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Infant Crying and Sleeping in London, Copenhagen and When Parents Adopt a “Proximal” Form of Care

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ABSTRACT

OBJECTIVE. Western parents are given conflicting advice about whether to introduce a “scheduled” approach to infant care or to follow their infants’ demands. Attempts to address this issue using randomized, controlled trials have been unsuccessful. This comparative study collected evidence about methods of parenting and associated infant crying and sleeping in 2 communities with substantially different approaches to infant care (London, United Kingdom, and Copenhagen, Denmark) and in a “proximal care” group, where parents planned to hold their infants ≥80% of the time between 8 AM and 8 PM, breastfeed frequently, and respond rapidly to infant cries.

METHODS. Validated behavior diaries were used to measure parental behavior and infant crying and night waking longitudinally at 8 to 14 days, 5 to 6 weeks, and 10 to 14 weeks of age. Feeding and sleeping practices were measured by questionnaire.

RESULTS. Proximal care parents held infants for 15 to 16 hours per 24 hours and coslept with them through the night more often than other groups. London parents had 50% less physical contact with their infants than proximal care parents, including less contact when the infants were crying and when awake and settled. London parents also abandoned breastfeeding earlier than other groups. Copenhagen parents fell in between the other groups in measures of contact and care. These differences in caregiving were associated with substantial differences in several aspects of infant crying and settled behavior at night. London infants cried 50% more overall than infants in both other groups at 2 and 5 weeks of age. However, bouts of unsoothable crying occurred in all 3 of the groups, and the groups did not differ in unsoothable bouts or in colicky crying at 5 weeks of age. Proximal care infants woke and cried at night most often at 12 weeks. Compared with proximal care infants, Copenhagen infants cried as little per 24 hours, but woke and cried at night less often at 12 weeks of age.

CONCLUSIONS. “Infant-demand” care and conventional Western care, as practiced by London parents, are associated with different benefits and costs. As used by
proximal care and Copenhagen parents, infant demand parenting is associated with less overall crying per 24 hours. However, the proximal form of infant-demand parenting is associated with more frequent night waking and crying at 12 weeks of age. Copenhagen infants cry as little per 24 hours as proximal care infants but are settled at night like London infants at 12 weeks of age. Colicky crying bouts at 5 weeks of age are unaffected by care. The findings have implications for public health care policy. First, they add to evidence that bouts of unsoothable crying, which are common in early infancy, are not much affected by variations in parenting, providing reassurance that this aspect of infant crying is not parents’ fault. Second, the findings provide information that professionals can give to parents to help them to make choices about infant care. Third, the findings support some experts’ concerns that many English parents are adopting methods of care that lead to increased crying in their infants. There is a need for informed debate among professionals, policy makers, and parents about the social and cultural bases for the marked differences between London and Copenhagen parents’ approach to care.

In Western societies, infants who cry persistently or wake at night are common concerns for parents and costly problems for health services. More rarely, the crying may lead a parent to smother, hit, or shake an infant, sometimes resulting in infant brain damage or death. These findings highlight the need for evidence to guide parents about effective ways of managing infant crying and sleeping.

In practice, the debate about infant care has been led by expert opinion rather than scientific evidence. On one hand, books like Ford’s The New Contented Little Baby Book recommend introducing routines such as feeding and sleeping schedules. In keeping with this, until recently the predominant form of infant care in London, United Kingdom, and much of Europe and North America involved feeding approximately every 3 or 4 hours; putting infants down in cots, seats, or strollers for much of the daytime; delaying responding to crying on ~40% of occasions; and placing infants in separate cots to sleep at night. Concern that Western parents are increasingly adopting scheduled forms of care for their own convenience, where they encourage parents to leave infants to cry, has fuelled a public debate.

In contrast, Liedloff’s book The Continuum Concept advocates an “infant-demand” approach to infant care. More specifically, the anthropological term “proximal care” refers to prolonged holding, frequent breastfeeding, rapid response to infant frets and cries, and cosleeping with infants at night. Studies in Africa of !Kung and Aka infants found that proximal care was associated with much lower amounts of crying than occur among Western infants. However, a cautious interpretation is needed. One concern is that the !Kung study sampled behavior briefly and infrequently, using different methods from Western studies. Standard methods are required, because methodologic variations produce large differences in the amounts of crying measured.

