

Results of the Children's Environmental Health Survey for Health Care Professionals from member organizations of the Canadian Association of Paediatric Health Centres (CAPHC). Canada, May-July 2006.

Characteristics of the Sample Population

The term "health care professional" includes family physicians, paediatricians, nurses, social workers, etc.

An invitation to fill out the electronic survey was sent by CAPHC to its member organizations. The survey was posted on-line on CAPHC's website from May to July 2006. The survey was directed to the most relevant person in the organization and responses were collected using www.surveymonkey.com. The total number of organizations members of CAPHC is 42. Twenty-four survey responses were received from health care professionals working in these organizations. This indicates a 57% survey response rate by organization.

The response varied from province to province. The response ranged from 4.3% the provinces of Alberta, Manitoba, New Brunswick, Newfoundland and Labrador, 8.7% in the province of Quebec to 73.9% in the province of Ontario. No response was obtained from the provinces of British Columbia, Northwest Territories, Nova Scotia, Nunavut, Prince Edward Island, Saskatchewan or Yukon Territory (Figure 1).

31. Province where you practice:

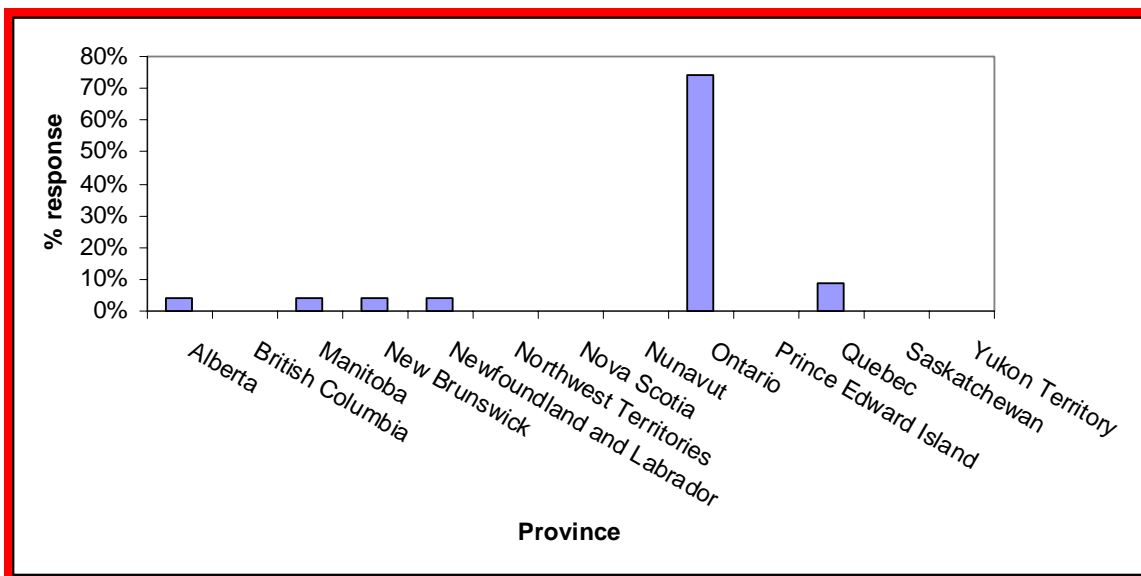


Figure 1. Percent response rate to the Children's Environmental Health Survey by province.

The average age of the health care professionals who responded to the survey was 46 years. There was a greater response by health care professionals with ages between 46-50 years (Figure 2). More than half of the survey response was from females (78.3% females and 21.7% males) (Figure 3).

25. Age:

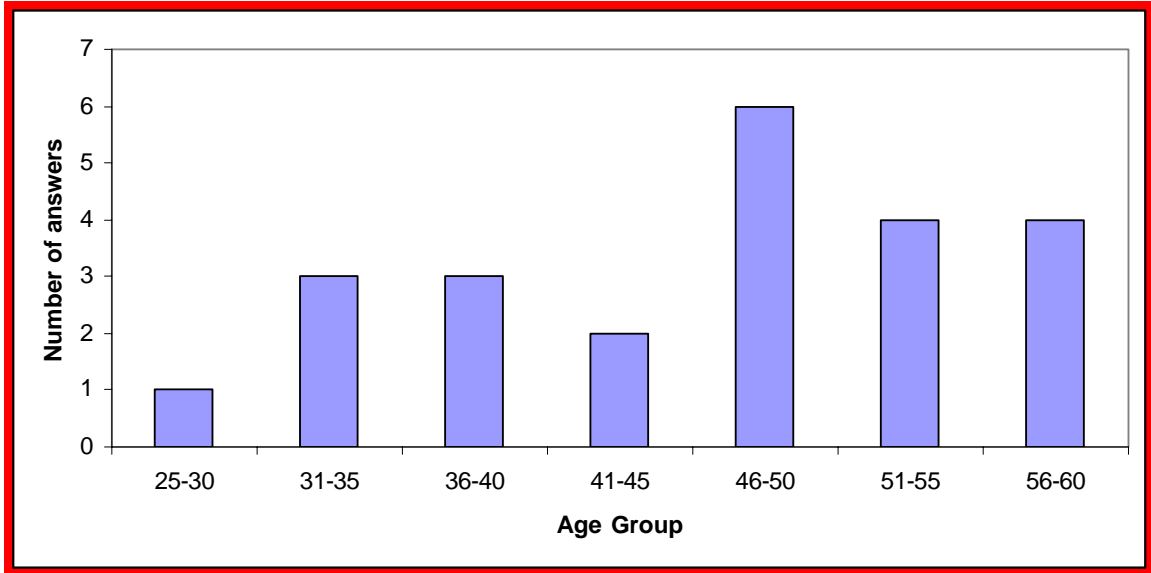


Figure 2. Age frequency distribution of the health care professionals that responded to the survey.

26. Gender:

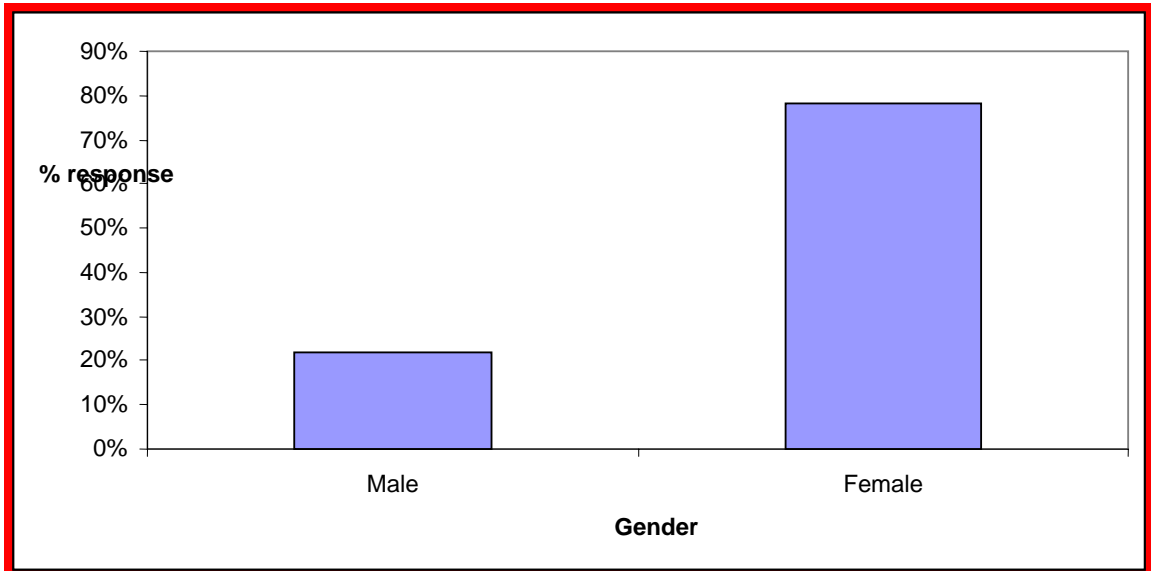


Figure 3. Number of male and female health care professionals that responded to the survey.

The average number of years in medical practice was 20. Health care professionals with 6 to 10 years in practice contributed with a similar number of responses to those with 21 and 25 years in practice. The great majority of the response was obtained from the group of health care professionals with 26 to 30 years in practice (Figure 4).

In addition, 56.5% of health care professionals indicated not having a subspecialty. Obstetrics and Gynecology as well as Environmental Medicine, Paediatric Rehabilitation, Pediatrics, Maternal and Child, Family Health-Repro, Asthma, Cystic Fibrosis and Neonatology were some of the subspecialties listed in the survey by health care professionals (Figure 5).

