

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Gut feelings in the diagnostic process of Spanish GPs. A focus group study
AUTHORS	Oliva, Bernardino; March, Sebastià; Gadea-Ruiz, Cristina; Stolper, Erik; Esteva, Magdalena

VERSION 1 - REVIEW

REVIEWER	Neil Langridge Southern Health NHS Foundation Trust
REVIEW RETURNED	22-Jun-2016

GENERAL COMMENTS	<p>There is a lack of clarity on the consent process and ethical approval.</p> <p>Page 16 line 40 the quotae does not really support the result.</p> <p>Page 16 line 18 as above</p> <p>Page 16 line 13 - quote has a english swear word which I would adapt for the publication</p>
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REVIEWER	Professor John Sandars University of Sheffield UK
REVIEW RETURNED	07-Jul-2016

GENERAL COMMENTS	<p>The overall topic of gut feelings in making a clinical diagnosis is of potential interest to a wider readership.</p> <p>The overall style could be improved and I suggest revision by a native English speaker.</p> <p>The title - I suggest adding "self-reported gut feelings" and put GPs in full</p> <p>The abstract - gut feelings are in all doctors and the mention of other GPs should be removed. The wording of the results could be improved.</p> <p>Strengths and limitations - I recommend that this is rewritten</p> <p>Background Gut feelings are found in all doctors (and all humans and I suspect most animals!) and I recommend further discussion of this concept within the medical context, but I also recommend that there is discussion of the general role of affect in metacognition and how this directs dual information processing. It would be useful to have a wider discussion of the importance of DIP in expertise and novices,</p>
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	<p>and the evolutionary importance of gut feelings and intuition.</p> <p>The aim includes identification of differences between cultural groups - is there any evidence to suggest that there are cultural differences in the use of gut feelings?</p> <p>Methods I consider Table 3 and Code Tree should be in results I would like to see some references to support the chosen method of data collection and analysis The coding appears to be almost the same as the research question and aims - was the coding deductive and use of content analysis using a predetermined template ? This requires further clarification.</p> <p>Results I personally found some of the themes confusing due to the choice of words - I wonder if this could be improved. The use of Spanish terms for gut feelings is interesting - is there any reference from the medical or general literature ?</p> <p>Discussion It is of no surprise that Spanish GPs have gut feelings! A comparison of the identified factors across both the expert and novice Spanish GPs, compassion across studies of GPs in other contexts and perhaps other doctors and contexts would greatly enhance the discussion and clarify the main findings of this study</p> <p>I recommend that the limitations of self-report and focus group methods are discussed, as well as alternative research approaches for the future e.g. think aloud during decision making.</p> <p>I am unsure who completed the quality assessment tool COREQ and whether this is only for review and editorial purposes. If this tool is in the final article, then it needs to be explained and if not included, then a clear discussion of the quality of the study should be included in the discussion</p>
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REVIEWER	Trish Green Hull York Medical School University of Hull England, UK
REVIEW RETURNED	02-Sep-2016

GENERAL COMMENTS	<p>The study addresses an interesting area of research that builds on our knowledge of GPs' experiences and understandings of 'gut feelings'. The methodology is suitable for the research question. There is a tendency to generalise the beliefs of Spanish GPs throughout the paper, based on a very small study sample of 20 participants, these statements should be replaced with 'Spanish GPs in this study', or equivalent. I would suggest replacing the term 'longitudinality' with 'continuity of care'. Some of the participants' quotes could be shortened. The standard of English is fairly poor in several sections and there are many spelling mistakes, awkward sentence constructions and grammatical errors. I would not recommend publication without a thorough proof-read.</p> <p>Abstract: Lines 43-5 cannot generalise with such a small sample Methods: need to add references from literature on focus groups and thematic analysis.</p>
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	<p>Results: information is there, but needs re-writing in several places, headings and sub-headings should be written out in full.</p> <p>Discussion: Line 37 generalisation of Spanish GPs' experiences of GFs cannot be substantiated with such a small study; Line 30 findings cannot be representative of Spanish GPs;</p> <p>Conclusion: Line 40 cannot state 'Spanish GPs recognize' based on this small cohort.</p> <p>This study is worthy because it adds to a growing body of knowledge about the existence of gut feelings and how they assist, or not, GPs in their decision-making. However, the authors must acknowledge that the findings they are presenting are based on a small study sample and the paper should be written up as such. This does not mean that the study lacks validity - qualitative research does not, nor should it, claim to be representative of those whom it studies.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Neil Langridge

Institution and Country: Southern Health NHS Foundation Trust

There is a lack of clarity on the consent process and ethical approval.

