Reviewer’s report

Title: Screening premorbid metabolic syndrome in community pharmacies: a cross-sectional descriptive study

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Reviewer: Maram Katoue

Reviewer’s report:

Reviewer Report:

This manuscript describes a study investigating the role of community pharmacists in screening for patients with high risk for cardiovascular diseases. In view of the increasing prevalence of the cardiovascular diseases and diabetes mellitus worldwide, the pharmacists’ contribution in early detection of those at risk needs to be highlighted. The study is also unique in that it looks to those patients with “pre-morbid” metabolic syndrome, i.e. patients who are at risk of developing the cardiovascular complications and would greatly benefit from initiating preventative measures to reduce their risks.

1. Is the question posed well defined?
Yes, although I think the study aimed to screening for patients with cardiovascular risk factors and with pre-morbid metabolic syndrome. I think that no pharmaceutical interventions were conducted for the patients who were diagnosed with the condition. It would be better to remove: “…carry out pharmaceutical interventions” from the aim of the study.

2. Are the methods appropriate and well described?
Yes. The method section is clear.

3. Are the data sound?
Yes. However, I think the results section would benefit from more organization. Also, the bar charts used need to be presented in a way to show differences between the variables. The color codes are not clear enough to show differences when the manuscript is printed in black and white.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes.

5. Are the discussion and conclusion well balanced and adequately supported by the data?
Yes. However, the different services that community pharmacists can provide to public with the metabolic syndrome need to be discussed further.
6. Are the limitations of the work clearly stated?
No. there is no mentioning for the limitations of the study. The authors need to acknowledge the limitations of their study by the end of the discussion section.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Yes.

8. Do the title and abstract accurately convey what has been found?
Yes.

9. Is the writing acceptable?
Yes. However, I feel that some of the sentences in the text are very long. The manuscript would benefit from English language revision. Care need to be given to include all the references of the manuscript in English language if possible (e.g. reference number 3, 10, 11, 12, 14, 15, 23 and 32).

Major Compulsory Revisions:

Abstract:
-Background: line 7: under the aim of the study; you mention that “The aim of the study was to determine the prevalence of pre-MetS in people who visited community pharmacies of measurement of any of the five risk factors to detect the presence of other risk factors and conduct pharmaceutical interventions”. However, it is not clear from the manuscript what pharmaceutical interventions these patients had received from the pharmacists upon the identification of their cardiovascular risk factors. If any specific interventions were carried out for the study participants, please indicate them; otherwise, remove that part from the aim of the study.

-Conclusion: the first sentence is repeated in the results section. It would be better to replace that sentence with a sentence that reflects the general conclusions of the study.

Background:
-Page 5: paragraph 2: in the last paragraph in the background section, it would be useful to include examples of studies showing the usefulness of screening programs conducted in community pharmacies for patients with metabolic syndrome. You can check the following reference:

You may need to highlight the wide range of services that the community pharmacists can provide to patients with the metabolic syndrome. Check our previous work on that topic:


Methods:
- Page 6: paragraph 3, line 1: all data were conducted by pharmacists using a structured questionnaire. Can you clarify what was the source of the questionnaire used in the study? You need to clarify the origin of the questionnaire and any steps that were taken to validate it before being used by the participating pharmacists.
- Page 6: paragraph 3, line 5: “… according to Baleares Primary Care Guide”. You may need to briefly describe what this guide includes and how it assesses physical activity.
- Page 7: paragraph 1, line 12: “Cardiovascular risk was calculated according to Framingham predictive equations calibrated for Girona (Spain) Regicor and according to the Score project for European population at low risk”: you may want to explain the meaning of “Regicor” in this sentence. In addition, MetS is high risk condition for diabetes and cardiovascular diseases. Please justify why you chose to use the Score project for patients at low risk.

Results:
- Page 8, paragraph 2: the first section of the result is fully illustrated by Figure 1. Therefore, I think no need for repeating that information within this paragraph.
- I have a general concern about all the figures: Fig 2, 3, 4, 5 and 6. The variables are distinguished using colors. This may not be clear when the manuscript is printed in black and white. Try to find a way to represent these figures in a way to show the differences between the two variables (e.g. between males and females) in a way that can be easily distinguished by the reader without relying on differences in the colors of the bars.
- Page 10, paragraph 4: you may want to consider moving this paragraph up to complete the second paragraph, since the two paragraphs are discussing the findings presented in Table 3. Then, you can continue by commenting on the findings presented in Table 4.
- Figure 5 and Figure 6 illustrate the same point, you may want to keep only one of them and remove the other.

