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Exposure to secondhand smoke in cars and e-cigarette use among 10-11 year old children in Wales

CHETS Wales 2 key findings report



Exposure to secondhand smoke in cars and e-cigarette use among 10-11 year old children in Wales:

CHETS Wales 2 key findings report

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Views expressed in this report are those of the researchers and not necessarily those of the Welsh Government.

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1 Introduction

1.1 Background

Introduction of smoke free legislation in 2007 was followed by declines in overall second hand smoke (SHS) exposure among children in Wales¹. However, declines occurred to a greater extent among children with more moderate exposure levels, with limited changes among children of smokers or children from poorer families².

Efforts to reduce childhood SHS exposure have since targeted smoking in private spaces, including cars. The Fresh Start Wales campaign (freshstartwales.co.uk) was launched in 2011, with the aim of raising awareness of the dangers of SHS and encouraging restrictions on smoking in cars carrying children. The Welsh Government indicated that if smoking in cars did not decline sufficiently in the three years after the start of the campaign, legislation would be considered. This study was commissioned to examine whether smoking in cars has declined since a 2008 post-legislation survey.

In England, a recent House of Commons vote³ favoured introduction of legislation to address smoking in cars carrying children. This survey took place against the backdrop of intense media scrutiny of debates around smoking in cars. Hence, while changes cannot be attributed specifically to Fresh Start Wales, the survey will provide data on the extent to which smoking in cars overall, and among at-risk groups, remains a problem in 2014.

The Welsh Government has also expressed concern regarding the increasing visibility of e-cigarette use in public places, and the possibility that this may undo some of the work which has gone into the de-normalisation of smoking⁴. Hence, in addition to

¹ Holliday, J., Moore, G., & Moore, L. (2009). Changes in child exposure to secondhand smoke after implementation of smoke-free legislation in Wales: a repeated cross-sectional study. *BMC Public Health*, 9(1), 430.

² Moore, G. F., Holliday, J. C., & Moore, L. A. R. (2011). Socioeconomic patterning in changes in child exposure to secondhand smoke after implementation of smoke-free legislation in Wales. *Nicotine & Tobacco Research*, 13(10), 903-910.

³ <http://www.publications.parliament.uk/pa/cm201314/cmhansrd/cm140210/debtext/140210-0002.htm#14021028000001>

⁴ <http://wales.gov.uk/consultations/healthsocialcare/white-paper/?lang=en>

smoking in cars, questions relating to prevalence and patterning of e-cigarette use among 10-11 year old children were included in the 2014 survey and are reported.

1.2 About the report

In 2007 and 2008, repeated cross sectional surveys (CHETS Wales⁵) examined changes in child exposure to second-hand smoke after legislation. The 2014 CHETS Wales 2 survey replicated components of these earlier surveys, recruiting a sample of 75 schools, and collecting questionnaire data from 1601 children within those schools.

The survey aimed to recruit as many of the schools who participated in CHETS Wales as possible. The same measures of exposure to SHS in private spaces as collected within CHETS Wales were repeated, with a number of additional items on smoking in cars. Additional items on e-cigarette use were also completed. Data were collected in a classroom setting by trained research staff.

This report describes changes in children's exposure to smoking in cars between 2008 and 2014. It also includes data on the prevalence of e-cigarette use and associations with parental smoking and future smoking intentions. A fuller report including detailed descriptions of methods and statistical analysis will be published at a later date.

⁵ Holliday, J., Moore, G., & Moore, L. (2009). Changes in child exposure to secondhand smoke after implementation of smoke-free legislation in Wales: a repeated cross-sectional study. *BMC Public Health*, 9(1), 430.

2. Key findings

2.1 Comparability of CHETS Wales 2 with CHETS Wales

A school-level response rate of 66% was achieved in CHETS Wales 2, with a pupil level response rate of 86%. This compares to 63% and 90% for the 2008 CHETS Wales survey.

Overall, 51 of the schools who took part in CHETS Wales took part again in 2014. The remaining 24 were replaced by a school selected from the same strata (defined by local education authority and high/low free school meal entitlement). There were no significant differences between children in schools who participated only at one timepoint and those who participated in 2008 and 2014, in terms of demographics or SHS measures.

