Response to "Behavioral Management of Sleep Problems in Infants Under 6 Months – What Works?"

To the Editor:

The recent narrative systematic review "Behavioral management of sleep problems in infants under 6 months – what works?" by Crichton and Symon concludes that "education directed to parents about the use of simple, prescriptive, behavioral techniques is effective in improving infant sleep."[1] However, our 2013 meta-narrative systematic review of first wave behavioral (FWB) approaches to parent-baby sleep in this age group finds that the very modest increase in the duration of infant sleep that results from FWB strategies cannot be assumed to translate into improved maternal mental health or benefit to the family, and may worsen outcomes for some.[2] A recent quantitative meta-analysis and systematic review corroborates our key findings, concluding that FWB interventions do not reduce night waking and that findings of improvement in maternal mental health could be due to publication bias.[3]

Our study concluded that research into parent-infant sleep is often characterized by unexamined assumptions and biased interpretation of data. I propose that the analysis of Crichton and Symon illustrates this problem.

In their critique of our work, Crichton and Symon confuse their own much narrower definition of a behavioral intervention with our clearly stated definition ("parental practice or infant-care method," chosen because parents learn to apply FWB methods from multiple sources in our society). They also misunderstand the methodology of meta-narrative systematic review, which aims to evaluate multicomponent and heterogenous real-world approaches to complex health problems, such as parent-infant sleep.[4]

Although Crichton and Symon claim that our findings are "neither relevant nor accurate" because "evidence for any positive or negative effect requires an assessment of intervention delivery, typically in comparison with a control condition," they select 8 mostly unblinded randomized controlled trials, 2 pre- and postintervention studies, and 1 prospective cohort study, which deliver varied and complex interventions by home visits, group visits, pediatrician consultations, or nurse education sessions, and, in 2 of the studies over multiple sessions.

Crichton and Symon claim, for example, that the pre- and postobservational study of Smart and Hiscock is of "an educational behavioral program … with simple, prescriptive, behavioral techniques." Yet that study evaluates a 1-hour tertiary outpatient consultation, including medical history and examination, of babies referred to a pediatrician with crying, sleep, and/or feeding problems aged from 2 weeks to 7 months (mean age, 14.9 weeks).[5] Less than half of the parents reported nighttime sleep as their primary problem, and parent-reported improvements in sleep quantity and quality were not statistically significant. The study does not demonstrate a "significant and rapid improvement in infant sleep, observed between 3 and 12 weeks of age," as Crichton and Symon claim.

Similarly, Crichton and Symon also rely on the study by St James-Roberts et al[6] for their conclusions. Yet a Cochrane Review points out that this study "did not find any meaningful or statistically significant effect of a sleep enhancement educational intervention on any of the infant sleep outcome measures at any period of time."[7]

Professor John Ioannidis[8] of Stanford University observes that the term "evidence based" is increasingly hijacked by conflicted stakeholders with views and products to sell. Crichton and Symon fail to declare Dr. Symon's for-profit business as a conflict of interest, although the BabySleepDoctor (http://www.thebabysleepdoctor.com.au/) markets an FWB program for infant sleep, delivered in consultations in the clinic and by telemedicine, by app, and by bulk-billed consultations on the floor of Expos for families Australia wide. Unfortunately, conflict of interest can be another reason for biased interpretation of data.

Pamela Douglas, MBBS, RACGP, IBCLC, PhD*†‡**
*The Possums Clinic, Brisbane, Australia
†Centre for Health Practice Innovation, Griffith University, Queensland, Australia
‡Discipline of General Practice The University of Queensland Queensland, Australia

P. Douglas is Founder and Medical Director of a charitable organisation, The Possums Clinic, Brisbane, Australia (Possums for Mothers and Babies Ltd). She and Dr. Koa Whittingham have written a parent-baby sleep intervention which is peer-reviewed and published, delivered in the Possums Clinic, taught to health professionals, and available for sale as a video and workbook at http://www.possumsonline.com/sleep-film.

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Reply

To the Editor:

We thank Pamela Douglas for her interesting and critical appraisal of our article: "Behavioural management of sleep problems in infants under 6 months—what works?" We would like to make a number of points in response.

We defined a behavioral intervention as "a practice implemented by a parent or primary caregiver with the primary aim of improving infant sleep… ways of settling the baby at sleep time, how and when to respond to infant crying or signalling during a period of sleep, and other strategies to promote undisturbed sleep." This is a narrow and clear definition. We remain unsure as to what Dr. Douglas's "infant-care method" entails and what the precise definition of a "first-wave" behavioral approach is. It is not a widespread term used in the literature.

We are not "interpreting" the data, but merely stating published findings from a number of studies in this area. The authors of each article, and hence researchers who performed each study, have made their own conclusions based on their study findings. We are simply summarizing the available literature in this area and mention 2 studies that Dr. Douglas refers to in her letter. St James-Roberts et al.[1] reported that "by 9 weeks of age, 77% of babies in the intervention group, compared to 66% in the control group, had sleep periods that lasted for 5 or more hours on 2 of 3 nights." We believe this is a meaningful difference between the 2 groups, as did the authors of the article. Similarly, Smart and Hiscock[2] report that "post clinic, significantly fewer mothers and fathers reported that the primary infant problem persisted (64% of mothers and 55% of fathers)," reduced from 100%. During consultation, parents are given practical advice about self-settling and provided with a written management plan. To the best of our knowledge, our description of this study is therefore accurate.

Dr. Douglas also appears to disregard any findings of improvements to maternal health from studies using a behavioral intervention for infant sleep. However, some of the evidence is clear, for example, Smart and Hiscock[2] report a 30% reduction in mothers scoring >12 (indicative of probable depression) on the Edinburgh Postnatal Depression Scale, follow their intervention. We fail to see how this is not a clear improvement in maternal well-being.

We also refer to the meta-analysis by Kempler et al.[3] that Dr. Douglas mentions in her letter. This review did report "improvements in reported infant nocturnal total sleep time" and "evidence of maternal mood improvements" and concluded that "psychosocial sleep interventions appear to impact the amount of sleep that a mother reports her baby to have." We would argue that this supports our key findings.

As authors, we are both clinicians and researchers, but primarily parents. The fact that we work clinically in this area is not a conflict of interest; in fact, it only strengthens our position, as we have directly observed the benefits of these behavioral sleep techniques to literally thousands of families. That we witness on a daily basis the negative effects of infant sleep problems on the functioning of the whole family unit is the very reason we feel passionately about highlighting the evidence for these strategies having repeatedly been shown to be effective.

Our simple aim is to help the many, many parents in Australia who are struggling with a baby who cries for long periods and is difficult to settle and keep asleep. Our experience in practice has shown how dramatically (and quickly) the well-being of an overtired baby and an exhausted mother can be turned around (within 1 week or less). Therefore, we are dedicated to helping these women, their babies, and their families.

We only wish to impart knowledge through our research and publications. We want to provide information to the community so parents are made aware of available management options to them. The decision to implement such techniques or strategies is then up to the family. We believe that behavioral techniques are sometimes misunderstood in the community and have attempted to address some of these confusions.

Georgina E. Crichton, PhD*†
Brian Symon, MD, MBBS†‡
*Alliance for Research in Exercise Nutrition and Activity (ARENA)
Sansom Institute for Health Research
University of South Australia
Adelaide, Australia
†Kensington Park Medical Practice
Kensington Park, Australia
‡Faculty of Medicine
University of Adelaide
Adelaide, Australia

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