Reviewer’s report

Title: Use of non-prescription analgesics in the Norwegian HUNT-3 population: Impact of gender, age, exercise and prescription of opioids.

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Reviewer: Cheryl Sadowski

Reviewer’s report:

This epidemiologic study includes some interesting associations. The findings regarding prevalence of use are important from a safety perspective as well. This information can be used by many stakeholders, especially clinicians, who should think about inquiring about pain and analgesic use more frequently. Some comments to address in the paper are below.

Major revisions:

Abstract - the first statement isn't obvious in an epidemiologic study and this was not a longitudinal study. It may be better to state that there are concerns about potential increasing use of analgesics, or safety concerns. The Methods may be enhanced as well with a bit more detail that the data was from adults in the community who were asked about lifestyle, medications, and health. Internationally people might not be familiar with this database so just another sentence or two would provide context. You also need to describe the basic analysis for the data in this section of the abstract.

Introduction - This is very brief and to the point, but it may help to explain a bit more context. What are the safety risks and reports from analgesic use? Is that the driver for the study - to address safety? The final statement in the paper reads about purchasing larger amounts, almost a cost implication or about convenience, rather than about safety. In the introduction frame why this study really needed to be done, and then in the Discussion talk about what will change because these findings are now available.

In the introduction you discuss studies that are 10-20 years old, yet use older studies again in the Discussion. Given that the data you are using is almost 10 years old, is that still valid? Has the availability of analgesics changed? Do we have evidence of patterns of analgesic use changing dramatically over the past years?

It may help in the introduction to provide a link or address medications that are available OTC, behind the counter, or with a certain level of prescription. It maybe that countries have significantly different regulation of these products so it may be challenging to compare. However, if the EU or US or other countries have similar legislation, it provides legitimacy to compare the comparator studies.

Methods - Please explain how some of the data was collected (e.g. Likert scale,
dichotomous variable) because the Results present scales for some items, but this is not always listed a priori in the Methods.

Results - please provide a basic demographics table, or provide the referencing from this database. For example, age distribution, rural vs urban setting. Are there many minority groups or ethnic diversity in this sample?

The results state that women consistently reported higher prevalence of pain - consistently meaning that it was measured multiple times and each time it was higher? Or that women in all age groups and in all situations had higher rates of pain?

Discussion - The formatting is very structured and it is easy to see that the authors have described the results and provided some context and elaboration. The main issue missing is the 'so what', or "what now' with these findings. Should this impact legislative decisions about analgesics, or prescription status? Should clinicians behave differently or assess patients in a different way? Should pharmacists intervene or not dispense therapies? Should patients or the public be educated or should their behaviour be modified?

The final statement was a bit surprising as the authors didn't make the case that physician control results in better care or management of pain, or safety of analgesic use. It's also unclear how cost became an issue, as this was not part of the study nor explained in the discussion.

Minor edits:

terms such as 'political decision' in the discussion (related to associations of OTC use) - please clarify. Does this mean regulatory or legislative change? Was this health care decision high-jacked by politics, or was it legitimately handled for health and safety reasons?

The terminology relating to 'physicians' is okay but in many jurisdictions other health professionals, such as nurse practitioners or pharmacists can prescribe. It may be better to use broader language such as "health care professional".

Discretionary edits:

For the section on research questions it may read better as a paragraph, but this is a minor issue for formatting and presentation.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:

No conflicts of interest to declare.