28. How many years have you been in practice:

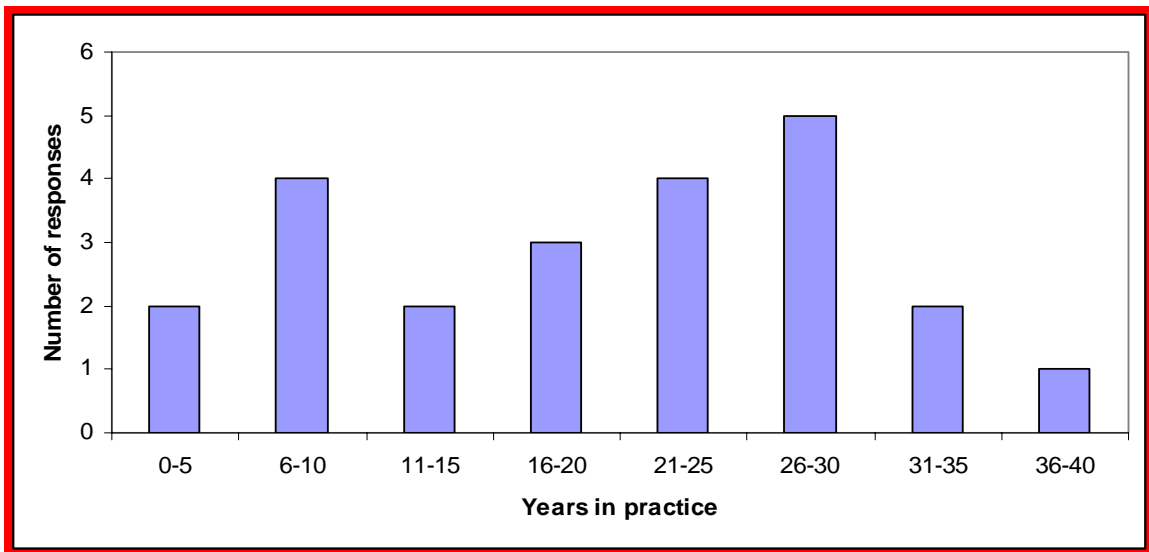


Figure 4. Number of years in practice of health care professionals that responded to the survey.

29. Subspecialty:

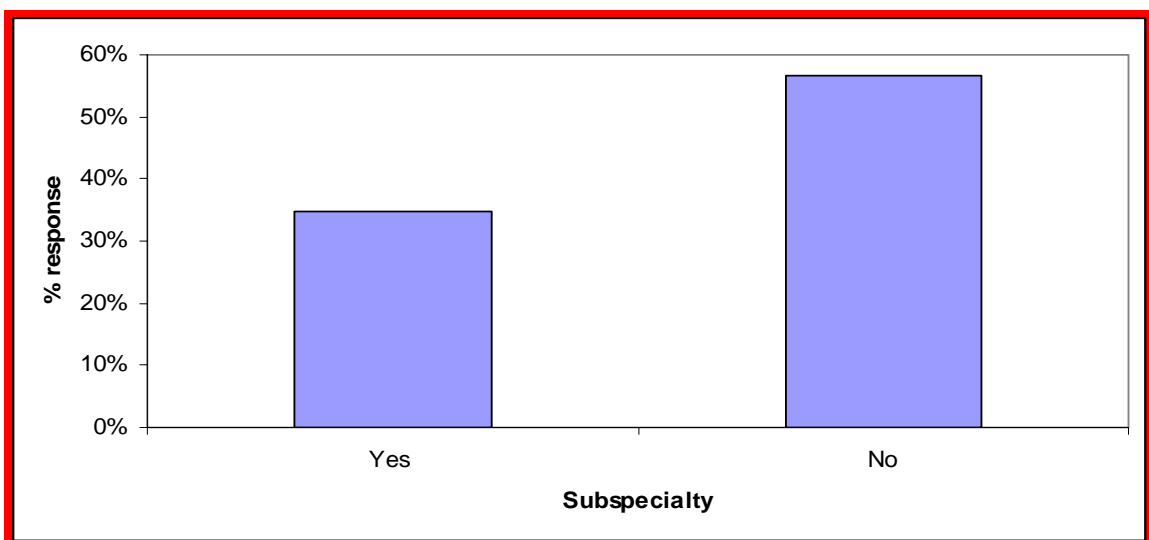


Figure 5. Number of health care professionals with a subspecialty.

The great majority of the pediatricians who responded to the survey worked in urban areas (90.5%) and 9.5% worked in rural areas (Figure 6). Most of them worked in Regional Facilities (22.7%), Tertiary/quaternary Facilities and in Rehabilitation Centres (18.2%). 13.6% worked in private practice (Figure 7).

30. Major area of practice:

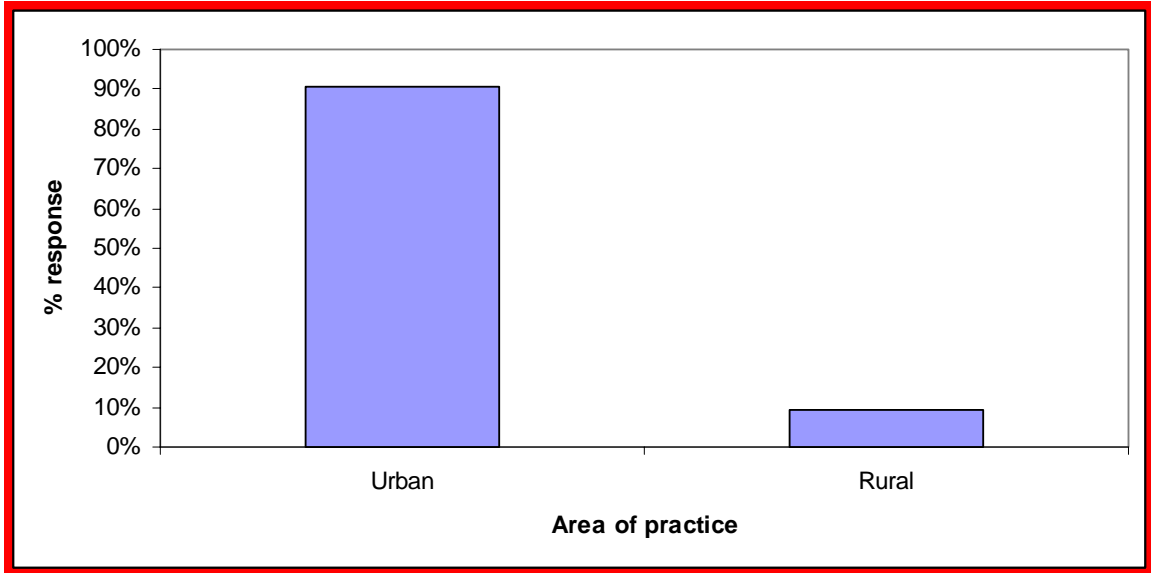


Figure 6. Major area of practice of health care professionals that responded to the survey.

32. Professional care for the majority of patients is provided in:

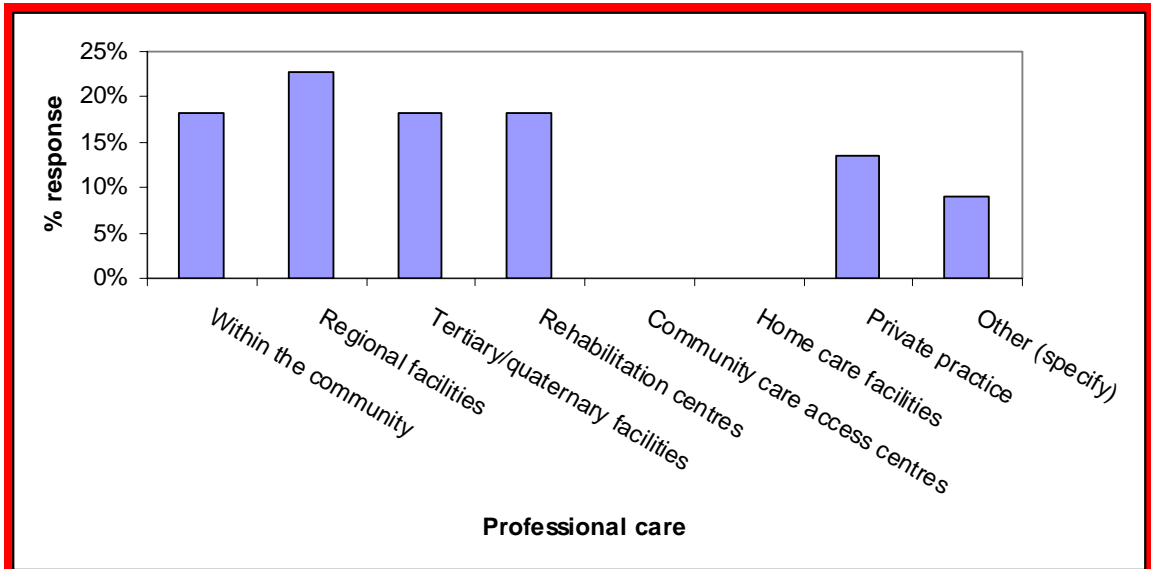


Figure 7. Location where professional care is offered by health care professionals that responded to the survey.

