

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	How common are symptoms? Evidence from a New Zealand national telephone survey
<b>AUTHORS</b>	Petrie, Keith; Faasse, Kate; Crichton, Fiona; Grey, Andrew

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Paulo Andrade Lotufo University of Sao Paulo
<b>REVIEW RETURNED</b>	04-May-2014

<b>GENERAL COMMENTS</b>	<p>The epidemiology of symptoms is one of the most undervalued fields in the medical and public health area. Complaints are the most common situation for a human being (and other animals, I suppose) that deserves to be much better studied by epidemiologists. Symptoms (and by extension signs detected during the patient examination) were the base of medicine since old times. Due to the rise of pathology as science and the microbiology at the end of the XIX Century, symptoms studies were downgraded and illness gave the place to disease. Tuberculosis with a specific germ and a specific histological marker is the prototypical of this situation. Diseases outlasted illness during the first half of the last century. After this period, the emergence of cardiovascular diseases and cancer, the extreme force of the results of the Framingham Heart Study and the Doll &amp; Hill case-control about lung cancer (e, several other cohorts) shift the focus from disease to risk factors. And, illness was downgrade once more. The risk factor focus has an impressive increase recently with clinical trials that revealed the importance to control high blood pressure and high cholesterol, p.eg. Since the beginning of this Century, there are two new disciplines emerging according to new epidemiologic profile: "mental health/psychiatric" and "gerontology/geriatric medicine." The first discipline considers symptoms as "somatization," one circular reasoning, or as due to depression/anxiety/abuse of substances/sleep disturbance. The second one only as part of ageing process and systematically confound symptoms with functionality.</p> <p>Suggestions:</p> <ol style="list-style-type: none"><li>1. The authors must explain briefly for no-NZ readers how the health system in their country is. One important point is about the use (and abuse) of over-the-counter or behind-the-counter (is it available in NZ? ) of medicines for complaints.</li><li>2. One important link to be considered is the dissociation between the epidemiologic reality versus medical curricula worldwide. Most of medical textbooks are disease-centered with few descriptions of the clinical picture.</li><li>3. One important limitation of this study is the impossibility to evaluate minimally other conditions as mental health, p.ex.</li></ol>
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	<p>4. As the survey was done during the late autumn/early winter, it is plausible to consider that some seasonal situations as allergy/flu can be producing an excess of upper respiratory symptoms.</p> <p>Minor comments:</p> <p>Title:</p> <p>1. Sounds better to identify the country and year: How common are symptoms? Evidence from a national telephone survey, New Zealand, 2013.</p> <p>Abstract:</p> <p>Objective: sounds better to describe associations with hierarchy order of causation: Demographic, medical visits, medicines</p> <p>Results: must be more informative with the proportion of each complain, p.e.x.</p> <p>Conclusion: just one phase will be enough.</p>
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<b>REVIEWER</b>	Omer Van den Bergh University of Leuven, Belgium
<b>REVIEW RETURNED</b>	05-May-2014

<b>GENERAL COMMENTS</b>	<p>This is an interesting and relevant study documenting base rates of symptoms in a representative sample of the general population. Data are analysed in a simple and straightforward manner and the paper is well written. Some questions/suggestions came up during reading which the authors may want to address to further strengthen their case, depending on the preferred balance between brevity and elaboration.</p> <ul style="list-style-type: none"> <li>• The authors correctly point to a weakness in epidemiological research on symptoms because of the absence of a standard measure to assess daily symptom reports. To document this, they refer to a recent review paper (Zijlema et al., 2013) that discussed the characteristics of 40 questionnaires used to assess self-reported symptoms. It was proposed to use either the PHQ-15 or the SCL-90 because of their excellent psychometric properties, scope etc. So, it comes as a surprise in the method section that the authors created a new list compiled of one instrument to assess side effects of medication and a number of ad hoc items. A more substantive documentation of the psychometric properties of this ad hoc questionnaire (e.g. factor structure?) and a more explicit discussion on how the items relate to the items most widely used, as apparent from the Zijlema review, would be relevant.</li> <li>• How many people were included in each bin of doctor visits? Was there more or less an equal amount of people in each one?</li> <li>• The data on bothersomeness of the symptoms are little reported. It would be interesting to see the bothersome data displayed as for frequency (cfr Table 1).</li> <li>• There is little explicit attention for the frequency x bothersomeness interaction. It may be relevant to document which (type) of symptoms causes the greatest burden at population level.</li> <li>• No gender differences on medication use, doctor visits, and bothersomeness are reported. This could be interesting because women typically report more and other symptoms than men.</li> <li>• The correlation between doctor visits and symptoms (<math>r = 0.25</math>) is called "very strong". This is probably an overstatement (it points to only 6.25 % of common variance).</li> <li>• Data are analyzed in a simple and straightforward manner, but leaves some opportunities unused. Did the authors consider mediation and/or moderation analyses on these data to further</li> </ul>
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	<p>address more specific questions? These could add substantial and relevant information to the paper.</p> <ul style="list-style-type: none"> <li>• The authors may wish to compare their findings with other population-based studies on the same topic to put their findings in a larger context (e.g., Ladwig et al., JPR, 2010; Tschudi-Madsen et al., BMC, 2001;).</li> </ul> <p>In sum, this is an interesting and relevant paper. Although time is limited in telephone-based interviews to collect data on actual or self-reported health status (e.g. self-reported Information about doctor-diagnosed illnesses, information on reasons for doctor visits, etc.) making it difficult to thoroughly interpret the present findings, population-based base rates of symptoms are relevant. However, some data are available to make the case more substantial if considered fitting the aim of the paper and the journal.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer 1

Suggestions:

1. The authors must explain briefly for no-NZ readers how the health system in their country is. One important point is about the use (and abuse) of over-the-counter or behind-the-counter (is it available in NZ? ) of medicines for complaints.

