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OPEN PEER REVIEW

Self-medication During the Coronavirus Disease 2019 Pandemic in North Central of Morocco: Prevalence, Causes, and Associated Factors

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

2 comments · 13 May 2023 – 27 May 2023

Referee 1 Reviewer

MINOR REVISION 13 May 2023

If available, the type of "Herbal products" used by the participants should be mentioned in the study.

When comparing the groups that used self-medication before and during the COVID pandemic, it is best to also mention the type and frequency of self-medication in the groups (presented in figures). Also, mentioning the reasons (if available) why participants started or stopped self-medication can be beneficial to further studies.

What the authors concluded from this study should be mentioned in the abstract.

Were all the participants diagnosed with COVID-19?

Were the doses of Zinc and Vitamin C, etc., used by the participants relevant to the period and severity of COVID?

Editor-in-Chief

MAJOR REVISION 27 May 2023

Dear Authors,
Our experts have scrutinized your article, and they believe it needs major revision before it can be considered for publication in JJNPP. We invite you to revise the manuscript and upload it with a point-by-point response or any rebuttal to the provided comments. Please remember to highlight changes.
Kind regards,
JJNPP EIC

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Responses to evaluators' comments

Dear reviewers,

Firstly, I would like to thank you for taking the time to read our work and for your pertinent comments, which have added value to our efforts.

We have highlighted changes to the manuscript in yellow in accordance with the journal's request. The following table summarizes all of your comments, along with the response of the team and where the changes have been made in the text. Thank you for reading and revising.

Authors of article No. 137345

Reviewer	No	Comment	Answers	Location in the text
1	**1**	If available, the type of "Herbal products" used by the participants is better to be mentioned in the study.	**We have added this paragraph in Result section:** The participants reported using herbal products for therapeutic purposes. Various forms and uses are available for these products. Infusions constituted the majority (95.54%), followed by nasal sprays (42.08%), aerial sprays (23.27%), and massage balms (14.36%). These herbal products were predominantly composed of *Eucalyptus globulus* (92.57%), *Mentha pulegium* (75.74%), *Zingiber officinale* (72.28%), *Citrus limon* (61.39%), *Thymus vulgaris* (44.06%), and *Rosmarius officinalis* (33.06%). **Discussion section :** We do not have any information regarding the biological effects of medicinal plants on the Coronavirus, but their diverse secondary metabolites provide innumerable advantages. There are many biological effects they are capable of producing, including anti-inflammatory (*Eucalyptus globulus*, *Zingiber officinale*, *Citrus limon*), antimicrobial (*Eucalyptus globulus*, *Mentha pulegium*, Zingiber *officinale*, *Thymus vulgaris*, *Citrus limon*), antioxidant (*Eucalyptus globulus*, *Mentha pulegium*, Zingiber *officinale*, *Thymus vulgaris*, *Rosmarius officinalis)* and analgesic properties (*Eucalyptus globulus*). **NB :** One bibliographical reference have been added (40)	**Result section:** Last paragraph, page 6 **Discussion section:** Second paragraph, page 11
	2	When comparing the groups that use self medication before and during COVID pandemic, it is	**We have added this paragraph in Results section :** Moreover, the study revealed that prior to the pandemic, 314 (78.50%) of the participants had used this practice, compared to	**Results section :** Last paragraph, page 5.

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		best to also mention the type and frequency of self-medication between the groups (present with figures).	86 (21.50%) of those who had not. According to our findings, self-medication during the COVID-19 period decreased statistically significantly compared to the previous period (p = 0.0001). In the population studied before the pandemic, self-medication risk appeared to be significantly higher than during the pandemic. The OR analysis (table 2) revealed a greater than 1 risk ratio between the two periods of self-medication (OR= 5.23; 95% CI 3.047-8.99). Therefore, self-medication was more prevalent before the Covid-19 outbreak than during the outbreak.	
	3	Also mentioning the reason (if available) that participants started or disused self medication can be beneficial to further studies.	**We have added this sentence in Results section :** Self-medication for COVID-19 was mainly due to fear of being tested positive for COVID-19 (22.68%), media impact (20.27%) and financial issues (17.87%). Other reasons reported were distance from the healthcare institution (14.09%), fear of being quarantined (13.75%), fear of discrimination (6.19%) and fear of going to the hospital (5.15%) (Table 3).	**Results section :** Last paragraph, page 7 and Table 3
	4	What the authors concluded from this study should be mentioned in the abstract.	**We have added this sentence in Abstract :** The self-medication constituted a serious health concern in Morocco during the COVID-19 pandemic.	**Conclusion of the abstract** : Page 1
	5	Were all the participants diagnosed with COVID-19?	**We have added this paragraph in Results section :** Among the respondents who practised self-medication, 208 (71.48%) self-medicated when symptoms of COVID-19 developed, 43 (14.78%) to prevent the apparition of symptoms and 40 (13.74%) was confirmed positive for COVID-19 (PCR test) (Table 3).	**Results section :** First paragraph, page 7 and table 3
	6	Were the using dose of Zinc and Vitamin C and etc. relevant to the period and severity of COVID?	**We have added this paragraph in Results section :** To our knowledge, the doses of Zinc and Vitamin C and etc. used, were not adapted to period and severity of COVID. Undoubtedly, patients have based their dosage decisions on the package leaflet or on the experience of others who have contracted the disease.	**Discussion section:** First paragraph, page 10