With regard to the age of patients, around 95% of health care professionals indicated that they care for children of all ages, and 5% care for children of less than 1 year of age (Figure 8).

Health care professionals indicated that they assist primarily children of middle economic level (70%) and 30% assist children of low economic background (Figure 9).

33. Patient age group:

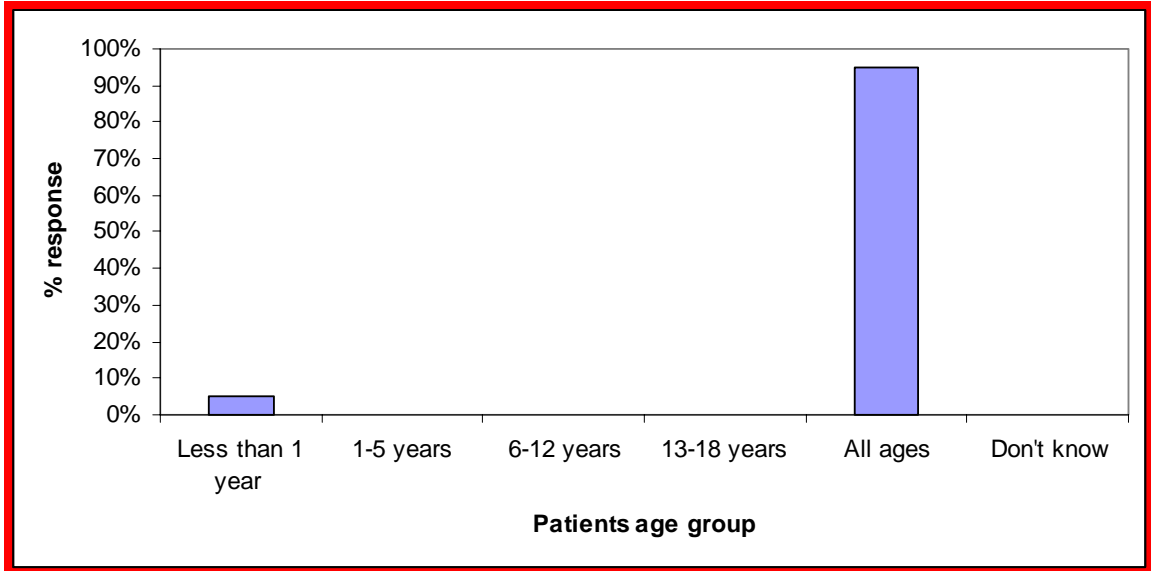


Figure 8. Patient age group.

34. Patient socioeconomic background:

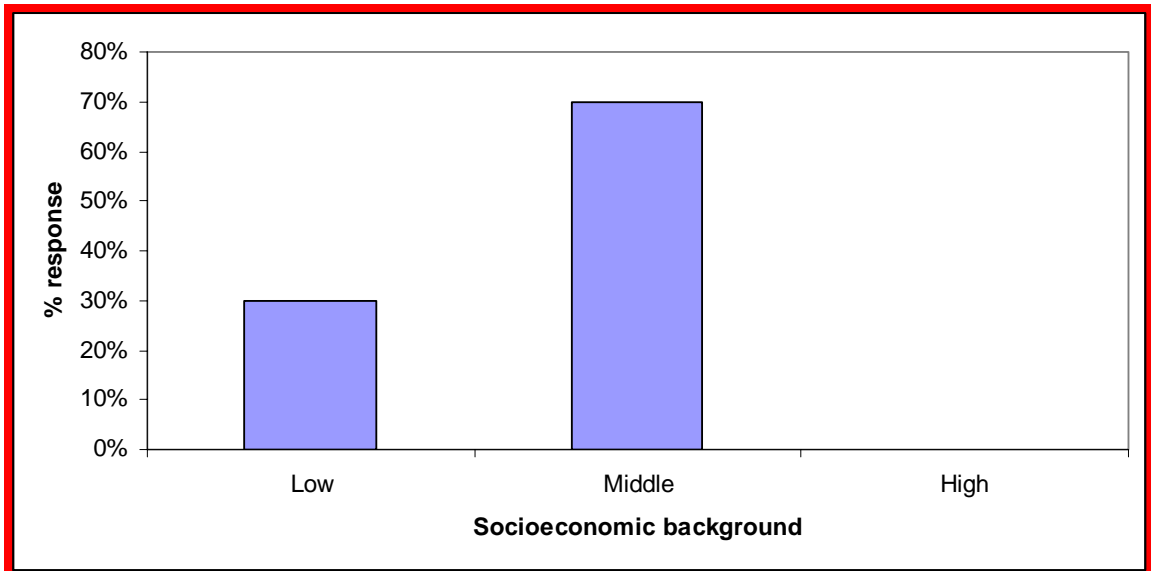


Figure 9. Patient socioeconomic background.

27. Health care profession:

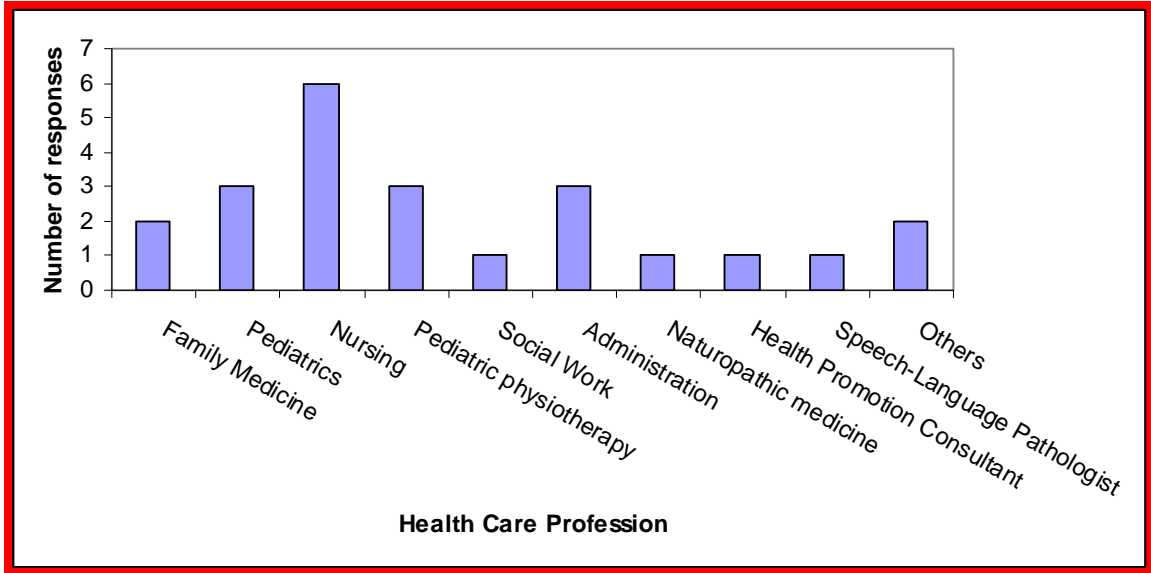


Figure 10. Health care professions of the survey respondents.

Knowledge and professional practice with relationship to Children's Environmental Health

A majority of the health care professionals (50%) that responded to the survey indicated that they had some knowledge about Children's Environmental Health, 37.5% indicated that they had very little knowledge and only 12.5% said they had a considerable amount of knowledge about Children's Environmental Health (Figure 11).