- We have changed the text on participants consent at ethical approval. It is in the methods section. Oral acceptance for participation and meeting audio recording was obtained from each of the participants after introduction of the objectives of the focus groups. The focus groups were audio recorded and then transcribed.

The Research Committee of the Majorca Primary Care Department authorized this study.

Page 16 line 40 the quotae does not really support the result.

- We have changed the text as follows:

The GPs reported that GFs were important for certain diagnostic tasks.

"I think we always attach value to these intuitions." (FG1/6)

Page 16 line 18 as above

- We have changed the text as follows:

In these cases, the GPs take advantage of their closeness to the patient and the continuity of care, and try to be attentive to patient evolution.

"Then you start looking. And if that patient doesn't come back, you look and see if they've had an emergency. Or you give them a call. I've done that, yes. The thing is, just the other day ... I did that ..." (FG1/5)

Page 16 line 13 - quote has a english swear word which I would adapt for the publication

- We have changed the text as follows:

"Sometimes you have intuitions but you don't always follow them, that is, sometimes you do and when you follow them and you're right, that's great, and sometimes you don't and you get left with a feeling like... you're left feeling angry." (FG1/9)

Reviewer: 2

Reviewer Name: Professor John Sandars

Institution and Country: University of Sheffield, UK

The overall topic of gut feelings in making a clinical diagnosis is of potential interest to a wider readership.

The overall style could be improved and I suggest revision by a native English speaker.

- A full review of English language has been done by a native English speaker.

The title - I suggest adding "self-reported gut feelings" and put GPs in full

- We decided to use the expression "gut feelings" as it has been commonly used in previous literature about them. See references 4, 10, 11, 13, 16, 17, 20, 21, 22, 23, 24.

The abstract - gut feelings are in all doctors and the mention of other GPs should be removed.

- We have changed the text as follows:

Objectives. The gut feelings of doctors can act as triggers and modulators of the diagnostic process. This study investigated the existence, meaning, and role of gut feelings among Spanish general practitioners.

The wording of the results could be improved.

- We have changed the text as follows:

Results. General practitioners were aware of the existence of gut feelings in their diagnostic reasoning process and recognized two kinds of gut feelings: a sense of alarm and a sense of reassurance. A previous physician-patient relationship and the physician's experience had a strong perceived influence on the appearance of gut feelings. The physicians attached great significance to gut feelings, and considered them as a characteristic of the primary care working style and as a tool available in their diagnostic process. The physicians thought that the notion of gut feelings and their relevance can be transmitted to students and trainees. They also felt comfortable following their gut feelings, although they were not sure of their accuracy.

Strengths and limitations - I recommend that this is rewritten

- We have changed the text as follows:

STRENGTHS AND LIMITATIONS

- This is the first study to examine diagnostic gut feelings in a Spanish-speaking area.
- The qualitative approach used here provides information about self-perceived feelings, perceptions, and opinions.
- Our study sample was heterogeneous in age, experience, gender, and location of practice, and the consensus was wide and rapidly achieved.
- The analysis was performed by three researchers to assure the validity of the results.

Background

Gut feelings are found in all doctors (and all humans and I suspect most animals!) and I recommend further discussion of this concept within the medical context, but I also recommend that there is discussion of the general role of affect in metacognition and how this directs dual information processing. It would be useful to have a wider discussion of the importance of DIP in expertise and novices, and the evolutionary importance of gut feelings and intuition.

- Although we agree with the reviewer in the interest and relevance of these topics we did not want to make the text too long. We just wanted to put our readers in the picture, so we included a

commentary and references about how emotions affect the decision-making process, about dual information process and about intuition and expertise (references 6,7,9). We have also included a reference of the interesting paper wrote by Kahneman and Klein discussing their approaches to dual processes (8).

Psychological theories postulate dual processes as the simultaneous existence of two forms of knowing and understanding: a rational and analytical process that is controlled, explicit and slow; and an implicit, associative, intuitive, and rapid non-analytical process.[7] Kahneman and Klein discuss these approaches.[8] They agreed that an environment of high validity (they use medicine as an example) and adequate chances for learning the regularities of that environment (by means of practice and feedback) are necessary conditions for the development of skilled intuitions. Cognitive neuroscientists showed that emotions are actively involved in decision making.[9]

The aim includes identification of differences between cultural groups - is there any evidence to suggest that there are cultural differences in the use of gut feelings?