We are not sure this is relevant to the current study. There is already literature available on the NZ health system and the current study is focused on daily symptoms not the use and abuse of over the counter medicines.

2. One important link to be considered is the dissociation between the epidemiologic reality versus medical curricula worldwide. Most of medical textbooks are disease-centered with few descriptions of the clinical picture.

As noted above we have added some more to the first paragraph of the article and the discussion to highlight the relevance of the topic to clinical practice (page 4 & 13).

3. One important limitation of this study is the impossibility to evaluate minimally other conditions as mental health, p.ex.

Thank you for this suggestion. We have added a comment to the discussion noting that the symptom survey mostly covers physical symptoms rather than mental health problems (page 11).

4. As the survey was done during the late autumn/early winter, it is plausible to consider that some seasonal situations as allergy/flu can be producing an excess of upper respiratory symptoms.

We have already noted this point in the limitations of the study (page 11) and in the bullet points on the strengths and limitations of the paper (page 3).

Minor comments:

Title:

1. Sounds better to identify the country and year: How common are symptoms? Evidence from a national telephone survey, New Zealand, 2013.

We have changed the title to reflect the study was conducted in New Zealand. (page 1)

Abstract:

Objective: sounds better to describe associations with hierarchy order of causation: Demographic, medical visits, medicines

We have reordered these as suggested (page 2).

Results: must be more informative with the proportion of each complain, p.e.x.

We have added the percentages for each of the most common symptoms (page 2)

Conclusion: just one phase will be enough.

We have simplified the first sentence of the conclusion (page 2)

Reviewer 2

- The authors correctly point to a weakness in epidemiological research on symptoms because of the absence of a standard measure to assess daily symptom reports. To document this, they refer to a recent review paper (Zijlema et al., 2013) that discussed the characteristics of 40 questionnaires used to assess self-reported symptoms. It was proposed to use either the PHQ-15 or the SCL-90 because of their excellent psychometric properties, scope etc. So, it comes as a surprise in the method section that the authors created a new list compiled of one instrument to assess side effects of medication and a number of ad hoc items. A more substantive documentation of the psychometric properties of this ad hoc questionnaire (e.g. factor structure?) and a more explicit discussion on how the items relate to the items most widely used, as apparent from the Zijlema review, would be relevant.

We thank the reviewer for this comment. We have added a sentence to explain why these scales are inappropriate because they only have a limited number of physical symptoms and are focused on identifying somatization (page 4). We feel further discussion of the factor structure of the questionnaire will distract from the main findings of the paper. While we have modified the original scale by added some more items, the original GASE scale is discussed in more detail in Rief et al's paper (reference 20 in the article).

- How many people were included in each bin of doctor visits? Was there more or less an equal amount of people in each one?

We have now added this information to the text (page 7)

- The data on bothersomeness of the symptoms are little reported. It would be interesting to see the bothersome data displayed as for frequency (cfr Table 1).

We realize that the term bothersome has caused some confusion. We actually asked whether respondents had experienced any of the 46 symptoms in the previous 7 days and if so, whether the symptom was mild, moderate or severe. We did not also ask how bothersome was the symptom in terms of their life as some questionnaires do. We have therefore removed the term "bothersome" from the text. We have also added a new table that looks at the 10 most highly rated symptoms by intensity (page 9).

- There is little explicit attention for the frequency x bothersomeness interaction. It may be relevant to

document which (type) of symptoms causes the greatest burden at population level.

As explained above we did not collect bothersome ratings.

- No gender differences on medication use, doctor visits, and bothersomeness are reported. This could be interesting because women typically report more and other symptoms than men.

We have added a new paragraph to the section on demographic differences to cover these points (page 12).

- The correlation between doctor visits and symptoms ( $r= 0.25$ ) is called “very strong”. This is probably an overstatement (it points to only 6.25 % of common variance).

We have changed the wording from “strongly associated” to “associated” (page 10).

- Data are analyzed in a simple and straightforward manner, but leaves some opportunities unused. Did the authors consider mediation and/or moderation analyses on these data to further address more specific questions? These could add substantial and relevant information to the paper.

We considered this aspect but the cross-sectional nature of the study makes such an analysis difficult to justify.

- The authors may wish to compare their findings with other population-based studies on the same topic to put their findings in a larger context (e.g., Ladwig et al., JPR, 2010; Tschudi-Madsen et al., BMC, 2001;).

We thank the reviewer for this suggestion. We have now added these papers to the discussion, along with another recent paper which showed that as symptom reports increased, so did the patient's belief that they were suffering from an unexplained condition such as amalgam poisoning, electromagnetic sensitivity or chronic fatigue syndrome (page 13).

We thank the editor and reviewers for their comments. We hope with these changes the paper is now acceptable in BMJ Open. I look forward to hearing from you in due course.