

Social Circumstances and Smoke Free Homes



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Why is smoking an issue?

Antenatally

- Approximately 20% of infants are born to mothers who smoke at time of their birth (DoH),
- Maternal smoking associated with increased risk of low birth weight, sudden infant death syndrome, pre-term labour, perinatal death etc.
- Partner's tobacco consumption linked to reduced birth weight, regardless of maternal smoking status (Martinaez et al 1994; Eskenazi et al, 1995; Dejmek et al, 2002)

Postnatally

- Passive inhalation of environmental tobacco smoke (ETS) is associated with an increase risk of:
 - Low birth weight, asthma, other respiratory conditions, otitis media and conductive deafness, sudden infant death syndrome
 - Mothers' smoking shown to be most harmful but fathers' smoking also linked with adverse health outcomes
- Although evidence of improvements in other risk behaviours for SIDS such as sleeping position, use of bed coverings and attitudes to heating, smoking behaviours appear to have been less influenced.
- Children's exposure to ETS has decreased since late 1980s but little evidence of reduced consumption by parents in presence of children (Jarvis et al, 2000)

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Why are social circumstances important?

- Associated with smoking prevalence
- Associated with smoking behaviour change:
 - quit rates
 - reductions in consumption
 - use of harm reduction measures in the home

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Social patterning and smoking

- Social disadvantage: social class, income, housing tenure, employment
- Personal circumstances: age, social leaving age and education, parity, dependent children
- Mental health: job strain/workload, depression, partner violence, low social and practical support
- Ethnic group: highest smoking rates among White UK women, lowest among women South Asian groups
- These patterns are evident for smoking prevalence and quitting

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The problem



- Reduction in smoking rates are occurring among those in better social and personal circumstances
- As smoking rates fall among these groups, smoking is becoming concentrated among those in the poorest socio-economic groups
- Need to find ways of reducing smoking in these groups in order to protect foetal, child and maternal health

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**Can modern perspectives
help us?**

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Modern perspectives

Harm elimination?

Harm reduction?



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Modern perspectives

- Just mothers?
- What about fathers' smoking?
- What about wider community?



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Two studies

- *Protecting infants from passive smoke exposure* (Spencer, Blackburn, Bonas, Coe, Dolan, Moy)

- *Fathers, infants and smoking* (Blackburn, Spencer, Bonas, Coe, Dolan, Moy)

We are grateful to the *Foundation for the Study of Infant Deaths*, who funded these studies

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Which approach: harm elimination or harm reduction?

- **Harm elimination approaches:**
 - Aims to eliminate harm through smoking cessation approaches
 - Most popular approach
 - Smoking cessation approaches: some (limited) success in pregnancy (Lumley et al, 2004, Cochrane Review) and postnatal period (Graham, 1993).
- **Harm reduction approaches:**
 - Encourage parents and other household members/visitors to change their smoking habits by reducing cigarette consumption and/or avoiding smoking in presence of children and pregnant women
 - After birth: majority of exposure occurs within home
 - Major source is parental smoking. Other people's smoke in and outside of home has been shown to be quantitatively less important in children (Jarvis et al, 2000; Cook et al, 1994)
- **Evidence on use and effectiveness of harm reduction approaches has been limited and confusing**
 - Generally not advocated in pregnancy
 - But is there a place for it? Lumley et al, 2004, Cochrane Review, say lack of evidence about whether harm reduction might be warranted
 - Postnatally, growing evidence base that harm reduction approach is effective

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Evidence on effectiveness of harm reduction approaches

- Previous studies have examined children with specific conditions, thus can't be generalised to wider population of infants
- Neither of community studies of infants (Erikson & Bruusgaard 1995; Hiley & Morley, 1996) report range of measures know of and adopt.
- 3 harm reduction intervention studies of infants: little effect (little reduction in uccrs*)
- Other studies of older children or children or age range containing older children:
 - 2 studies show decreased uccrs with strategies short of a household ban on smoking (Wakefield et al, 2000; Bakoula et al, 1997)
 - 1 showed reduced uccrs with ban on smoking only but no adjustment for confounders (Winklestein et al, 1997)

* uccr = urinary cotinine:creatinine ratio. Cotinine is a biologic measure of exposure to nicotine, which can be estimated from urine, blood, saliva, hair. In young children, for urinary measures it is estimated as a ratio with creatinine to adjust for dilution of urine.

