Environmental Tobacco Smoke in Icelandic Homes: Infant Exposure and Parental Attitudes and Behaviour

Development within Iceland between 1995 and 2006

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Preamble

This report on children's exposure to passive smoking (or environmental tobacco smoke) within Iceland forms part of a broader body of research that has been conducted within the Nordic countries over the past 10 years or so. By identifying the extent of child exposure to passive smoking and gaining an understanding of the behaviours, attitudes and awareness of the parents can help in developing the latest health promotion strategies for protecting our children. This is crucial as research shows that exposure to environmental tobacco smoke can lead to short and long-term health problems for the growing child.

This study has a wider significance in the context of the current developments that are occurring both within European and more specifically, in Iceland; that is to say, the new laws banning smoking in restaurants, bars and other indoor public locations. Furthermore, this research provides a gauge towards the extent to which the Public Health Institute of Iceland is progressing in achieving its stated objective that no child in Iceland should be exposed to environmental tobacco smoke by the year 2010.

A number of organizations and groups have been involved in the data collection and preparation of this report, including the Public Health Institute of Iceland, Reykjavík University, along with the Research Centre of the University of Akureyri and the Stockholm Centre of Public Health (Karolinska Institute).

This report forms part of the author's Masters Degree (MEd.) in Public Health and Education at Reykjavík University, Iceland. For further information or enquires regarding this report, please address correspondents to Brian Daniel Marshall via bdm@ru.is

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Summary

Parents of 3 year old children in Iceland completed a questionnaire which examined child exposure to Environmental Tobacco Smoke (ETS), as well as parental attitudes, awareness and behaviours towards smoking. Overall ETS exposure amongst 3 year old children has decreased from 43% to 8% in Iceland between 1995 and 2006, although smoking parents are more likely to expose their children than non-smoking parents. Awareness of the risks associated with smoking around children has remained at a stable level between 1995 and 2006; however, it is of concern that only 30% of parents are aware of the link between passive smoking and ear infections. More parents support the view that children have the right to a smoke-free environment; however, there remains a large minority who are still not committed to this viewpoint. Also, parents with a negative attitude towards a child smoke-free environment are more likely to expose their children to ETS. It is recommended that future research includes qualitative methods in order to identify the characteristics of the small percentage of parents who continue to allow their children to be exposed to ETS. It is also recommended that the Public Health community increase awareness to the risks of ear infections due to ETS exposure; incorporating this message into traditional "Quit Smoking" campaigns may be one option in doing this.

Introduction

Exposure to environmental tobacco smoke (ETS) amongst children provides a double whammy in terms of negative health and behaviour consequences. In the first instance, research has shown that exposure to ETS as an infant is causally related to lung diseases, ear infections and coronary diseases (Larsson et al, 2001; Strachan and Cook, 1997). Longer term consequences of ETS exposure in children is associated with an increased prevalence of asthma amongst individuals who have never smoked, whilst children who have been exposed are more likely to become smokers in adult life (Larsson et al. 2001)

In a review of 50 publications Strachan and Cook (1997) report that the occurrence of acute lower respiratory illnesses in infancy is significantly increased when a young child is exposed to environmental tobacco smoke. Furthermore, research that excludes the possible influence of maternal pre- and postnatal smoking behavioural indicates that smoking by other household members increases the risk of infant contracting an acute chest illness. Meanwhile, Johansson et al (2003) reports that significantly more children of indoor smokers "coughed more than two weeks after a upper respiratory infection", "wheezed without a upper respiratory infection" and had more pooled respiratory symptoms than did children of non-smokers.

Larsson et al (2001) report that the risk of becoming a smoker is increased threefold if one has grown up in a "smoking family" with their research noting that it is difficult to pinpoint the reason for this phenomenon, although social influence and low nicotine exposure are possible explanations.

Cook and Strachan (1999) report that the occurrence of respiratory illnesses and symptoms, as well as middle ear disease, are significantly more likely to occur amongst children when at least one of the parent's smoke. Furthermore, this risk is higher amongst preschool children than school age children. Cook and Strachan conclude that "policies need to be developed which reduce smoking amongst parents and protect infants and young children from exposure to environmental tobacco smoke.".

Within the Nordic countries (Denmark, Iceland, Finland, Norway and Sweden) research by Lund et al (1998; 1998a) has examined the extent of ETS exposure amongst children within the Nordic countries; firstly by examining the extent of exposure to ETS amongst children (1998) and secondly by studying parental efforts towards protecting their children from ETS exposure (1998a).

In comparing ETS exposure of children between different Nordic countries, Lund et al (1998) report that smoking prevalence within households was similar across all Nordic countries; however, there were significant differences in the extent to which parents protected their children from ETS exposure. Denmark and Iceland had the highest rates of infant ETS exposure whereas Finland had the lowest rates (Lund et al, 1998).

Lund et al (1998a) report that ETS exposure increases based on the number of smokers within the family home. Where neither parent smoked, only 11% of children were exposed, however this rose to 54% when one parent smoked daily, with 7 out of 10 children being exposed (or 69%) when both parents smoked daily (Lund et al, 1998a).

Educational background and family structure has been shown to be an influencing factor in the extent of ETS exposure amongst infants. Parents with a lower level of educational achievement from Denmark, Sweden and Norway were more likely to expose their children to ETS (Lund et al, 1998). Whilst children from Denmark and Sweden who lived in single-parent homes were more likely to be ETS exposed than those living in double-parent households (Lund et al, 1998). Similar findings within Sweden have been demonstrated by Johannson et al (2003) with single parents and blue-collar workers being significantly more likely to expose their children to ETS.

Contrarily, neither educational background nor household structure was a factor in increasing or decreasing the likelihood of child ETS exposure within the Icelandic household (Lund et al, 1998).

The percentage of parents attempting to change their smoking behaviour for the sake of their children was high throughout the Nordic countries (Lund et al, 1998a) with 8 out of 10 current smokers and former smokers reporting made attempts. However, Johansson (2003), notes that caution be used in determining between a parent's intention to change behaviour and actually executing their intentions.

Within Iceland, households containing at least one daily smoker were more likely to have rules in place to limit ETS in their home compared to smoke-free households (Lund et al, 1998). These finding were also found in Finland and Denmark.

In a comparative study of the changing behaviours, awareness and attitudes towards ETS exposure within the home in Norway between 1995 and 2001, Lund and Helgason (2005) report that child ETS exposure has decreased by 14 % (from 32% in 1995 to 18% in 2001). Households imposing rules to limit smoking indoors had increased from 72% to 85% between 1995 and 2001.

Furthermore, high health risk awareness by smokers was a more significant factor in reducing the number of cigarettes smoked in the vicinity of the child between 1995 and 2001, whereas, household education and attitudes were of less importance in exposure intensity (Lund and Helgason, 2005). This suggests that:

> Increasing parents' awareness of the health risk of ETS exposure to children may significantly reduce children's ETS exposure.
> Lund and Helgason, 2005

Aims and Objectives

The aim of this study is to identify attitudes, health risk awareness, smoking behaviours and ETS prevention amongst parents with 3 year olds children in 2006; as well as study the development in these factors between parents in 1995 and parents in 2006.

The objectives of this research are:

1. Assess the extent of child ETS exposure in 2006 and its development since 1995.
2. Assess parental attitudes towards smoking in 2006 and its development since 1995.
3. Assess health risk awareness towards ETS around children in 2006 and its development since 1995.
4. Make recommendations to the Public Health community for future ETS programs.

Material and Method

Data Collection

The conclusions presented in this report have been prepared by the Public Health Institute of Iceland and Reykjavík University and are built on a questionnaire that was sent to parents with children born in 1992 for the 1995 survey and children born in 2003 for the 2006 survey.

In both studies (1995 and 2003), a random sample of 1000 households with children born in the year 1992/2003 (in other words three year olds during the year of the survey), were selected and sent a postal questionnaire. Addresses were extracted from the Central Office of Population Records. The parent / person in charge whose birthday came first after the date on which the household received the questionnaire, was instructed to answer the questions. This was to ensure that the sample would include as many men as women. Those who did not live with a partner were instructed to fill in the form themselves.

The 2006 questionnaire used in this study was sent out by the Research Centre of the University of Akureyri in cooperation with the Public Health Institute of Iceland.

Measurements

The questionnaire used was designed as part of three-year intervention programme launched by the Nordic Cancer Union with the aim of reducing ETS exposure in the home and in day-care (Lund et al, 1998a). The questionnaire has the aim of assessing parental attitudes, awareness and behaviour towards passive smoking and children. A Likert scales was the most often used form of allowing respondents to indicate his or her agreement or evaluation to a statement. Additionally, respondents were also asked to guess the number of cigarettes smoked indoor doors when their children were at home.

Statistics

Descriptive statistics are presented in figure and table form, with percentages and cross-table variables recorded. Analyses were performed using the SPSS© Version 14.0 (SPSS Inc. Chicago IL, USA) and SPSS© Version 11.5 (SPSS Inc. Chicago IL, USA).

Results

Participants

Just over 70% of the respondents (or 72,2%) were female. In the 1995 study the percentage of female respondents was 65,1%.

The average age of respondents was 32,2 years old in 1995 and 32,8 years old in 2005.

Table 1: Response rate and characteristics of responding households

	1995		**2006**	
Response rate	70%		70%	
Number of households	702		760	
% answered by women	65% (456/700)		72% (545/755)	
Mean age of parents	Male: 34.1	Female: 31.1	Male: 35.1	Female: 31.9
% single parents	12% (83/696)		8% (62/755)	
Mean household education	4.3		5.4	
Prevalence of daily smoking:				
% both parents smoke	9% (65/701)		5% (39/759)	
% one parent smokes	24% (167/701)		13% (98/759)	
% Neither smoke	67% (469/701)		82% (622/759)	

Residence

Almost 57% of the participants in the study lived in the capital area of Iceland. Outside of this capital area, almost 15% of participants lived in a population area of between 5000 and 99000 inhabitants, whilst a further 14% lived in population areas of 1000 and 5000 inhabitants. The remaining participants lived in areas of less than 1000 inhabitants or out in the country. Less than 1% lived overseas.

Age Groups

Table 2: Ages of parents in 1995 and 2006 based on defined age-bands

	1995	2006
19-24 year olds	9,5% (66/697)	6,8% (52/760)
25-29 year olds	25,7% (179/697)	23,8% (181/760)
30-34 year olds	30,0% (209/697)	33,6% (255/760)
35-39 year olds	24,2% (169/697)	23,4% (178/760)
40 years and older	10,6% (74/697)	12,4% (94/760)

Education

Table 3: Education levels of participants

	1995	**2006**
Less than high school graduation	42,4% (291/687)	31,2% (234/749)
High school graduation or equivalent	36,8% (253/687)	37,2% (279/749)
University graduation	20,8% (143/687)	31,5% (236/749)

It can be seen in table 2 that the proportion of participants who have not completed high school has decreased by around 10% whilst the proportion of participants who have completed university level studies has increased by around 10%.

In table 3, it can be seen that the percentage of parents within the age-band 19 to 24 years has decreased from 1995 to 2006, whilst the highest proportion of parents is within the age-band 30-34 years.

Smoking behaviour

Table 4: Extent of daily smoking amongst parents

	1995	2006
Both Smoke Daily	9,3% (65 / 701)	5,1% (39 / 759)
One of Them Smoke's Daily	23,8% (167 / 701)	12,9% (98 / 759)
Neither Smoke	66,9% (n 469 / 701)	81,9% (n 622 / 759)

It can be seen in table 4 that the proportion of parents who do not smoke has risen by 12% between 1995 and 2006. The proportion of households where one parent smokes has decreased from 23,8% to 12,9%, whilst the the proportion of households where both parents smoke has decreased from 9,3% to 5,1% between 1995 and 2006.

Age and Smoking Behaviour

Table 5: Age of parents in 1995 and 2006 based on whether the household contains a smoking parent or not

	1995		2006	
	Households containing parents who smoke	Households containing non-smoking parents	Households containing parents who smoke	Households containing non-smoking parents
19-24 year olds	7,1% (33/466)	14,3% (33/231)	5,8% (36/623)	11,7% (16/137)
25-29 year olds	25,5% (119/466)	26,0% (60/231)	22,2% (138/623)	31,4% (43/137)
30-34 year olds	29,8% (122/466)	30,3% (70/231)	35,3% (220/623)	25,5% (35/137)
35-39 year olds	26,2% (122/466)	20,3% (47/231)	24,2% (151/623)	19,7% (27/137)
40 years and older	11,4% (53/466)	9,1% (21/231)	12,5% (78/623)	11,7% (16/137)

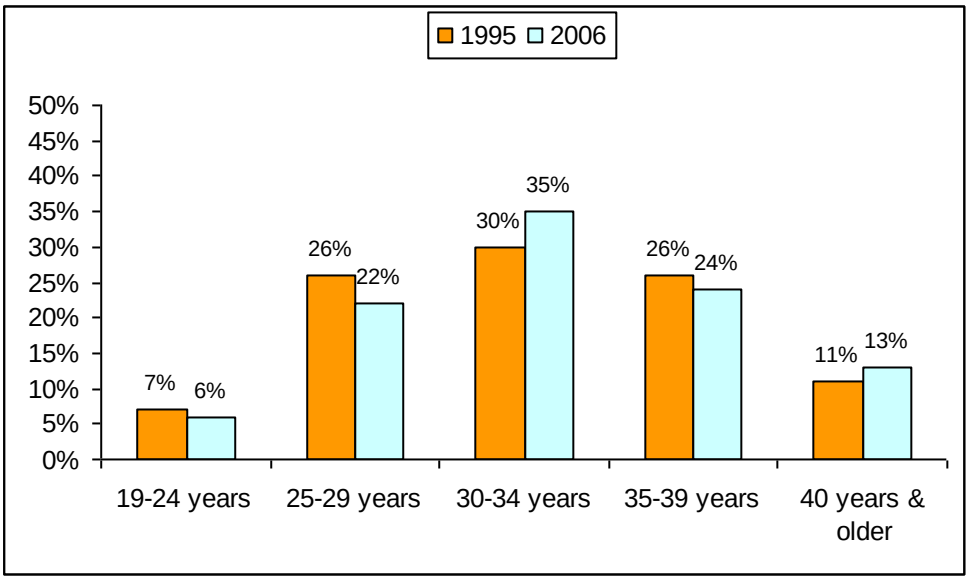

Figure 1: Parents living in a smoking household based by age from 1995 and 2006

It can be seen in figure 1 that the age bracket containing the highest percentage of smoking households is the 30-34 year olds. The household with the lowest proportion of parents containing smokers is 19-24 year olds.

