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# Pet owners' attitudes and behaviours related to smoking and second-hand smoke: a pilot study

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## ABSTRACT

**Background:** Although research indicates that second-hand smoke (SHS) harms both human and animal health, data on the percentage of pet owners who smoke or allow smoking in their homes are not readily available.

**Objective:** To investigate pet owners' smoking behaviour and policies on smoking in their homes, and the potential for educational interventions to motivate change in pet owners' smoking behaviour.

**Methods:** A web-based survey was used with 3293 adult pet owners. The main outcome measures were smoking behaviour of pet owners and their cohabitants; policies on smoking in pet owners' homes; and impact of information about the dangers of pet exposure to SHS on pet owners' smoking intentions.

**Results:** Of respondents, 21% were current smokers and 27% of participants lived with at least one smoker. Pet owners who smoke reported that information on the dangers of pet exposure to SHS would motivate them to try to quit smoking (28.4%) and ask the people with whom they live to quit smoking (8.7%) or not to smoke indoors (14.2%). Moreover, non-smoking pet owners who live with smokers said that they would ask the people with whom they live to quit (16.4%) or not smoke indoors (24.2%) if given this information. About 40% of current smokers and 24% of non-smokers living with smokers indicated that they would be interested in receiving information on smoking, quitting, or SHS.

**Conclusions:** Educational campaigns informing pet owners of the risks of SHS exposure for pets could motivate some owners to quit smoking. It could also motivate these owners and non-smoking owners who cohabit with smokers make their homes smoke-free.

The health effects of second-hand smoke (SHS) among humans are well known.<sup>1</sup> Studies have also addressed the effects of SHS on household pets, linking smoke exposure to such diseases as lymphoma in cats<sup>2</sup> and nasal cancer<sup>3</sup> and lung cancer<sup>4</sup> in dogs. Observers have also noted associations between SHS exposure and allergic reactions in dogs; eye disease, respiratory problems and dermatitis in birds; and oral carcinoma in cats.<sup>5</sup>

As awareness of the human risks posed by SHS can motivate behaviour change among smokers and homeowners, it is plausible that awareness of the effects of SHS on pets could do the same.<sup>6</sup> Many tobacco control advocates have attempted to use this potentially motivating information to encourage behaviour change among smokers.<sup>7-9</sup> Although we found no formal studies of pet owners' smoking behaviour in the research literature, it is possible that some pet owners would change their smoking behaviour when informed that it might have a negative impact on their pets.

Pet owners in the US are very devoted to their pets. Spending on pet supplies and over the counter medicines continues to increase, with \$9.9 billion spent in 2007, an increase of 6.5% over 2006 according to the American Pet Products Manufacturers' Association.<sup>10</sup> Spending in 2008 will likely exceed \$10.5 billion. In a recent study by the American Animal Hospital Association, more than half of the respondents said if they were stranded on a desert island they would prefer the company of their pet to a human companion.<sup>11</sup>

We investigated the relationships among pet ownership, smoking behaviour and policies on smoking in homes, and below we provide previously unavailable data on the percentage of pet owners who smoke or allow smoking in their homes.

## METHODS

We developed a web-based survey for adults aged 18 years and older who live with cats, dogs, or birds, and who could read and comprehend written English. The survey was targeted to pet owners in southeastern Michigan (ie, from Wayne, Oakland and Macomb counties) so that participants could be more easily engaged in a subsequent intervention. The survey included questions on participants' smoking behaviours and those of people with whom they live, smoking policies in the home, knowledge of the effects of SHS on pet health and the potential for educational interventions on smoking and pets to motivate behaviour change. The study design was approved by the Henry Ford Health System's Institutional Review Board.

The study was conducted with support from Pet Supplies "Plus" (PSP), a national pet product retail chain, and the Michigan Humane Society (MHS). The survey was available for completion online for 6 months (19 March 2007 to 8 September 2007). Participants were also offered the option to complete the survey over the phone (via a toll-free number) or by mail (via postage-paid return envelopes). Pet owners were notified of the survey and their eligibility to participate in it via flyers distributed in PSP stores and MHS locations as well as through advertising and newsletters. The first 1200 people who completed the survey received \$5 PSP gift cards. In addition, all respondents were entered in a Grand Prize Draw to win \$500, \$100, \$50 or \$20 gift cards for use in a PSP store.