Another proviso is that both studies measured infant behavior only during the daytime, leaving open the question of differences in infant waking and crying at night. Third, African societies differ in climate, diet, and other ways from Western cultures, making it unclear whether differences in infant behavior reflect differences between proximal and Western care.

Attempts to tackle these issues using randomized, controlled trials have not produced a resolution. Hunziker and Barr found that increased holding and carrying by parents reduced infant crying at 5 to 6 weeks of age, but this was not confirmed in 2 subsequent studies, and increased carrying was not an effective treatment when infants were already crying a lot. However, all 4 of the studies were only moderately Successful in changing Western care. For example, holding/carrying was increased in the London study, but only from the community control group level of 2 to 4 hours per day compared with 10 hours per day among !Kung parents, who also cosleep with their infants at night. The London study group that was asked to increase social interaction and breastfeeding did not increase nonfeed parent-infant interaction. The number of feeds at 6 weeks was increased, but to an average of just 8.7 feeds per 24 hours compared with 7.8 per 24 hours in the community control group.

Because progress in comparing infant demand with structured infant care has eluded randomized, controlled trial methods, the present study compares the crying and sleeping of 3 groups of infants whose parents elected to adopt different forms of care. Copenhagen parents were expected to be more responsive and to spend more time holding their infants than London parents. The proximal care group was recruited through specialist networks. Proximal care was defined as parenting that involved holding infants ~80% of the time between 8 AM and 8 PM, shared between caregivers as preferred, frequent breastfeeding, and rapid response to infant cries. We did not require cosleeping, but this often occurred. Parents had to have elected to adopt proximal care before their infant’s birth.

Using standardized methods, the study aimed to confirm the group differences in caregiving and to assess whether these were associated with differences in infant crying in the day and night during the first 12 weeks of age. This period was chosen because crying peaks at 4 to 6 weeks of age, and because most infants begin to remain settled at night by 12 weeks of age, whereas failure to do so in early infancy predicts long-term night
waking and crying. Two hypotheses were tested. First, recent studies have distinguished infant crying in general from bouts of unsoothable crying, which have been attributed to neurodevelopmental changes at ~6 weeks of age. We, therefore, hypothesized that infants cared for in Copenhagen and by proximal care would fuss and cry less overall but would not differ from London infants in bouts of unsoothable crying at 5 weeks of age. Second, following evidence that structured behavior programs help infants to learn to remain settled at night by 12 weeks of age, we hypothesized that infants who received proximal care would be more likely to wake and cry at night at 12 weeks.

METHODS

Participants
After joint training, researchers in London and Copenhagen used uniform procedures to approach breastfeeding mothers of 0- to 3-day-old newborns in community hospital postnatal wards. We excluded multiple births, infants with birth weight <2500 g, infants admitted to special care or who medical staff considered unwell, and cases where mothers had limited English/Danish or no access to a telephone. Otherwise, mothers were approached consecutively, given an explanation of the study’s cross-cultural focus, and invited to allow a telephone call to explain the study fully after they returned home. Mothers who agreed were asked whether they planned to adopt infant care practices that were conventional in their community or proximal care and gave written consent for the follow-up call. Seven mothers approached in this way in Copenhagen and 1 in London had decided before this infant’s birth to adopt proximal infant care and were assigned to the proximal care group. The study requirements were explained during the telephone call, ~1 week after the infant’s birth. Written consent was obtained at a home visit when infants were 6 to 11 days old. The study received Medical Research Ethics Committee approval.

Most women planning to adopt proximal care were approached via a private midwifery group in London and others via National Childbirth Trust coordinators or announcements on the Web sites of the Continuum Concept, Natural Nurturing, and Natural Parenting networks. In Copenhagen, women were contacted via a national organization for natural parenting and an attachment parenting Web site. The numbers contacted are not known. Except for those recruited in postnatal wards, proximal care cases were recruited during the mother’s pregnancy. Most (74%) were residents of Southern England, 14 of Denmark, and 2 of the United States. Exclusion criteria were as for the community groups.