Parental Education and Daily Smoking

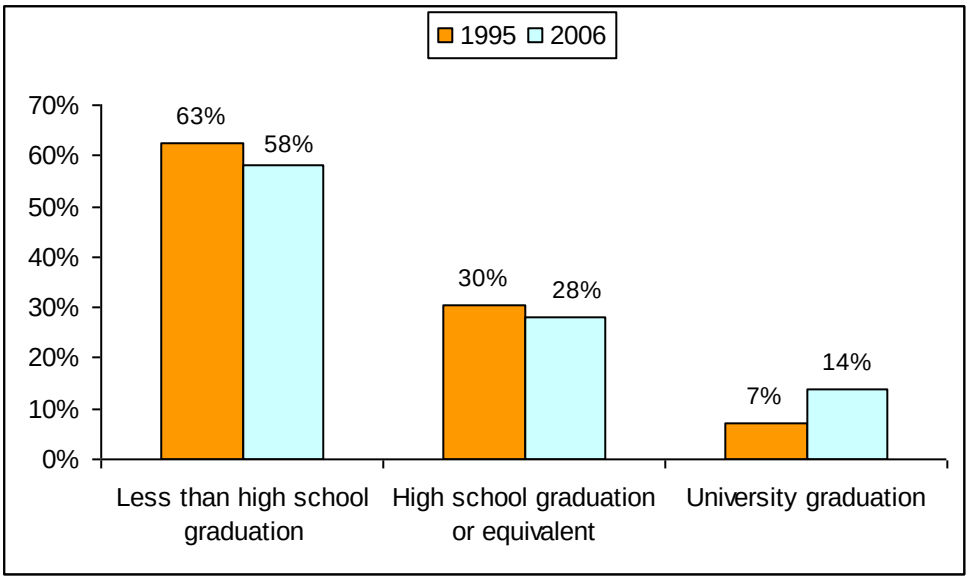

Figure 2: Comparison between 1995 and 2006 of the educational level of households that smoke daily

Family Structure and Daily Smoking

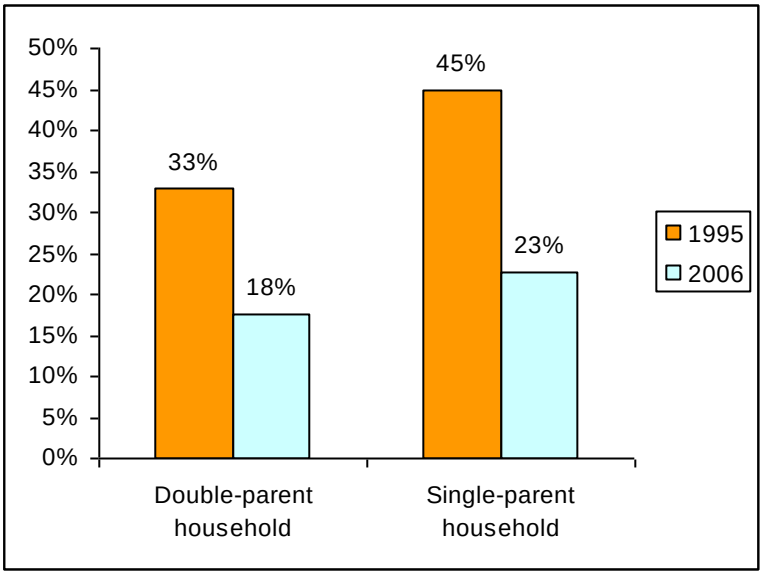

Figure 3: Comparison between 1995 and 2006 of family structure and the percentage of households containing a daily smoker.

In figure 2 it can be seen that there has been an increase in the proportion of daily smokers amongst university graduates, whilst in figure 3, it can be noted that whilst there has been a decrease in the number of daily smokers in both household structures, single parent families are now much closer in 2006 to the daily smoking habits of their double parent equivalents.

Infant exposure to ETS in the household

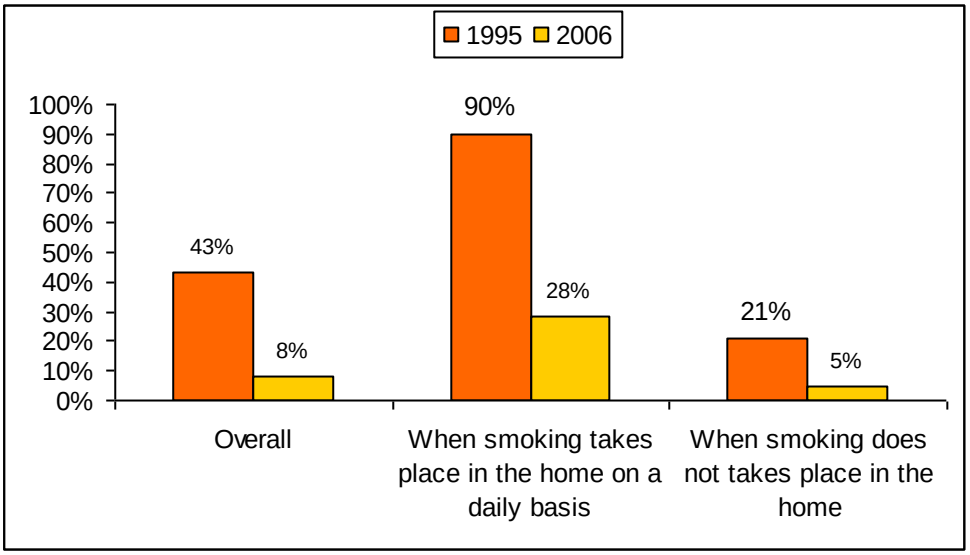

Figure 4: Percentage of infants exposed to ETS at least once per week in 1995 and 2006

It can be seen in figure 4 that the number of 3 year olds coming into contact with ETS at least once per week has decreased by 35% since 1995. Infant ETS exposure is more likely in households where smoking takes place (28% exposure rate versus 5%); however, infant ETS exposure has reduced dramatically within smoking homes (from 90% in 1995 to 28% in 2006).

Infant ETS Exposure in Different Locations

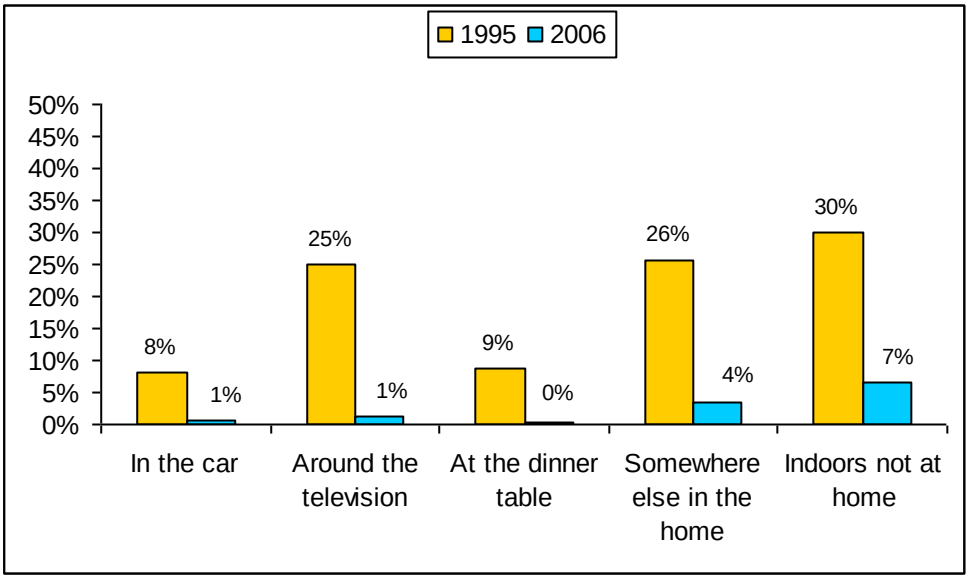

Figure 5: Infant exposure to ETS at least once per week in different locations

It can be seen in figure 5 that there has been a decrease in the locations where ETS exposure takes place. Exposure around the television, somewhere else in the home and indoors but not at home have all decreased by 20% or more. There were no reported cases of smoking at the dinner table in 2006.

Infant ETS Exposure and Parental Age

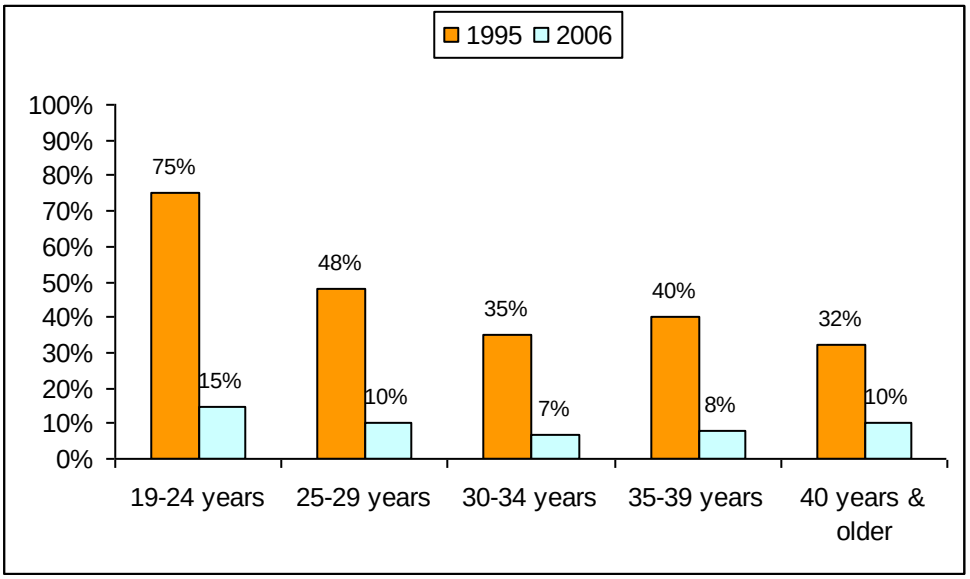

Figure 6: Percentage of children exposed at least once per week to ETS within each parental age-group

It can be seen from the above figure that in 1995 75% all children with parents in the age-group 19-24 allowed their children to be exposed to ETS at least once per week. In 2006, only 15% of children with parents within this age-group were exposed to ETS smoke at least once per week.

Overall there has been a decrease within each age-group of parents towards allowing their children to be exposed to ETS, with parents between the ages of 30-34 exposing their children the least (7%).

Attitudes towards ETS

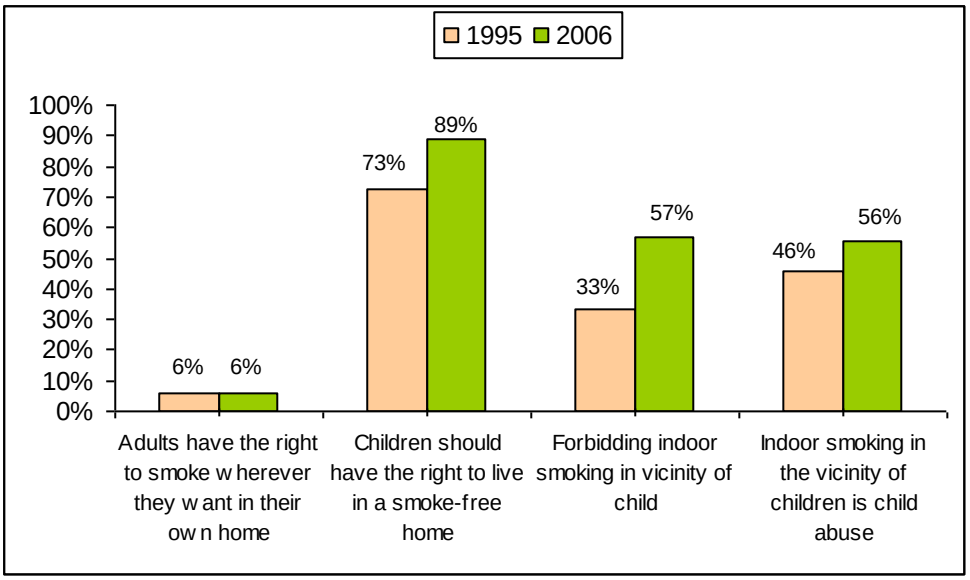

Figure 7: Comparison between 1995 and 2006 of parents who are in total agreement with certain attitudes towards smoking rights and consequences

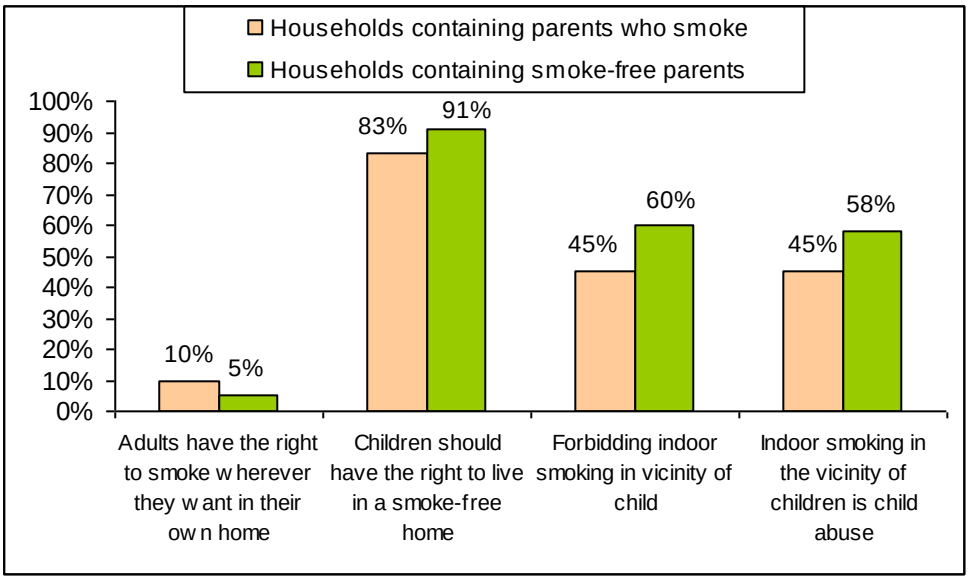

Figure 8: Comparison of those who are in total agreement with certain attitudes towards smoking rights and consequences in 2006 based on whether the parent lives in a smoke or smoke-free household.

