

<b>Institution: University of Reading</b>
<b>Unit of Assessment: 4 Psychology, Psychiatry &amp; Neuroscience</b>
<b>Title of case study: Improving the early detection and treatment of postnatal depression and associated adverse child outcomes</b>
<p><b>1. Summary of the impact.</b> Since 1994, a team from the University of Reading, led by Peter Cooper, Professor (1993-) and Lynne Murray, Professor (1996-), have published extensively on postnatal depression (PND), revealing important information on the prevalence, detection rates, prediction and assessment of this disorder. Furthermore, their studies examined the impact of PND on the mother-infant relationship and child development, and the effectiveness of interventions for PND. This work has been key to clarifying the nature of PND and its clinical significance and has had a major impact on clinical care for women with PND and their babies. Specifically, the research has provided support for an increased number of health visitors in the UK, influenced UK practice guidelines, and informed training delivered directly to healthcare professionals by Cooper and Murray. Cooper and Murray have extended their UK research to work in an impoverished community in South Africa, which has given rise to community-based parenting interventions that are now being disseminated both in South Africa and beyond.</p> <p><b>2. Underpinning research.</b> PND is a debilitating mood disorder affecting 10 to 15% of women in the weeks following a delivery. Since their appointments at the University of Reading in 1994 and 1996 respectively, Cooper and Murray have run three lines of inter-related research on PND: (i) longitudinal and experimental research into the impact of PND on the mother-infant relationship and child development; (ii) research on the detection of PND, the uptake of psychological interventions and their impact on maternal mood, mother-infant interactions, and child development; and (iii) longitudinal and treatment research on maternal mood, the mother-child relationship, and child outcome in an impoverished community in South Africa.</p> <p>The first line of work demonstrated that PND, which affects around 70,000 women in the UK each year, has specific adverse effects on the early mother-infant relationship that predict particular adverse child outcomes. Specifically, Cooper and Murray have shown (with Halligan (PostDoc/Lecturer/Reader, 2002 to 2013; and Fearon (Reader, 2007 to 2011)) that (i) PND predicts cognitive impairment in boys in infancy (via maternal lack of contingent responsiveness), which in turn predicts significant adverse scholastic outcome at age 16 (GCSE grades); (ii) maternal hostility and coercion predict dysregulation of child behaviour as well as conduct problems; and (iii) maternal withdrawal predicts physiological distress, which, together with vocal expressions of sadness and infant insecure attachment, predicts depression in adolescence [e.g. 1-3].</p> <p>With regard to clinical practice, the team's research has shown that detection of PND in routine care is poor, with at-risk individuals being particularly likely to exclude themselves from routine care and having especially poor outcomes (in terms of infant prematurity and low birthweight, and reduced rates of breastfeeding) [e.g. 4]. Cooper and Murray carried out the first randomised controlled trial of the impact of treating PND on the mother-child relationship and child emotional development [5, 6], demonstrating that early brief psychological intervention substantially improved maternal mood and was of benefit to the mother-child relationship and child outcome. Importantly, the trial demonstrated that equally positive outcomes were obtained when the intervention was delivered by a specialist or non-specialist (health visitor) therapist, providing a strong endorsement for intervention in PND being led by health visitors.</p> <p>Finally, in response to a request for assistance from the University of Cape Town in 1994, Cooper and Murray extended their work to the developing world. In collaboration with Professor Leslie Swartz (University of Cape Town), in an impoverished South African community, Khayelitsha, they demonstrated that (i) the rate of PND was three times greater than in the developed world and (ii) both PND and the high levels of adversity experienced by this population were associated with impaired parenting [7]. Furthermore, in collaboration with Professor Mark Tomlinson (then working as a University of Reading doctoral student, 2000-2003), the team (i) established that PND in Khayelitsha was associated with insecure infant attachment [8]; (ii) developed a novel psychological intervention designed to enhance the quality of the mother-infant relationship in this context; and (iii) demonstrated, in a large-scale randomised controlled trial, significant improvements in parenting and infant attachment following the intervention. These positive outcomes were achieved with the intervention delivered by lay community workers [9]. In a recent extension to their work in South Africa, Cooper and Murray developed a training programme</p>

specifically designed to promote infant cognitive development. They piloted this training programme in Khayeltisha [10] with successful outcomes and have subsequently recently completed a randomised controlled trial in Khayelitsha which demonstrated substantial benefits to child language development and attention (in collaboration with Professor Tomlinson of Stellenbosch University, supported by the Felix Foundation and the DG Murray Trust).

