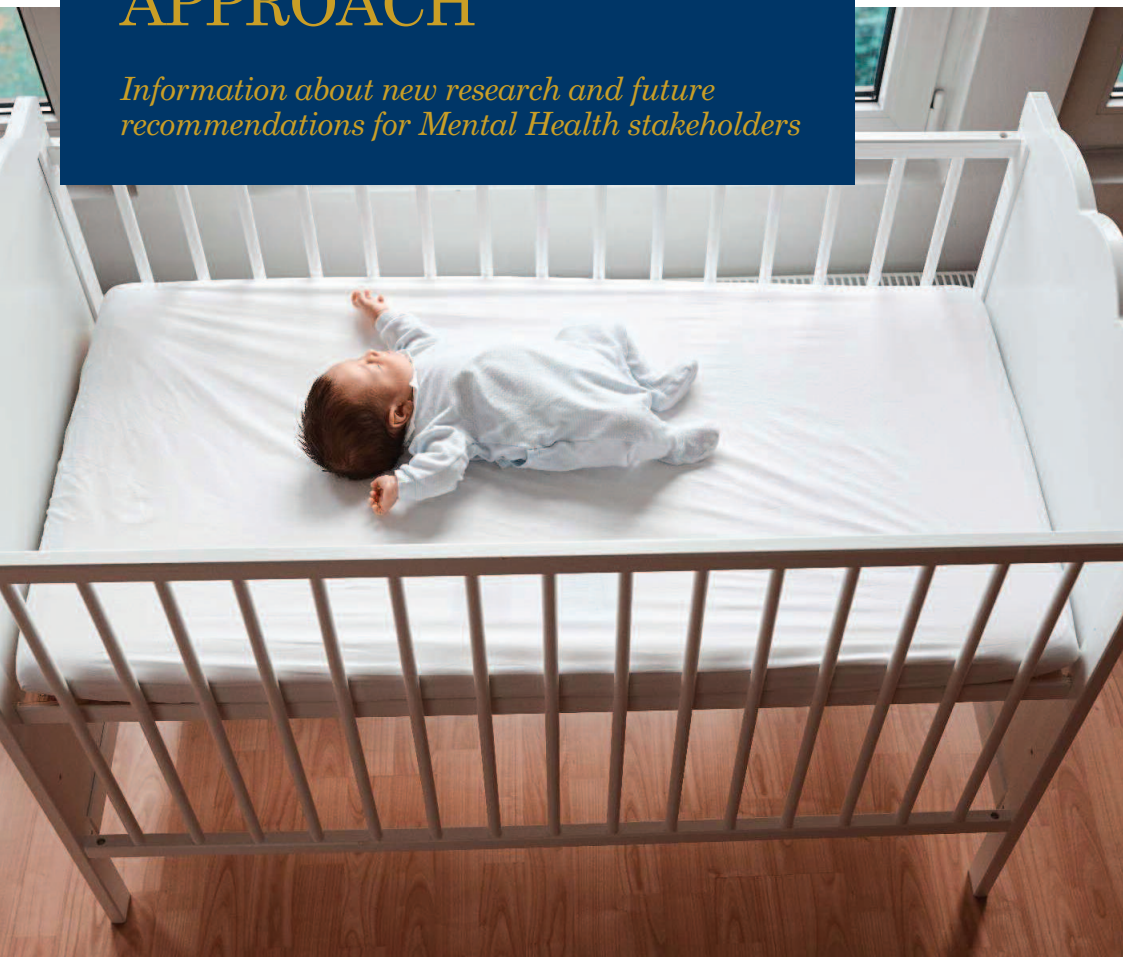


POSTNATAL DEPRESSION: AN EVOLUTIONARY APPROACH

*Information about new research and future
recommendations for Mental Health stakeholders*





POSTNATAL DEPRESSION: AN EVOLUTIONARY APPROACH

Why is this research important?

Postnatal Depression (PND) has an adverse effect on mothers' relationships with their children. This has a subsequent impact on child development from early infancy through to adolescence, and influences emotional, cognitive, and physical development, for example, stunted growth and poorer language development in children whose mothers are depressed. PND also causes women to stop caring for themselves and their children, and having PND can lead to future depressive episodes. Preventing PND, or diagnosing it early, is crucial to improving maternal and child health outcomes. Below are summaries of three recent, linked, research projects that assess different impacts of PND. We suggest two new potential risk factors, and demonstrate how PND can affect both family relationships over time, and how it can affect completed family size.

Summary of the research

Myers, S & Johns, S E (2019) Male infants and birth complications are associated with increased incidence of postnatal depression. *Social Science & Medicine*, 220, pp 56-64.

We found the odds of developing PND increased by 79% when mothers had baby boys compared to baby girls. The study used the complete reproductive histories of 296 women from contemporary, low fertility populations. We identified that women who give birth to boys were 71-79% more likely to develop PND. Furthermore, women whose births had some form of complication were 174% more likely to experience PND compared to those women who had no complications.

This research also showed that while women with a tendency towards symptoms of depression, anxiety, and stress were always at

increased risk of PND, they had reduced odds of developing PND after experiencing birth complications. We suggest that these women may have received greater post-birth support because their mental health concerns were previously recognised. This finding suggests interventions to support women can be effective in preventing PND developing.

We undertook this research to explore whether there was a relationship between the sex of infants and PND because of the known link between inflammatory immune response and the development of depressive symptoms. Both the gestation of male foetuses and the experience of birth complications have documented associations with increased inflammation, yet, until this study, their relationships with PND were unclear. Many known risk factors for depressive symptoms are associated with activation of inflammatory pathways, opening up the potential for identifying new risk factors based on their inflammation causing effects – an idea supported by this study.

