Author's response to reviews

Title: Factors associated with the utilization of primary care emergency centers in a Spanish region with high population dispersion: a mixed-methods study.

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Author's response to reviews: see over
ANSWER TO THE REVIEWERS

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Factors associated with the utilization of primary care emergency centers in a Spanish region with high population dispersion: a mixed-methods study

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The authors would first like to thank both the editor and the reviewers for their comments on this manuscript, which have undoubtedly helped to improve the quality and clarity of the manuscript. We are also grateful for the opportunity to have the revised version reconsidered for publication in BMC Health Services Research.

Reviewer Comments:

1º. - Reviewer's report

Title: Factors associated with the utilization of primary care emergency centers in a Spanish region with high population dispersion: a mixed-methods study

Reviewer: Joanne C Turnbull

Reviewer's report:
This is a study of the use of PCECs in a sparsely populated area think the topic is interesting and there are some interesting findings in the paper. Some of the rationale and background for the study is a little confusing. The paper would benefit from some clarification / justification of methods and a clearer argument around health care utilization for patients in sparsely populated areas. I am not a statistician so cannot comment on the appropriateness of MLM.

We appreciate the reviewer's comments. We will consider each of her suggestions.

Major revisions
1. Whilst the methods section states that the interviews were designed to collect ‘healthcare professionals experience and perceptions regarding services’, much of the data presented draws on healthcare professionals perceptions’ of patient help-seeking behaviour. Surely, if the aim of the study is to understand patterns of utilisation in sparsely populated areas, the most reasonable approach would be to ask patients themselves rather than relying on healthcare professionals'
perceptions / opinions. I think this aspect of the study needs greater rationale / explanation about what the interviews with healthcare professionals really add,

We thank the reviewer her comment. One of the objectives of this study is: “3. To know the perceptions of the healthcare professionals working at rural PCEC regarding the use of these services and the factors determining such use patterns.” To clarify that, we modify the paragraph when we talk about “healthcare professionals experience and perceptions regarding services”:

“We used a scripted interview specifically designed to collect the healthcare professionals perceptions regarding the use of rural PCEC and the factors determining such use patterns.” (track changes)

In other hand, about, what the interviews with healthcare professionals really add? and, why this approach was chosen?, one of our objectives was “collect the healthcare professionals´ perceptions regarding the use of rural PCEC such determining factors and the use patterns” because healthcare professionals give us an overview of the demand that the population makes at the PCEC, and describe how they perceive the use of this service.

And what might be the limitations of relying on ‘second hand’ interpretations of patient behavior?

We thank the reviewer her comment. As we comment previously, one of the objectives of the study is “collect the healthcare professionals’ perceptions regarding the use of rural PCEC and the factors determining such use patterns”. Because of that, the professional information is not a “second hand” interpretation of patient behavior. For sure it is true that will be interesting to know the patient behavior. Because of that we add the following paragraph to the limitations:

“Further research is needed to gain a deeper understanding of the current attitudes and practices of the rural population, both men and women regarding utilization of primary care emergency to better match the supply and demand” (track changes).

2. Under methods, the authors state that the ‘quantitative and qualitative data were collected from different geographical areas’. It’s not clear why the different types of data were collected from different geographical areas. This needs some explanation.

We thank the reviewer her comment. The reason we chose two different geographical areas was because the database analyzed in the quantitative study was conducted on the Autonomous Community of Castilla y Leon. Select only the province of Segovia would have greatly reduced the statistical power of the sample.

The management of health services occurs at the regional level, so all the provinces are subject to the same health management. The sociodemographic characteristics of the region have a high homogeneity. In other hand, if the
qualitative study will be developed throughout the autonomous region the financial cost will be huge by the project.

3. The study is presented as a mixed methods study, but it reads like a separate quantitative study and separate qualitative study was carried out and then the results have been presented here together. I would like to see more explanation of this mixing of methods – the rationale, purpose, and how the methods have been integrated to make it a truly mixed methods study.

We thank the reviewer her comment. About how we develop the study, firstly we conducted a quantitative study. To answer different doubts and questions related with the results, we decided to design a qualitative study that could give answers to those questions. Because of that we presented the study as a mixed methods one. If the editor or the reviewers consider that it is not a proper mixed methods approach we could remove this concept.

4. How was rurality measured / defined in the context of ‘rural PCECs’? How do ‘rural’ PCECs relate to ‘population dispersion’?