Procedures

Behavior Diary
Data on parental behavior and infant crying were collected by parents using behavior diaries. These have been validated against audio recordings and researcher observations and are the leading method for studies of infant crying. The diary has four 6-hour “time rulers,” printed on a single page, corresponding with the morning (6 AM and 12 PM), afternoon (12 PM and 6 PM), evening (6 PM and 12 AM), and night (12 AM and 6 AM). Parents shade in the onset and end time of successive periods of behavior on the time rulers against a scale showing 5-minute increments of time. Infant behaviors are logged on the top section of the time ruler and parental behaviors in the bottom section. Parents were asked to log the caregiver and infant behaviors described below.

Caregiver Behaviors
Caregiver behaviors included holding or carrying, playing or talking, soothing, and care (includes nappy changing, dressing, and bathing). Holding or carrying was defined as any activity that involved body contact between parent and infant, including bed sharing, but excluding where infants were in a cot or basket, even nearby parents. Because parents reported during piloting that soothing and play or talking could occur while holding or carrying, >1 form of caregiving could be recorded on the diary at any time. The combinations were examined during data analysis.

Infant Behaviors
Infant behaviors included sleeping, being awake and content, fussing, crying, and unsoothable crying, and feeding. Fussy behavior was defined as “your infant is awake and irritable and may be vocalizing but not continuously crying”; crying was defined as “periods of prolonged, distressed vocalization”; and unsoothable crying was defined as “bouts of hard to soothe or unsoothable fussing or crying.”

The researchers explained diary completion during the home visit. Copenhagen parents filled in a version translated into Danish, back translated into English, and checked by bilingual speakers. To improve the reliability of each infant’s data, parents were asked to complete the diary for 4 successive days when their infants were 10 to 12 weeks of age. The diaries were returned by post, and contact was maintained by telephone.

Researchers entered the completed diaries in a computer program, RonNicLog, which calculates the duration and frequency of each infant and parental behavior. Because infant and parental behaviors are entered
against the same time scale, the program also computes the amounts of time where target infant and parental behaviors occur together. To confirm the reliability of data coding, 100 diaries, selected uniformly across the infant groups, were duplicate entered by separate researchers. $\kappa$ statistics for agreement between the duplicate entries for infant and parental behavior ranged from 0.911 to 1.0.

**Questionnaires**

Danish versions of questionnaires were back translated and checked against the English versions by bilingual speakers. Demographic particulars about each family were collected by questionnaire at 10 days. The mothers completed summary questionnaires about infant feeding and sleeping at 10 days, 5 weeks, and 12 weeks of age. At each age, the mothers identified: (1) the method of infant feeding being used (breast only, breast and expressed breast milk, breast and formula, formula only, any other method); (2) where the infant usually slept (in the parents' bed, in a separate cot, or in a combination of these); and (3) whether the infant slept in the parents' bed at all: (a) the number of nights in the last week this had happened; and (b) whether this was all night or part of the night. At 12 weeks, parents recorded the number of nights in the last week that the infant had slept for $\geq 5$ hours without waking and crying, a previously used definition of “sleeping through the night.”

**RESULTS**

Because behavior diaries are onerous for parents, studies using them have substantial sample attrition, whereas participants tend to be mature, well educated, and in stable relationships. These features were reproduced here, and participating Copenhagen mothers were more likely than London mothers to take part. In Copenhagen, 197 women were approached in hospital; 174 (88%) agreed to be contacted by telephone; 3 could not be reached. Of those approached in hospital, 87 (44%) signed consent forms. In London, 669 women were approached; 540 (81%) agreed to be contacted; 90 could not be reached. Of those approached in hospital, 174 (26%) signed consent forms. The main reason for declining was that taking part would be too demanding when coping with a new infant.