- There is not much research about gut feelings in the medical practice, and less about cultural difference. We have only found the research made by Le Reste et al (23), who studied the transculturality of gut feelings between French and Dutch GPs. This is one of the reasons why we conducted this research: to explore the existence, significance, determinants, and triggers of GFs among Spanish GPs, and to compare the results with the Dutch ones. Although gut feelings go beyond medical practice in this exploratory article we sought to circumscribe the concept to that particular area, following the line drawn by Dr. Stolper.

Methods

I consider Table 3 and Code Tree should be in results

- We have moved Table 3 to the Results section.

I would like to see some references to support the chosen method of data collection and analysis

- We have added references 26, 27

26 Strauss A, Corbin JM. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. SAGE Publications 1998.

27. Smithson J. Using and analyzing focus groups: limitations and possibilities. Int J Social Research Methodology, 2000, VOL.3, NO.2, 103-11.

The coding appears to be almost the same as the research question and aims - was the coding deductive and use of content analysis using a predetermined template ? This requires further clarification.

- The researchers individually selected quotes related to the research questions from the transcripts, and assigned codes to them. The coding was mainly deductive, based on previous research, although it also allowed debate and the use of new categories.[21,22]

Results

I personally found some of the themes confusing due to the choice of words - I wonder if this could be improved.

- A full review of English language has been done by a native English speaker.

The use of Spanish terms for gut feelings is interesting - is there any reference from the medical or general literature ?

- The word *corazonada* is outlined in literary works since 1729. ("Diccionario de Autoridades" Volume II). It can also be found as a synonym of intuition in Spanish studies about psychology, neuroscience, economics, etc.

Discussion

It is of no surprise that Spanish GPs have gut feelings! A comparison of the identified factors across both the expert and novice Spanish GPs, compassion across studies of GPs in other contexts and perhaps other doctors and contexts would greatly enhance the discussion and clarify the main findings of this study

Following the reviewer's advice we have included a paragraph about differences between expert and novice GPs. In addition, there is a comparison with Dutch and French GPs in the Discussion section, 3rd paragraph.

- We found no effect of gender or previous medical experience on the discourses of the GPs we examined. In fact, all the GPs in our study had experienced GFs during their work. Experienced GPs had more confidence in their GFs than less experienced GPs.

The results of our study are similar to those of previous research of GPs conducted in the Netherlands and France, in terms of recognition of the existence of GFs and their typology. Previous qualitative research reported the idea of GFs as the GP being worried (sense of alarm) or not (sense of reassurance) about a patient's prognosis, even in the absence of objective findings, and the role of GFs on whether to initiate the diagnostic process or a specific treatment. However, we found some small differences in Spanish GPs. Spanish GPs reported feeling cautious about the sense of reassurance provided by GFs, and although they usually follow their GFs, they remained alert to the resolution of the case. The GPs in our study referred to the sense of alarm from a GF more as a trigger for the diagnostic process than as a need for management. In this latter aspect, they are more similar to French GPs than Dutch GPs. As previously noted, the longer tradition of research and acceptance of GFs in the Netherlands than in France and Spain might explain these differences.[23]

I recommend that the limitations of self-report and focus group methods are discussed, as well as alternative research approaches for the future e.g. think aloud during decision making.

- The aim of this study is in the subjectivity of the Spanish GPs: Their opinions, perceptions and values given to the gut feelings in clinical practice. So, a qualitative approach, like the one we used, is commonly recommended. The cornerstone of this approach is precisely the subjectivity of the "self-Reported" results. Limitations of work with these subjectivities are controlled because of the saturations of discourses (results are repeated by different individuals). In this case, we found a big consensus around the topic, so this limitation has low impact.

Focus groups are also a common technique in the qualitative approach. In addition, like any technique have strengths and limitations. The groups were led by trained moderators, and the participation was normal. The composition of the groups was heterogeneous, and the discourse achieved a great consensus about the major topics addressed. We think that there is no limitation related to the application of the technique in this study. We have included a reference about focus groups general limitations (27).

I am unsure who completed the quality assessment tool COREQ and whether this is only for review and editorial purposes. If this tool is in the final article, then it needs to be explained and if not included, then a clear discussion of the quality of the study should be included in the discussion

- COREQ is only a checklist for reporting qualitative research, used to assess the quality of the

manuscript. We send it at demand of the Editorial board, only for editorial purposes, to make easier the work of the reviewers. It will not go in the final article. Anyway, we reviewed the strengths and limitations paragraph and we made modifications and clarifications as the reviewer suggested. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349-357.