1. How much do you know about Children's Environmental Health?

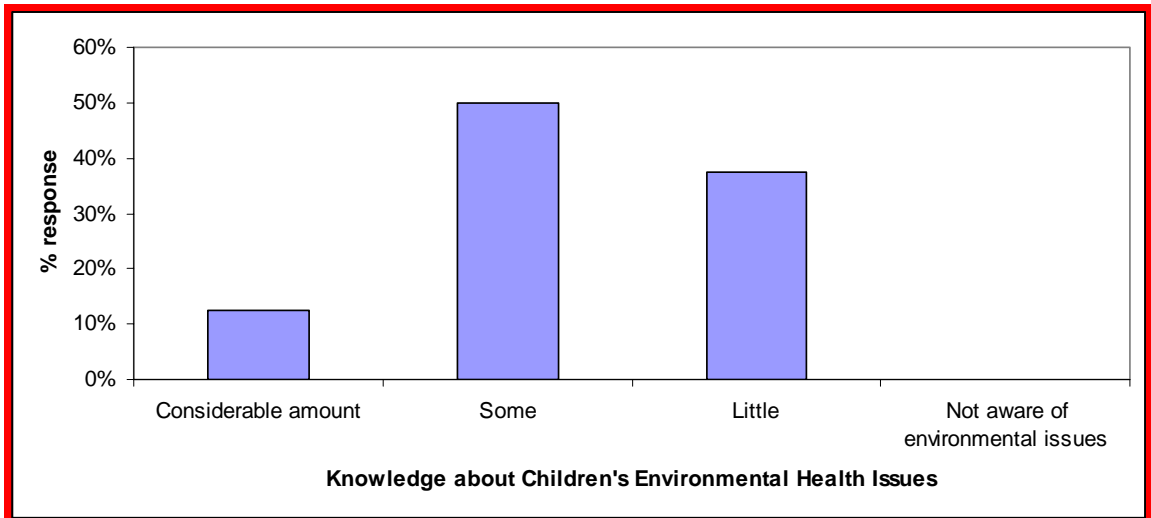


Figure 11. Knowledge with relationship to Children's Environmental Health issues.

Most health care professionals reported that they received information and knowledge of Children’s Environmental Health issues through scientific research articles and scientific journals (82.6%), magazines (65.2%), and conferences (52.2%). Only 34.8% reported the Internet and 26.1% courses and workshops as sources of information. Health care professionals also reported during the survey to have received or acquired knowledge on the issues by the media, television documentaries, research, presentations, news, health units and through their professional experience (Figure 12).

2. How did you acquire the knowledge on Children’s Environmental Health?

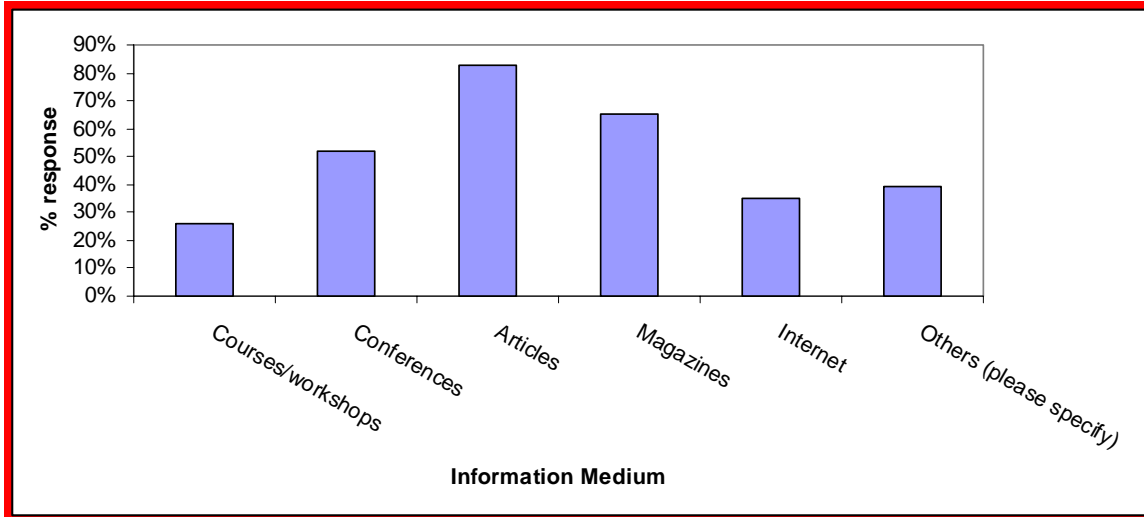


Figure 12. Principal sources of information on Children’s Environmental Health issues.

Only 40% of health care professionals indicated that they frequently gather information about the environment where the child lives, grows, plays and learns and 25% indicated that they occasionally gather this type of information. 35% of health care professionals indicated that they never gather information about the environment (Figure 13).

4. How often do you gather information about the environment where the child lives, grows, plays and learns?

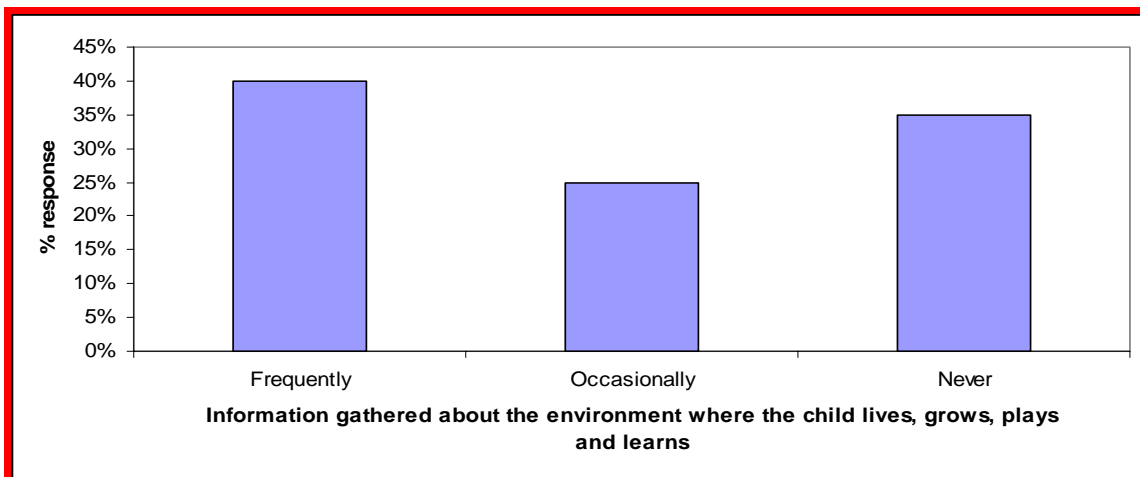


Figure 13. Information gathered about the environment where the child lives, grows, plays and learns while conducting a clinical history.

The 87.5% of health care professionals had information about outdoor air, 79.2% had information about indoor air, 75% had information about pesticides and 66.7% had information about water pollution and food contamination. Around 58.3% had information about lead, 41.7% had information about industrial pollution and 33.3% had information about sanitation/waste disposal, mercury, noise and contaminated soils, respectively.

Around 20.8% had information about electromagnetic fields and 4.2% about nuclear pollution (Figure 14). Other issues that were brought up during the survey were personal care products, vertical transmission during pregnancy, effects on reproductive health, arsenic and allergies.

3. On what Children's Environmental Health issues did you receive information?

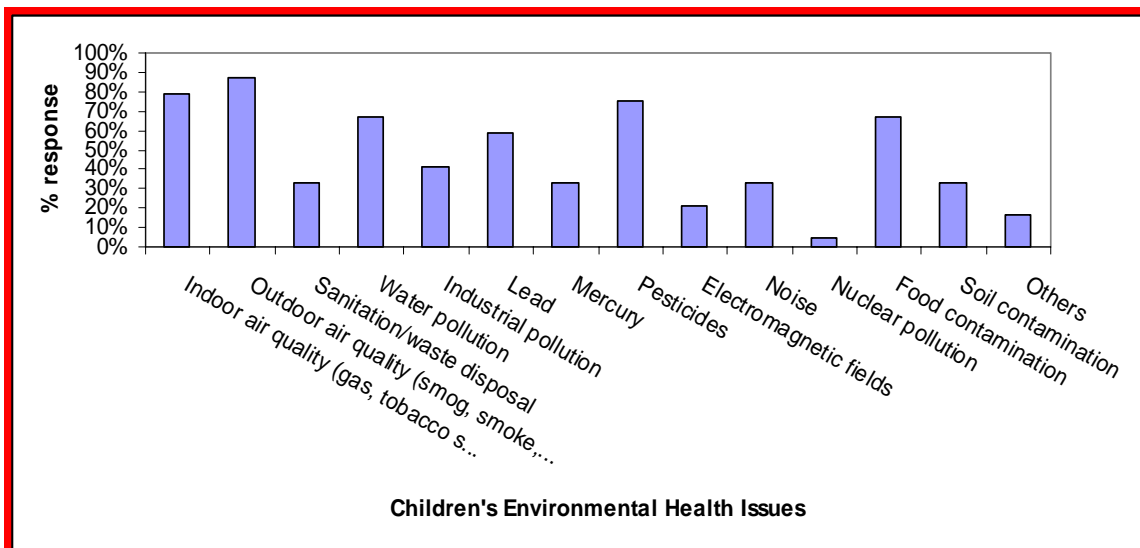


Figure 14. Children's Environmental Health issues.