Table 1 shows the resulting numbers of infants, their ages at each measurement point, and demographic details for participants. The infant groups did not differ in gender, birth order, or age, except that Copenhagen infants were significantly younger than proximal care infants at 12 weeks (but by just 3 days on average). Parents in all 3 of the groups were well educated and in stable relationships. Copenhagen mothers were younger, but their age is representative of Danish childbearing women. Fewer partners in Copenhagen were in full-time employment and more were in further or higher education. The majority of parents in each group were white-European in background (Danish community group: 92% mothers, 89% fathers of Danish national origins; London community group: 75% mothers, 71% fathers of white ethnicity; proximal care group: 92% mothers, 91% fathers of white/Danish national origins). Notably, 29% of proximal care mothers were employed before their infant’s birth compared with 57% and 64%, respectively, of London and Copenhagen community mothers.

**Group Differences in Parental Behavior**

Table 2 summarizes the number of minutes per 24 hours that parents held and interacted with their infants and the total number of infant feeds given at 10 days of infant age. Proximal care parents spent an average of 16

<table>
<thead>
<tr>
<th>Variable</th>
<th>London Community</th>
<th>Copenhagen Community</th>
<th>Proximal Care</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. (% of boys)</td>
<td>59 (52)</td>
<td>32 (43)</td>
<td>27 (47)</td>
<td>NS</td>
</tr>
<tr>
<td>No. (% of first borns)</td>
<td>66 (58)</td>
<td>58 (77)</td>
<td>28 (61)</td>
<td>NS</td>
</tr>
<tr>
<td>No. providing data at 10 d</td>
<td>111</td>
<td>70</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>No. providing data at 5 wk</td>
<td>81</td>
<td>64</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>No. providing data at 12 wk</td>
<td>75</td>
<td>63</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Mean (SD) infant ages, d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 d</td>
<td>10.7 (1.7)</td>
<td>10.7 (0.8)</td>
<td>10.7 (1.9)</td>
<td>NS</td>
</tr>
<tr>
<td>5 wk</td>
<td>36.3 (3.9)</td>
<td>35.1 (3.5)</td>
<td>35.7 (3.3)</td>
<td>NS</td>
</tr>
<tr>
<td>12 wk</td>
<td>86.5 (4.8)</td>
<td>84.5 (3.6)</td>
<td>87.9 (6.6)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Mother’s mean (SD) age, y</td>
<td>33.8 (4.7)</td>
<td>29.9 (4.7)</td>
<td>32.3 (4.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Partner’s mean (SD) age, y</td>
<td>35.8 (4.9)</td>
<td>31.9 (5.8)</td>
<td>34.0 (4.9)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>% mothers (partners) with college/university education</td>
<td>52 (49)</td>
<td>83 (81)</td>
<td>93 (84)</td>
<td>NS</td>
</tr>
<tr>
<td>% partners employed full-time</td>
<td>87</td>
<td>73</td>
<td>85</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>% mothers employed full-time before maternity leave</td>
<td>57</td>
<td>64</td>
<td>29</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>% parents living together</td>
<td>95</td>
<td>97</td>
<td>100</td>
<td>NS</td>
</tr>
</tbody>
</table>

NS indicates not significant.

$^a$ After ANOVA or $\chi^2$, posthoc Tukey or $\chi^2$ tests were used to identify significant differences ($P < .05$) between pairs of groups.

$^b$ Different from each other but not the third group figure.

$^c$ Different from both other group figures.
hours 29 minutes per 24 hours holding their 10-day-old infants compared with 9 hours 44 minutes for Copenhagen parents and 8 hours 29 minutes for London parents. Proximal care parents held their infants while asleep more than both other groups at 10 days (Table 2). Table 2 also shows the amounts of time per 24 hours that parents spent interacting with their infants, as well as the time spent without any contact, when the infants were 10 days old (definitions are in the Table 2 footnotes). Allowing for interaction that occurred while holding, there were no significant group differences in the time that parents spent interacting with infants. However, as Table 2 shows, London parents spent much less time in contact with their 10-day-old infants than both other groups of parents, including when the infants were crying and when they were awake and settled. Proximal care parents fed more often than both other groups at 10 days of age (Table 2). The groups differed in the total number of feeds, but London parents did not spend less time feeding (Table 2).