Reviewer: 3

Reviewer Name: Trish Green

Institution and Country: Hull York Medical School, University of Hull, England, UK

Please state any competing interests: None declared

Please leave your comments for the authors below

The study addresses an interesting area of research that builds on our knowledge of GPs' experiences and understandings of 'gut feelings'. The methodology is suitable for the research question. There is a tendency to generalise the beliefs of Spanish GPs throughout the paper, based on a very small study sample of 20 participants, these statements should be replaced with 'Spanish GPs in this study', or equivalent.

- We have changed references to "Spanish GPs" for expressions referred only to participants in the study.

I would suggest replacing the term 'longitudinality' with 'continuity of care'.

- We have changed this term.

Some of the participants' quotes could be shortened.

- We have shorten some participants quotes without losing their meaning.

The standard of English is fairly poor in several sections and there are many spelling mistakes, awkward sentence constructions and grammatical errors. I would not recommend publication without a thorough proof-read.

- A full review of English language has been done by a native English speaker.

Abstract: Lines 43-5 cannot generalise with such a small sample

- We have changed the text as follows:

Conclusions. Spanish general practitioners in our study agree to recognize the presence and role of gut feelings in their diagnostic reasoning process. Future research should examine the diagnostic accuracy of gut feelings and how to teach about gut feelings in the training of general practitioners.

Methods: need to add references from literature on focus groups and thematic analysis.

- Added references 26, 27, 28.

26 Strauss A, Corbin JM. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. SAGE Publications 1998.

27 Smithson J. Using and analyzing focus groups: limitations and possibilities. *Int J Social Research Methodology* 2000;3:103-11.

28 Fereday J, Muir-Cochrane E. Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative*

Methods 2008;5:4.

Results: information is there, but needs re-writing in several places, headings and sub-headings should be written out in full.

- A full review of English language has been done by a native English speaker. Headings and sub-headings have been rewritten.

Discussion: Line 37 generalisation of Spanish GPs' experiences of GFs cannot be substantiated with such a small study

- We have changed the text as follows:

The Spanish GPs in our study recognized the existence of GFs in their own diagnostic processes.

Line 30 findings cannot be representative of Spanish GPs

Conclusion: Line 40 cannot state 'Spanish GPs recognize' based on this small cohort.

This study is worthy because it adds to a growing body of knowledge about the existence of gut feelings and how they assist, or not, GPs in their decision-making. However, the authors must acknowledge that the findings they are presenting are based on a small study sample and the paper should be written up as such. This does not mean that the study lacks validity - qualitative research does not, nor should it, claim to be representative of those whom it studies.

- We have changed the conclusions on reviewer request. Still we maintain in the discussion that these results can be generalized to Spanish GPs. This is sustained by the heterogeneity of the sample (age, experience, gender, homeland) and the wide consensus reached, with fast data saturation. This seems to indicate that if we interview GPs in other places of Spain the results would be similar. Spanish GPs in our study recognized the presence of GFs during the diagnostic process. There were two main types of GFs: a sense of reassurance and a sense of alarm. The former is more common, but both are useful for discrimination of patients according to disease severity, an important goal in primary care. The GPs reported that clinical experience, duration of the patient relationship, and frequency of patient contact were the main factors related to recognition of GFs.

We expect answers to reviewer's suggestions will be satisfactory,

VERSION 2 – REVIEW

REVIEWER	Professor John Sandars University of Sheffield UK
REVIEW RETURNED	11-Oct-2016

GENERAL COMMENTS	<p>The authors appear to have carefully considered the comments of previous reviewers and made changes to the re-submitted paper</p> <p>I am unclear if Figure 1 is still included in the re-submission. If it is included, it requires greater description in the text.</p> <p>In the Abstract there are two phrases that require rewriting: - felt comfortable following their gut feelings I SUGGEST FEELING COMFORTABLE IS REPLACED - Spanish general practitioners in our study agree to recognize the presence I SUGGEST AGREE TO RECOGNIZE IS REPLACED</p>
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	<p>The authors state different aims and objectives:</p> <ul style="list-style-type: none"> - investigated the existence, meaning, and role of gut feelings among Spanish general practitioners. - provides information about self perceived feelings, perceptions, and opinions. - The aim of this study was to explore the existence , significance, determinants, and triggers of GFs among Spanish GPs <p>These should be closely aligned and I suggest rewriting</p> <p>p 28 "traditional perspectives for diagnosis" I recommend that this section is rewritten to make it clear - the perspectives are not "traditional" but on based on "traditional" approach to teaching and learning about decsion-making</p> <p>The Themes presented in the results are not closely aligned to the Table 3 Level 2 categories. I reommand that there is greater alignment</p>
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REVIEWER	Trish Green University of Hull, England, UK
REVIEW RETURNED	06-Oct-2016