It can be seen in figure 7 that the proportion of parents who support the right of a child to live in a smoke-free home has increased by 16% between 1995 and 2006. The proportion of parents who are in total agreement with the viewpoint that smoking indoors in the vicinity of the child should be forbidden has also increased.

Figure 8 illustrates that in 2006 non-smoking households are more likely to be in total agreement than smoking households to certain attitudes that relate to the protection and rights of children to not be exposed to ETS smoke.

It can also be noted that regardless of whether a household is smoke free or not, the vast majority of parents (or 89%) believe in the right for the child to live in a smoke-free environment. However, other protections or rights for children, that is to say, indoor smoking should be forbidden inside the home and that indoor smoking in the vicinity of the children is child abuse receives much less support – or around 57&

There was no significant difference between household education and attitudes towards smoking (p=<0,05).

Positive Attitude for the Right of a Child to a Smoke-Free Environment and Household Structure

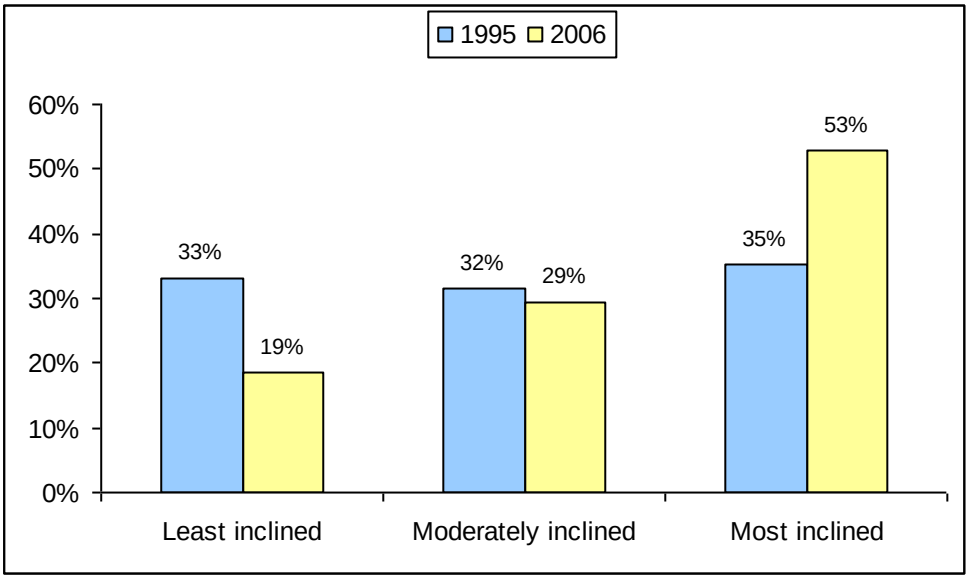

Figure 9: Inclination towards the right for children to have a smoke free environment amongst all households in 1995 and 2006

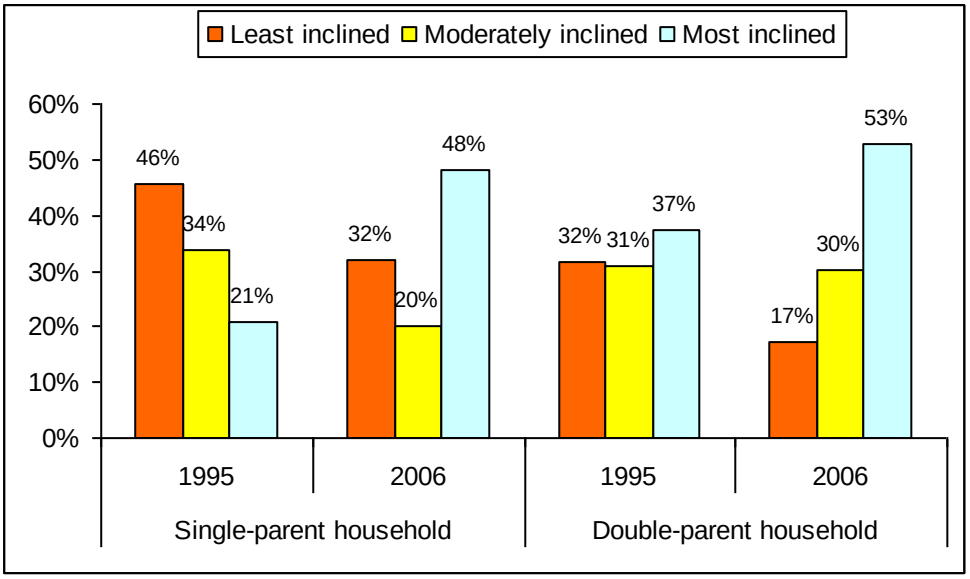

Figure 10: Inclination of parents towards children rights to have a smoke free environment based on household structure and year

Figure 9 shows that whilst the proportion of parents who are moderately inclined towards the right of children to have a smoke free environment remains relatively stable between 1995 and 2006, the proportion of parents who are most inclined towards this viewpoint has increased by 18%. Thus, it can be seen that over 50% of parents have a positive attitude towards the right of the child. At the same time there has been a 14% in reduction in the proportion of parents who at least inclined (or most negative) to the right of a child to live in a smoke-free environment.

In figure 10, it can be seen that single-parent households are now close to the double-parent households when it comes to proportion who very positive (or inclined) to the rights of children to live in a smoke-free environment. Whereas in 1995, around a half of all single-parent households (or 46%) were negative to this right or belief; in 2005, 48% of single-parents households were most inclined to the rights of children in this issue

Positive Attitude to Rights, Education and Household Smoking

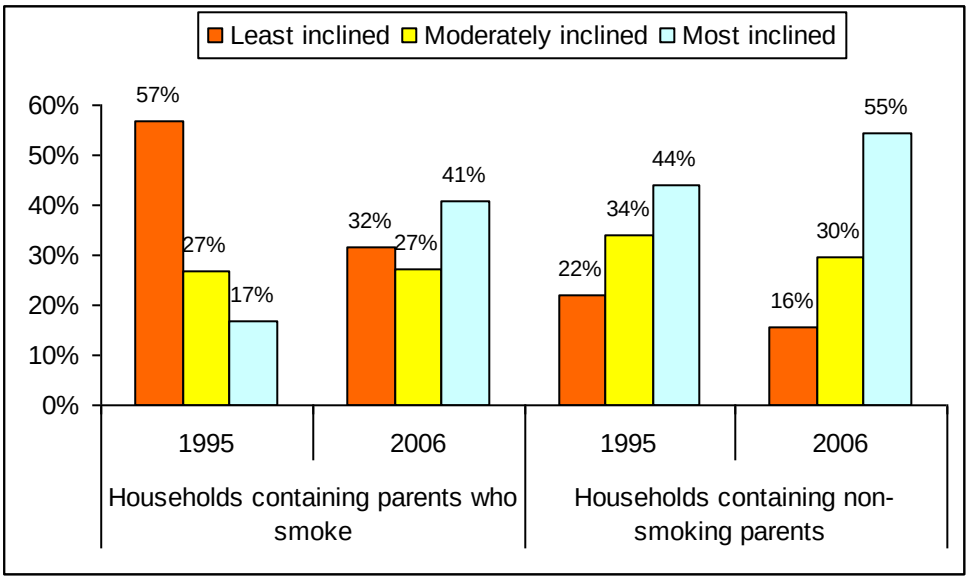

Figure 11: Inclination of parents towards children rights to have a smoke free environment based on household smoking behaviour and year.

In terms of households who are least inclined towards the rights of children to live in smoke-free environment, it can be seen that amongst households where at least one parent smokes the proportion who are negative has decreased from 57% to 32%. This decrease, however, has yet to reach the levels of households whom are smoke-free – which now lies at 16% in 2006. The proportion of non-smoking households who are most inclined is 14% higher than households that smoke.

In terms of having a positive inclination towards the rights of children to live in a smoke-free environment, no significant difference was found between whether parents had graduated from high school or not (p=0,05).

Positive Attitude for the Right of a Child to a Smoke-Free Environment and ETS Exposure

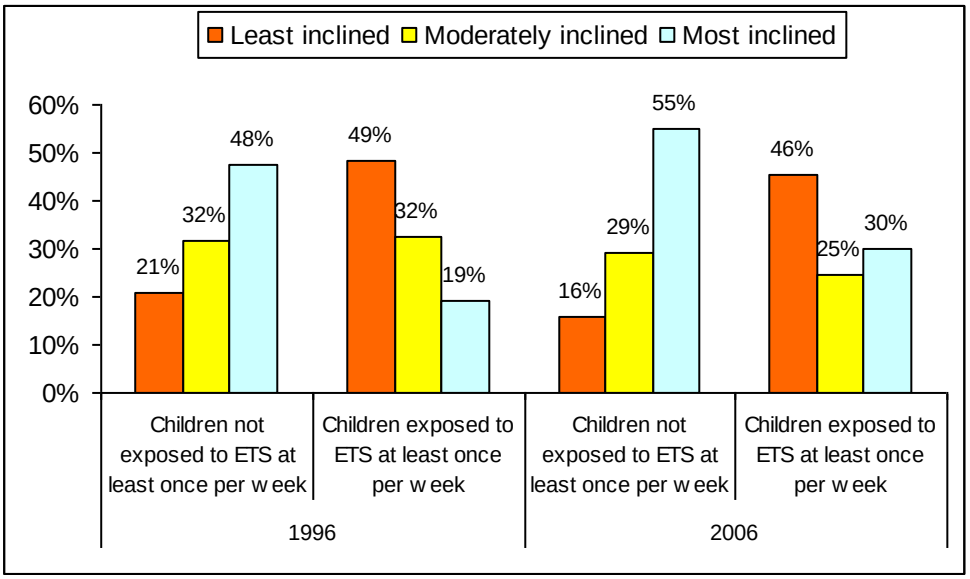

Figure 12: Child exposure to ETS compared to inclination of parents towards children rights to have a smoke free environment in 1995 and 2006

It can be seen in figure 12 that amongst children who are exposed at least once per week are more likely to have parents who are the least inclined towards children's rights for a smoke-free environment. In 1995, 49% of all children who exposed to ETS had parents who held a negative attitude towards this issue; in 2006, this figure had decreased by 3% to 46%. In the opposite direction, it can be seen that amongst children who are not exposed to ETS, 55% have parents who are most inclined towards the rights of children to have a smoke-free environment.

Health Risk Awareness and ETS

Knowledge of Different ETS Risks

Table 6: Response of parents to the statement that children raised by parents that smoke are more likely to die of cot death

	2006
Not at all	24,5 % (177/722)
Maybe, maybe not	44,9% (324/722)
Probably	20,8% (150/722)
Definitely	9,8% (71/730)

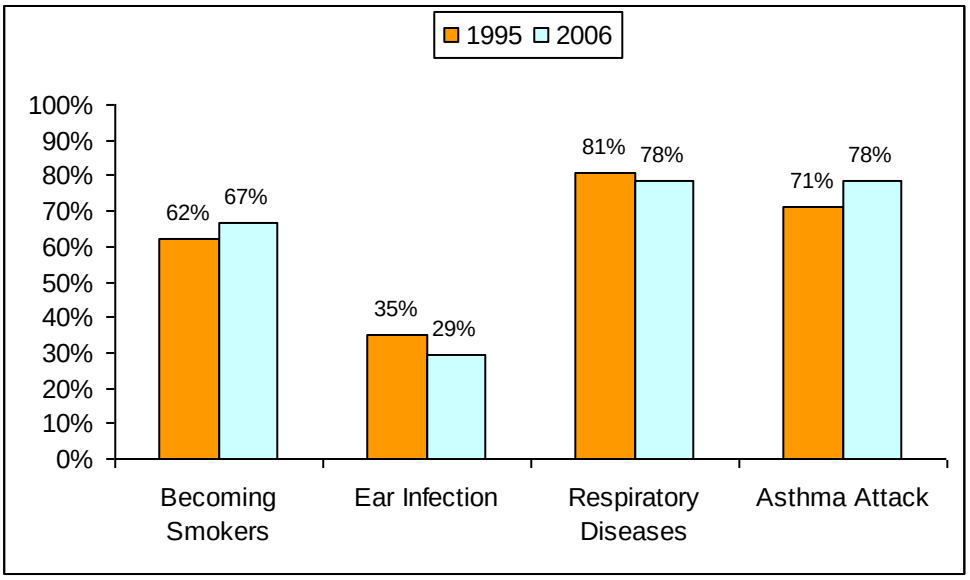

Figure 13: Parents who stated that the link between parental smoking and various child health consequences was either probable or definite in 1995 and 2006

It can be seen that parents are most aware of the potential health risks associated with parental smoking and childhood respiratory diseases (bronchitis, colds) and asthma attacks. Conversely, parents have the least amount awareness towards the increased likelihood of acquiring an ear infection due to ETS exposure; indeed, the awareness to this risk has gone down from 1995 and 2006. Parents (in the 2006 survey) had an equally low awareness level to the increased risk of cots death due to ETS exposure. The proportion of parents aware of the risk that children raised by parents who smoke are more likely to begin smoking themselves increased by 5% between 1995 and 2006.