The 5-week diary findings were similar. At this age, as Fig 1 illustrates, proximal care parents held their infants more than Copenhagen parents, who did so more than London parents (analysis of variance [ANOVA] \( P < \) .001).
London parents spent an average (±SD) of 929 ± 197 minutes per 24 hours without contact, compared with 779 ± 218 minutes and 441 ± 330 minutes, respectively, in the Copenhagen and proximal care groups (ANOVA P < .001; Tukey P < .05 all group pairs). Similarly, London parents left awake and settled infants without contact for 125 ± 65 minutes per 24 hours compared with 92 ± 71 and 64 ± 51 minutes, respectively, in the Copenhagen and proximal care groups (ANOVA P < .001; Tukey P < .05 all group pairs). London parents left fussing/crying 5-week-old infants without contact for 58 ± 44 minutes per 24 hours compared with 17 ± 15 minutes per 24 hours and 18 ± 24 minutes per 24 hours, respectively, in the Copenhagen and proximal care groups (ANOVA P < .001; Tukey P < .05 between London and other groups only). At 5 weeks, London, Copenhagen, and proximal parents fed 10, 12, and 14 times per 24 hours, respectively (ANOVA P < .001; Tukey P < .05 between all group pairs). There were no significant group differences in the time parents spent feeding or interacting with their infants at 5 weeks of age.

The questionnaire data showed that 85% of proximal care and 70% of Copenhagen infants were still breastfed at 12 weeks compared with only 37% of London infants (Table 3). At this age, both proximal and Copenhagen parents coslept with their infants at least part of the night during 5 nights per week compared with London parents’ average of 1 night per week. Proximal care parents were more likely than other parents to cosleep with their infants for the entire night: 70% of proximal care parents did so for the whole night, whereas just 16% of Copenhagen and 9% of London parents did so.

### Table 3 Questionnaire Measures of Sleeping and Feeding Arrangements

<table>
<thead>
<tr>
<th>Variable</th>
<th>London Community</th>
<th>Copenhagen Community</th>
<th>Proximal Care</th>
<th>P (ANOVA or χ² Analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. (%) babies wholly breastfed&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 d</td>
<td>78 (70.3)</td>
<td>65 (86.7)</td>
<td>56 (94.9)</td>
<td>.001</td>
</tr>
<tr>
<td>5 wk</td>
<td>35 (44.9)</td>
<td>52 (78.8)</td>
<td>47 (90.4)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>12 wk</td>
<td>27 (36.9)</td>
<td>44 (69.8)</td>
<td>46 (85.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No. (%) babies slept in parents’ bed whole night&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 d</td>
<td>20 (18.0)</td>
<td>23 (30.7)</td>
<td>23 (72.9)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>5 wk</td>
<td>17 (21.2)</td>
<td>14 (21.2)</td>
<td>40 (76.9)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>12 wk</td>
<td>7 (9.5)</td>
<td>10 (15.9)</td>
<td>38 (70.4)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No. (%) babies slept in own cot all or part of the night&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 d</td>
<td>91 (82.0)</td>
<td>52 (69.3)</td>
<td>16 (27.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>5 wk</td>
<td>63 (78.8)</td>
<td>52 (78.8)</td>
<td>12 (23.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>12 wk</td>
<td>65 (89.0)</td>
<td>53 (84.1)</td>
<td>16 (29.6)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

<sup>a</sup> P value based on χ² analysis.

<sup>b</sup> P value based on ANOVA.

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**Infant Fussing and Crying**

As Fig 2 indicates, London infants spent ~50% more time fussing and crying than both other groups at 10 days and 5 weeks of age (Table 4 contains the individual figures). Resembling previous research, all 3 of the groups reduced their fussing and crying by about one third at 12 weeks of age. However, London infants still fussed and cried significantly more at this age.

There was no group difference in the mean amount of unsoothable crying at any age (Table 4). Table 5 identifies the number of infants in each group who exhibited any bouts of unsoothable crying during the 4 days of diary assessment. Up to 47% of infants did so, with the highest number at 5 weeks and no difference between the groups at any age.