**3. References to the research:** *Papers internally reviewed and deemed as of at least 2\* quality.*

- [1] Murray, L., et al. (2010). The effects of maternal postnatal depression and child sex on academic performance at age 16 years: a developmental approach. *Journal of Child Psychology and Psychiatry*, 51 (10), 1150-1159. ISSN 0021-9630 doi: 10.1111/j.1469-7610.2010.02259.x Funded by MRC (PIs: Murray/Cooper, 1995-2005; 'The intergenerational transmission of affective disorders', £1,415,698).
- [2] Morrell, J. & Murray, L. (2003). Parenting and the development of conduct disorder and hyperactive symptoms in childhood: a prospective longitudinal study from 2 months to 8 years. *Journal of Child Psychology and Psychiatry*, 44, 489-508. Funded by MRC (PIs: Murray/Cooper, 1994-1999; 'The process of child development in the context of postnatal depression', £510,836). Web of Science citations (November 2013): 49
- [3] Murray, L., et al. (2011). Maternal postnatal depression and the development of depression in offspring up to 16 years of age. *Journal of the American Academy of Child and Adolescent Psychiatry*, 50 (5), 460-470. ISSN 0890-8567 doi: 10.1016/j.jaac.2011.02.001 Funded by MRC (1995-2005; as above). Web of Science citations (November 2013):20
- [4] Murray, L., et al. (2003). Self-exclusion from health care in women at high risk for postpartum depression. *Journal of Public Health Medicine*, 25 (2), 131-137. ISSN 0957-4832 doi: 10.1093/pubmed/fdg028 Funded by Department of Health (PIs: Murray/Cooper, 1999; 'Contacts with midwives, health visitors and GPs, of women at risk for postpartum depression', £30,000). Web of Science citations (November 2013): 27
- [5] Cooper, P.J., et al. (2003). Controlled trial of the short- and long-term effect of psychological treatment of post-partum depression - 1. Impact on maternal mood. *British Journal of Psychiatry*, 182 (5), 412-419. ISSN 0007-1250 Funded by Birthright- The Royal College of Obstreticians (PIs: Murray/Cooper, 1989-1992; 'The prediction of postnatal depression and the treatment of its adverse effects on infant development', £100,000). Web of Science citations (Nov. 2013): 151
- [6] Murray, L., et al. (2003). Controlled trial of the short- and long-term effect of psychological treatment of post-partum depression 2. Impact on the mother-child relationship and child outcome. *British Journal of Psychiatry*, 182 (5), 420-427. ISSN 0007-1250 Funded by Birthright- The Royal College of Obstreticians (1989-1992; as above). Web of Science citations (November 2013): 117
- [7] Cooper, P.J., et al. (1999). Post-partum depression and the mother-infant relationship in a South African peri-urban settlement. *British Journal of Psychiatry*, 175, 554-558. Funded by Wellcome Trust (PIs: Murray/Cooper, 1998-1999; 'An epidemiological study of postpartum depression and associated mother-infant disturbances in Khayelitsha', £43,677). Web of Science citations (November 2013): 149
- [8] Tomlinson, M., et al. (2005). The mother-infant relationship and infant attachment in a South African peri-urban settlement. *Child Development*, 76 (5), 1044-1054. ISSN 0009-3920 doi: 10.1111/j.1467-8624.2005.00896.x Funded by The Vlotman Foundation (PIs: Cooper/Murray, 'The T Vlotman Fellowship in Child Development', £153,778). Web of Science citations (November 2013): 37
- [9] Cooper, P. J., et al. (2009). Improving quality of mother-infant relationship and infant attachment in socioeconomically deprived community in South Africa: randomised controlled trial. *British Medical Journal*, 338 (7701), 8. ISSN 0959-8146 doi: 10.1136/bmj.b974 Funded by The Wellcome Trust (PIs: Cooper/Murray, 1999-2003; 'A controlled trial of a community based mother-infant intervention in a South African peri-urban settlement', £344,859). Web of Science citations (November 2013): 30
- [10] Cooper, P.J., et al. (2013). Promoting mother-infant book-sharing and child cognitive development in an impoverished South African population: a pilot study. *Early Childhood Education Journal*, doi: 10.1007/s10643-013-0591-8 Funded by Constable Robinson (PIs: Murray/Cooper, 2011-12, £10,000).