There were also no significant differences between 2008 and 2014 samples in terms of key demographics (gender composition, age, family structure). Although Family Affluence Scale (FAS)⁶ scores were higher in 2014, this was driven by rapid proliferation in computer ownership across all socio-economic groups. Removing the item on computer ownership from the scale resulted in identical mean FAS scores at all time-points.

Hence, samples achieved a high degree of comparability, and differences between 2008 and 2014 can confidently be interpreted as genuine changes over time.

2.2 Smoking in cars

As in CHETS Wales, children were asked whether smoking was allowed in their family car, van or truck (yes, no, I don't know or don't own a family vehicle). Children were also asked whether they were in a car the previous day where someone was smoking.

⁶ A Family Affluence Score is derived by summing items on numbers of family cars owned, number of family holidays in the past 12 months, number of computers owned and whether or not the child reports having their own bedroom.

In 2014, 9% of children said that smoking was allowed in their family vehicle. This equated to 11% of those children who said their family owned a car and that they knew whether smoking was allowed in it. This represents a halving of exposure since 2008, when 18% (23% of those children who said that their family owned a car and they knew whether smoking was allowed in it) reported that smoking was allowed in their family vehicle. Four per cent reported being exposed to second-hand smoke in a car the previous day; a decline from 7% in 2008.

Among children with at least one smoking parent figure, 20% reported that smoking was allowed in their family car; a decline from 35% in 2008. Seven per cent reported being exposed to second-hand smoke in a car the previous day; a decline from 13% in 2008.

Table 1. Frequency (and percentage) reporting smoking restrictions in car

| | | Smoking allowed in family car?* | | | | In car where someone smoking yesterday? |
|-----------------------------|------|---------------------------------|-------------|------------|-----------|---|
| | | Yes | No | Don't know | No car | |
| Whole sample | 2007 | 327 (20.4) | 926 (57.8) | 231 (14.4) | 118 (7.4) | 107 (6.9) |
| | 2008 | 288 (18.0) | 965 (60.3) | 234 (14.6) | 114 (7.1) | 107 (6.7) |
| | 2014 | 141 (8.9) | 1140 (71.7) | 195 (12.3) | 115 (7.2) | 57 (3.6) |
| Children of smoking parents | 2007 | 301 (38.6) | 272 (34.9) | 114 (14.6) | 92 (11.8) | 102 (13.5) |
| | 2008 | 259 (34.8) | 284 (38.2) | 123 (16.5) | 78 (10.4) | 98 (13.3) |
| | 2014 | 131 (19.6) | 371 (55.5) | 87 (13.0) | 79 (11.8) | 46 (7.0) |

New for CHETS Wales 2, children were also asked how often people smoked in their family car when they were inside it (about every day, sometimes, never, I don't know, or don't have a car). Children were also asked how often they were in a car where someone was smoking (i.e. any car rather than just the family car).

Slightly higher estimates of exposure to smoking in the family vehicle were obtained where children were asked how often people smoked in their vehicle (rather than whether it was 'allowed'), with 15% reporting that people did smoke in their car while they were inside it sometimes (12%) or almost every day (3%). Of those children who