We thank the reviewer her comment. This concept was defined before conducting this study. We decided to use the concept of rural area based on the Spanish National Institute of Statistic, concretely Census of Population and Housing, which consider rural area all the population entities with less than 2000 inhabitants. To give an answer to this comment we add the following paragraph to the methods paragraph:

“The concept of rural area uses on that study was based on the Spanish National Institute of Statistic, concretely Census of Population and Housing, that consider rural area all the population entities with less than 2000 inhabitants.”

About how do ‘rural’ PCECs relate to ‘population dispersion’?

The population of Segovia (164,268 inhabitants), is distributed across 217 municipalities according to the Spanish National Institute of Statistics [16]. This province is divided into 16 Basic Health Zones, 3 of which are located in urban areas and 13 in rural areas. Each Basic Health Zone includes at least one PCEC [18]. These PCEC are located in the biggest municipality of the Basic Health Zone, and have to give healthcare at all the little municipalities (villages) that make up this Basic Health Zone. To clarify that we introduce the following paragraph in the manuscript:

“These PCEC are located in the biggest municipality of the Basic Health Zone, and have to give healthcare at all the little municipalities (villages) that make up each zone.” (track changes)

5. Qualitative analysis is a bit ‘thin’ / superficial and it would benefit from a deeper, analysis of the qualitative findings in relation to the quantitative findings on, access to services. For example, you have identified a theme of ‘distance
affects PCEC utilization, but can you show with your data really why / how distance might do this? You show what healthcare professionals THINK might be going on for patients, but have no data to really explain what might actually be happening from a patient point of view. Some of the arguments need substantiating a bit more, and the pieces of a bigger picture you present here need to be put together in a way that addresses the aim of the paper. In a way, it doesn’t really matter that the health care professionals perceive distance as a barrier – it’s what the patient thinks that would be more crucial! For me, this is a flaw with the paper - and needs addressing (e.g. justifying the method, what this qual data REALLY adds, etc).

We thank the reviewer her comment. One of the objectives of the study is “collect the healthcare professionals’ perceptions regarding the use of rural PCEC and the factors determining such use patterns”. Because of that, it is not a “second hand” interpretation of patient behavior. For sure it is true that will be interesting to know the patient behavior. Because of that we add the following paragraph to the limitations:

“Further research is needed to gain a deeper understanding of the current attitudes and practices of the rural population, both men and women regarding utilization of primary care emergency to better match the supply and demand” (track changes).

Minor Essential Revisions:

6. There are a number of typographical errors and the paper would benefit from some careful editing and proof reading e.g. Abstract ‘method – should be conducted not conducted; Background – services not servicers, determined not determinated, access not acces? organisation rather than organism

We thank the comment. We correct the typographical errors in the manuscript.

7. Under data sources I am not clear why the effective sample was 97.9% of the theoretical sample. What happened to the other 2.1%?

In 2.1% of cases the surveys were not conducted by incidents such as found empty houses, that the person did not meet the age and gender quotas, and rejection.

8. In background - Not clear what this sentence is trying to say - ‘variability of emergency services in primary care centers among nearby health areas is also understudied’. Needs rewriting to make this point clear.

Following reviewer comment we change this sentence:

“However, the variability of emergency services in primary care centers among nearby health areas is also understudied”

By following sentence:
"However, the variability in the use of primary care emergency centers (PCEC) among nearby health areas is also understudied"

2º- Reviewer's report

Title: Factors associated with the utilization of primary care emergency centers in a Spanish region with high population dispersion: a mixed-methods study

Reviewer: Marie-Pierre Gagnon

Reviewer's report:
This paper reports a mixed-methods study of the relationships between emergency care utilisation and geographic location.
My major concern is that the study uses census data from 2003 as the source of information regarding emergency care utilisation. Interviews were conducted between January 2008 and December 2009, so there could be a large gap between emergency services utilisation portrayed in 2003 and the situation that was described in 2009. In the study limitations, it would be important to mention that data collection took place at different times, and that the information could be out-dated.

Following her suggestion we include the following paragraph in the study limitations:

"data collection of qualitative and quantitative study was conducted at different times. The Regional Health Survey Castile y León was compiled in 2003, and the qualitative fieldwork was conducted in 2009. During this time period, health resources are no change in the area. On the other hand, the only significant socio-demographic change in the region is increasing migrant population. However, this increase was similar in rural and urban areas, so it is not possible that this fact biases our results”.