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Protecting infants from passive smoking study

Nick Spencer, Clare Blackburn, Chris Coe, Alan Dolan, Sheila Bonas, Rob Moy

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Protecting infants from passive smoking study

Aims

- To examine patterns of smoking in infant households
- To measure infants' exposure to household tobacco smoke
- To explore parental knowledge and use of harm reduction measures
- To examine barriers to the use of harm reduction measures
- To test the hypothesis that the use of harm reduction measures reduces infant UCCRs

Design and methods

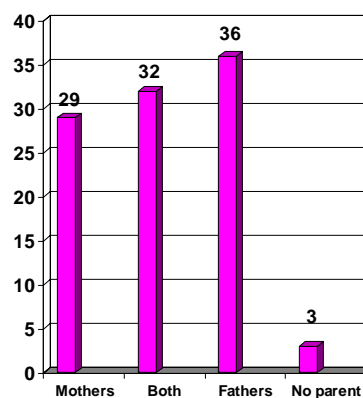
- Cross-sectional survey 454 households (314 smoking; 140 non-smoking)
- Main carers of infants recruited by family health visitor, interviewed when infant 8-12 weeks old
- Structured questionnaire for main carer, saliva from main carer and urine from infant for saliva estimation
- Data analysis: frequencies, cross-tabulations and linear regression analyses

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Types of smoking households with infants

68% of smoking households contain fathers who smoke

61% of smoking households contain mothers who smoke



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Cigarette consumption patterns in infant households

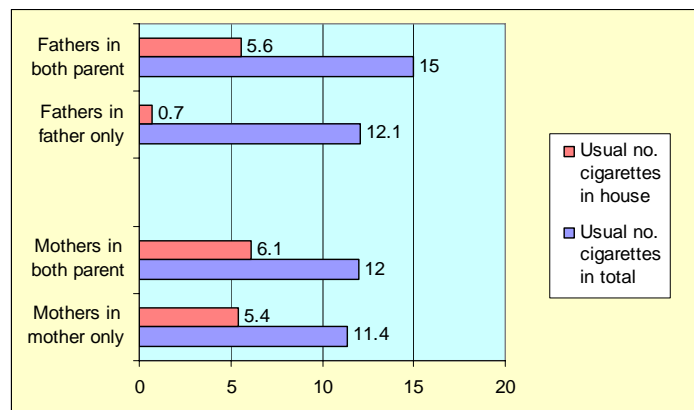
(see Blackburn et al, 2005 forthcoming, Health Education Research)

- Overall, mothers generally consumed more in house than fathers (medians: mothers = 6.7, fathers = 3.7)
- Fathers in father only smoking households had lowest median consumption in the house (0.7 cigs)
- Consumption in house highest in households where both parents smoke (fathers=5.6, mothers=6.1)
- In households where both parents smoke fathers consumed more cigarettes in the house than those in father only households (5.6 cigs compared to 0.7 cigs)
- Mothers consumption stayed the same regardless of type of smoking household

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Average (median) cigarette consumption for mothers and fathers