## RESULTS

Participants were 3293 pet owners; of these, 2151 (60.2%) were from Michigan, with the majority (n = 1767, 82.1%) living in the 3 targeted counties

**Table 1** Impact on pet owners' smoking intentions of knowledge about the dangers of pet exposure to SHS

If you were told research shows SHS could harm your pets, would you:	Smokers (n = 698)	Non-smokers living with smokers (n = 531)
Think about quitting	11.3% (79)	N/A
Try to quit smoking	28.4% (198)	N/A
Ask other people in your home to quit smoking	8.7% (61)	16.4% (87)
Ask people in your home to not smoke indoors	14.2% (99)	24.2% (128)
Not allow smoking inside your home	18.9% (189)	12.6% (67)
Be interested in receiving information on smoking, quitting and SHS	40.0% (280)	24.0% (128)

N/A, not applicable; SHS, second-hand smoke.

in southeastern Michigan (Wayne, Oakland and Macomb). No differences were found in key study findings when comparing respondents from southeastern Michigan with those living in other parts of Michigan or in other states. Thus, the data presented below are aggregated across these geographic groups.

Most respondents (76%) were dog owners, 53% owned cats and about 10% owned birds; they had owned their pet(s) for 6 years on average. The mean age of participants was 39.9 years, and most were female (81%) and Caucasian (88%).

A total of 40% (1327) of participants were ever-smokers (ie, smoked at least 100 cigarettes in their lifetime), and 21% (698) were current smokers (smoked every day or some days). Smokers reported smoking 13.5 cigarettes each day on average, with 6.4 cigarettes per day being smoked inside their homes. Among current smokers, 70% expressed interest in quitting in the next 6 months, and 35% indicated that they were planning on quitting within the next 30 days.

In all, 27% (878) of participants lived with at least 1 smoker, including 20% (531) of the non-smokers (never-smokers and former smokers) and 50% (347) of the current smokers. A total of 75% of participants (including 81% of non-smokers and 35% of current smokers) did not allow smoking anywhere inside their homes.

As can be seen in table 1, pet owners who smoke reported that information on the dangers of pet exposure to SHS would motivate them to try to quit smoking (28.4%), ask the people with whom they live to quit smoking (8.7%), or not to smoke indoors (14.2%). Moreover, non-smoking pet owners who live with smokers said that they would ask the people with whom they live to quit smoking (16.4%) or not to smoke indoors (24.2%), if given this information. About one in five smoking pet owners, and one in eight non-smoking pet owners who live with smokers, said they would not allow smoking inside their homes if they were informed that SHS could harm their pets (table 1).

A total of 40% of current smokers indicated that they would be interested in receiving information on smoking, quitting and SHS, whereas 24% of non-smokers living with smokers said they would be interested in this information. Both groups of participants reported that they would prefer to receive this information as print material (61%) or by email (50%).

## DISCUSSION

A key finding from this study is that sizable proportions of pet owners said that information on the dangers of pet exposure to SHS would motivate them to think about quitting smoking, to try quitting, to encourage other household smokers to quit, or to prohibit smoking inside their homes (table 1). In addition, 20% of the non-smoking pet owners in this study live with smokers. Thus, the findings from this study suggest that

informing pet owners of the risks of SHS exposure for pets could lead to quit attempts by many pet owners and their cohabitants—who comprise a substantial proportion of the smoking population—and limitations on smoking inside their homes.

A limitation of this study is that it used a convenience sample of primarily adults from southeastern Michigan who became aware of the survey through various promotional means; therefore, the sample may not be representative of all pet owners in Michigan or in the US. However, no differences were found in key study findings when comparing respondents from southeastern Michigan with those living in other parts of Michigan or in other states (data not shown). In addition, the prevalence of current cigarette smoking among pet owners who responded to our 2007 survey (20.8%) is similar to the prevalence of adult smoking reported for the state of Michigan (22.1%)<sup>12</sup> and for the US overall (22.2%) for 2006.<sup>13</sup> Another indication that our sample was representative of pet owners nationally is that 81% of our respondents were female, consistent with the finding from national data that 74.5% of pet owners with primary responsibility for their pets were female in 2006.<sup>14</sup>

Further research is needed to test whether pet owners actually respond to information on pet exposure to SHS in the same way as pet owners predicted in their responses to our survey. If pet owners' actual behaviour mirrors their predicted behaviour, tobacco control advocates could gain a broad new base of support among veterinarians, pet supply retailers, kennel and shelter operators, and pet owners themselves. This new source of motivation could be particularly strong for smokers who, aside from their companion animals, live alone. These individuals may lack motivation to change their smoking behaviour in order to protect themselves or other humans, but might be compelled to quit smoking or to prohibit smoking in their homes because of concerns about the effects of SHS on their pets.

Given that 63% of US households (71.1 million homes) have a pet in the home,<sup>10</sup> and that about a fifth of pet owners are current cigarette smokers (according to our study), our findings are relevant to millions of households in the US. If an effective educational campaign on the dangers of pet exposure to SHS were designed and then implemented throughout the country, it could have a meaningful impact on attitudes and behaviours regarding smoking and exposure to SHS.

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**Competing interests:** None.

**Ethics approval:** Ethics approval was obtained.

## Brief report

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