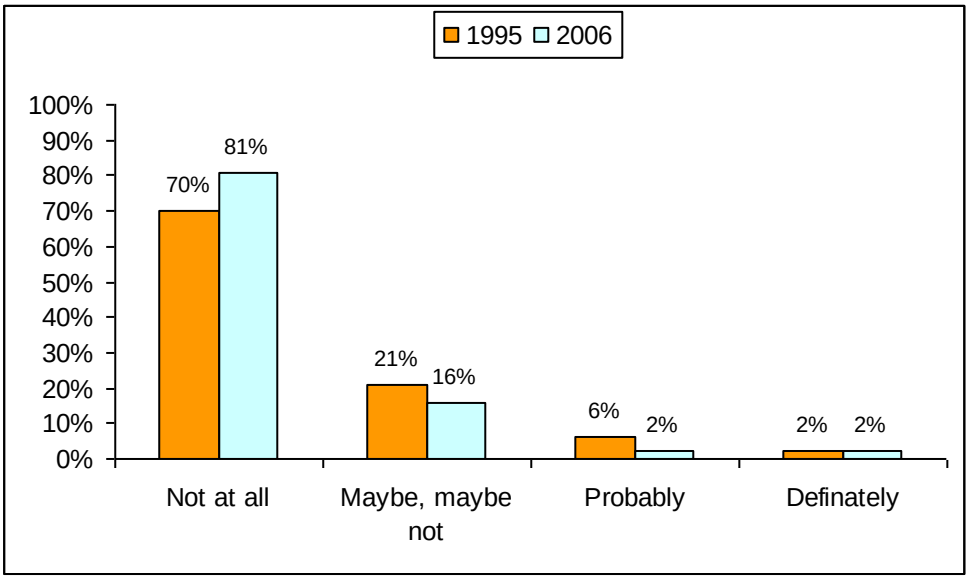

Figure 14: Response of parents to the statement that if ventilation is good, smoking in the vicinity of children is not harmful

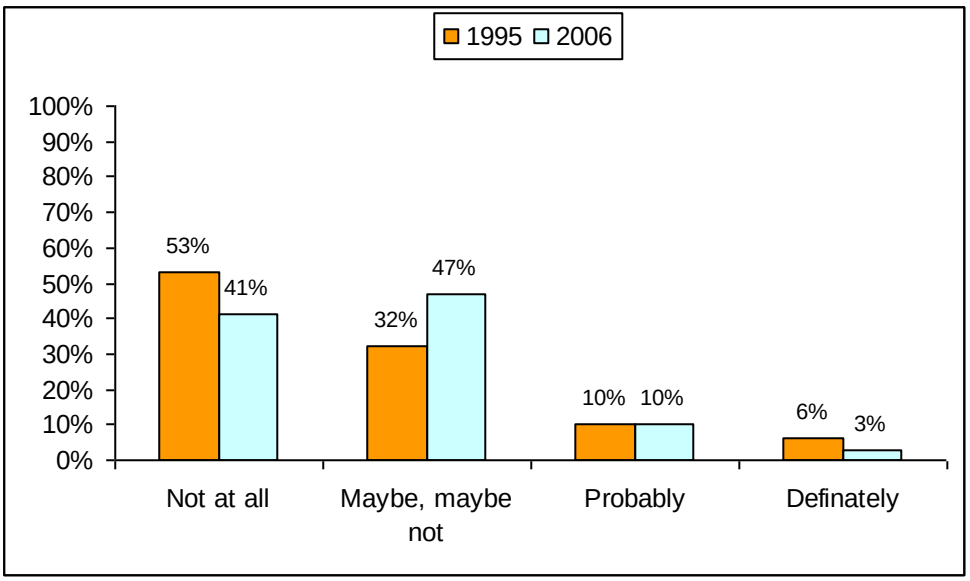

Figure 15: Response of parents to the statement that other indoor air pollutions are more harmful to people's health than ETS

In figure 14 it can be seen that the vast majority of parents or 81% rejected the statement that if ventilation is good, smoking in the vicinity of children is not harmful. This area of awareness has increased by 11% between 1995 and 2006. Parents are less in agreement, however, about whether the health risks associated with other indoor pollutants are more harmful to people's health than ETS (see figure 15). In 2006, 41% of parents rejected this statement compared to 47% who responded that maybe the statement was correct and maybe not. It is interesting to note that there has been a decrease in the proportion of parents who rejected this statement in 1996 (53%) compared to 2006.

ETS as a Proven Health Risk

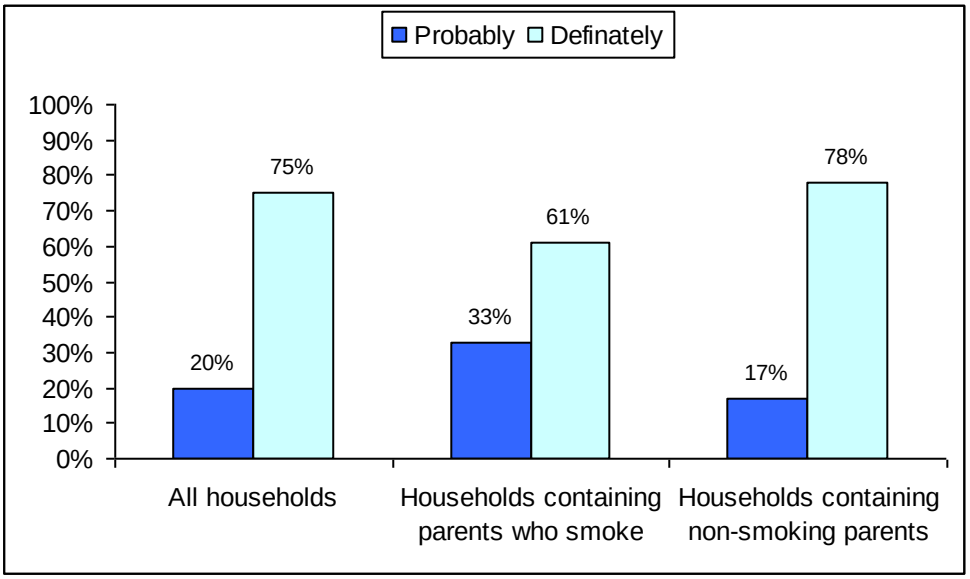

Figure 16: Parents who responded to the statement that it has been sufficiently demonstrated that ETS is harmful to children as either probably or definitely correct

In figure 16, it can be seen that 75% of all households definitely agree that it has been sufficiently demonstrated that ETS is harmful to children; a further 20% of parents responded that this statement was probably correct. When smoking and non-smoking households are compared, then it can be seen that a greater proportion of non-smoking households are definitely in agreement (78%) than smoking households (61%).

Overall Awareness of ETS Risks

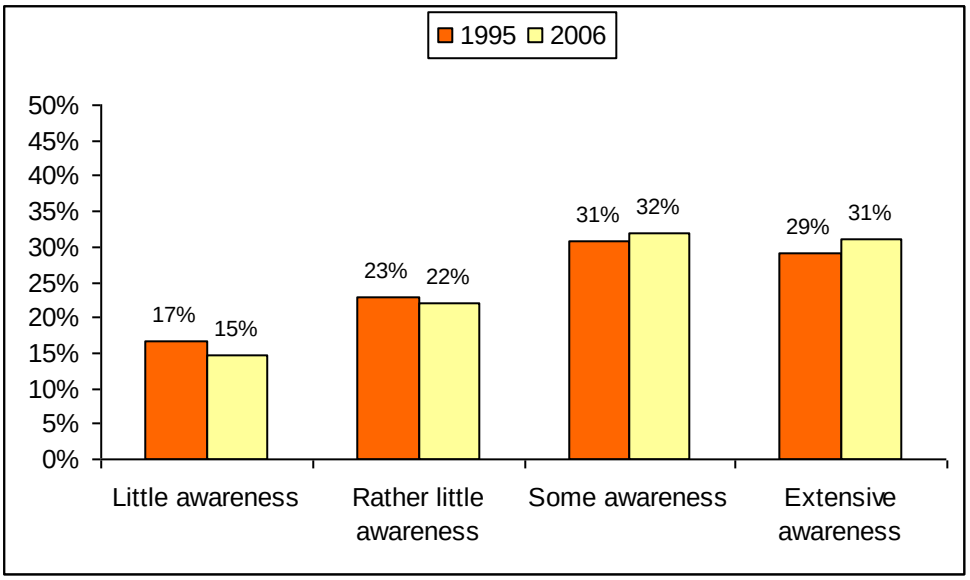

Figure 17: Parental awareness of the health risks associated with smoking around children in 1995 and 2006

It can be seen in figure 17 that the extent of parental awareness of the health risks associated with smoking around children has remained relatively the same between 1995 and 2006. It can also be noted that just over one-third of all parents in 2006 had either little awareness (15%) or rather little awareness (22%) of the health risk associated with smoking around children.

I Overall Awareness of ETS Risks and Age of Parents

Table 7: Awareness of the health risks associated with smoking around children based on the age of the parents from 2006

	Age of Parents (2006)				
	19-24 Years	25-29 Years	30-34 years	35-39 Years	40 years and older
Little knowledge	18,0% (9/50)	15,4% (26/169)	13,4% (32/238)	16,8% (29/173)	16,7% (14/84)
Rather little knowledge	14,0% (7/50)	29,0% (49/169)	21,8% (52/238)	17,3% (30/173)	19,0% (16/84)
Some knowledge	36,0% (18/50)	27,8% (47/169)	31,9% (76/238)	34,1% (59/173)	33,3% (28/84)
Extensive knowledge	32,0% (16/50)	27,8% (47/169)	32,8% (78/238)	31,8% (55/173)	31,0% (26/84)

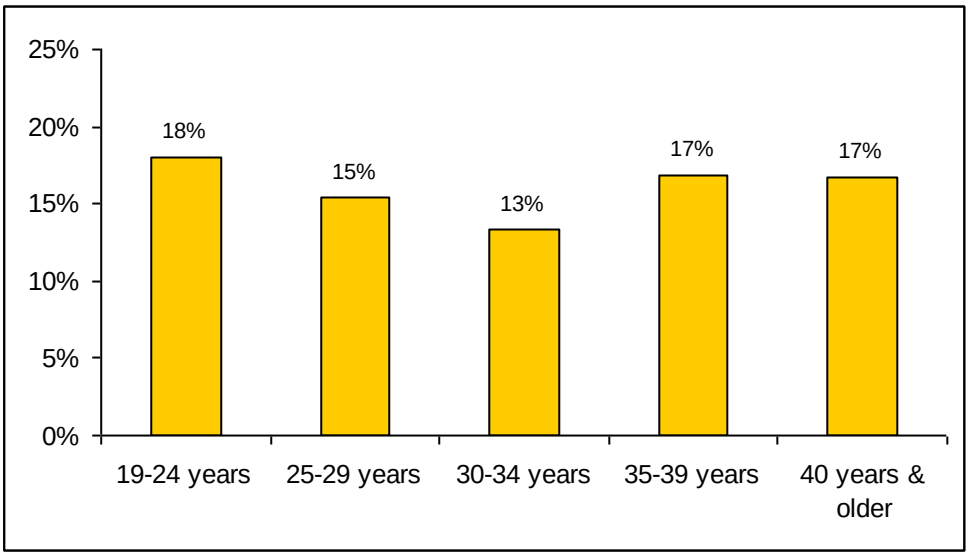

Figure 18: Proportion of parents with little awareness of the health risks associated with smoking around children based on the age of the parents from 2006

It can be seen in figure 18 that between 13% and 17% of each age-group of parents has little knowledge of the health risks associated with smoking around children.

Overall Awareness of ETS Risks and Smoking Behaviour

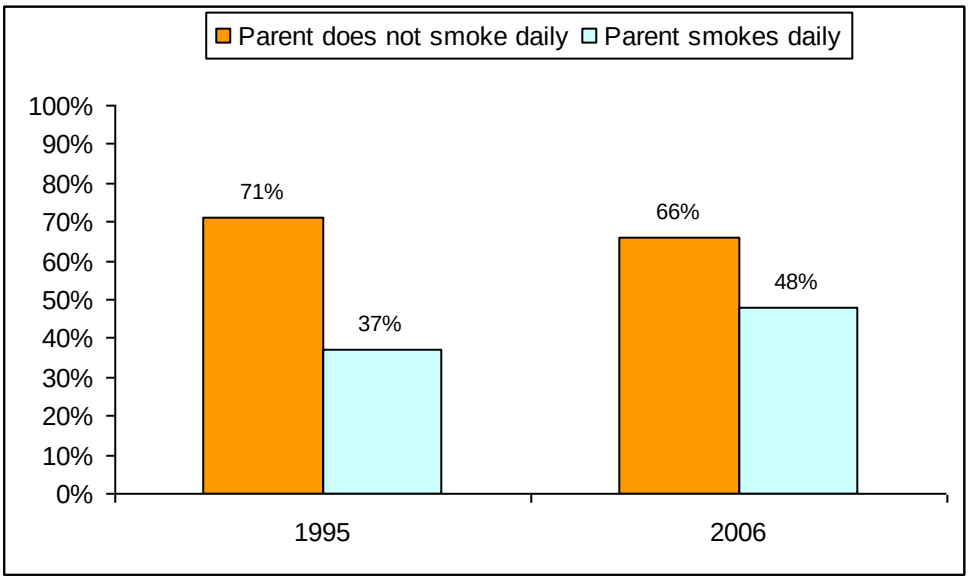

Figure 19: Parents with some or extensive awareness of the health consequences towards children when parents smoke based on whether they smoke daily or not

It can be seen in figure 19 that parents who do not smoke every day are more aware of the health risks associated with smoking compared to smoking parents. Equally, however, it can be seen that the number of aware parents who smoke daily has increased by 11% from 1995 to 2006.

