Author's response to reviews

Title: High prevalence of diagnosis of diabetes, depression, anxiety, hypertension, asthma and COPD in the total population of Stockholm, Sweden - a challenge for public health

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Version: 4 Date: 13 May 2013

Author's response to reviews: see over
Reviewer replies

Dear Editor:

We are pleased to resubmit our manuscript entitled ‘High prevalence of diagnosed diabetes, depression, anxiety, hypertension, asthma and COPD in the total population of Stockholm, Sweden – a challenge for public health’ for consideration for publication in the BMC Public Health.

The replies from the author group to the comments by the Reviewers are listed below.
All authors have read and approved resubmission of the manuscript and the manuscript has not been published and is not being considered for publication elsewhere in whole or part in any language. There are no conflicts of interest.

Sincerely,

Axel C Carlsson, PhD

**Reviewer # 1**

Reviewer's report
Title:
High prevalence of diagnosis of diabetes, depression, anxiety, hypertension, asthma and COPD in the total population of Stockholm, Sweden - a challenge for public health
Version:
3
Date: 19 April 2013
Reviewer:
John JC Carstensen
Reviewer's report:
I have no further comments. My advice is to accept the paper.
Level of interest:
An article of importance in its field
Quality of written English:
Acceptable
Statistical review:
Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
I declare that I have no competing interests

**Author response:** Thank you.
Reviewer # 2

Reviewer's report
Title: High prevalence of diagnosis of diabetes, depression, anxiety, hypertension, asthma and COPD in the total population of Stockholm, Sweden - a challenge for public health
Version: 3
Date: 25 April 2013
Reviewer: Alessandra Marengoni
Reviewer's report:
Major issue:
I still have some concerns about persons who died during the observational period. In fact as the authors stated more than once in the manuscript, they talk about period prevalence and not point prevalence as they replied to my previous review.
In the period prevalence rate all cases that existed anytime during the specified time period are included in the numerator regardless of outcome. Hence, even if a case dies during the specified time period, that case is still included in the numerator. The denominator for a period prevalence rate is generally the average or mid-interval population for the specified time period
Level of interest:
An article of importance in its field
Quality of written English:
Acceptable
Statistical review:
Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
'I declare that I have no competing interests

Author response: We thank the Reviewer for the thoughtful comment about period prevalence. As explained by the Reviewer, all cases that exist during the time period are included in the numerator. This is the case in our paper. As the denominator, we used the population as of December 31, 2011. Please see Reviewer Table 1 below or Table 1 in the submitted manuscript. These population numbers were used for both the calculation of the prevalence numbers in 2011 per se, as well as for the accumulated prevalence 2007-2011 (having the diagnosis recorded at least once).

Reviewer Table 1

The demography of Stockholm County as of December 31, 2011
Age-groups       Women 2011 |   Men 2011 |   Total 2011

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td>20.8</td>
<td>231845</td>
<td>22.4</td>
<td>451457</td>
<td>21.6</td>
</tr>
<tr>
<td>18-44</td>
<td>403774</td>
<td>38.2</td>
<td>410537</td>
<td>39.6</td>
<td>814311</td>
<td>38.9</td>
</tr>
<tr>
<td>45-64</td>
<td>254622</td>
<td>24.1</td>
<td>255355</td>
<td>24.6</td>
<td>509977</td>
<td>24.4</td>
</tr>
<tr>
<td>65-74</td>
<td>94586</td>
<td>9.0</td>
<td>87093</td>
<td>8.4</td>
<td>181679</td>
<td>8.7</td>
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<tr>
<td>75-84</td>
<td>52699</td>
<td>5.0</td>
<td>37948</td>
<td>3.7</td>
<td>90647</td>
<td>4.3</td>
</tr>
<tr>
<td>85-</td>
<td>31383</td>
<td>3.0</td>
<td>14263</td>
<td>1.4</td>
<td>45646</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td>1056676</td>
<td>100</td>
<td>1037041</td>
<td>100</td>
<td>2093717</td>
<td>100</td>
</tr>
</tbody>
</table>

The Reviewers suggests that instead of using the population in December 2011, we should use the population in the middle of the studied period. This strategy would require us to use two separate populations as denominator. The population in June 2009 is listed below, Reviewer Table 2.

Reviewer Table 2. The population in Stockholm June 30 2009

<table>
<thead>
<tr>
<th>Age</th>
<th>women</th>
<th>men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-17</td>
<td>211734</td>
<td>223051</td>
<td>434785</td>
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<td>18-44</td>
<td>387965</td>
<td>392499</td>
<td>780464</td>
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<td>65-74</td>
<td>82585</td>
<td>75784</td>
<td>158369</td>
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<tr>
<td>75-84</td>
<td>53316</td>
<td>36713</td>
<td>90029</td>
</tr>
<tr>
<td>85-</td>
<td>31071</td>
<td>13684</td>
<td>44755</td>
</tr>
<tr>
<td>Total</td>
<td>1014247</td>
<td>988667</td>
<td>2002914</td>
</tr>
</tbody>
</table>

The authors of the present study think it is more accurate to use the last available population, as has been done previously by Wirehn et al (Wirehn AB, Karlsson HM, Carstensen JM: Estimating disease
There are several reasons for this. First, four of the diagnoses namely diabetes, COPD, asthma and hypertension are point prevalence’s, since they are chronic conditions.


Third, as illustrated by two examples below, the prevalence would be overestimated when using the population in June 2009 instead of December 2011 as the population in Stockholm County increases, see below. Additionally, these small differences does not seem to have a clinical impact.

Taking diabetes among women as an example; the prevalence using the population in December 2011 renders \(\left(\frac{55938}{1056676}\right) \times 100\) a prevalence of 5.3%, whereas using the population in June 2009 renders a prevalence of 5.5% \(\left(\frac{55938}{1014247}\right) \times 100\).

For depression in men; the prevalence using the population in December 2011 renders \(\left(\frac{45344}{1037041}\right) \times 100\) a prevalence of 4.4%, whereas using the population in June 2009 renders a prevalence of 4.6% \(\left(\frac{45344}{988667}\right) \times 100\).

Lastly, the numerator should mathematically be a part of the denominator.