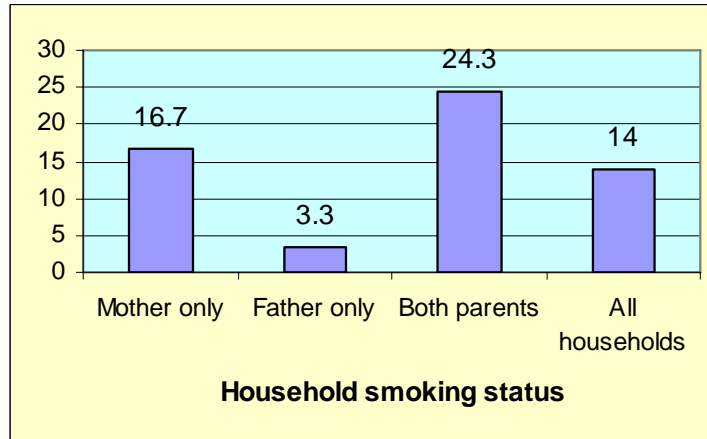
(Protecting infants from smoke exposure study)



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Average (median) Urinary Cotinine:Creatinine Ratio (CCR) for Infants in Smoking Households

(Breast fed babies excluded)



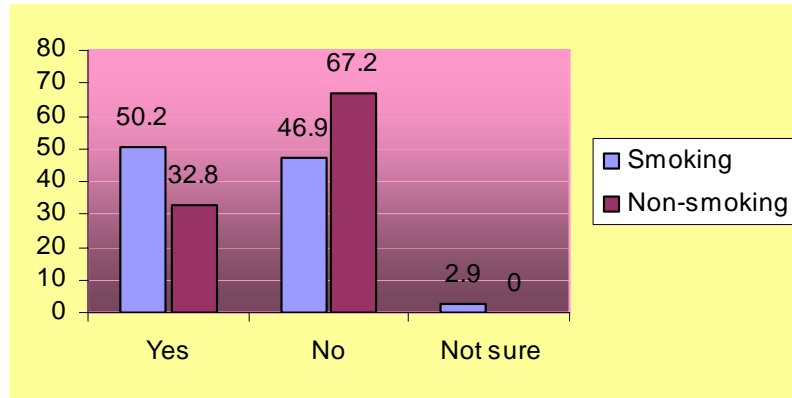
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Main carers who smoke

	%
Beliefs about tobacco smoke	
Exposure effects children's health:	
A great deal/quite a lot	85
A little/not at all	14
Are there practical things people can do to protect infants from smoke?	
Yes	89
No/don't know	10
Able to recall one or more harm reduction measures	
	90
No. of measures used	
None	12
1	22
2	12
3 or more	53
Severity of measures used	
Strict (banning smoking in house)	18
Less strict	69
None or not aware of any	12

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Are there practical measures you would like to take but don't feel able?



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Measures respondents in smoking households would like to take but don't feel able:

- Stop smoking
- Prevent exposure to smoke (other than through smoking cessation)



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Barriers to implementing harm reduction measures

☞ Can't stop other people smoking near the baby (partner, family, friends)

☞ Can't quit smoking myself

☞ Stress

☞ Practical barriers e.g. difficult to go outside to smoke

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Does using harm reduction measures protect infants from passive smoking?

- See Blackburn et al (2003), BMJ: 327 pp 257-259
- Used linear regression models fitted on log uccrs to adjust for potential confounders (respondent's and partner's cigarettes consumption, tenure and overcrowding)
- Banning smoking in the home was associated with a small but significant reduction in UCCRs in infants
- Using less strict or no measures had no effect on infant UCCRs
- Conclusion: only banning smoking reduces infant exposure

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Reducing infant smoke exposure: the way forward?

- Promotion of banning smoking in the home: lack of clear health promotion messages
- Are broader, community wide strategies worth trying?
- More emphasis on fathers' smoking?



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Modern perspectives

What about fathers?