Overall Awareness of ETS Risks and Household Structure

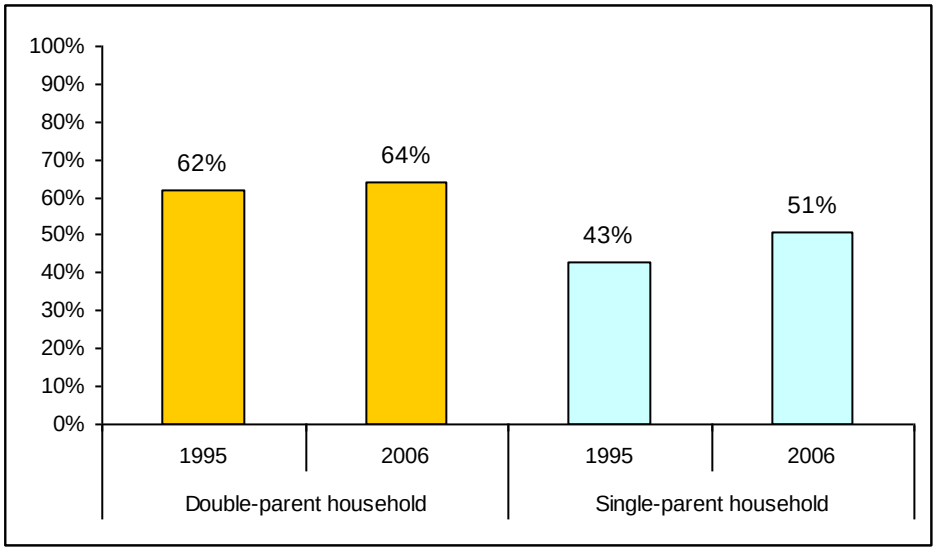

Figure 20: Parents with some or extensive awareness of the health consequences towards children based on household structure in 1995 and 2006

It can be seen in figure 20 that a higher percentage of parents living in a double-parent household had a higher awareness regarding the health risks associated with smoking around children compared to parents from a single-parent household. It can also be noted that in 1995 the proportion of single-parent households with some or extensive awareness was 19% less than their double-parent households. The difference between household structures with some or extensive awareness in 2006 has decreased to a 13% gap. Whilst the proportion of double-parent households with this awareness has increased by 2%, the proportion of single-parents has increased by 8%.

Awareness and Child ETS Exposure

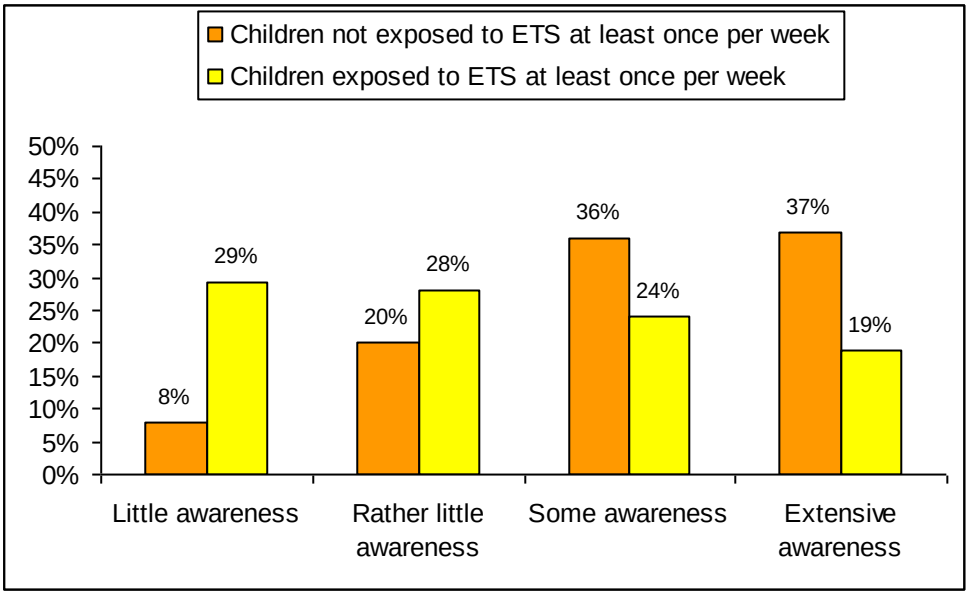

Figure 21: Awareness of the health consequences towards children when parents smoke compared with children's exposure to ETS in 1995

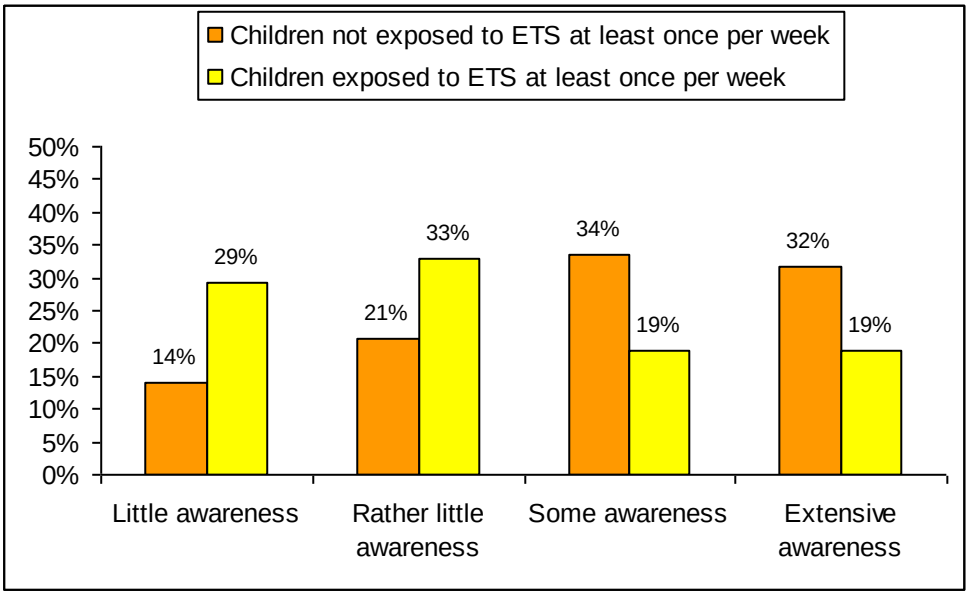

Figure 22: Awareness of the health consequences towards children when parents smoke compared with children's exposure to ETS in 2006

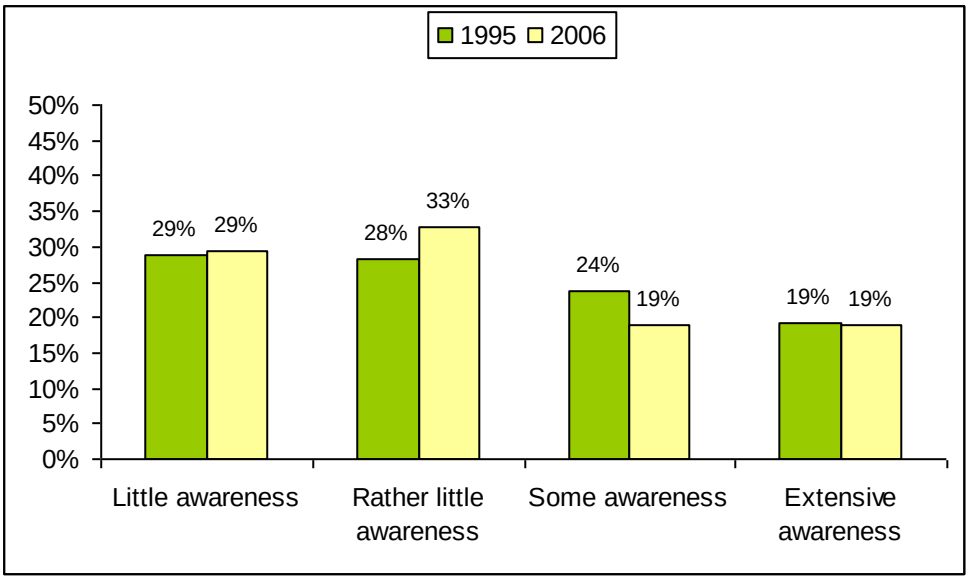

Figure 23: Awareness of ETS health consequences in 1995 and 2006 amongst children who are exposed to ETS at least once per week

It can be seen in that in 1995 (figure 21) and in 2006 (figure 22) that children who are not exposed to ETS at least once per week, are more likely to have parents who have some or extensive knowledge regarding the health consequences towards children when their parents smoke. For example, in 1995, of children who were not exposed to ETS, 37% of them had parents with extensive knowledge, whilst a further 36% had parents with some awareness. In 2006, these figures were similar, with 32% of parents having extensive knowledge and 34% having some knowledge. Conversely, it can be seen that children who are exposed to ETS are more likely to have parents who have either little or rather little awareness of the health risks. Thus, amongst exposed children in 1995, 29% had parents with little awareness and 28% had parents with rather little knowledge; in 2006, 29% had parents with little awareness and 33% with rather little awareness.

Figure 23 shows a comparison of the extent of awareness amongst parents whose children are exposed to ETS at least once per week in 1995 and 2006. Here it can be seen that the proportion of parents who have rather little awareness has risen from 28% in 1995 to 33% in 2006.

Information Received about ETS risks

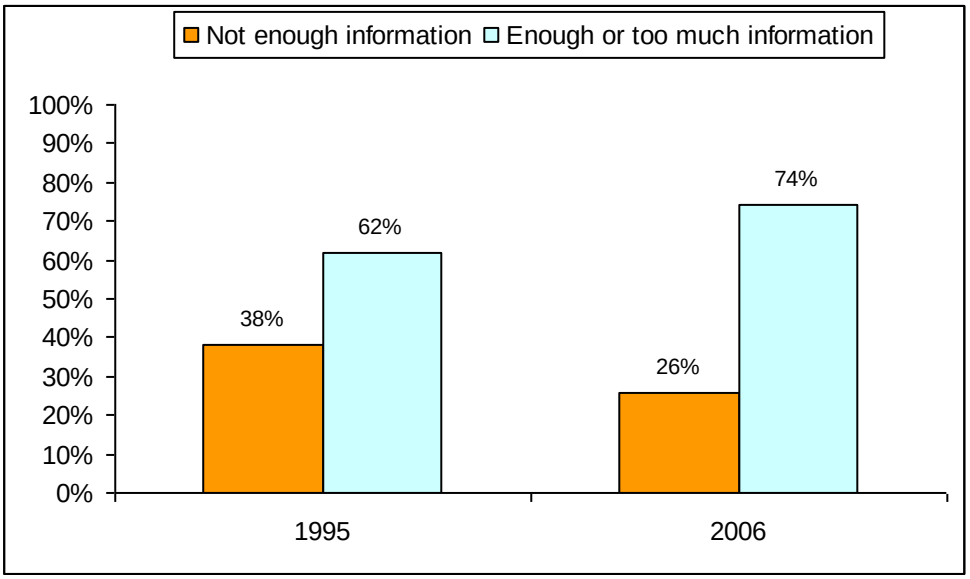

Figure 24: The level of information received by parents regarding the affects of ETS on children

Information Received and Household Structure

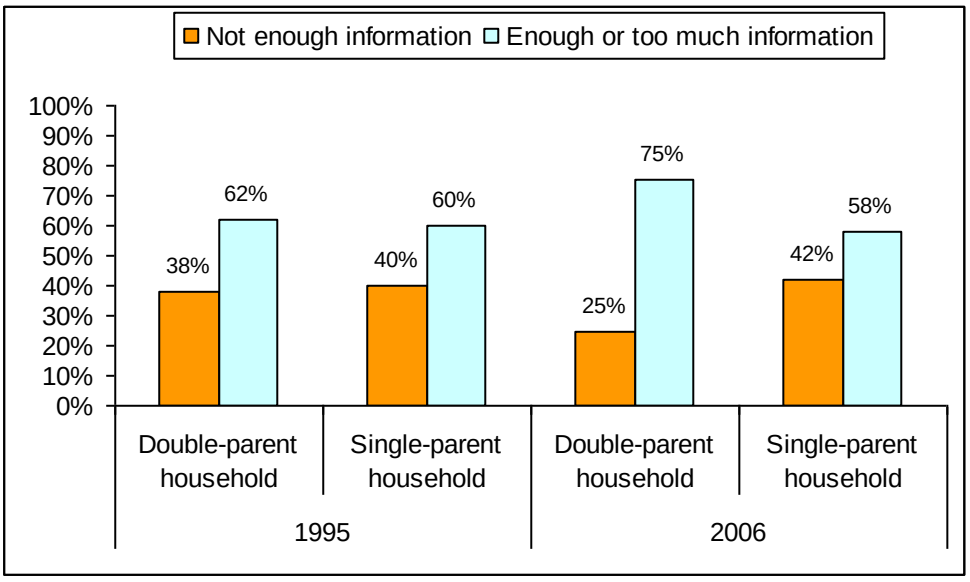

Figure 25: Responses from 1995 and 2006 of parents on the level of information received regarding the affects of ETS on children based on household structure

In figure 24, it can be seen that the overall percentage of parents who feel that they have not received enough information has decreased from 38% in 1995 to 26% in 2006**.**

As can be seen in figure 25, single-parent households were the subgroup with the lowest reported feeling of having not received enough information about ETS health risks, with almost 42% of single parents having not received enough information in 2006. This is comparison to only 25% of double-parent households in 2006. It can also be noted that in 1995, double and single-parent household reported similar rates of information received (62% for double-parent and 60% for single-parent). However, in 2006, double-parent households reported a 13,4% increase in those who felt that they had received enough information, whilst this figure had decreased by almost 2% single-parent households.