The “rule of threes” by Wessel et al<sup>33</sup> defines infants whose fussing and crying exceeds 3 hours per day on >3 days per week as cases of infant colic. Because few parents will keep diaries for 7 days, infants whose fussing and crying is ≥3 hours when averaged across diaries are often regarded as colic cases. Table 5 shows the proportion of infants in each group whose total fussing plus crying plus unsoothable crying per 24 hours averaged ≥3 hours at each age. Just 1 proximal care and 1 Copenhagen infant met this definition at 10 days, whereas 15 (17%) London infants did so. As expected, the proportions of colic cases per group did not differ at 5 weeks of age. The proportion of colic cases declined in each group and did not differ at 12 weeks of age.

At 12 weeks, parents recorded how many nights in the last week their infant had spent a continuous period of ≥5 hours asleep without waking and crying. London and Copenhagen parents reported more such nights than proximal care parents (mean ± SD: 5.0 ± 2.3 and 4.6 ± 2.6 vs 3.4 ± 2.6 nights, respectively; ANOVA P <
London and Copenhagen infants did not differ in this respect.

DISCUSSION
By comparing groups that elected to adopt different approaches to care, this study found much greater differences in parenting than have proved possible in randomized, controlled trials. Proximal care parents spent &gt;16 hours per 24 hours holding or in body contact with their infants at 10 days of age and similar amounts at 5 weeks. London parents spent about half as much time holding their infants at both of these ages. Copenhagen parents held less than proximal care parents but more than London parents at 5 weeks. London infants were also left without parental contact when fussing and crying and when awake and settled for much longer than both other groups. These findings are consistent with earlier studies of typical Western care in London and North America, so that the sample attrition, which occurred particularly among London parents, has not detracted from their representativeness.

Most proximal care parents coslept with their infants for the entire night, whereas 16% of Copenhagen and 9% of London parents did this at 12 weeks. London infants were predominantly put down to sleep in cots at night, whereas Copenhagen parents mixed cot use with taking their infants into their bed for part of the night.

Proximal care parents fed their infants more often (14 feeds per 24 hours on average) than both other groups. Both Copenhagen and proximal care parents persisted with breastfeeding longer than London parents: at 12 weeks, 70% of Copenhagen mothers and 85% of proximal care mothers were solely breastfeeding compared with 37% of London mothers.

<table>
<thead>
<tr>
<th>Variable</th>
<th>London Community</th>
<th>Copenhagen Community</th>
<th>Proximal Care</th>
<th>ANOVA P</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 10 d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fussing</td>
<td>82² (50)</td>
<td>61 (37)</td>
<td>56 (38)</td>
<td>.001</td>
</tr>
<tr>
<td>Crying</td>
<td>32² (24)</td>
<td>15 (18)</td>
<td>15 (17)</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Unsoothable crying</td>
<td>6 (13)</td>
<td>4 (9)</td>
<td>3 (10)</td>
<td>NS</td>
</tr>
<tr>
<td>At 5 wk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fussing</td>
<td>88² (42)</td>
<td>58 (40)</td>
<td>66 (43)</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Crying</td>
<td>33² (30)</td>
<td>14 (16)</td>
<td>16 (18)</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Unsoothable crying</td>
<td>5 (12)</td>
<td>9 (21)</td>
<td>3 (8)</td>
<td>NS</td>
</tr>
<tr>
<td>At 12 wk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fussing</td>
<td>62² (38)</td>
<td>40 (36)</td>
<td>45 (38)</td>
<td>.003</td>
</tr>
<tr>
<td>Crying</td>
<td>16² (17)</td>
<td>7 (10)</td>
<td>13 (16)</td>
<td>.001</td>
</tr>
<tr>
<td>Unsoothable crying</td>
<td>2 (4)</td>
<td>5 (14)</td>
<td>3 (9)</td>
<td>NS</td>
</tr>
</tbody>
</table>

NS indicates not significant.

² After ANOVA, Tukey tests were used to identify significant differences (P &lt; .05) between pairs of groups.