**4. Details of the impact.**

**1. Increased recognition of importance of identification and intervention for PND.**

Cooper and Murray's findings highlighted the profound and wide-ranging impact of PND on child

development and the fact that it was a commonly undetected problem. We disseminated these findings widely to practitioners working with mothers in the UK, Europe, and South Africa, highlighting the importance of identification and treatment [1]. This work is of major social and clinical importance [2] because those who have direct contact with mothers and infants in the perinatal period (i.e. GPs, midwives, health visitors, psychiatric nurses) are now aware that PND is a common complication of childbirth, and are required to direct their practice according to guidelines informed by evidence that includes Cooper and Murray's work [e.g. NICE guideline, published 2007; 3]. Indeed, providing support for PND is now a core part of health visitor services as documented within the Health Visitor Implementation Plan [4]. The UK government has committed to strengthen health visitor services and increase the workforce by 4,200 (approximately 40%) between 2011 and 2015. A key piece of evidence in arguing for this increase was the research by Cooper and Murray showing the serious, long-term consequences of PND [5]. As health visitors are required to visit every new infant and mother after birth, the reach of Cooper and Murray's work on PND is considerable. In addition, by engaging with radio, television and print media, Cooper and Murray have informed the general public of the research findings and provided advice on how to seek help [6].

## **2. Direct influence on health visitor training**

Cooper and Murray have been directly involved in healthcare training in PND. Between 2002 and 2010, in collaboration with a health care training company (Pivotal Partners Ltd), they ran a biannual three-day trainers' course for health visitors and other professionals (e.g., midwives and psychiatric nurses) on the identification and treatment of PND. A total of 113 professionals from the UK and abroad were trained between 2008 and 2010 [7]. This training programme produced a body of informed clinicians who have since disseminated their knowledge and, on the basis of the knowledge provided during the training, have effected change in their local practices [7]. Since 2010, Cooper and Murray have run a similar PND training course for clinicians at the University of Massachusetts, Boston, USA [8].

## **3. Enabling widespread public and professional access to critical information on parenting and child development**

To disseminate their research findings on infant development more widely, Murray produced a book for parents and professionals ('The Social Baby'), in collaboration with a health visitor colleague [9]. This book was published in 2000, and over 30,000 copies have been sold, with over 10,000 sold since 2008 [10]. The book has now been published in the UK, Australia, Greece, Germany and Italy. The potential impact and significance of the book for training healthcare professionals on important aspects of parent-infant interactions was recognised by the National Society for the Prevention of Cruelty to Children, who produced a video version in 2004 [11]. Over 4,000 copies of the video have been disseminated to professionals working with women vulnerable to PND [10] and several consumer bodies actively promote use of the book (e.g. National Childbirth Trust, Parenting UK, Barnados, National Family and Parenting Institute) [e.g. 12]. Excerpts from the book have been used by the Department for Children, Schools and Families in materials for Early Years and Foundation Stage (EYFS) practitioners and the book is widely recommended by health and social services across the UK [13]. Murray has just completed a follow up volume ('The Psychology of Babies: how relationships support development from birth to two'), to be published early in 2014, aimed again at a lay and professional readership, with the National Childbirth Trust actively involved in its dissemination, ensuring continued public and professional access to the practical implications of Cooper and Murray's basic research.

## **4. Improving child development in the developing world**

The psychological intervention for PND that Cooper and Murray developed, and which was trialled in South Africa, has been adopted by a Non-Government Organisation (NGO), the Parent Centre [14]. The therapists trained by the team have been delivering the intervention to women in impoverished communities (over 3,000 women have been treated since 2008) and they themselves have trained further community workers (64 newly trained therapists from 10 sites) [12]. The work of the Parent Centre, based on Cooper and Murray's intervention, was adopted in 2012 by a major child NGO, 'Ububele', working with mothers and children in Alexandra, a township in Gauteng province [12]. In 2013 Cooper and Murray were consulted by the MRC of South Africa on the roll-out of early mother-infant interventions and, as a consequence, are currently advising groups in Tanzania, Kenya and Uganda on adapting their early parenting intervention materials for use in intervention programmes within these countries [15].

## Impact case study (REF3b)

To ensure effective translation of their recent research to promote children's cognitive development in South Africa, in 2012 Cooper and Murray established a formal collaboration with a local literacy NGO (Wordworks). They are currently working with them to develop a range of training programmes for national implementation [16]. The potential relevance of the training to other impoverished populations in Africa (and elsewhere) is clear. To extend this work further Cooper and Murray are currently collaborating with a WHO-funded group working with teenage mothers in Cameroon.