Information Received and Smoking Behaviour

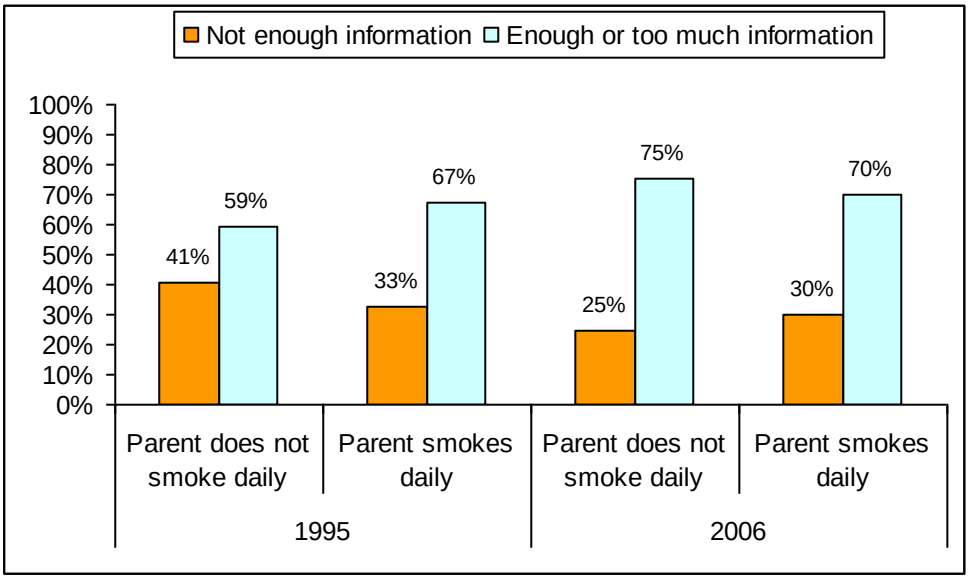

Figure 26: Responses from 1995 and 2006 of parents on the level of information received regarding the affects of ETS on children based on parental smoking behavior

When looking at the amount of information parents feel they have received regarding the affects of ETS on children, it can be seen in figure 26 that amongst parents who do not smoke daily, the proportion who consider that they have not received enough information has decreased from 41% in 1995 to 25% in 2006. Amongst parents who do smoke daily, there has been a smaller decrease in the same figures, with 30% of parents not feeling that they have received enough information in 2006, compared to 33% in 1995.

Information Received and Educational Attainment

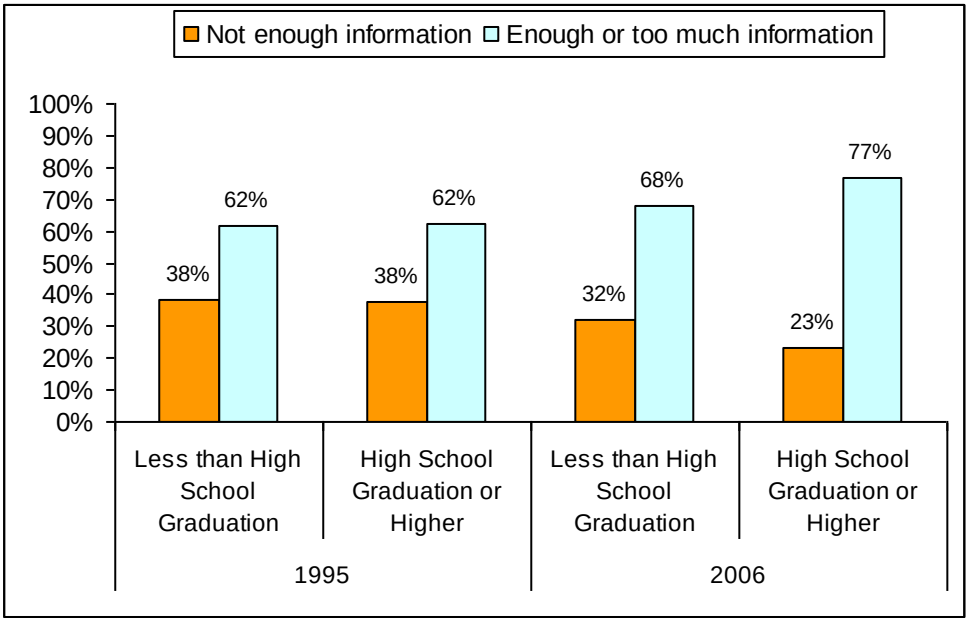

Figure 27: Responses from 1995 and 2006 of parents on the level of information received regarding the affects of ETS on children based on parental smoking behavior

In figure 27, it can be seen that in 2006, a higher proportion of parents who graduated from high school or higher reported that they had received enough information (77%) compared with those parents who did not graduate from high school (68%). In 1995, a equal proportion of parents from both groups (graduates and non-graduates) reported having received enough information.

Information Received and Parental Age

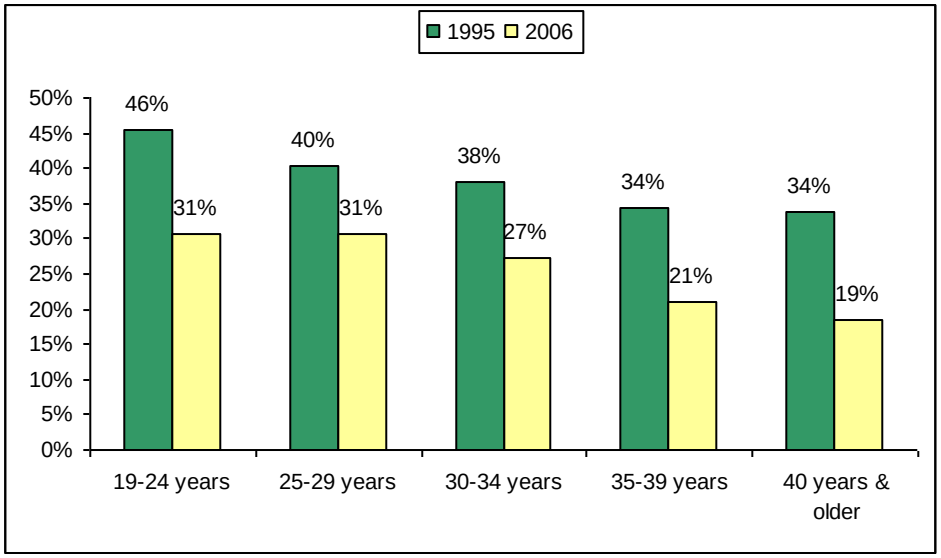

Figure 28: Percentage of parents in each age-group who reported that they did not receive enough information regarding ETS health risks in 1995 and 2006

In figure 29, it can be seen that "younger" parents are more likely to report that they have not received enough information regarding the affects of ETS smoke around children. In 2006, 31% of the age bands 19-24 years and 25-29 years expressed this viewpoint, compared with 27% of parents in the 30-24 year band and 21% of parents in the 35-49 year age-band. The smallest proportion of parents (19%) expressing that they did not receive enough information in 2006 were those in the age-band 40 years and older.

In 1995, almost half of all parents in the youngest age-band reported not having received enough information; however, this figure has dropped by 15% in 2006. Smaller decreases between 1995 and 2006 can be observed within each age-band.

Information Received and ETS Exposure

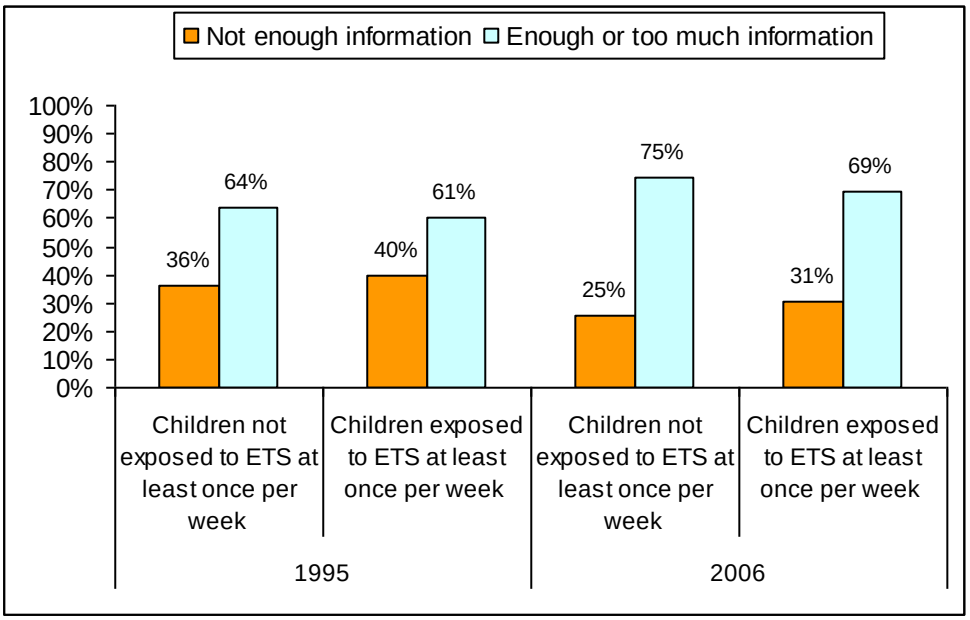

Figure 29: Extent of information received regarding in 1995 and 2006 on the affects of ETS on children based on children's exposure to ETS

It can be seen in figure 29 that the proportion of parents who consider that they have not received enough information has decreased for both parents whose children have not been exposed to ETS as well as for those parents whose children have been exposed. In 1995, for children who have not been exposed 36% had parents who did not receive enough information compared with 25% in 2006. For children who had been exposed, the decrease between studies is from 40% in 1995 to 31% in 2006.

Discussion

ETS exposure at least once per week amongst 3 year olds in Iceland has decreased from 43% of all children in 1995 to 8% in 2006. An even greater reduction in weekly exposure can be observed in homes where smoking occurs on a weekly basis; thus in 1995, only 10% of children were free from ETS exposure, whereas in 2006, 72% of children living in homes with at least one smoking parent were free from exposure.

When exposure to ETS does take place, then it is most likely to occur in the home (but excluding the bedroom, around dinner table and the television) or occur indoors but not at home. The current research does not allow for parents to state whereabouts "indoors, but not at home" this exposure occurs; however, future research should include this possibility of identifying what location the exposure takes place. Thus, health promotion programs could target these areas. One might propose that this location would include cafes and restaurants where the child is being exposed to ETS; thus, it will be interesting to see whether child ETS exposure decreases further following the newly implemented act in Iceland which forbids smoking in cafes, bars and restaurants.

Being raised in a smoking home still holds a greater to risk to exposure that been raised in a smoke-free environment; however, it is encouraging to see that whereas 90% of parents that smoked daily in 1995 exposed their children to ETS, this figure is now down to 28%.

This trend in reduced ETS exposure is greater than the reduction which has been observed in Norway (Lund and Helgason, 2005) where ETS exposure between 1995 and 2001 was reduced from 32% to 18%, and amongst homes where at least one parent smoked from 67% to 33%. Whilst the Icelandic figures reveal a lower child exposure rate it should not be forgotten that the Norwegian study was conducted in 2001; thus, given the decreasing exposure trend that occurred in Norway between 1995 and 2001, it is possible to postulate that exposure rates would be still lower in 2006.
Attitudes towards smoking rights and passive smoking have changed between 1995 and 2006, with a greater percentage of parents agreeing to the rights and opportunities for

children to live in smoke free environments. This shift in attitudes occurs amongst both non-smoking parents and smoking parents; however, the attitude amongst smoking parents is now getting closer to those of their non-smoking counterparts. This would suggest that smoking parents can distinguish between their own smoking needs and the needs and rights of children. A similar trend of converging attitudes amongst smoking and non-smoking parents is seen towards the viewpoint that an act should be passed which forbids all indoor smoking in the vicinity of children.

Whilst it is positive to report these improvements, the figures remain below those of Norwegian parents when asked the same questions (Lund and Helgason, 2005). For instance, 96% of Norwegian households agree to the statement that children should have the right to a smoke-free home, compared with 89% of Icelandic households. Similarly, 69% of Norwegian households (in 2001) agree that indoor smoking in the vicinity of children is child abuse compared with 56% of Icelandic households (in 2006). It should also be noted that whilst more Icelandic parents with young children are supporting the right of the child to live in a smoke-free environment, there remains a large minority (or 47%) of parents that are yet to fully support this right. One might suggest that achieving a 100% smoke-free environment for children (Public Health Institute of Iceland, 2007) by 2010 would require a greater percentage of parental support to children's rights.

The results show that just under half of all children who are exposed regularly to ETS (that is, once a week or more often) have parents who are negative or the least inclined towards the attitude that children have the right to live in smoke-free environment. Also, this figure has changed little between 1995 and 2006. This indicates that having a negative attitude towards children's right to a smoke-free environment is an influencing factor in subsequent exposure to ETS.

It is important to identify who are these parents that have a negative attitude towards the right of the child to live in a smoke-free attitude. Furthermore, it would be of interest to hear from these parents about what reasons or beliefs they hold that shape their current viewpoints. Understanding this might help provide more specific ways of

communicating the message of the risks of ETS smoke in the child's life in a way that would change parental attitudes.

Moreover, we also need to explore the reasons behind the increase in the number of parents who are fully supporting the right for a child smoke free environment; and secondly, what needs to be done in order to raise this figure? Public health workers and organizations need to look at whether they need to expand on the work that they have been doing since 1995, or whether they need to develop new strategies towards changing overall attitudes to a children's right to a smoke free environment. It is possible to suggest that the campaigning and resultant law that was passed in Iceland which banned smoking within restaurants and bars has influenced the attitudes of parents towards passive smoking and the child (Lund and Helgason, 2005). For instance, has the increase in discussion and attentions regarding this new law influenced the attitudes of parents with young children?

Overall awareness of the health risks associated with exposing children to ETS has changed very little between 1995 and 2006. Parents who smoked daily were less aware than their non-smoking counterparts, whilst single-parent households had a lower level of awareness than double-parent households. This indicates that health practitioners need to develop specific health awareness strategies (regarding child ETS exposure) that reach to smoking parents and single-parents. It is, however, encouraging to note that single-parent households are "catching-up" (though still not equal) with their double-parent household counterpart in terms of overall awareness to ETS risks and in having a positive attitude towards child smoke-free environment. Nevertheless, as with the previously discussed attitudes of parents towards ETS, around 40% of Icelandic parents do not have the all round understanding / awareness of the health risks associated with ETS. Thus, existing strategies for increasing awareness are not effectively enhancing awareness to a large minority of the population of parents with young children.