Discussion:
- Page 11, paragraph 4: you mention that in your study, 50.2% (I think it would be better to word that by saying “almost half of the study participants”) had not received any pharmacological treatment for any of the five MetS diagnostic factors.”
It is good to bring this information in the discussion together with another important result: almost one third (27.2%) who had pre-MetS had not previously diagnosed with obesity, dyslipidemia or hypertension. These two statements together at the beginning of the discussion will highlight the value of the screening service provided by community pharmacies.

-Page 13, paragraph 1: in this paragraph you are discussing the strength of your study compared to the DARIOS and HERMEX studies. One of the strengths of your study is that you studied the prevalence of risk factors in all included participants, unlike these two studies which only looked at patients with Pre-MetS. You need to balance the strengths of your study with its limitations. You should acknowledge the limitations of the study.

-So, perhaps by the end of the discussion section, you can include one paragraph discussing the limitations of your study: e.g. the cross-sectional nature of the study, the small sample size, the use of questionnaire which required self-reporting from the study participants etc..

-Page 14, paragraph 1: you need to expand more on the role of community pharmacists in management of patients with chronic conditions such as hypertension and dyslipidemia to support your arguments that community pharmacists can provide pharmaceutical care services to patients with cardiovascular risk factors. You can check the following references:


-Also, it worth mentioning that community pharmacists can also have contribution in providing smoking cessation programs that would benefit patients with high cardiovascular risk factors with references from literature to support that.

Conclusion:

-As previously indicated, the conclusion section need to be rephrased to reflect the main study findings, but without repeating these findings.

-So, please remove the first sentence which shows the prevalence percentage and replace it with another sentence that would clarify for example, the value of screening patients with Pre-morbid MetS, and how that could have affected the prevalence rate in you study (less prevalence rate will be obtained using this criteria, but it would be of more value to detect those patients at risk to initiate timely preventative measures).

Minor Essential Revisions

Table 1. : It is mentioned that data are expressed as means (95% Confidence
Interval) and percentages (95% Confidence Interval): can you clarify on the table which variables were presented using means and which were presented using percentages? You can use footnotes to indicate that for the reader (e.g. you can use * or superscripts letters: e.g. a depending on the journal style).

For Tables 2, 3, 4, and 5: please indicate that p value is considered significant when < 0.05 as a footnote below the table.

Discretionary Revisions:

Abstract:
You may consider defining what is meant by pre-morbid metabolic syndrome within the abstract section. The fact that this condition excludes those patients with diabetes and established cardiovascular diseases needs to be clarified for the reader in the abstract.

Background of the manuscript:
- Page 3, paragraph 4: the first sentence in the background is extensively long. I would suggest dividing this sentence into two sentences. The second sentence would start from line four: “They should be able to identify patients at risk to initiate treatments to prevent these diseases”.
- Page 4, paragraph 2, line 5: replace the word “physiology” with “pathophysiology”.
- Page 4, paragraph 2, line 13: “…. The MetS is indeed highly prevalent.” Can you complete this sentence for clarification: prevalent where? Among what population?
- Page 4, paragraph 4, line 2: the first sentence in this paragraph needs a reference.

Methods:
- Page 6, paragraph 1, line 2: can you unify the use of either “inclusion criteria” or “selection criteria”.
- Page 6, paragraph 2, line 7: I think for better organization, you may want to move the statement on the ethical approval for the study to follow the statement about written consent in paragraph 1, line 6 in the same page.

Results:
- Page 9, paragraph 2, line 1: the sentence could read better this way: “of these 650 patients, 29 (4.5%) were excluded from the sample due to lack of more than two diagnostic risk factor values making it difficult to estimate a diagnosis for pre-MetS in these individuals.”
- Page 9, paragraph 2, line 4: add “elevated” before blood pressure.
- Page 9, paragraph 2, line 5: add “elevated” before fasting glucose.
- Page 9, paragraph 2, line 6: add “low” before HDL-cholesterol.
- Page 9, paragraph 3, line 1: only 20.5% of people. You may want to replace the
word “people” with “study participants”, or “study population”.

-The subtitle: Metabolic Syndrome in the study population. It would be better to be clarified as follows: The prevalence of pre-morbid metabolic syndrome in the study population.

Discussion:

-Page 11, paragraph 4, line 7: “according to the literature worldwide, there are only a few published studies…” Remove “a” before few.

-Page 12, paragraph 2, line 2: can you clarify the setting of the HERMEX study. Where have the participants been screened for pre-MetS? Was that performed in primary care? Or community pharmacies?

-Page 13, paragraph 1, line 14: the last sentence needs further clarification: “no statistically significant differences were obtained”. You need to clarify among what groups there was no statistically significant differences.

-Page 13, paragraph 3, line 5: “The most suitable subjects for these interventions are those who have pre-MetS (21.9%) and two or the five diagnostic criteria (22.4%).” This can be better clarified as:…… and patients with two of the five diagnostic criteria (22.4%).

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

Declaration of competing interests:

I declare that I have no competing interests.