GENERAL COMMENTS	<p>The paper is much improved, but some minor editing is still needed as follows:</p> <p>p.5 L.10 Abstract Design should read 'Qualitative study using focus groups.</p> <p>p.6 L.26 remove 'an'</p> <p>p.8 L.52 remove 'meeting'</p> <p>p.10 L10 insert 'of' before GFs</p> <p>p.12 L44 insert 'the' before diagnosis</p> <p>p.13 L13 replace 'mention' with 'mentioned'</p> <p>p.20 L31 replace 'focus study group' with 'focus group study'</p> <p>p.20 L55 replace 'expert' with 'experienced'</p> <p>p.21 L13 replace 'confirm' with 'suggest'</p> <p>p.21 L13 replace 'and are in' with 'and our findings are in'</p> <p>p.21 L16 replace 'has' with 'have'</p> <p>p.21 L18 replace 'where the origin of the Gut Feeling Questionnaire is' with 'where the Gut Feeling Questionnaire originates'</p> <p>p.21 L41 replace 'discrimination of patients' with 'discriminating between patients'</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer: 3
Reviewer Name
Trish Green
Institution and Country
University of Hull, England, UK

p.5 L.10 Abstract Design should read 'Qualitative study using focus groups.
Changed
p.6 L.26 remove 'an'
Changed

p.8 L.52 remove 'meeting'
Changed
p.10 L10 insert 'of' before GFs
Changed
p.12 L44 insert 'the' before diagnosis
Changed
p.13 L13 replace 'mention' with 'mentioned'
Changed
p.20 L31 replace 'focus study group' with 'focus group study'
Changed
p.20 L55 replace 'expert' with 'experienced'
Changed
p.21 L13 replace 'confirm' with 'suggest'
Changed
p.21 L13 replace 'and are in' with 'and our findings are in'
Changed
p.21 L16 replace 'has' with 'have'
Changed
p.21 L18 replace 'where the origin of the Gut Feeling Questionnaire is' with 'where the Gut Feeling Questionnaire originates'
Changed
p.21 L41 replace 'discrimination of patients' with 'discriminating between patients'
Changed

Reviewer: 2
Reviewer Name
Professor John Sandars
Institution and Country
University of Sheffield
UK

The authors appear to have carefully considered the comments of previous reviewers and made changes to the re-submitted paper

I am unclear if Figure 1 is still included in the re-submission. If it is included, it requires greater description in the text.

Figure 1 is a visual summary of the first paragraph of the discussion section. We have added an explanation as follows:

Figure 1 summarizes the main discourses around GFs and how factors related with GFs appearance, and the relevance given to them influence the diagnosis process

In the Abstract there are two phrases that require rewriting:

- felt comfortable following their gut feelings I SUGGEST FEELING COMFORTABLE IS REPLACED

Changed

- Spanish general practitioners in our study agree to recognize the presence I SUGGEST AGREE TO RECOGNIZE IS REPLACED

Changed

The authors state different aims and objectives:

- investigated the existence, meaning, and role of gut feelings among Spanish general practitioners.

- provides information about self perceived feelings, perceptions, and opinions.

- The aim of this study was to explore the existence , significance, determinants, and triggers of GFs among Spanish GPs

These should be closely aligned and I suggest rewriting

Rewritten in the abstract, strengths and limitations, and background sections.

p 28 "traditional perspectives for diagnosis" I recommend that this section is rewritten to make it clear - the perspectives are not "traditional" but on based on "traditional" approach to teaching and learning about decision-making

Changed

Psychological research on clinical reasoning shows that general practitioners (GPs), and doctors in general, use two strategies for diagnosis: problem solving and decision-making.[1]

The Themes presented in the results are not closely aligned to the Table 3 Level 2 categories. I recommend that there is greater alignment.

Themes in the results and in Table 3 have been realigned.