This research indicates that parental awareness of the risks associated with smoking-parents and respiratory diseases and asthma attacks has remained relatively high with over three quarters of parents having a good awareness of the consequences of ETS

exposure. In comparison, less than one third of parents had a reasonable awareness to the risk of ear infection or increased risk of cot deaths amongst smoking parents. This indicates that the Public Health community must now begin developing educational strategies that advance the message that the risk of ear infections and cots deaths are associated with child ETS exposure. Given, that awareness to the risk of contracting respiratory diseases decreased slightly between 1995 and 2006, it is important that, at the same time as awareness campaigns focus on the lesser known risks (for example, ear infections), that the education of respiratory disease and smoking remain a part of the overall educational program. It might be suggested that one of the reasons that parents are more aware of respiratory diseases as a consequence of ETS exposure may be because parents have been receiving this message as part of "Quit Smoking" campaigns over many years – rather than because of specific education programs directed at parents of young children. If this is the case, then it might be interesting to use existing "Quit Smoking" campaigns to promote the risks of ear infections as a result of passive smoking.

As has been noted, the actual number of cases of children being exposed to ETS at least once per week is now at 10%. This is a positive progression; however, it also poses problems for future research in that the total number of exposed cases in the future might be 50 or less. With such a small group of cases it will become more difficult to statistically identify the factors that isolate or identify them as a high-risk group through quantitative methods. Furthermore, if we are to achieve the stated objective of the Public Health Institute of Iceland of ensuring a 100% "smoke-free environment for all children (homes of 3-year-old children which are smoke-free) by 2010, then we may need to follow up existing research methods with quantitative methods. Thus, we will be able to identify why a small minority of parents continue to expose their children, and thus enable Public Health officials to address these specific issues.

Recommendations to the Public Health community

- Smoking parents remain more likely to expose their children to ETS and should continue to be a priority group for Public Health programs.
- Work to change parental attitudes regarding the basic right of the child to live in a smoke-free environment – 40% of parents with young children not fully inclined to this viewpoint.
- Parents with a negative attitude towards the right of child to a smoke-free environment are more likely to expose their children to ETS and thus changing negative attitudes needs to be a priority for Public Health programs.
- Improve health risk awareness amongst all parents towards child ETS exposure. Extra attention should be given towards parents who smoke and single-parent households.
- Health risk awareness programs must educate parents on the risks of ear infections and cot death as a consequence of ETS exposure. This issue requires urgent attention by the Public Health community.
- The risk of ear infections due to ETS exposure could be linked more closely to traditional “Quit Smoking” campaigns.
- Respiratory illnesses associated with exposure should remain a key message within Public Health promotions.

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Appendix

Tables

Table 8: Comparison between 1995 and 2006 of the educational level of households that smoke daily.

	1995	2006
Less than high school graduation	62,6% (142/227)	58,1% (79/136)
High school graduation or equivalent	30,4% (69/227)	27,9% (38/136)
University graduation	7,0% (16/227)	14,0% (19/136)

Table 9: Comparison between 1995 and 2006 of family structure and the percentage of households containing a daily smoker

	1995	2006
Double-parent household	33%	17,6%
Single-parent household	45%	22,6%

Table 10: Percentage of households in which children are exposed to ETS at least once per week.

	1995	2006
Percentage of 3 year olds who come into contact with ETS at least once per week	43% (379/666)	8% (63/718)
Percentage of 3 year olds who come into contact with ETS at least once per week when smoking takes place in the home on a daily basis	89,8% (22/215)	28,1% (87/121)
Percentage of 3 year olds who come into contact with ETS at least once per week when smoking does NOT takes place in the home	20,8% (94/451)	4,9% (29/597)

Table 11: Infant exposure to ETS at least once per week in different locations

	1995	**2006**
In the car	8,1% (55/680)	0,7% (5/748)
In the bedroom	0,3% (2/ 682)	0,0% (0/746)
Around the television	24,9% (170/683)	1,1% (8/749)
At the dinner table	8,9% (61/684)	0,4% (3/740)
Somewhere else in the home	25,6% (175/683)	3,5% (26/750)
Indoors not at home	29,9% (206/689)	6,7% (49/734)

Table 12: Percentage of children exposed or not to ETS at least once per week within each parental age-group in 1995

	1995				
	19-24 years	25-29 years	30-34 years	35-39 years	40 years & older
Children not exposed to ETS at least once per week	25,4% (16/63)	52,1% (88/169)	64,8% (129/199)	60,0% (96/160)	68,1% (49/72))
Children exposed to ETS at least once per week	74,6% (47/63)	47,9% (81/169)	35,2% (70/199)	40,0% (64/160)	31,9% (23/72)

Table 13: Percentage of children exposed or not to ETS within each parental age-group in 2006

	2006				
	19-24 years	25-29 years	30-34 years	35-39 years	40 years & older
Children not exposed to ETS at least once per week	85,4% (41/48)	90,2% (156/173)	92,9% (223/240)	92,2% (154/167)	90,0% (81/90)
Children exposed to ETS at least once per week	14,6% (7/48)	9,8% (17/173)	7,1% (17/240)	7,8% (13/167)	10,0% (9/90)

Table 14: Attitudes towards ETS with consideration to household smoking behaviour; percentage (proportion) in total agreement with the statements

	All households [% (no./total no.)]		Households containing parents who smoke [% (no./total no.)]		Households containing non-smoking parents [% (no./total no.)]	
	1995	2006	1995	2006	1995	2006
Adults have the right to smoke wherever they want in their own home	6,2% (43/699)	5,8% (70/741)	6,9% (16/232)	9,8% (13/132)	5,8% (27/466)	4,9% (30/609)
Children should have the right to live in a smoke-free home	72,8% (501/688)	89,1% (664/745)	58,2% (131/225)	82,6% (109/132)	79,9% (370/463)	90,5% (555/613)
An act should be passed which forbids all indoor smoking in the vicinity of children	33,4% (232/695)	57,1% (423/741)	15,3% (35/229)	44,8% (60/134)	42,3% (197/466)	59,8% (363/607)
Indoor smoking in the vicinity of children is child abuse	45,5% (316/695)	55,7% (404/725)	23,4% (54/231)	44,8% (56/125)	56,5% (262/464)	58,0% (348/600)

Table 15: Attitudes towards ETS with consideration to household education; percentage (proportion) in total agreement with the statements

	Less than High School Graduation [% (no./total no.)]		High School Graduation or Higher [% (no./total no.)]	
	1995	2006	1995	2006
Adults have the right to smoke wherever they want in their own home	8,0% (23/289)	4,8% (11/227)	4,8% (19/395)	6,3% (32/504)
Children should have the right to live in a smoke-free home	71,4% (205/287)	87,2% (198/227)	74,4% (288/387)	90,1% (457/507)
An act should be passed which forbids all indoor smoking in the vicinity of children	30,8% (388/286)	57,5% (130/226)	35,8% (141/394)	57,3% (290/506)
Indoor smoking in the vicinity of children is child abuse	39,0% (112/287)	49,3% (108/219)	51,0% (201/394)	58,7% (291/496)

Table 16: Inclination towards the right for children to have a smoke free environment based on household structure

	All households [% (no./total no.)]		Single-parent household [% (no./total no.)]		Double-parent household [% (no./total no.)]	
	1995	2006	1995	2006	1995	2006
Least inclined	33,2% (216/651)	18,5% (120/649)	45,5% (35/77)	32,0% (16/50)	31,7% (180/568)	17,2% (102/594)
Moderately inclined	31,6% (206/651)	29,3% (190/649)	33,8% (26/77)	20,0% (10/50)	31,0% (176/568)	30,1% (179/594)
Most inclined	35,2% (229/651)	52,9% (339/649)	20,8% (16/77)	48% (24/50)	37,3% (212/568)	52,7% (313/594)

Table 17: Inclination towards the right for children to have a smoke free environment based on length of education

	Less than High School Graduation [% (no./total no.)]		High School Graduation or Higher [% (no./total no.)]	
	1995	2006	1995	2006
Least inclined	38,4% (101/263)	22,8% (44/193)	28,5% (107/376)	16,4% (74/450)
Moderately inclined	30,8% (81/263)	26,9% (52/193)	32,7% (123/376)	30,2% (136/450)
Most inclined	30,8% (81/263)	50,3% (97/193)	38,8% (146/376)	53,3% (240/450)

Table 18: Inclination towards the right for children to have a smoke free environment based whether the household contains at least one smoking parent

	Households containing parents who smoke [% (no./total no.)]		Households containing non-smoking parents [% (no./total no.)]	
	1995	2006	1995	2006
Least inclined	56,7% (119/210)	31,8% (35/110)	22,0% (97/440)	15,8% (85/539)
Moderately inclined	26,7% (56/210)	27,3% (30/110)	34,1% (150/440)	29,7% (160/539)
Most inclined	16,7% (35/210)	40,9% (45/110)	43,9% (193/440)	54,5% (294/539)

Table 19: Child exposure to ETS compared to inclination of parents towards children rights to have a smoke free environment in 1995 and 2006

	1995		2006	
	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week
Least inclined	20,7% (73/353)	48,5% (129/266)	15,8% (91/576)	45,6% (26/57)
Moderately inclined	31,7% (112/353)	32,3% (86/266)	29,2% (168/576)	24,6% (14/57)
Most inclined	47,6% (168/353)	19,2% (51/266)	55,0% (317/576)	29,8% (17/57)

Table 20: Response of parents to the statement that children raised by parents that smoke are more likely to begin smoking themselves

	1995	2006
Not at all	11,4% (80/700)	6,0% (45/753)
Maybe, maybe not	26,3% (184/700)	27,2% (205/753)
Probably	40,7% (285/700)	43,8% (330/753)
Definitely	21,6% (151/700)	23,0% (173/753)

Table 21: Response of parents to the statement that children raised by parents that smoke are more likely to contract an ear infection

	1995	2006
Not at all	27,0% (187/692)	23,6% (172/730)
Maybe, maybe not	38,0% (263/692)	47,1% (344/730)
Probably	27,0% (187/692)	22,1% (161/730)
Definitely	7,9% (55/692)	7,3% (53/730)

Table 22: Response of parents to the statement that children raised by parents that smoke are more likely to contract a respiratory disease – either bronchitis or a cold

	1995	2006
Not at all	4,0% (28/694)	3,4% (25/745)
Maybe, maybe not	14,7% (102/694)	18,3% (136/745)
Probably	43,1% (299/694)	45,0% (335/745)
Definitely	38,2% (265/694)	33,4% (249/745)

Table 23: Response of parents to the statement that children raised by parents that smoke are more likely to have an asthma attack

	1995	2006
Not at all	4,7% (33/695)	4,2% (31/745)
Maybe, maybe not	24,2% (168/695)	17,6% (131/745)
Probably	44,6% (310/695)	43,9% (327/745)
Definitely	26,5% (184/695)	34,4% (256/745)

Table 24: Response of parents to the statement that if ventilation is good, smoking in the vicinity of children is not harmful

	All households		Households containing parents who smoke		Households containing non-smoking parents	
	1995	2006	1995	2006	1995	2006
Not at all	70,1% (491/700)	80,8% (603/746)	59,1% (137/232)	76,5% (101/132)	75,6% (353/467)	81,8% (502/614)
Maybe, maybe not	21,4% (150/700)	15,7% (117/746)	28,9% (67/232)	18,2% (24/132)	17,8% (83/467)	15,1% (93/614)
Probably	6,0% (42/700)	1,7% (13/746)	10,3% (24/232)	3,0% (4/132)	3,9% (18/467)	1,5% (9/614)
Definitely	2,4% (17/700)	1,7% (13/746)	1,7% (4/232)	2,3% (3/132)	2,8% (13/467)	1,6% (10/614)

Table 25: Response of parents to the statement that other indoor air pollutions are more harmful to people's health than ETS

	All households		Households containing parents who smoke		Households containing non-smoking parents	
	1995	2006	1995	2006	1995	2006
Not at all	52,7% (356/676)	41,1% (293/713)	44,5% (98/220)	26,8% (34/127)	56,5% (257/455)	44,2% (259/586)
Maybe, maybe not	31,8% (215/676)	46,7% (333/713)	30,5% (67/220)	55,1% (70/127)	32,5% (148/455)	44,9% (263/586)
Probably	9,9% (67/676)	9,7% (69/713)	15,0% (33/220)	13,4% (17/127)	7,5% (34/455)	8,9% (52/586)
Definitely	5,6% (38/676)	2,5% (18/713)	10% (22/220)	4,7% (6/127)	3,5% (16/455)	2% (12/586)

Table 26: Response of parents to the statement that it has been sufficiently demonstrated that ETS is harmful to children

	All households	Households containing parents who smoke	Households containing non-smoking parents
Not at all	2,6% (19/731)	1,7% (2/121)	2,8% (17/609)
Maybe, maybe not	2,2% (16/731)	4,1% (5/121)	1,8% (11/609)
Probably	19,8% (145/731)	33,1% (40/121)	17,2% (105/609)
Definitely	75,4% (551/731)	61,2% (74/121)	78,2% (476/609)

Table 27: Parents who are in total agreement with the following statements towards ETS with consideration to household smoking behavior.