I have some additional minor comments:

We appreciate the reviewer's comments. We will consider each of her suggestions.

1- In the qualitative part of the study, it is said that participants were volunteers, but how were these specific participants selected?

We appreciate the reviewer's comments. A snowball sampling was developed by the authors. To clarify that, we add this information to the manuscript:

“We designed a qualitative phase linked to the aim of this study that included 14 in-depth interviews of 6 general practitioners and 8 primary care nurses, by snowball sampling.” (track changes)

2- What was the total number of potential participants?

From the information collected in the fieldwork, the potential number of doctors is about 40 and the number of nurses is approximately 25. We have requested
this information to the primary care management service, but they don’t know
this information. The number of professionals working in the PCEC has a great
variability due to sick leave, hours previously worked, etc.

3- Were interview transcripts returned to interviewees in order to check for
accuracy?

The interviews were recorded and faithfully transcribed by one of the authors.
Later a second researcher listened to and read the transcribed interviews in
order to check for accuracy.

4- How many people performed qualitative analyses?

One researcher performed the qualitative analyses at the beginning (coding). After that, two researchers performed the condensed meaning units.

To clarify that question we add this information in the manuscript:

“From these readings and notes, meaning units referring to PCEC utilization
were identified by one of the researchers, which lead to corresponding codes to
label such units. Codes were then grouped to form the condensed meaning
units by two of the researchers.” (track changes).

5- In the sentence “... included 14 in-depth interviews of 6 general and 8 primary
care nurses” (p. 9), do you mean “general practitioners”?

We appreciate this reviewer's comment. In fact, we would like to mean “general practitioners.” We do that correction in the text:

“We designed a qualitative phase linked to the aim of this study that included 14
in-depth interviews of 6 general practitioners and 8 primary care nurses, by
snowball sampling.”(track changes).

6- The section “Possible Explanations” should be integrated with the Discussion
and placed before “Study limitations”.

We appreciate the reviewer's comment. As she suggested, we have integrated
the section “Possible Explanations” with the Discussion and have placed before
“Study limitations” (track changes).
3º.- Reviewer’s report

**Title:** Factors associated with the utilization of primary care emergency centers in a Spanish region with high population dispersion: a mixed-methods study

**Reviewer:** Joanna Stewart

**Reviewer's report:**

This paper is clearly presented and apart from a couple of typographical errors my only concern is in the description of the MOR - see below

Minor

1. Background p3 2nd to last sentence starting 'however ... - needs rewording

We thank the reviewer /her comment. Following his/her suggestion we replace the sentence:

*However, as the availability of emergency centers in geographic areas of high population dispersion is related to PCEC use has not been determined.*

By the sentence:

*However, how the availability of emergency centers (hospital, primary care emergency center) in geographic areas of high population dispersion is related to PCEC use has not been determined.*

2. Next sentence typo 'access'

Thank you very much, we corrected the typographical error

3. p8 definition of MOR. This is not a measure, as a biostatistician, I have met previously and I suspect not many of the readers of this journal will have done so either. It is therefore important that it is clear what this measure is. From my understanding of the definition (and name) it is the median odds ratio of all pairs of people with the same characteristics in different municipalities. It would therefore be less confusing if the wording was more strictly aligned to this in both the methods and results. It is a median, not a mean and it is presenting an odds ratio so needs to be worded as such. Therefore on the bottom of p8 it needs to read something like'

The authors thank the reviewer comment. We are agreed with your appreciation in the definition of this biostatistician.

We change the sentence:
"In our study, MOR represents the mean increase in the probability of using a PCEC when a person moves to a municipality with higher PCEC use. A slope analysis was performed with no random effects found."

By the sentence:

"When randomly picking out two municipalities, MOR represents the median value of the odds ratio between the municipality at highest risk and the municipality at lowest risk. In this study, the MOR shows the extent to which the individual probability of using PCEC is determined by the municipality."

Similarly in the results on p12.

We change the sentence:

The probability of a person using PCEC is 2.7 times higher when moving from a municipality of low utilization percentages to one of high utilization percentages (MOR= 2.7). This probability decreases to 2.2 in Model 4.

By the sentence:

*The person´s median probability of using PCEC is 2.7 times higher if this persons moved to a municipality with higher utilization (MOR= 2.7). This median probability decreases to 2.2 in Model 4.*

4. p9 spelling in heading 'Geographical'

Thanks for the suggestion, we do the change.