### 5. Sources to corroborate the impact \*Contact details provided

- [1] To corroborate dissemination to practitioners: programmes documenting presentations at clinical conferences available on file, for example: The Fifth Annual Greenwich Child and Adolescent Mental Health Services (CAMHS) Under 5s Conference; London, October 2010. Available upon request.
- [2] To corroborate the contribution of the underpinning research to increased awareness of the importance of identification and treatment for PND: Past Chair of Marce Society for Perinatal Mental Health\*
- [3] NICE guideline on antenatal and postnatal mental health:  
<http://www.nice.org.uk/nicemedia/live/11004/30431/30431.pdf>
- [4] Evidence that supporting mothers with PND is a core part of health visitor services (in Health Visitor Implementation Plan, 2011-15):  
[https://www.eoedeanery.nhs.uk/cms/page\\_manager/downloadFile.php?doc\\_url=1301473722\\_WFI\\_R\\_sh\\_health\\_visitor\\_implementation\\_plan.pdf](https://www.eoedeanery.nhs.uk/cms/page_manager/downloadFile.php?doc_url=1301473722_WFI_R_sh_health_visitor_implementation_plan.pdf)  
[https://www.eoedeanery.nhs.uk/document\\_store\\_2/Health\\_Visitor\\_Factsheet.pdf](https://www.eoedeanery.nhs.uk/document_store_2/Health_Visitor_Factsheet.pdf)
- [5] To demonstrate reference to the team's work in supporting the case for increased health visiting provision in the U.K. (see response to question 73):  
<http://www.publications.parliament.uk/pa/cm201012/cmselect/cmeduc/1170/11062203.htm>
- [6] To corroborate media reports on the team's work, for example:  
<http://www.bbc.co.uk/programmes/b012fbvk>  
<http://www.dailymail.co.uk/health/article-2004627/40-children-mothers-experience-baby-blues-suffer-depression-16.html>  
<http://www.netmums.com/coffeehouse/general-coffeehouse-chat-514/news-current-affairs-topical-discussion-12/901887-thousands-new-mums-suffering-silence-pnd-all.html>
- [7] To corroborate the number of professionals trained on the identification and treatment of PND and the effect of this training on local practice. Director, Pivotal Partners Ltd.\*
- [8] To corroborate provision of clinical training in Boston, USA:  
<http://supportingchildcaregivers.com/tag/postnatal-depression/>
- [9] The Social Baby book: <http://www.socialbaby.com/>
- [10] Sales figures for The Social Baby available on request.
- [11] The Social Baby video:  
[http://www.nspcc.org.uk/inform/trainingandconsultancy/learningresources/socialbaby\\_wda47886.html](http://www.nspcc.org.uk/inform/trainingandconsultancy/learningresources/socialbaby_wda47886.html)
- [12] National Childbirth Trust link to The Social Baby:  
<http://www.nctshop.co.uk/The-Social-Baby-Understanding-Babies-Communication-from-Birth-Lynne-Murray-Liz-Andrews/productinfo/1894/>
- [13] Examples of health and social services recommending The Social Baby:  
<https://www.flintshirepkh.co.uk/UploadedFiles/FSDInformation/Bibliotherapy%20Book%20Prescription%20list-14-8-2013-13-55-9.pdf>  
[http://cornwall.childrensservicedirectory.org.uk/kb5/cornwall/fsd/organisation.page?id=XbWy5n\\_HNrs](http://cornwall.childrensservicedirectory.org.uk/kb5/cornwall/fsd/organisation.page?id=XbWy5n_HNrs)  
[http://www.stockport.gov.uk/2013/3000/97557/self-health\\_children\\_and\\_families\\_booklist](http://www.stockport.gov.uk/2013/3000/97557/self-health_children_and_families_booklist)
- [14] Confirmation of adoption of intervention by The Parent Centre and Ububele: Consultant Clinical Psychologist, The Parent Centre.\*
- [15] To confirm advisory role across Africa: Director of the Gender and Health Research Unit, Medical Research Council of South Africa.\*
- [16] To confirm collaboration with Wordworks to roll out literacy intervention across Africa: Director and Early Literacy Coordinator, Wordworks, Cape Town, South Africa.\*