An average of 14.2% of health care professionals indicated that they very frequently receive questions from parents about environmental factors that can affect the health of children. An average of 29.5% indicated that they only receive questions sometimes and an average of 48.5% indicated that they never receive questions about these issues (Figure 15). Some health care professionals also reported receiving questions about health effects during pregnancy, personal care products and allergies.

These are among the issues that health care professionals reported as raising the most questions from parents: indoor air (32%), food contamination (19%), outdoor air contamination (19%) and mercury (14%). In contrast, health care professionals are less frequently asked about nuclear pollution (80%), sanitation and waste disposal (65%), industrial contamination (62%), electromagnetic fields (60%), mercury (57%), water pollution (57%), noise (57%), lead (52%), soil contamination (52%) and pesticides (40%) (Figure 15).

5. How frequently do you receive questions from parents regarding children's environmental health issues?

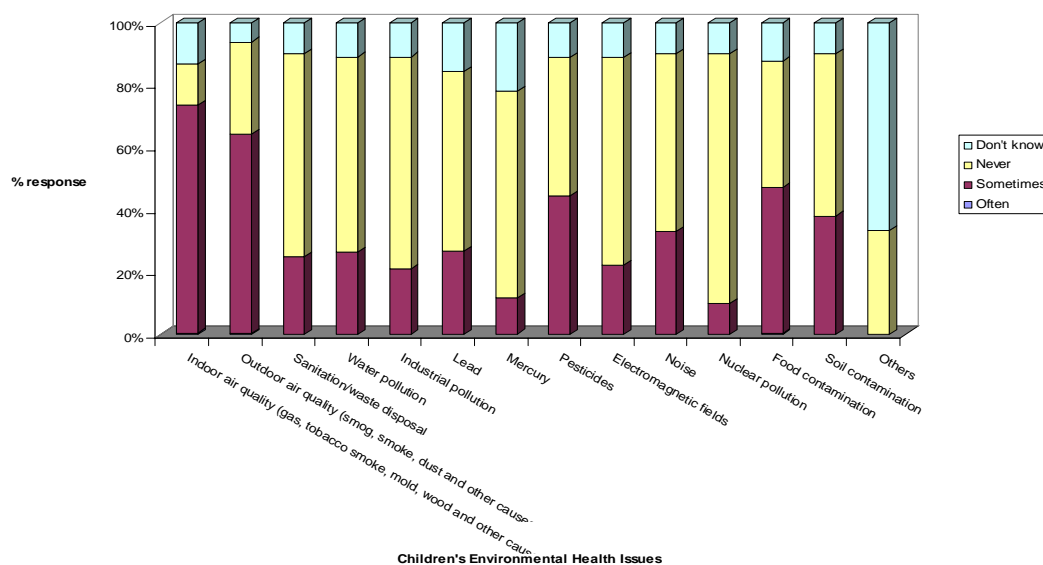


Figure 15. Frequency of questions regarding children's environmental health issues by parents.

Asthma (55%, 55%) and respiratory illnesses (55%, 50%) were considered to be most often related to environmental factors. Cancer (32%, 36%), poisonings (32%, 33%), skin problems (27%, 32%) and accidents (32%, 27%) were also recorded as big problems related to environmental factors. Neurodevelopmental disorders (27%, 27%) and nutritional problems (27%, 32%) were also mentioned often (Figure 16 y 17).

In contrast, genetic disorders (36%, 32%) and endocrine diseases (14%, 14%) were less associated with environmental factors (Figure 16 y 17).

Also, 41% health care professionals indicated that they did not know if reproductive problems were related to environmental factors in boys but 27% indicated that they did not know if reproductive problems were or were not related to environmental factors in girls.

7. Based on your experience with Boys, which of the following health problems do you feel could be associated with environmental factors?

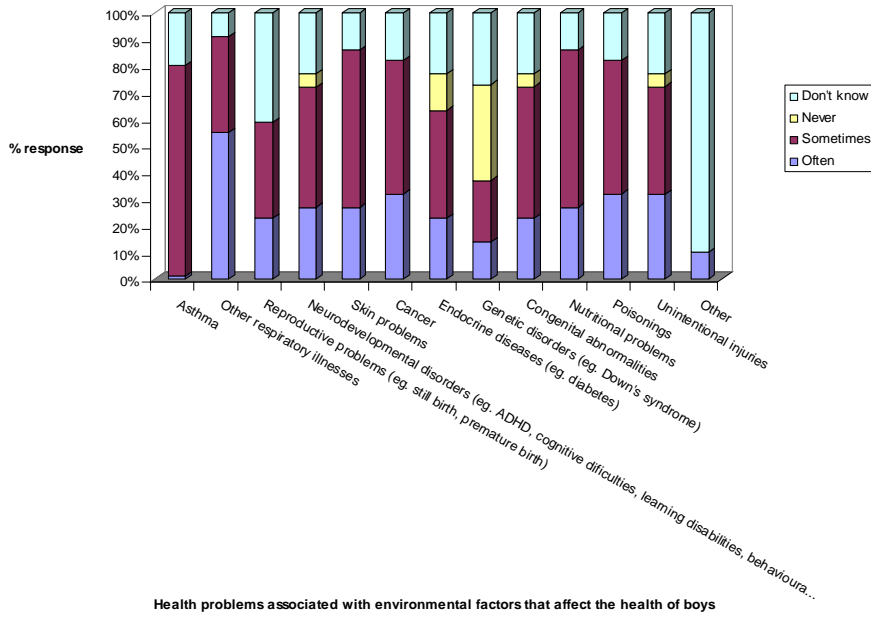


Figure 16. Health problems that affect boys and are thought to be associated with environmental factors.

9. Based on your experience with Girls, which of the following health problems do you feel could be associated with environmental factors?

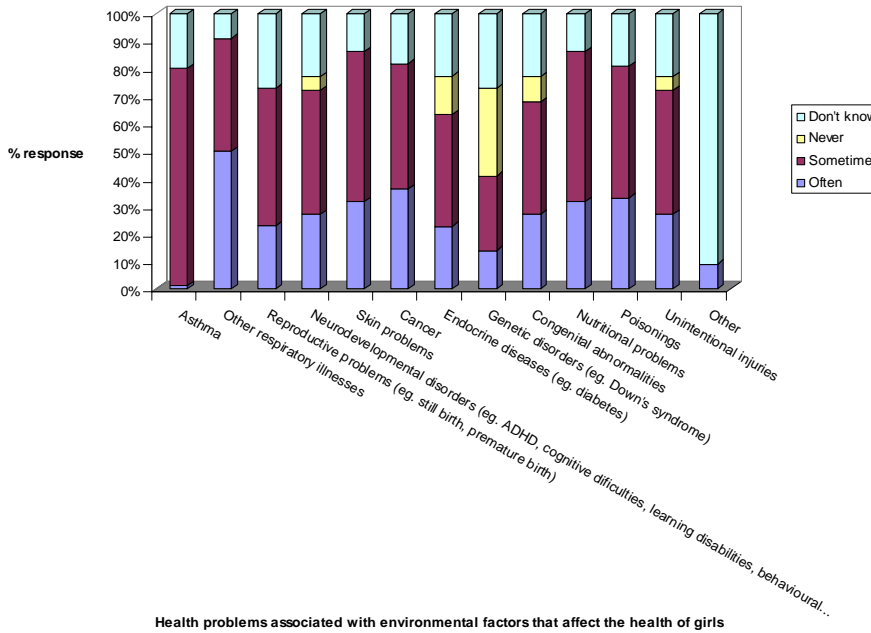


Figure 17. Health problems that affect girls and are thought to be associated with environmental factors.

With regard to the importance of the different places in which children live, play, grow and learn and the role that these play as locations of environmental exposure, health care professionals mentioned schools (45%, 41%), community/streets (43%, 39%), home (39%, 41%), recreational areas (39%, 35%), work (29%, 24%) and rural areas/farms (23%, 18%) (Figure 18 y 19).

Approximately 5% of health care professionals considered that work environments were not places where children could be exposed to environmental factors. Other places mentioned during the survey as were school and public transportation.