Our recommendations

PND is a condition that is avoidable, and it has been shown that giving at-risk women extra help and support can make it less likely to develop. The finding that having a baby boy or a difficult birth increases a woman's risk gives health practitioners two new and



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easy ways to identify women who would particularly benefit from additional support in the first few weeks and months after they have given birth.

Myers S, & Johns S E (2018). Postnatal depression is associated with detrimental life-long and multi-generational impacts on relationship quality. *PeerJ* 6:e4305 <https://doi.org/10.7717/peerj.4305>

Postnatal depression (PND) can impact the quality of the relationship between mother and child into adult life, and have a negative influence on the quality of relationships between grandmothers and grandchildren. We found that PND continues to impact mother-child

relationships into later life and affects multi-generational relationships too.

We surveyed 305 women mainly from the UK and US with an average age of 60 and who had given birth to an average of 2.2 children. Their children ranged in age from 8 to 48, with an average age of 29; many of whom now had their own children. This wide-ranging data set allowed us to assess the impact of PND over a longer time frame than has been hitherto examined.

Our data showed that women who had PND reported lower relationship quality with their offspring, including those children who are now adults, and that the worse the PND had

been the worse the later relationship quality was.

While mothers who experienced depressive symptoms at other times had worse relationships with all of their children, PND was found to be specifically detrimental to the relationship mothers had with their child whose birth triggered the PND. This suggests that factors which affect mother-child relationships in early infancy can have lifelong consequences on the relationship that is formed with a child over time.

Another discovery from the research was that women who suffer from PND with a child, and then in later life become a grandmother via that child, form a less emotionally close





relationship with that grandchild. This continues the negative cycle associated with PND as the importance of grandmothers in helping with the rearing of grandchildren is well-documented.

Our recommendations

The findings should encourage the ongoing development and implantation of preventative measures to combat PND, such as ensuring parity of experience at eight week post-natal checks, specialist mental health checks at six weeks post-birth, and access to specialist midwives for at-risk women. Investment in prevention will not only improve mother-child relationships, but also future grandmother-grandchild relationships. Health professionals should use these findings when assessing the support women have after giving birth, and use them to recognise the long-standing issues PND can cause in family relationships.

Myers, S, Burger O, & Johns, S E (2016). Postnatal depression and reproductive success in modern, low-fertility contexts. *Evolution, Medicine, & Public Health*, 1, 71-84

Mothers who have PND are unlikely to have more than two children. Until now, very little has been known about how women's future family size is impacted by the experience of PND. We collected data on the complete reproductive histories of over 300 women to measure the effect PND had on their decision to have more children. The mothers were all born in the early to mid-20th century and the majority were based in industrialised countries while raising their children.

We found that PND, particularly when the first child is born, leads to lowered fertility levels. Experiencing higher levels of emotional distress after her first birth decreased a woman's likelihood of having a third

child, though did not affect whether she had a second. Furthermore, PND after both the first and the second child put women off having a third child to the same extent as if they had experienced major birth complications.

Our recommendations

This research is the first to highlight the potential role PND has on population ageing, where the median age of a country becomes older over time. This demographic change is mostly caused by women having fewer children, and can have significant social and economic consequences. Given that PND has a prevalence rate of around 13% in industrialised countries, with emotional distress occurring in up to 63% of mothers with infants, this research suggests that investing in screening and preventative measures to ensure good maternal mental health now may reduce costs and problems associated with an aging population at a later stage.

Our target audience

- Clinicians and health professionals, particularly those who work with 'at risk' populations
- Health policy and planning professionals
- Relevant ministerial departments; The Department of Health and Social Care
- The National Institute for Health and Care Excellence (NICE)
- Maternal and child health researchers across a wide array of disciplines

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- Grassroots support groups and organisations
- Professional bodies, such as the Royal College of Midwives and the Royal College of Psychiatrists.

Implications of our research for future policies and practice

Our research thinks about PND differently than many other studies. We found that employing an evolutionary framework leads to new ways of asking – and answering – questions about PND, and other aspects of reproductive health. For example, mothers are known to help their daughters out with their own children, thus increasing their fertility, so we became interested in examining whether PND disrupts this relationship. It had also been suggested that PND may – in theory – increase fertility, as it could be a way of getting more help from relatives in raising children.

However, we tested this, and found it not to be the case. Our work has

taken the study of PND in a different direction, produced concrete recommendations that can be implemented by health professionals, and that should be incorporated into antenatal and postnatal mental health policy and practice.

Our findings have also highlighted new lines of inquiry around links between PND and inflammatory response during pregnancy and birth, and the quality of family and social relationships after periods of poor mental health.

About the authors

Dr Sarah E Johns (pictured below) is a Senior Lecturer in Evolutionary Anthropology in the School of Anthropology and Conservation at the University of Kent. She has broad research interests in reproductive and sexual health, postnatal mental health, and how evolutionary theory is a useful explanatory framework in this area. Dr Johns is also an expert on teenage motherhood in the UK, and

is currently working on a project examining the causes and consequences of sexting and unsolicited sexual images.

Dr Sarah Myers is currently an Honorary Research Associate and Postdoctoral Teaching Assistant in the Department of Anthropology at University College London. She received her PhD from the University of Kent in 2017. Sarah also undertakes research on the influence different forms and sources of support have on infant feeding decisions and early maternal experience in the UK.

Dr Oskar Burger is an evolutionary demographer, currently based at the University of Texas at Austin. He has research interests in evolutionary approaches to human behaviour, data analysis, and areas of applied anthropology and psychology.





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