



## What do parents mean, when they report that their child has wheezed? Interpretation of the word "wheeze" in a population-based questionnaire survey

Gisela Michel<sup>1</sup>, M Silverman<sup>2</sup>, MPF Strippoli<sup>1</sup>, E Chauliac<sup>1</sup>, A M Brooke<sup>2</sup>, C E Kuehni<sup>1,2</sup>

### Background

Because there is no gold standard for diagnosing asthma in epidemiological surveys, prevalence of asthma and related disorders in young children are usually estimated by parental reports of current wheeze, the most distinctive feature of asthma. Alternative methods are unsatisfactory. Population estimates of prevalence of wheeze are thus dependent on the definition of the term wheeze by parents. We therefore wanted to know if the definition of wheeze used by parents corresponded to the one given by epidemiologists.

### Aim

In a population-based cohort, we wanted to identify parents' definition of wheeze. In particular we wanted to know

- 1) if the words parents used to define wheeze included whistling
- 2) Which family characteristics predicted a correct definition of wheeze (as 'whistling sound').

### Method

The study was carried out using the second Leicestershire Respiratory Cohort (Kuehni et al., 2001). Parents of 6-10 year old children filled in a questionnaire on respiratory symptoms in children, including wheeze and asthma. A definition of wheeze was given on the first page ('Breathing that makes a high-pitched whistling or squeaking sound from the chest, not the throat').

**Parental definition of wheeze:** Parents were asked if any of the following words meant the same as "wheeze": rattly breathing or 'rattles', snoring, noises from the nose or throat during sleep, croup or stridor, whistling or squeaking noise in the chest, worrying dry cough, moist or wet cough with phlegm (each question could be answered separately with yes, no, don't know).

### Literature

Kuehni, C. E., Davis, A., Brooke, A. M., & Silverman, M. (2001). Are all wheezing disorders in very young (preschool) children increasing in prevalence? *Lancet*, 357(9271), 1821-1825.

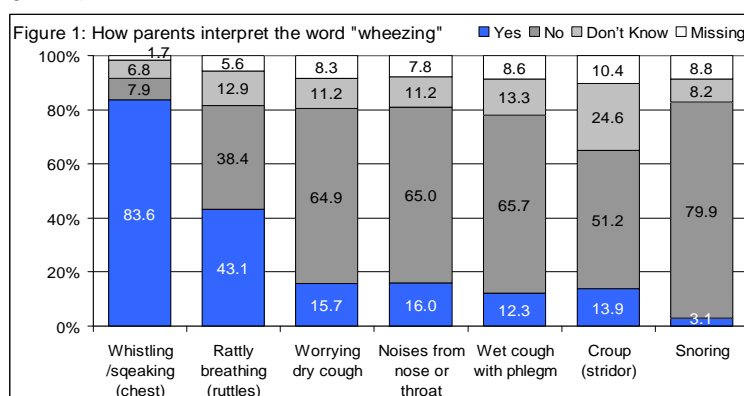
### Correspondence

Gisela Michel, ISPM, University of Bern, Finkenhubelweg 11, 3012 Bern. E-mail: michel@ispm.unibe.ch

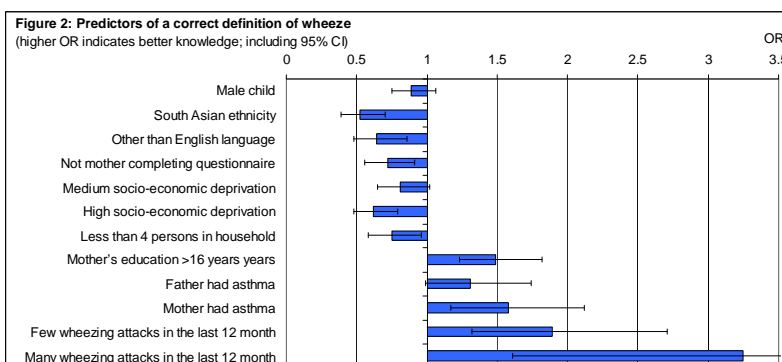
### Results

4037 respondents answered the questionnaire and were included in the analysis (76% White and 24% South Asians).

**Definition of wheeze:** 84% (3375/4037) answered correctly (Wheeze = whistling / squeaking sound). Knowledge was better among parents reporting wheeze in their child (90.9%) than among parents not reporting wheeze (82.5%). Many respondents included other respiratory noises (Figure 1).



**Predictors of the correct definition of wheeze:** The definition of wheeze was better (Odds ratio>1) in families with own experience of wheeze or asthma in parents or child, especially if moderate or severe, and with higher maternal education, and was poorer in underprivileged families, from ethnic minorities, whose mother tongue was not English, and when questionnaires were not filled in by the mother (Figure 2).



### Take home message

- Only 84% of respondents include the word 'whistling' in their definition of wheeze. Epidemiological studies might therefore slightly overestimate the prevalence of mild wheeze.
- Experience of wheeze or asthma in child or parents, especially if more severe, improves the definition of wheeze. Therefore, prevalence estimates for moderate and severe wheeze are more accurate.
- If prevalence of wheeze is compared between socio-economic classes or ethnic minority groups, the different understanding of wheeze should be taken into account and results adjusted accordingly.