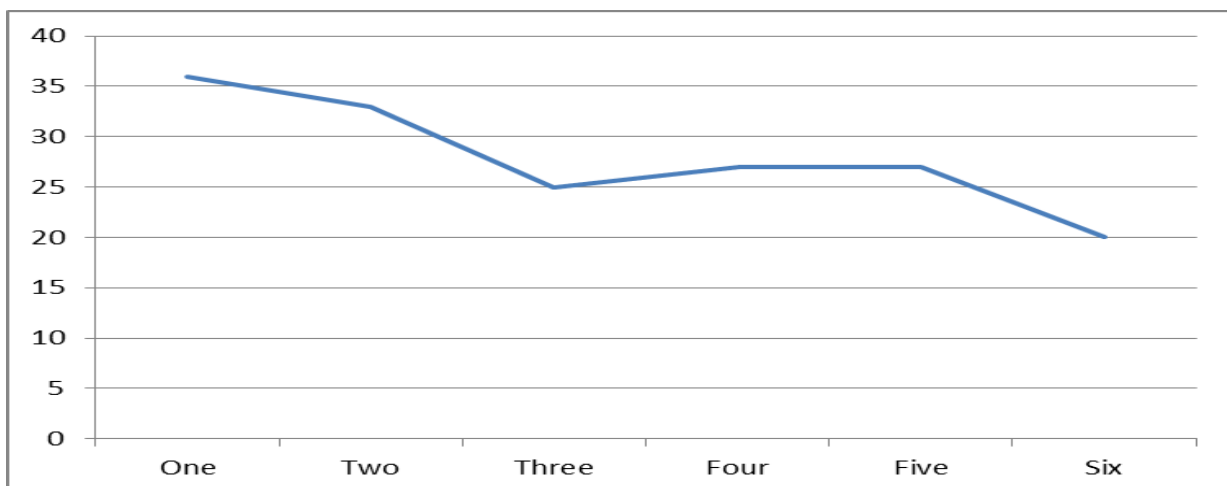
reported that they did not know whether smoking was allowed in their vehicle, a substantial proportion (26%) stated that people did sometimes smoke in it. Hence, smoking in cars is reported to occur in many instances where children are unsure of whether or not it is 'allowed'.

Where asked about exposure to smoke in any car, 4% of children reported being in a car where someone was smoking almost every day, while 23% reported that they were sometimes in a car where someone was smoking.

2.3 Socioeconomic patterning in smoking in cars

Although poorer families were less likely to own a car, among children who reported that their family did own a car, children from the poorest families were substantially more likely to report that smoking was allowed in it than were those from more affluent families (17% vs 7%). Despite their families being less likely to own a car, children from the poorest families were also almost twice as likely to report that they were in a car where smoking took place almost daily or sometimes (5% and 31%) than were their most affluent peers (2% and 18%).

Figure 1. Percentage of children reporting exposure to SHS in a car at least sometimes by family affluence score (high score=high affluence)



2.4 Awareness of Fresh Start Wales and attitudes to smoking in cars

Overall, 33% of children had heard of Fresh Start Wales, of whom 90% agreed that it was a good idea. A large majority of children agreed that smoking in cars should be banned (71% any car; 76% cars carrying children). A smaller majority of those children (54% any car; 61% cars carrying children) who reported that smoking was allowed in their family vehicle agreed with the statement that smoking in cars, should be banned. Hence, a majority of children whose parents smoke in their car feel that this should not be allowed.