	All households	Households containing parents who smoke	Households containing non-smoking parents
It is ok to smoke with the child in the car if the window is open	0,5% (4/749)	0% (0/134)	0,7% (4/615)
It is ok to smoke in the home providing that the child is not in the same room	1,8% (13/738)	3,1% (4/128)	1,5% (9/610)
ETS can only exist when tobacco smoke is observed	1,0% (7/736)	1,6% (2/129)	0,8% (5/607)
It is likely that healthy children who are exposed to tobacco smoke will be harmed by it.	57,2% (424/741)	47,7% (62/130)	59,2% (362/611)
Only children with asthma or other breathing problems can be harmed by ETS.	0,9% (7/738)	0,8% (1/129)	1,0% (6/609)

Table 28: Awareness of the health risks associated with smoking around children

	1995	2006
Little awareness	17,2% (118/685)	15,4% (110/714)
Rather little awareness	23,2% (159/685)	21,6% (154/714)
Some awareness	30,7% (210/685)	31,9% (228/714)
Extensive awareness	28,9% (198/685)	31,1% (222/714)

Table 29: Awareness of the health risks associated with smoking around children based on smoking behaviour in 1995 and 2006

	Parent does not smoke daily		Parent smokes daily	
	1995	2006	1995	2006
Little awareness	8,3% (38/459)	11,4% (67/590)	35,4% (80/226)	34,7% (43/124)
Rather little awareness	21,1% (97/459)	22,4% (132/590)	27,4% (62/226)	17,7% (22/124)
Some awareness	34,9% (160/459)	32,5% (192/590)	22,1% (50/226)	29,0% (36/124)
Extensive awareness	35,7% (164/459)	33,7% (199/590)	15,0% (34/226)	18,5% (23/124)

Table 30: Awareness of the health risks associated with smoking around children based on household structure in 1995 and 2006

	Double-parent household		Single-parent household	
	1995	2006	1995	2006
Little awareness	16,7% (100/599)	14,8% (96/650)	22,5% (18/80)	20,0% (11/55)
Rather little awareness	21,7% (130/599)	20,9% (136/650)	35,0% (28/80)	29,1% (16/55)
Some awareness	30,9% (185/599)	33,2% (216/650)	26,3% (21/80)	20,0% (11/55)
Extensive awareness	30,7% (184/599)	31,1% (202/650)	16,3% (13/80)	30,9% (17/55)

Table 31: Awareness of the health consequences towards children when parents smoke compared with children's exposure to ETS

	1995		2006	
	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week
Little awareness	7,8% (29/372)	28,9% (81/280)	13,9% (87/625)	29,3% (17/58)
Rather little awareness	19,6% (73/372)	28,2% (79/280)	20,8% (130/625)	32,8% (19/58)
Some awareness	35,8% (133/372)	23,6% (66/280)	33,6% (210/625)	19,0% (11/58)
Extensive awareness	36,8% (137/372)	19,3% (54/280)	31,7% (198/625)	19,0% (11/58)

Table 32: Educational attainment and knowledge of the health risks associated with smoking around children compared with children's exposure to ETS in 2006

	Less than High School Graduation		High School Graduation or Higher	
	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week
Little awareness	21,2% (35/165)	37,1% (13/35)	11,6% (52/450)	17,4% (4/23)
Rather little awareness	24,8% (41/165)	31,4% (11/35)	19,1% (86/450)	34,8% (8/23)
Some awareness	27,9% (46/165)	14,3% (5/35)	35,8% (161/450)	26,1% (6/23)
Extensive awareness	26,1% (43/165)	17,1% (6/35)	33,6% (151/450)	21,7% (5/23)

Table 33: Parent's smoking behaviour and awareness of the health risks associated with smoking around children compared with children's exposure to ETS in 2006

	Parent does not smoke daily		Parent smokes daily	
	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week
Little awareness	10,6% (57/540)	14,3% (4/28)	35,3% (30/85)	43,3% (13/30)
Rather little awareness	21,9% (118/540)	35,7% (10/28)	14,1% (12/85)	30,0% (9/30)
Some awareness	33,7% (182/540)	21,4% (6/28)	32,9% (28/85)	16,7% (5/30)
Extensive awareness	33,9% (183/540)	28,6% (8/28)	17,6% (15/85)	10,0% (3/30)

Table 34: The level of information received by parents regarding affects of ETS on children

	1995	2006
Not enough information	38,2% (266/697)	25,8% (194/753)
Enough information	61,3% (427/697)	72,8% (548/753)
Too much information	0,6% (4/697)	1,5% (11/753)

Table 35: The level of information received by parents regarding affects of ETS on children compared to household structure

	1995		2006	
	Double-parent household	Single-parent household	Double-parent household	Single-parent household
Not enough information	38,2% (232/608)	39,8% (33/83)	24,7% (169/684)	41,7% (25/60)
Enough information[1]	61,9% (376/608)	60,2% (50/83)	75,3% (515/684)	58,3% (35/60)

Table 36: The level of information received by parents regarding affects of ETS on children based on parent's smoking behaviour

	1995		2006	
	Parent does not smoke daily	Parent smokes daily	Parent does not smoke daily	Parent smokes daily
Not enough information	40,8% (190/466)	32,9% (76/231)	24,8% (153/617)	30,1% (41/136)
Enough information[2]	59,2% (276/466)	67,1% (155/231)	75,2% (464/617)	69,9% (95/136)

Table 37: The level of information received by parents regarding affects of ETS on children based on educational attainment

	1995		2006	
	Less than High School Graduation	High School Graduation or Higher	Less than High School Graduation	High School Graduation or Higher
Not enough information	38,3% (111/290)	38,0% (149/392)	32,0% (74/231)	23,2% (119/512)
Enough information[3]	61,7% (179/290)	62,0% (243/392)	68,0% (157/231)	76,8% (393/512)

[1] Enough or too much information combined
[2] Enough or too much information combined
[3] Enough or too much information combined

Table 38: Level of information received by parents regarding the affects of ETS on children based on the age-group of parents in 1995

	Age of Parents (1995)				
	19-24 Years	25-29 years	30-34 years	35-39 years	40 years and older
Not enough information	45,5% (30/66)	40,4% (72/178)	38,0% (79/208)	34,3% (57/166)	33,8% (25/74)
Enough information	54,5% (36/66)	59,6% (106/178)	62,0% (129/208)	65,7% (109/166)	66,2% (49/74)

Table 39: Level of information received by parents regarding the affects of ETS on children based on the age-group of parents in 2006

	Age of Parents (2006)				
	19-24 Years	25-29 years	30-34 years	35-39 years	40 years and older
Not enough information	30,8% (16/52)	30,7% (55/179)	27,2% (69/254)	21,0% (37/176)	18,5% (17/92)
Enough information	69,2% (36/52)	69,3% (124/179)	72,8% (185/254)	79,0% (139/176)	81,5% (75/92)

Table 40: Extent of information received regarding in 1995 and 2006 on the affects of ETS on children based on children's exposure to ETS

	1995		2006	
	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week	Children not exposed to ETS at least once per week	Children exposed to ETS at least once per week
Not enough information	36,4% (137/376)	39,5% (113/286)	25,3% (164/649)	30,6% (19/62)
Enough information	63,6% (239/376)	60,5% (171/286)	74,7% (485/649)	69,3% (43/62)

Letter to Participants

Reykjavík, 22nd March 2006

Dear recipient

In 1995, the Nordic Cancer Unit conducted a study into passive smoking in the vicinity of young children. This study has been repeated in all of the Nordic countries with the exception of Iceland; however, the Public Health Institute of Iceland intends to repeat this research now.

A random sample of 1000 homes has been selected from the National Registry. Additionally, a further 1000 homes were selected where there resides a child born in the year 2003. Included within this latter sample were you.

We would be very appreciative if you could give your time in order to answer the questionnaire, which should take no more than 10 minutes. It is your own choice as to whether you complete the questionnaire; furthermore, you have the right to skip any questions that you do not wish to answer including not completing the survey. Nevertheless, it is very important that as many homes take part in this study in order that we can gain the best picture possible of the current situation.

Complete anonymity will be given at all times throughout this study. The results will only be used in connection with this research purpose and under no circumstances would it be possible to identify you from the conclusions found. This research has been notified to the The Data Protection Authority.

If there are two parents in the household then we ask that **the parent whose birthday comes first after the date on which appears on this letter complete the questionnaire**. This is done in order to have a balance in the number of men and women in the survey.

When you have completed the questionnaire, we kindly ask that you place the questionnaire in the enclosed stamped addressed envelope and send it to the Research Centre of the University of Akureyri within the next 2 weeks.

If you have any questions whilst completing this questionnaire the please feel free to contact Jakobína Árnadóttir, Project Manager for Tobbaco Protection at the Public Instistute of Iceland: telephone 5800-0909.
Thanking you for cooperation

Laufey Steingrímsdóttir
Research Director

Anna Elísabet Ólafsdóttir
Director, Public Health Institute of Iceland

2006 Questionnaire

Smoking in the Home of Children Born in the Year 2003

Reykingar á heimilum barna sem fædd eru 2003

1. Are you male or female?

☐ Male

☐ Female

2. What year were you born?

Year _____ +

3. Have you completed further educational studies in addition to compulsory education and if so, how many years of further education have you completed?

☐ No, I have not completed any study in addition to compulsory education

☐ Yes, and I have completed a total of _____ years of further education beyond compulsory education

4. Has you partner / spouse completed further educational studies in addition to compulsory education and if so, how many years of further education have you completed?

☐ No, my partner / spouse has not completed any study in addition to compulsory education

☐ Yes, og he / she has completed a total of _____ years of further education beyond compulsory education

☐ I do not have a partner / spouse

5. Which of the following best describes the place where you live now?

☐ I live in the capital area (Reykjavík, Kópavogur, Garðabær, Hafnafjördur, Seltjarnanes, Álftanes and Mosfellsbær)

☐ I live in town with a population of between 5000-99.000 inhabitants

☐ I live in town with a population of between 1000-4999 inhabitants

☐ I live in town with a population of between 200-99 inhabitants

☐ I live in the countryside or other rural area / community with fewer than 200 inhabitants

☐ I live overseas

6. Do you consider that children who are raised by parents who smoke are thus more likely to

(Select one box in each line)

	No, not at all	Maybe, maybe not	Probably	Definitely
a) Begin to smoke themselves?	☐	☐	☐	☐
b) Contract an ear infection?	☐	☐	☐	☐
c) Die of cot death?	☐	☐	☐	☐
d) Contract a respiratory infection, be it bronchitis or a cold?	☐	☐	☐	☐
e) Experience asthma attacks?	☐	☐	☐	☐

7. How much do you agree or disagree with the following statements?

(Select one box in each line)

	Totally disagree	Somewhat disagree	Rather agree	Totally agree
a) Adults have the right to smoke wherever they want in their own home	☐	☐	☐	☐
b) An act should be passed which forbids all indoor smoking in the vicinity of children	☐	☐	☐	☐
c) If ventilation is good, smoking in the vicinity of children is child abuse	☐	☐	☐	☐
d) Indoor smoking in the vicinity of children can be considered child abuse	☐	☐	☐	☐
e) Other indoor air pollution is more harmful to people's health than ETS	☐	☐	☐	☐
f) Children should have the right to a smoke-free home	☐	☐	☐	☐
g) It is acceptable to smoke whilst a child in is the car if the window is open	☐	☐	☐	☐
h) It is acceptable to smoke indoors in a child's home if the child is not in the same room	☐	☐	☐	☐
i) Passive smoking can only exist when the tobacco smoke is visible	☐	☐	☐	☐

j) There is enough evidence that shows that passive smoking harms children	☐	☐	☐	☐
k) It is likely that healthy children who are exposed to tobacco smoke will be harmed by the smoke	☐	☐	☐	☐
l) Only children with asthma or with other respiratory problems can be harmed by passive smoking	☐	☐	☐	☐

8. How large a proportion of Icelandic parents that smoke do you consider smoke indoors in their home in the vicinity of their children?

- ☐ Nearly all
- ☐ More than half
- ☐ Around half
- ☐ Less than half
- ☐ Almost nobody

9. Does it happen that your child (born 2003) is present when somebody smokes in the home, in the car or someplace else indoors? (Select one box in each line)

	Daily	Several times per week	Around once per week	Less than once per week	Never
a) In the car	☐	☐	☐	☐	☐
b) Home, in the child's bedroom	☐	☐	☐	☐	☐
c) Home, around the television	☐	☐	☐	☐	☐
d) Home, at the dinner table	☐	☐	☐	☐	☐
e) Somewhere else in the home	☐	☐	☐	☐	☐
f) Indoors not at home	☐	☐	☐	☐	☐

10. Does your child (born 2003) live, on average, at least one 24 hour period a week somewhere else other than at home?

- ☐ Yes
- ☐ No

11. If yes, is there smoking indoors at this home?

- ☐ Yes
- ☐ No
- ☐ Don't know

12. How often does smoking take place within your home?

- ☐ Daily
- ☐ Several times per week
- ☐ Around once per week
- ☐ Less than once per week
- ☐ Never

13. Has a member of the health profession discussed with you passive smoking and the affect that it can have on children?

- ☐ Yes
- ☐ No

14. Do you feel that you have received enough information about the affects of passive smoking on children?

- ☐ I feel that I have **not** received enough information
- ☐ I feel that I have received enough information
- ☐ I feel that I have received **too much** enough information

15. What are your smoking habits now?

- ☐ I smoke daily
- ☐ I smoke every now and then / occasionally
- ☐ I never smoke

16. What are the smoking habits of your partner / spouse?

- ☐ He / she smokes daily
- ☐ He / she smokes every now and then / occasionally
- ☐ He / she never smokes
- ☐ I don't have a partner / spouse

Questions 17 and 18 are only for those who smoke or for those whose who live with a partner / spouse who smokes

17. How many cigarettes (approximately) do you smoke a week when you are indoors with your child (born 2003)?

I would guess				cigarettes	

18. How many cigarettes (approximately) does your partner / spouse smoke a week when he / she are indoors with your child (born 2003)?

I would guess				cigarettes	

The following questions are only for those that smoke or have smoked

Have you at some time received advise about changing your smoking habits, for example, to quit smoking, smoke less or smoke in a different place when you have gone with your child / children to postnatal care or to a another doctors check-up?

- ☐ I have never been to such a check-up
- ☐ No, healthcare professionals have not given me advise regarding changing my smoking habits
- ☐ Yes, healthcare professionals have given me advise regarding changing my smoking habits
- ☐ I don't remember

19. Have you at anytime tried to change your smoking habits because of your child / children?

- ☐ Yes
- ☐ No

20. Have you changed your smoking habits during your pregnancy?

(Select one box in each line – if you have more than three children then base your answers on your three youngest)

Pregnancy:	No, I had quit smoking	I smoked then just as I smoke now	Yes, I withdrew from smoking	Yes, I quit smoking for part of my pregnancy	Yes, I quit smoking for the majority of my pregnancy	Yes, I began smoking or smoked more
a) Child born 2003	☐	☐	☐	☐	☐	☐
b) Child born _____	☐	☐	☐	☐	☐	☐
c) Child born _____	☐	☐	☐	☐	☐	☐

Thank you for taking part. This questionnaire should be sent to the Research Centre of the University of Akureyri in the enclosed stamped addressed envelope.