

Reviewer's report

Title: Systematic Review of Worldwide Variations of the Prevalence of Wheezing Symptoms in Children

Version: 1 **Date:** 5 June 2008

Reviewer: Fritz Horak

Reviewer's report:

A systematic review of the prevalence of wheezing symptoms in children is presented by the authors of the present manuscript. Although most of the studies included are part of the ISAAC studies phase I and III, and are therefore well published in scientific literature, the authors added 127 additional studies that fulfilled specific quality criteria given in the manuscript. This addition makes sense and gives a better impression of the whole picture as it includes more rural study regions than ISAAC did. Furthermore the authors found major differences in ISAAC and non-ISAAC studies that are well-discussed in the manuscript. In addition to that a closer view is given on the differences of the prevalence of wheeze and its time-dependent development between UK and Australia. This is valid as there is significant migration between these countries and, on the other hand, definite climatic and cultural differences. Furthermore the data-density is high in both of these countries giving a good data-basis for comparisons.

There are a few points, though, that I think can be improved:

Abstract:

There is still a lot discussion about asthma, although the authors investigate wheezing symptoms which is not interchangeable with asthma. This should be better clarified.

State in the method-part of the abstract, why ISAAC-studies are compared to non-ISAAC studies (to take into account regional differences / methodological differences).

Results-part: line 7: adjusting for all other factors: you can never adjust for ALL the factors.

Introduction:

p4, par 1: Same as for Abstract. I would not start with "asthma".

p4, par 4: The symptom of wheeze is rarely a sign of emphysema or chronic bronchitis in children. But it is very often a symptom of acute viral infection, which is really common in this age group. Please state that.

p5, par 1: add a word about ISAAC Phase II.

p5, par 2, l 3: "all" non-ISAAC studies: all available non-ISAAC studies that fulfilled specific quality criteria

p5, par 2, l 12: In what follows.... : very critical! you should never use "asthma"

and “wheezing” interchangeably!

Methods:

p7, l15; age (yrs).: add “(years)” also in all the tables. The term in brackets (parental vs. self-report) must account for the prevalence, not the age, hopefully. Otherwise it does not make sense. Please change that also in the tables.

p8, par 2: statistics: please state the actual statistic model (formula) that you used. Although it is possible to use ratios (as prevalence) as an outcome parameter in a multiple logistic regression model this should be explained a bit more in detail.

Results:

p11, par4, l2: “This shows a clear increasing trend...”. In my opinion this trend is obvious for the UK but not so for Australia, as there are only 2 studies done between 1970 and 1990.(Figure 1)

Discussion:

p13, par 3, l 2: same as above: “all epidemiological studies”: see above, better write: all available studies, that fulfilled our quality criteria.

p13, par4, l 5. Try to discuss these different findings in America. Can there be different migration- patterns accounting for the differences?

p15, par 2, l 2: Add: also in these countries, the ISAAC studies reported ...

p16, par 1, l 2: The multiple logistic regression analysis ... add: for the prevalence of wheezing ... was adjusted for..

p17, par 4: again, do not write “all studies” without explaining.

Tables:

1-5: clearly state which of these are ISAAC and non-ISAAC studies. The footnotes A-H seem to be non-ISAAC, but it is not clear if all the others where ISAAC, or if they just used the ISAAC-questionnaire.

Age: add “(years)” in table 2-5; P=parental/S=self reported # must be prevalence, not age.

95% CI : remove “[]” brackets in the title and for all numbers (not necessary)

“Turkey” is not part of the middle East but of Europe and Asia. It will be politically correct if you list the studies according to the main city they are performed.

It would be interesting to see a figure comparable to the ISAAC publications, for the prevalence of wheezing (for example for 6-12yrs old) in the different countries in the order of prevalence.

Minors:

p 2, par 3, line 8: Australia showed “a” significantly higher prevalence

p 4, par 2, line 4: different countries “will” also have # “can”

p4, par 3, l 1: varying methods # different methods

p5, par 1, l 3: “easy way” # “standardized method”

p6, pt1. : typo: Embase DATABSES # databases

p11, par2, l 1: Fiji had very high # had “a” very high

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.