11. Based on your experience, where do you feel Boys are most likely to be exposed to environmental hazards?

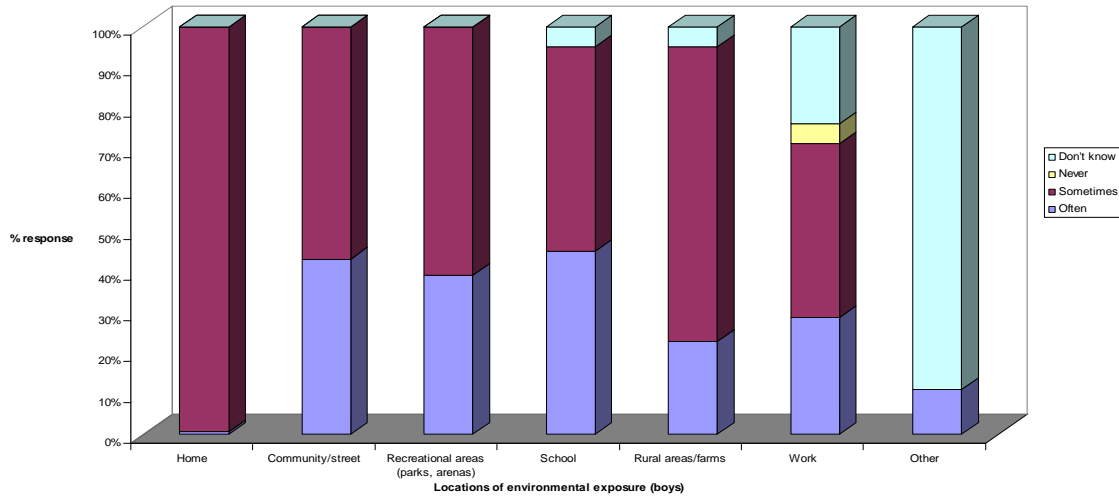


Figure 18. Locations where boys are considered to be most likely exposed to environmental hazards.

13. Based on your experience, where do you feel Girls are most likely to be exposed to environmental hazards?

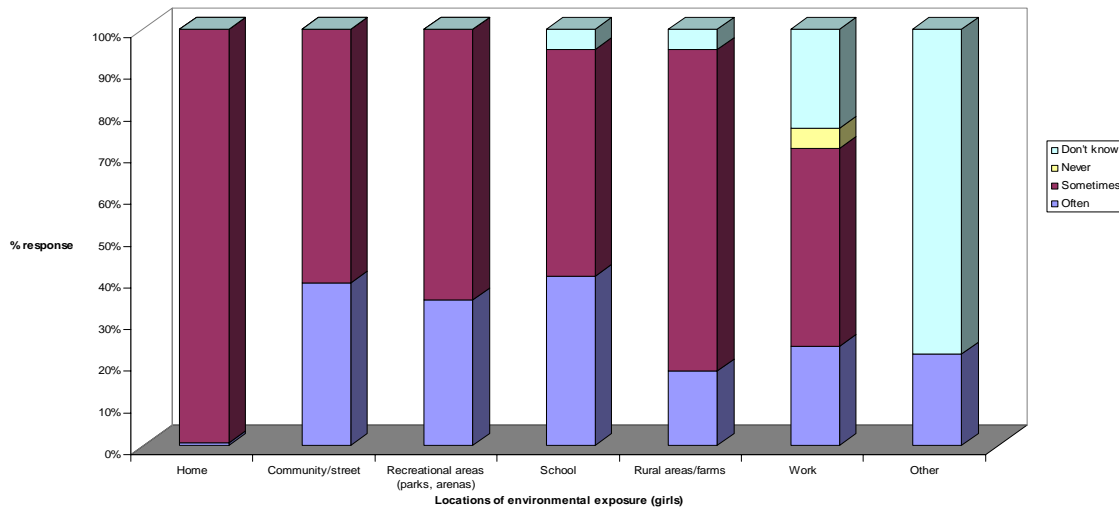


Figure 19. Locations where girls are considered to be most likely exposed to environmental hazards.

With regard to health care professional’s knowledge of the impact that different contaminants of indoor air have on children’s health, cigarette smoke (83%) and pesticides (52%) were mentioned as having the most harmful effects. These were followed by volatile compounds from household products and solvents (48%) and mold (48%) (Figure 20).

With respect to indoor air, health care professionals considered that pollutants from industrial activities (4%), particulate matter and dust (4%) and the open burning of garbage (13%) had no harmful effects on the health of children.

Also mentioned by health care professionals as indoor air pollutants were personal care products such as perfumes, colognes and candles.

With regard to outdoor air, combustion products from traffic (61%), pollutants from industrial activities (39%), pesticides (43%), particulate matter and dust (35%) were mentioned as having the most harmful effects on the health of children. These were followed by the open burning of garbage at 22% (Figure 21).

Also mentioned by health care professionals as outdoor air pollutants were perfumes, fragrances and cigarette smoke.

15. Which of the following indoor air pollutants do you feel have an impact on children’s health?

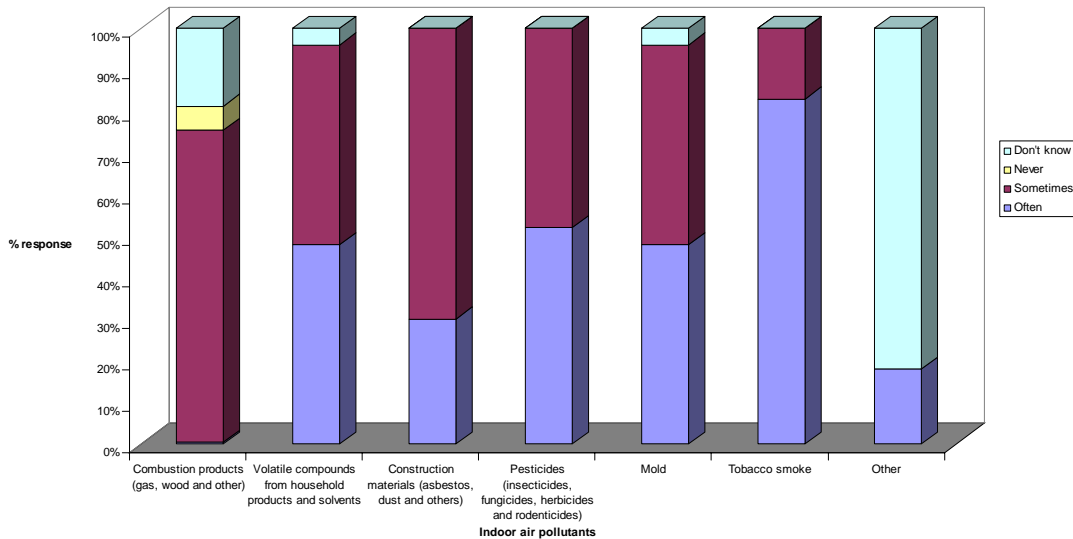


Figure 20. Indoor air contaminants that are thought to affect the health of children.

16. Which of the following outdoor air pollutants do you feel have an impact on children's health?

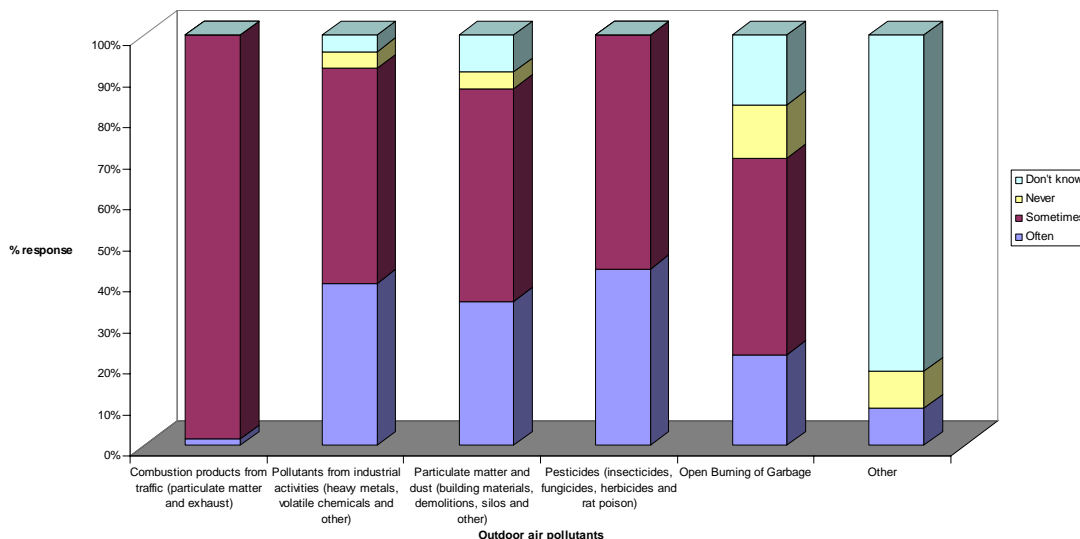


Figure 21. Outdoor air contaminants that are thought to affect the health of children.