² Figure is different from both other group figures.
These parenting differences were associated with substantial differences in infant fussing and crying, in the predicted ways. First, London infants fussed and cried ~50% more per 24 hours than both Copenhagen and proximal care infants at both 10 days and 5 weeks of age. The amounts of fussing and crying declined at 12 weeks in each group but remained higher in London infants. Second, bouts of unsoothable crying occurred in each group and did not differ between the groups. Likewise, infant colic occurred in 5% to 13% of infants at 5 weeks and did not differ between the groups at this age. Third, infant waking and crying at night was more common in proximal care infants at 12 weeks of age. Infants who continue to wake and cry at night are often described as having “sleeping problems,” although they differ from other infants by waking and crying at night, rather than in biological sleeping. However, it is precisely because the night waking is accompanied by crying that it disturbs many parents. Because their infants are next to them in bed, it is possible that proximal care parents are more aware of infant fussing and crying at night. Provisonal analyses have indicated that most Proximal care infants continue to wake their parents at night when 10 months of age.

The lack of random assignment prevents certainty that these group differences in infant crying were caused by the measured differences in parental care. However, features of the study suggest that this is likely. First, the care approaches were adopted before birth, so that they preceded infant crying rather than responding to it. Second, the reduced infant crying per 24 hours occurred with 2 very different groups of parents: a general-community sample in Copenhagen and a nonconformist sample of proximal care parents. This suggests that the features of care they have in common, that is, high amounts of holding and responsiveness, are responsible for the similarities in their infants’ low overall amounts of crying. Indeed, the more frequent feeding practiced by proximal care parents did not impact on infant crying.

Third, the findings are consistent with evidence that proximal care in Africa and Copenhagen care are associated with lower amounts of overall fussing and crying than are typical in London infants. The figures for crying amounts in London are similar to those from previous studies of London and North American infants, indicating that they, too, are representative of infants in these countries who are cared for in conventional Western ways. Based on recent evidence, our prediction that unsoothable crying at 5 weeks of age would not be affected by differences of care was confirmed. Similarly, rates of infant colic did not differ between the groups at 5 weeks of age, while the finding that proximal care parents report infant night waking and crying more often at 12 weeks is also consistent with evidence and theory.

Last, the findings may help to explain why the debate about infant demand versus conventional Western infant care has persisted so long. Rather than one being better, they are associated with different benefits and costs. Infant demand care, as practiced by proximal care and, to a lesser extent, Copenhagen parents, is associated with less overall crying per 24 hours in the early weeks. However, in the form adopted by proximal care parents, infant demand care is associated with a higher amount of reported waking and crying at night at 12 weeks of age.

The question of causation will need to be resolved by randomized, controlled trials. Toward this, it is striking that Copenhagen parents’ care seems as effective as proximal care in minimizing early crying and more effective than proximal care in helping infants to “sleep through the night” at 12 weeks of age. Copenhagen parents’ practice of placing their infant to sleep in cots during part of the night meets current recommendations for preventing infant cot death. London and other Western parents may be willing to try Copenhagen parenting methods, allowing randomized trials.

Clinically, the substantial care differences between London and Copenhagen parents are of interest in their own right, particularly because these refer to well-educated parents who are motivated to participate in infant research. Sample attrition was greater in London, but the London/Copenhagen parenting differences would probably have been at least as great if a more heterogeneous sample of London parents had been obtained.

The findings have 3 implications for public health care policy. First, they add to evidence that bouts of unsoothable crying, which are common in early infancy, are not much affected by variations in parenting, providing reassurance that this aspect of infant crying is not parents’ fault. Second, the findings provide information that professionals can give to parents to help them to make choices about infant care. Third, the findings support some experts’ concern that many English parents are adopting methods of care that lead to increased crying in their infants. This issue is complex and un-
likely to be productive if parents are given the blame. There is a need for a broader debate among professionals, policy makers, and parents about the social and cultural bases for these marked differences in parents’ approach to care.

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Infant Crying and Sleeping in London, Copenhagen and When Parents Adopt a "Proximal" Form of Care

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