Responses to evaluators' comments

2	**1**	No explanation has been given regarding the selection of the cases in question. How do you ensure that the study population is representative of the general population?	**We have added this paragraph in "Study design and sampling section" :** The minimum sample size of 384 was calculated using the Cochran formula for cross-sectional studies for the 95% confidence level and 5% error margin for a general population estimated at 835695. **NB :** **1.** A bibliographical reference has been added : 13 **2.** The validity of a survey depends on its representativeness of the population. Five steps were involved in our calculation process: - Determining the target population - Determining the level of accuracy - Determining the sample size - Will respondents respond? - How many people do we need to contact? We had to determine the number of people who actually responded to our questionnaire in order to determine the level of confidence and margin of error. In the case of large populations, the sample size is calculated using Cochran's formula. According to data provided by the high commisionner for planning, regional direction of Fez-Meknes, Meknes has a population of 835695 people in 2017 (Latest and only statistics available at national level). A sample size of 384 people is required for this study (the sample size does not change much for populations of more than 20,000). Margin of error: 5% (A margin of error of 5% is commonly considered sufficient). Confidence interval: 95% (The interval commonly used is 95%)	**Study design and sampling section** : Page 3
	2	Inclusion and exclusion criteria are not well mentioned. In addition, when living in a certain	**We have added this paragraph in "Inclusion and exclusion criteria section" :** The inclusion criteria were that the participant had to be an adult	**Inclusion and exclusion criteria section :** Page 3

Responses to evaluators' comments

		city is one of the inclusion criteria, living in other cities should not be introduced as an exclusion criterion.	(aged ≥18 years), consent to participation in the study and reside in the city of Meknes. Furthermore, pregnant women and children were not included in the study.	
	3	The history of the person's or his family's referral to the treatment system has not been mentioned.	Data not collected	
	4	No explanation has been given about the culture of the target community regarding arbitrary or non-prescription drug use. Using vitamins as supplements or acetaminophen during pain is not considered arbitrary use in many societies.	**We have added this paragraph in "Discussion section":** The massive consumption of this medication may be the result of its availability for sale without a prescription from a physician. Indeed, using vitamins as supplements or acetaminophen during pain is not considered arbitrary use in many societies, such as Morocco. **And** Moroccans have grown increasingly interested in dietary supplements and herbals products in recent years, particularly since social networking sites have contributed to the popularity of these products, particularly during the recent pandemic.	**Discussion section:** Paracetamol : Last paragraph, page 10 Supplements : Third paragraph, page 11
	5	The explanation about Table 2 is not complete and clear	**We have added this paragraph in "Results section" :** Moreover, the study revealed that prior to the pandemic, 314 (78.50%) of the participants had used this practice, compared to 86 (21.50%) of those who had not. According to our findings, self-medication during the COVID-19 period decreased statistically significantly compared to the previous period (p = 0.0001). In the population studied before the pandemic, self-medication risk appeared to be significantly higher than during the pandemic. The OR analysis (table 2) revealed a greater than 1 risk ratio between the two periods of self-medication (OR= 5.23; 95% CI 3.047-8.99). Therefore, self-medication was more prevalent before the Covid-19 outbreak than during the outbreak.	**Results section :** Last paragraph, page 5.
	6	More than 70% of the respondents have used herbal	**We have added this paragraph in Result section:** The participants reported using herbal products for therapeutic	**Result section:** Last paragraph, page 6

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		products. The prominent part of your study could have been about these drugs, while the effects of these drugs and their general use in the target community have not been mentioned enough.	purposes. Various forms and uses are available for these products. Infusions constituted the majority (95.54%), followed by nasal sprays (42.08%), aerial sprays (23.27%), and massage balms (14.36%). These herbal products were predominantly composed of *Eucalyptus globulus* (92.57%), *Mentha pulegium* (75.74%), *Zingiber officinale* (72.28%), *Citrus limon* (61.39%), *Thymus vulgaris* (44.06%), and *Rosmarius officinalis* (33.06%). **Discussion section :** We do not have any information regarding the biological effects of medicinal plants on the Coronavirus, but their diverse secondary metabolites provide innumerable advantages. There are many biological effects they are capable of producing, including anti-inflammatory (*Eucalyptus globulus*, *Zingiber officinale*, *Citrus limon*), antimicrobial (*Eucalyptus globulus*, *Mentha pulegium*, Zingiber *officinale*, *Thymus vulgaris*, *Citrus limon*), antioxidant (*Eucalyptus globulus*, *Mentha pulegium*, Zingiber *officinale*, *Thymus vulgaris*, *Rosmarius officinalis)* and analgesic properties (*Eucalyptus globulus*). **NB :** One bibliographical reference have been added (40)	**Discussion section:** Second paragraph, page 11
	7	The bright spot of your article is its discussion section, but there I did not find sufficient and detailed reasoning in the analysis of the decrease in the number of arbitrary drug users compared to before Corona.	**We have added this paragraph in "Discussion section" :** The analysis of the decrease in the number of arbitrary drug users compared to pre-Corona could be explained, among other things, by the number of awareness and information campaigns run daily by health authorities to educate the public about the dangers of arbitrary drug use. It should also be noted that strict measures on the part of the authorities, not to sell medicines arbitrarily or without a prescription, have been observed. As well as, confinement may make access to medicines more difficult.	**Discussion section:** Last paragraph, page 9

2 Revision 1

3 comments · 20 Jun 2023 – 29 Jun 2023

Referee 2 Reviewer — ACCEPT 20 Jun 2023

Thanks a lot

Referee 1 Reviewer — ACCEPT 28 Jun 2023

Thank you for your time and dedication to answering the comments.

Editor-in-Chief — ACCEPT 29 Jun 2023

Dear Authors,
I am pleased to inform you that your manuscript has been accepted in its current form. We will send it to the publisher for further processing. We look forward to receiving your future research results.

Kind regards,
JJNPP EIC