Around 35% of health care professionals considered that, based on their experience, water contamination due to agrochemicals and industrial chemicals (35%) have the most harmful effects on the health of children (Figure 22). Biological contamination (26%), natural chemical pollution (arsenic) (17%) are also thought to have harmful effects. Twenty-nine percent of health care professionals considered that natural chemical pollution and biological contamination (25%) have small impact on the health of children. Four percent indicated that pollution due to industrial chemicals was not a factor that affected the health of children (Figure 23).

Pharmaceutical residues (antibiotics, antidepressants and hormones) and toxic waste were also considered as important drinking water pollutants that affect the health of children.

19. Which of the following pollutants related to drinking water do you feel have an impact on children's health?

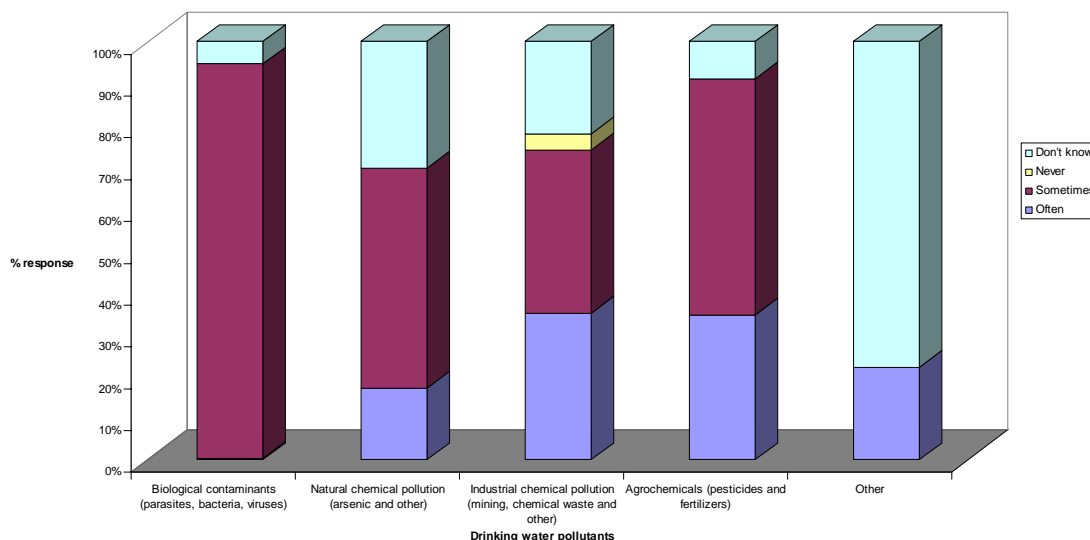


Figure 22. Drinking water pollutants that are thought to affect the health of children.

Health care professional responses to children's environmental health interventions

Eighty-seven percent of health care professionals considered that improving community awareness through information and communication activities and the identifying the type and magnitude of specific environmental problems (87%), building capacity and professional training in children's environmental health (74%), including the topic in University training and ongoing professional development (73%) and developing epidemiological environmental studies (61%) were the most important intervention activities to protect children's health.

Encouraging cooperative interdisciplinary and participative intersectoral networks (70%) and encouraging government advocacy (83%) were also important intervention activities to protect children's health (Figure 23). The development of materials received 74% of the response.

Television campaigns, improving awareness through information and communication activities in schools (teachers and students) and the creation of policies and laws were also important intervention activities to protect children's health

21. Which of the following activities do you feel are relevant to protect children from environmental hazards?

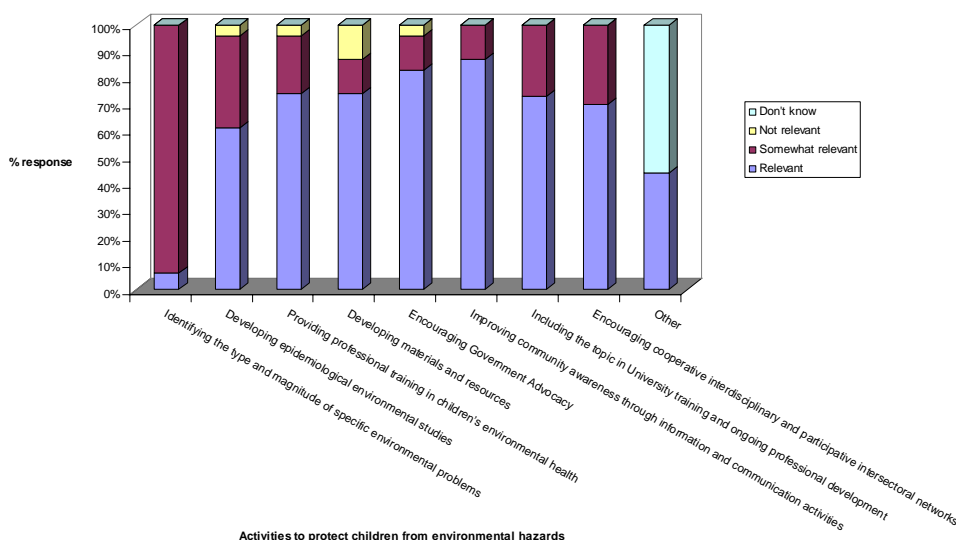


Figure 23. Intervention activities that were considered important for the protection of children's health from environmental hazards.

Around 58.3% of health care professionals indicated that they had no knowledge about children's environmental health activities in their region (Figure 24). Health care professionals provided the following contact information about children's environmental health activities in their region:

Health promotion consultant for Ontario's Maternal, Newborn and Early Child Development Resource Centre. We support service providers across the province who are working on health promotion initiatives to improve the health of expectant parents and their young children. (Since we don't serve children and parents directly, I haven't responded to the clinical history questions above.) We develop resources, provide training and consultations. We offer resources on child health and the environment which are accessible from our website:

http://www.beststart.org/resources/env_action/index.html

We will be working in partnership with CPCHE to deliver training workshops this fall and I will be planning an environmental health forum for the spring of '07.

I have been involved in writing medical papers and presenting teaching rounds to physicians, medical students and others at hospitals, universities and conferences on health issues and the environment particularly as they affect developing children. I also have a community lecture entitled "Our Genes are not our Destiny: Addressing the Escalating Pandemic of Chronic Disease" where I have enjoyed educating people in the community about environmental health issues in general.

No smoking in public places campaigns

Ongoing epidemiological studies in asthma through the Firestone Allergy Clinic, St. Joseph's Hospital

Bans on pesticide use campaigns

Smog advisory campaigns

Push for ban on cosmetic pesticides

Air quality studies on respiratory status of school age children living in our area which is an international trade conduit ie. lots of trucks, schools and residences directly en route.

The Direction de la Santé Publique de Montréal is very active in environmental evaluation. Contact Dr. Louis Drouin, at 514-286-6500. The Quebec National Institute for public health is also very active in research about environment.

<http://www.inspq.qc.ca/domaines/index.asp?Dom=50>

Consideration is currently being given to a health study of Lambton County (Southwestern Ontario) which would include the environment and children's health, since there have been specific concerns raised on Aamjiwnaang First Nation. There is also concern about the creation of two truck lanes on the approach road to the Bluewater Bridge, because of particulate matter and the danger to certain populations in certain types of weather or wind directions. I think there may be a study about this also. Contact Lambton County Health Services 383-8381, Dr. Chris Greensmith Medical Officer of Health

23. Knowledge of any activities that are being carried out in your region concerning the environment and children's health:

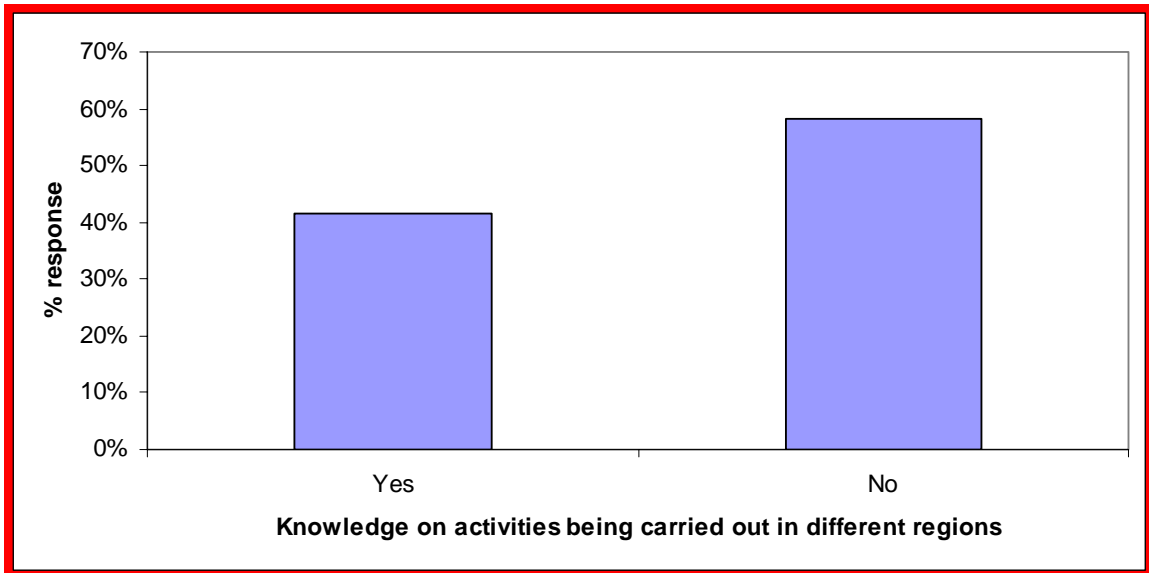


Figure 24. Knowledge of any activities that are being carried out in different regions concerning the environment and children's health.