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Fathers' smoking

- Fathers are a neglected group for health promotion campaigns and research
- Fathers' smoking associated with poor foetal, pregnancy and child health outcomes
- Men are key influences on women's smoking behaviour (Nafstad et al, 1996; Lu et al, 2001; McLeod et al, 2003)
- During and after pregnancy, women more likely to be smokers and less likely to quit smoking if they have a partner who smokes
- Assisting men to cease smoking or reduce cigarette consumption is likely to have positive benefits for maternal, foetal and infant health.
- No information to underpin programmes to reduce fathers' smoking



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Fathers, infants and smoking study



- Research questions
 - What do fathers with young infants know and believe about the effect of tobacco smoke on the health of their young infants?
 - Where do fathers get their information about smoking, passive smoking and infant health from?
 - What factors in fathers' home and work lives shape their smoking status and inhibit smoking cessation?
 - Does the experience of being a new father act as a motivator or inhibitor for smoking behaviour change?
 - What kinds of information and support do fathers need in order to reduce their infants' exposure to tobacco smoke? What would help smoking fathers to stop smoking or reduce their tobacco consumption?
- Design and methods
- Cross-sectional survey of 427 fathers (286 were smoking when baby was born)
- Interviewed when infants 6-14 weeks
- Structured questionnaire

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What do fathers know about effects of ETS on infants?



- Knowledge scale constructed of 32 items that fathers could know about infants and exposure to tobacco smoke
- In general, fathers' knowledge was patchy
- Poorer knowledge about effects of maternal and paternal smoking prenatally and link with SIDS and health outcomes
- There are areas of knowledge that could be targeted
- Fathers in socially disadvantaged households had poorer knowledge
- Poor knowledge about effects of maternal and infant exposure to tobacco smoke associated with not changing smoking behaviour during pregnancy and after birth

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Fathers and information on smoking

During partner's pregnancy:

Asked about smoking status?	30%
Got or been given information about stopping smoking?	20%

After birth:

Asked about smoking status?	17%
Got or been given information about stopping smoking?	9%

Views on smoking

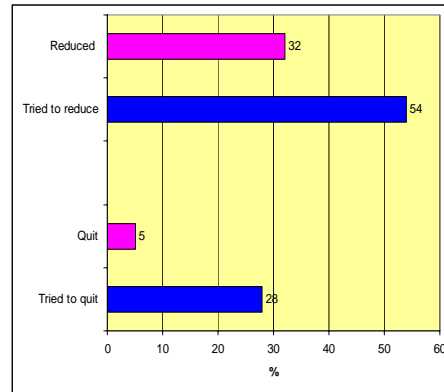
Being a father <u>has</u> changed my views about smoking	69%
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'I realise the risks a bit more. If I die young it will affect the kids. It's a funny thing you don't stop.'

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Do men change their smoking behaviour during partner's pregnancy?

- 1/3 of men successfully reduced cigarette consumption but 1/2 tried to reduce it
- Only 5% successfully quit but over ¼ had tried to do so.

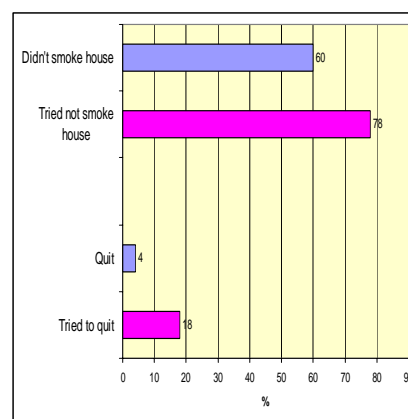


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Do men change their smoking behaviour after birth of baby?

(see Blackburn et al, forthcoming, *Social Science and Medicine*)

- 8 in 10 tried not to smoke in house and 6 in 10 succeeded in achieving this
- Less than 1 in 5 tried to quit and only 4% succeeded



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Conclusions

- Need clear messages on 'what works' i.e. banning smoking in home
- Need to recognise that focusing only on expectant and new mothers may have limitations
- Harm reduction approach has a place postnatally but lack of evidence base for use prenatal.
- Broader approaches including wider community may be beneficial
- Tackling fathers' smoking is key to reducing mothers' smoking and reducing foetal and infant exposure to tobacco smoke
- Important to ask expectant and new fathers about their smoking status and give them information about quitting and harmful effects for partner and baby of ETS exposure
- More research needed to develop interventions for fathers