2.5 Smoking in the home

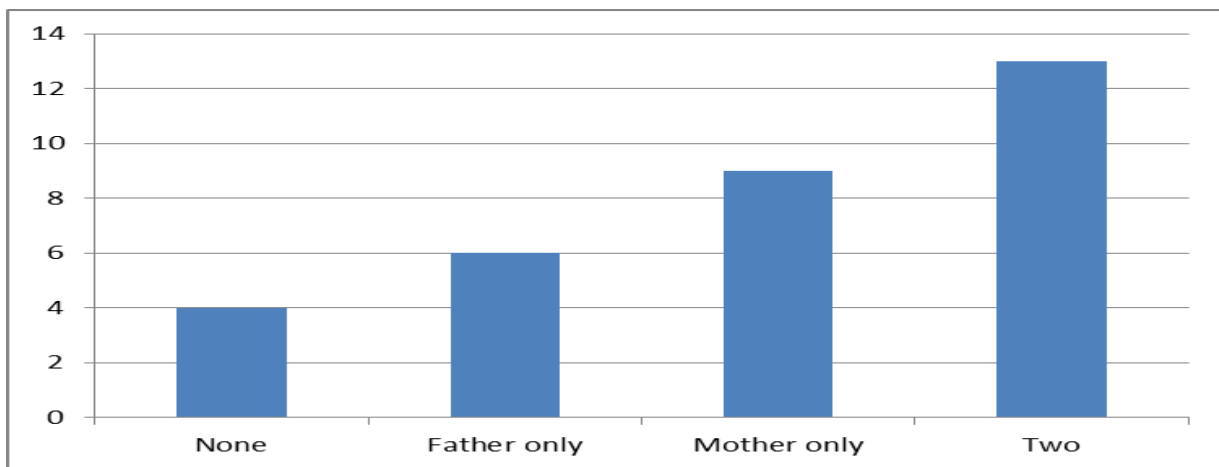
In addition to items on smoking in cars, children were asked whether they had a parent figure who smoked in the home, and whether smoking was allowed in their home. Both measures indicated substantial declines in smoking in the home since 2008. In 2008, 67% of children reported that they did not have a parent figure who smoked in their home, rising to 78% in 2014. Notably, while in 2008, only 29% of children with at least one smoking parent figure reported that they did not have a parent figure who smoked in their home, indicating that for parent figures who smoked, it was still the norm to smoke in the home. However, this rose to 48% in 2014, meaning that almost half of children who reported that a parent figure smoked reported that they did not smoke in the home. Similarly, the percentage of children living in smoke free homes (i.e. reporting that smoking was not allowed in their home at all) increased from 63% to 74%). Again, among children who reported that at least one parent figure smoked, those reporting that their home was smoke free were a clear minority in 2008 (34%). However, in 2014, half (51%) of children with one or more smoking parent figure reported living in a home where smoking was not allowed.

2.6 E-cigarettes

In 2014, 67% of children reported that they had heard of e-cigarettes. Overall, 6% reported having used an e-cigarette at least once; three times as many as had tried smoking tobacco (2%). Hence, most children who reported that they had used an e-cigarette had never smoked a tobacco cigarette. Where limited to children who reported

that they had never tried a tobacco cigarette, 5% reported having used an e-cigarette; the vast majority of children who had used an e-cigarette had never smoked tobacco. Among children who reported having two smoking parent figures, 12% report having used an e-cigarette, compared to 4% of those whose parents did not. Eighty-three per cent of children reported that no parent figure used an e-cigarette, while 6% reported their father did, 6% that their mother did and 5% that both did.

Figure 2. Percentage of children who have used e-cigarettes by number of parent figures who smoke tobacco



Among never-smoking children who reported having used an e-cigarette 85% report that they will definitely not or probably not smoke within the next two years, compared to 98% of those who had not used an e-cigarette. Hence, while most reported that they did not intend to take up smoking in the next two years, anti-smoking intentions were substantially weaker among those who had used e-cigarettes, with 15% saying that they might, or will, take up smoking in the next two years, compared to 2% of those who had not.

Children were asked whether they had seen people smoking e-cigarettes inside and outside a range of public places in the past month. E-cigarettes were most commonly seen being used at bus stations (29% inside; 32% outside), train stations (24% inside, 27% outside) and cinemas (20% inside; 20% outside). Children also reported seeing e-cigarettes used inside and outside leisure venues (15% inside; 23% outside), hospitals (14% inside; 19% outside) and inside GP surgeries (12% inside, 17% outside).

3. Conclusions

Smoking in cars, as well as in the home, has declined considerably in recent years, with substantial increases in smoking restrictions in private spaces reported by children with smoking parents. A large proportion of children with one or more smoking parents continue to be exposed to smoke in cars and homes, while substantial socioeconomic patterning remains. E-cigarette use appears to represent a new form of childhood experimentation with nicotine, which is more prevalent among 10-11 year old children than smoking tobacco. E-cigarette use is more common among children whose parents smoke tobacco, and is associated with increased intentions to take up smoking.

4. Research team

The core research team were staff/students at the Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer) unless indicated. Investigators: Graham Moore, Jo Holliday and Laurence Moore (MRC/CSO Social and Public Health Sciences Unit, University of Glasgow). Project manager: Nilufar Ahmed. Research assistants: Elen Jones, Julie Hayward, Sophia Lewis, Hannah Littlecott, Gillian Sulley. Administrative assistants: Natalie Richards and Kim Sheppard.