Fifty percent of health care professionals that responded to the survey would like to be part of a Health Care Professional's network on Children's Health and the Environment if one were to be developed.

35. Would you like to be part of a Health Care Professional's network on Children's Health and the Environment?

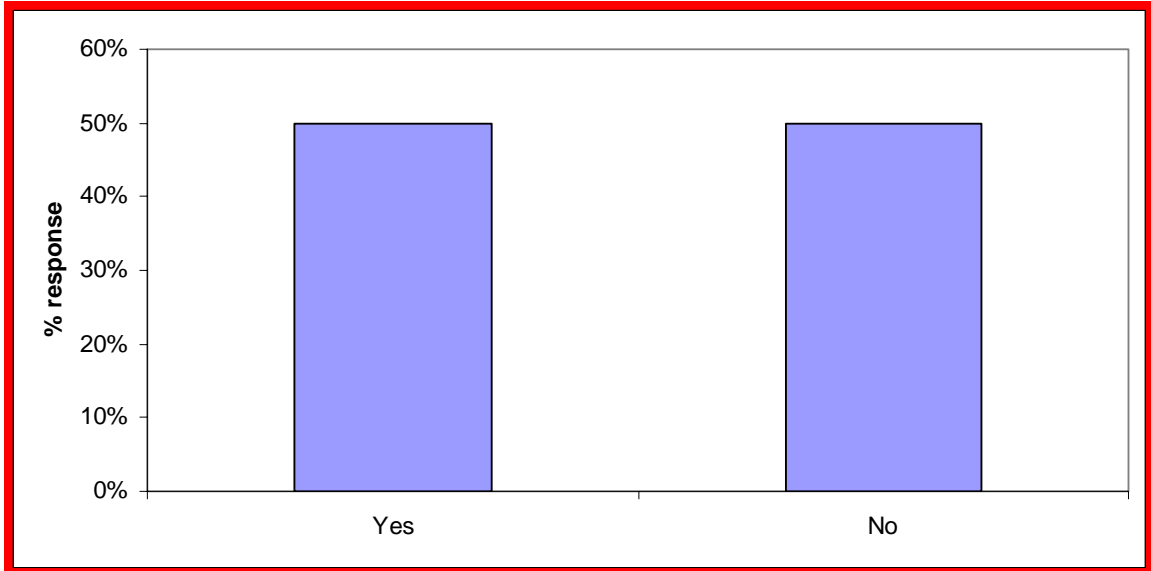


Figure 25. Interest in participating in a Health Care Professional's network on Children's Health and the Environment.

73.9% of health care professionals are not interested in becoming Master Trainers to be able to deliver workshops on Children's Environmental Health.

36. Are you interested in becoming a Master Trainer and deliver workshops on Children's Environmental Health?

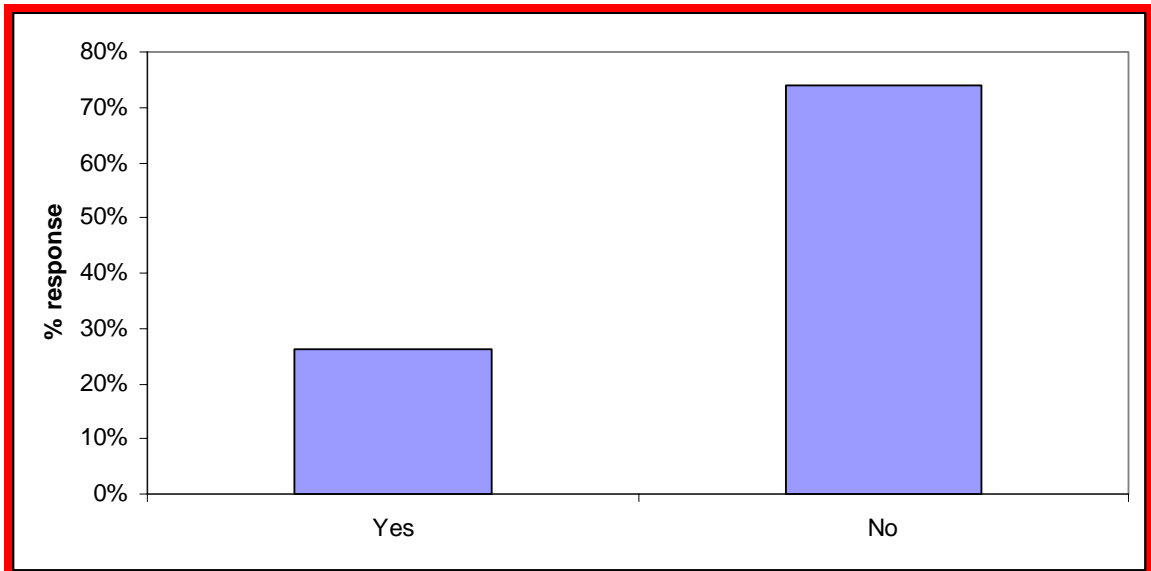


Figura 26. Health care professional's interest in becoming Master Trainers and deliver workshops on Children's Environmental Health.

37. Would you be interested in attending a training workshop on Children's Environmental Health?

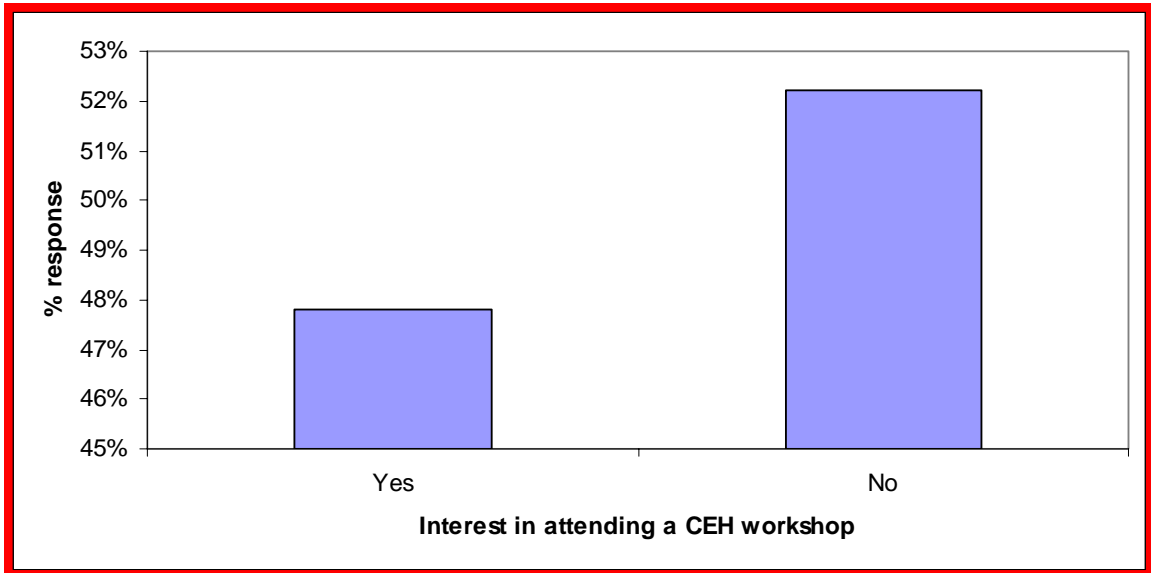


Figure 27. Health care professional's interest in attending training workshops on Children's Environmental Health.